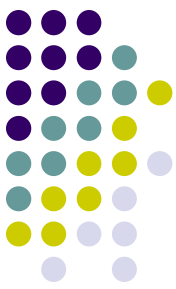


Before you begin: This is a big topic, and big topics beget big slide-sets. There's a couple of natural breaks (around slide 215, and again around 415); I placed *break time!* slides at those locations.

Melanocytic Eyelid and Epibulbar Lesions



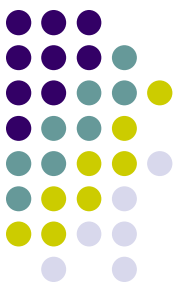
*All lesions of the eyelid and epibulbar tissue can be said to have one of two appearances—
what are they?*

?

?

*(Obviously, there are multiple legit ways to answer this question,
but there's one best way in the context of this slide-set)*

Melanocytic Eyelid and Epibulbar Lesions



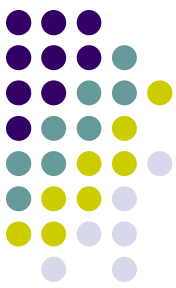
All lesions of the eyelid and epibulbar tissue can be said to have one of two appearances—what are they?

Pigmented

Nonpigmented

(Obviously, there are multiple legit ways to answer this question, but there's one best way in the context of this slide-set)

Melanocytic Eyelid and Epibulbar Lesions



All lesions of the eyelid and epibulbar tissue can be said to have one of two appearances—what are they? Which lesions can present pigmented, and which can present nonpigmented?

Pigmented

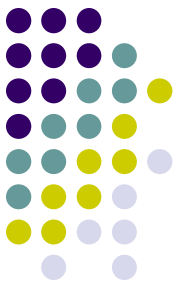
— ?
— ?
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— ?

Nonpigmented

— ?
— ?
— ?
— ?
— ?
— ?
— ?
— ?

(Don't spend too much time sweating this—it's kinda rhetorical)

Melanocytic Eyelid and Epibulbar Lesions



All lesions of the eyelid and epibulbar tissue can be said to have one of two appearances—what are they? Which lesions can present pigmented, and which can present nonpigmented?

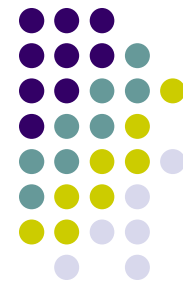
Pigmented

- All of them
- All of them
- All of them
- All of them
- All of them
- All of them
- All of them
- All of them

Nonpigmented

- All of them
- All of them
- All of them
- All of them
- All of them
- All of them
- All of them
- All of them

No question—proceed when ready



Melanocytic Eyelid and Epibulbar Lesions

All lesions of the eyelid and epibulbar tissue can be said to have one of two appearances—what are they? Which lesions can present pigmented, and which can present nonpigmented?

Pigmented

- All of them
- All of them
- All of them
- All of them
- All of them
- All of them
- All of them
- All of them

Nonpigmented

- All of them
- All of them

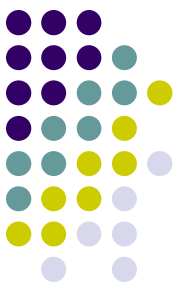
Point #1:

Regardless of cell of origin, any eyelid or epibulbar lesion can be **pigmented**.

- All of them
- All of them

No question—proceed when ready

Melanocytic Eyelid and Epibulbar Lesions



7

All lesions of the eyelid and epibulbar tissue can be said to have one of two appearances—what are they? Which lesions can present pigmented, and which can present nonpigmented?

Pigmented

- All of them
- All of them
- All of them
- All of them
- All of them
- All of them
- All of them
- All of them

Melanocytic

Nonpigmented

- All of them
- All of them

Point #1:

Regardless of cell of origin, any eyelid or epibulbar lesion can be **pigmented**.
This includes melanocytic lesions (duh).

- All of them
- All of them

No question—proceed when ready



Melanocytic Eyelid and Epibulbar Lesions

*All lesions of the eyelid and epibulbar tissue can be said to have one of two appearances—**what are they?** Which lesions can present pigmented, and which can present nonpigmented?*

Pigmented

- All of them
- All of them
- All of them
- All of them
- All of them
- All of them

Point #2:

--Lesions of melanocytic origin
can be **nonpigmented**

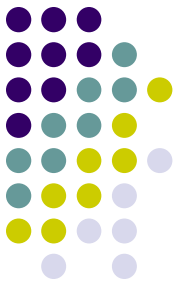
Nonpigmented

- All of them
- All of them
- All of them
- All of them
- All of them
- All of them
- All of them
- All of them
- All of them

Melanocytic

No question—proceed when ready

Melanocytic Eyelid and Epibulbar Lesions



Note! This question concerns melanocytic lesions specifically, not pigmented lesions generally



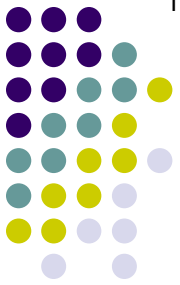
?

*All **melanocytic** lesions of the eyelid and epibulbar tissue arise from one of two cell types—what are they?*

?

(OTOH, this question only has one legit answer)

Melanocytic Eyelid and Epibulbar Lesions

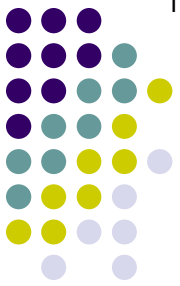


Melanocytes

*All **melanocytic** lesions of the eyelid and epibulbar tissue arise from one of two cell types—what are they?*

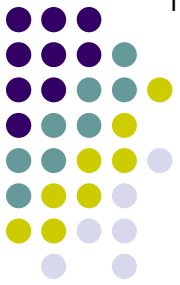
Nevus cells

(OTOH, this question only has one legit answer)



Melanocytes

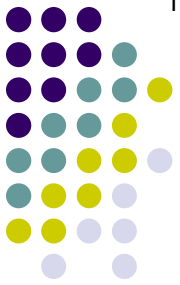
Let's consider the embryology of melanocytes. From which primordial cell do they derive?



Melanocytes

Let's consider the embryology of melanocytes. From which primordial cell do they derive?
Neural crest cells (NCCs)

Melanocytic Eyelid and Epibulbar Lesions

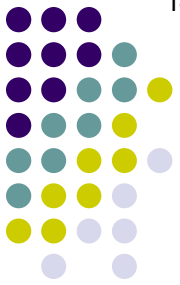


Melanocytes

Let's consider the embryology of melanocytes. From which primordial cell do they derive?
Neural crest cells (NCCs)

Briefly, what's the backstory on neural crest cells?

Melanocytic Eyelid and Epibulbar Lesions

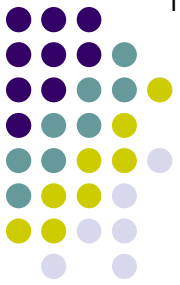


Melanocytes

Let's consider the embryology of melanocytes. From which primordial cell do they derive?
Neural crest cells (NCCs)

Briefly, what's the backstory on neural crest cells?
NCCs are a subtype of embryo cell type cells.

Melanocytic Eyelid and Epibulbar Lesions

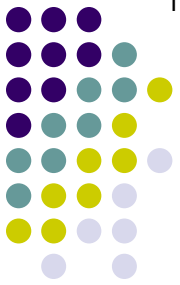


Melanocytes

Let's consider the embryology of melanocytes. From which primordial cell do they derive?
Neural crest cells (NCCs)

Briefly, what's the backstory on neural crest cells?
NCCs are a subtype of neuroectodermal cells.

Melanocytic Eyelid and Epibulbar Lesions

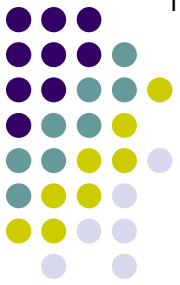


Melanocytes

Let's consider the embryology of melanocytes. From which primordial cell do they derive?
Neural crest cells (NCCs)

Briefly, what's the backstory on neural crest cells?

NCCs are a subtype of neuroectodermal cells. Early v Late in embryogenesis, some of the neuroectodermal cells located along the dorsal v ventral aspect of the structure (two words) are induced to transition into NCCs.



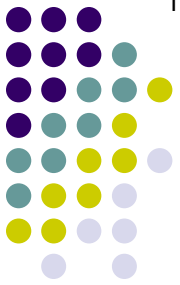
Melanocytes

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Neural crest cells (NCCs)

Briefly, what's the backstory on neural crest cells?

NCCs are a subtype of neuroectodermal cells. Early in embryogenesis, some of the neuroectodermal cells located along the dorsal aspect of the neural tube are induced to transition into NCCs.

Melanocytic Eyelid and Epibulbar Lesions



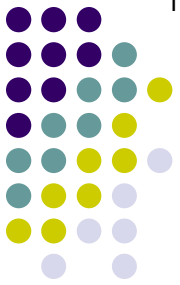
Melanocytes

Let's consider the embryology of melanocytes. From which primordial cell do they derive?
Neural crest cells (NCCs)

Briefly, what's the backstory on neural crest cells?

NCCs are a subtype of neuroectodermal cells. Early in embryogenesis, some of the neuroectodermal cells located along the dorsal aspect of the neural tube are induced to transition into NCCs. NCCs then migrate widely across the embryo, and upon arriving at their destination they proliferate and differentiate into specialized tissues and cells, including melanocytes.

Melanocytic Eyelid and Epibulbar Lesions



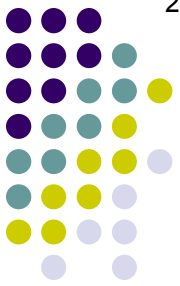
Melanocytes

Let's consider the embryology of melanocytes. From which primordial cell do they derive?
Neural crest cells (NCCs)

Briefly, what's the backstory on neural crest cells?

NCCs are a subtype of neuroectodermal cells. Early in embryogenesis, some of the neuroectodermal cells located along the dorsal aspect of the neural tube are induced to transition into NCCs. NCCs then migrate widely across the embryo, and upon arriving at their destination they proliferate and differentiate into specialized tissues and cells, including melanocytes. The cohort of NCCs from which melanocytes derive gives rise also to cell type 1... and ...and 2 cells.

Melanocytic Eyelid and Epibulbar Lesions



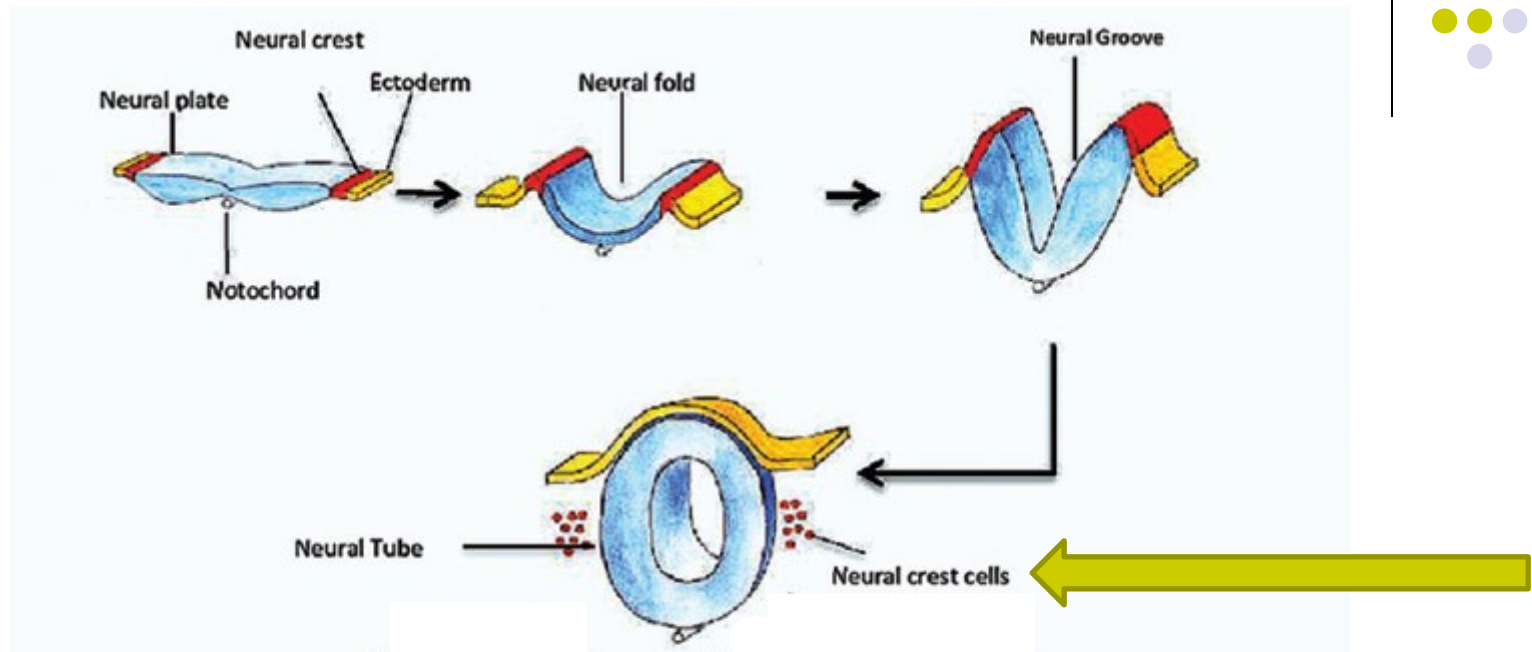
Melanocytes

Let's consider the embryology of melanocytes. From which primordial cell do they derive?
Neural crest cells (NCCs)

Briefly, what's the backstory on neural crest cells?

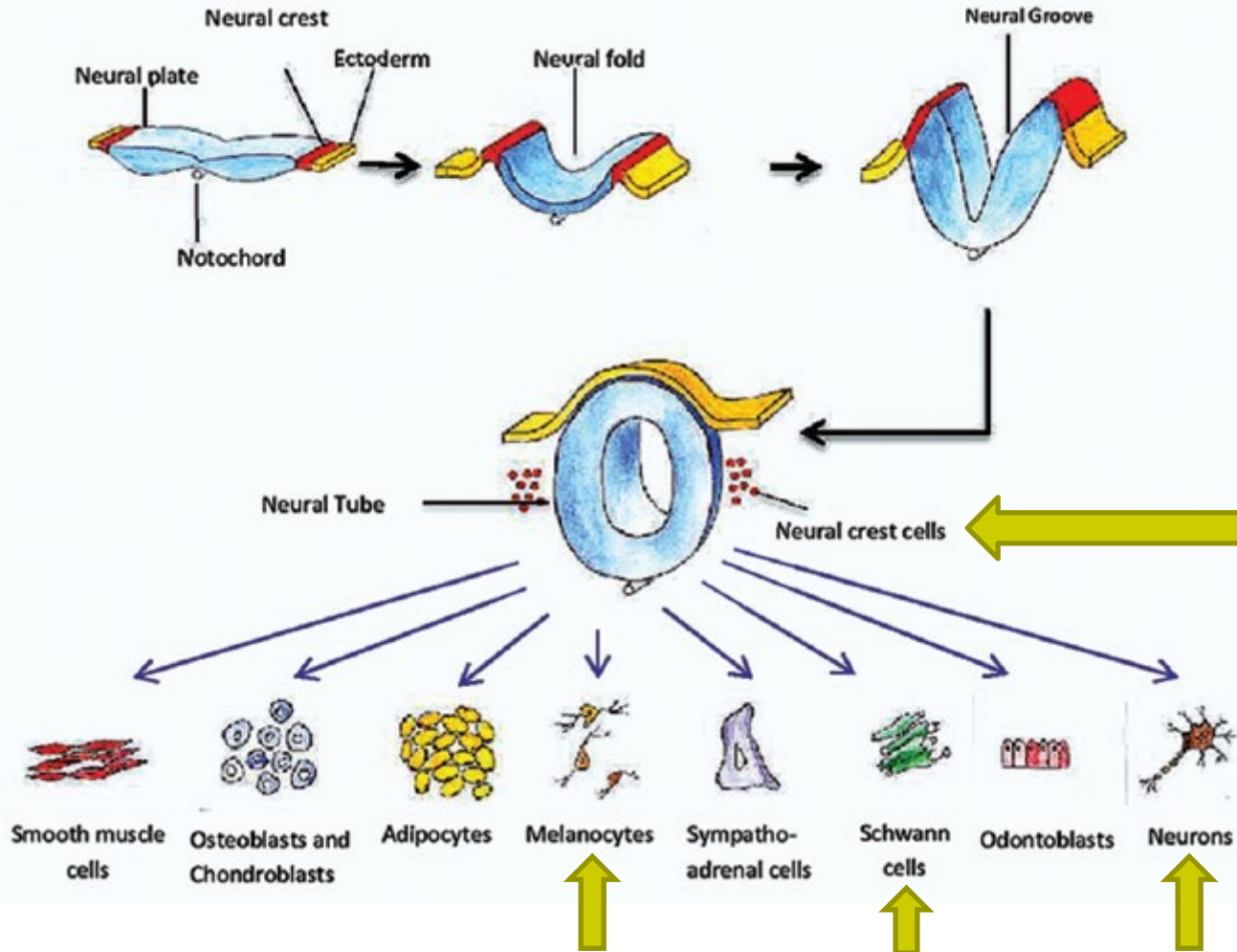
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Melanocytic Eyelid and Epibulbar Lesions



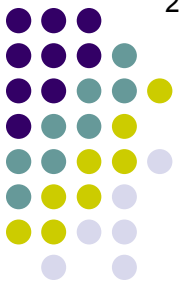
Neural crest cells...

Melanocytic Eyelid and Epibulbar Lesions



Neural crest cells...and their derivatives

Melanocytic Eyelid and Epibulbar Lesions



Melanocytes

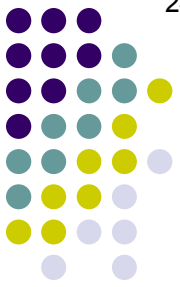
Let's consider the embryology of melanocytes. From which primordial cell do they derive?
Neural crest cells (NCCs)

Briefly, what's the backstory on neural crest cells?

NCCs are a subtype of **neuroectodermal cells**. Early in embryogenesis, some of the neuroectodermal cells located along the dorsal aspect of the neural tube are induced to become NCCs. NCCs then migrate to various locations throughout the embryo.

Other than giving rise to melanocytes, does neuroectodermal tissue play any role in eye morphogenesis?

Yes, including melanocytes. The cohort of NCCs from which melanocytes derive gives rise also to neurons and glial cells.



Melanocytic Eyelid and Epibulbar Lesions

Melanocytes

Let's consider the embryology of melanocytes. From which primordial cell do they derive?
Neural crest cells (NCCs)

Briefly, what's the backstory on neural crest cells?

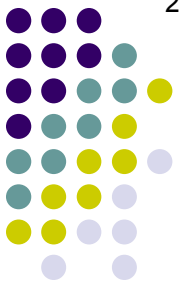
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Other than giving rise to melanocytes, does neuroectodermal tissue play any role in eye morphogenesis?

It does indeed—neuroectoderm gives rise to the **two words** and the **abb.** for example

including melanocytes. The cohort of NCCs from which melanocytes derive gives rise also to neurons and glial cells.

Melanocytic Eyelid and Epibulbar Lesions



Melanocytes

Let's consider the embryology of melanocytes. From which primordial cell do they derive?
Neural crest cells (NCCs)

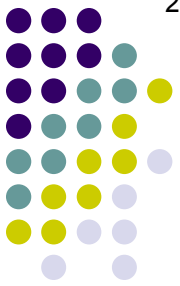
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Other than giving rise to melanocytes, does neuroectodermal tissue play any role in eye morphogenesis?

It does indeed—neuroectoderm gives rise to the neurosensory retina and the RPE, for example

including melanocytes. The cohort of NCCs from which melanocytes derive gives rise also to neurons and glial cells.



Melanocytic Eyelid and Epibulbar Lesions

Melanocytes

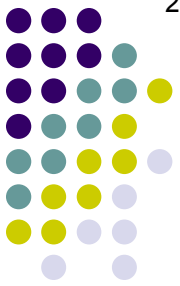
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So, the NS retina and RPE derive from NCCs?



Melanocytic Eyelid and Epibulbar Lesions

Melanocytes

Let's consider the embryology of melanocytes. From which primordial cell do they derive?
Neural crest cells (NCCs)

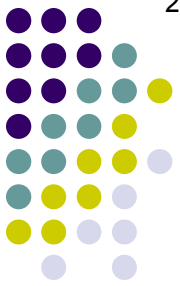
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It does indeed—neuroectoderm gives rise to the **neurosensory retina** and the **RPE**, for example including melanocytes. The cohort of NCCs from which melanocytes derive gives rise also to neurons and glial cells.

So, the NS retina and RPE derive from NCCs?

No no no, don't get it twisted—they derive from **neuroectoderm**, which is the same primordial tissue that gives rise to NCCs



Melanocytic Eyelid and Epibulbar Lesions

Melanocytes

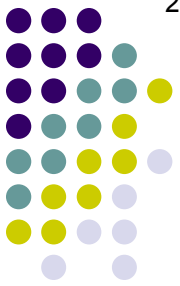
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Neural crest cells (NCCs)

Briefly, what's the backstory on neural crest cells?

NCCs are a subtype of neuroectodermal cells. Early in embryogenesis, some of the

There is a condition—well known to you, dear reader—that consists of a multitude of lesions, most of which are either melanocytic or neuroglial in origin. What is this condition?

including melanocytes. The cohort of NCCs from which **melanocytes** derive gives rise also to **neurons and glial cells**.



Melanocytic Eyelid and Epibulbar Lesions

Melanocytes

Let's consider the embryology of melanocytes. From which primordial cell do they derive?
Neural crest cells (NCCs)

Briefly, what's the backstory on neural crest cells?

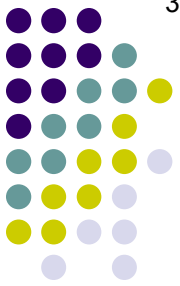
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Neurofibromatosis type 1 (NF1)

including melanocytes. The cohort of NCCs from which **melanocytes** derive gives rise also to **neurons and glial cells**.

Melanocytic Eyelid and Epibulbar Lesions



Melanocytes

Let's consider the embryology of melanocytes. From which primordial cell do they derive?
Neural crest cells (NCCs)

Briefly, what's the backstory on neural crest cells?

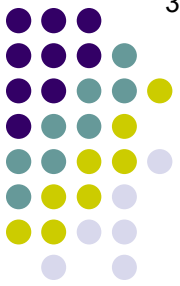
In one word, what sort of condition is NF1?

A phakomatosis

Neural cells. Early in embryogenesis, some of the neural cells migrate to form the peripheral nervous system. A phakomatosis is a group of conditions, often inherited, that consist of a multitude of lesions, most of which are either melanocytic or neuroglial in origin. What is this condition?

Neurofibromatosis type 1 (NF1)

including melanocytes. The cohort of NCCs from which melanocytes derive gives rise also to neurons and glial cells.



Melanocytic Eyelid and Epibulbar Lesions

Melanocytes

Let's consider the embryology of melanocytes. From which primordial cell do they derive?
Neural crest cells (NCCs)

Briefly, what's the backstory on neural crest cells?

In one word, what sort of condition is NF1? A phakomatosis. Early in embryogenesis, some of the neural cells. Near reader—that consists of a multitude of lesions, most of which are either melanocytic or neuroglial in origin. What is this condition?

Neurofibromatosis type 1 (NF1)

including melanocytes. The cohort of NCCs from which **melanocytes** derive gives rise also to **neurons and glial cells**.

Neuroglial lesions

--?
--?
--?
--?

What are the four classic neuroglial lesions in NF1?



Melanocytic Eyelid and Epibulbar Lesions

Melanocytes

Let's consider the embryology of melanocytes. From which primordial cell do they derive?
Neural crest cells (NCCs)

Briefly, what's the backstory on neural crest cells?

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Neurofibromatosis type 1 (NF1)

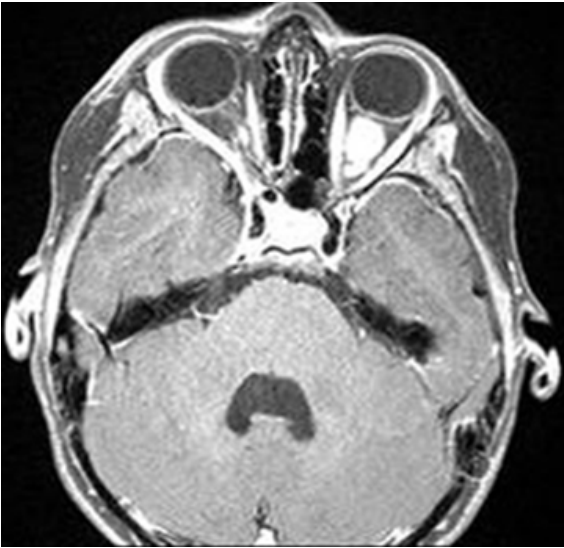
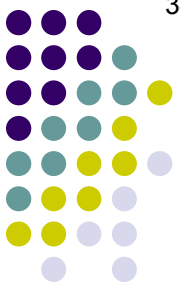
including melanocytes. The cohort of NCCs from which melanocytes derive gives rise also to **neurons and glial cells**.

Neuroglial lesions

- Nodular neurofibromas
- Plexiform neurofibromas
- Optic glioma
- Prominent corneal nerves

What are the four classic neuroglial lesions in NF1?

Melanocytic Eyelid and Epibulbar Lesions



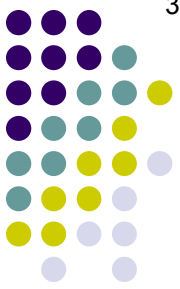
Plexiform neurofibroma



Nodular neurofibroma

Optic nerve glioma

NF1: Neuroglial lesions



Melanocytic Eyelid and Epibulbar Lesions

Melanocytes

Let's consider the embryology of melanocytes. From which primordial cell do they derive?
Neural crest cells (NCCs)

Briefly, what's the backstory on neural crest cells?

In one word, what sort of condition is NF1? A phakomatosis. A phakomatosis is a term used to describe a group of conditions that affect the nervous system. Early in embryogenesis, some of the neural crest cells migrate to form the peripheral nervous system. In some cases, these cells can form tumors. A phakomatosis is a term used to describe a group of conditions that affect the nervous system. Early in embryogenesis, some of the neural crest cells migrate to form the peripheral nervous system. In some cases, these cells can form tumors. A phakomatosis is a term used to describe a group of conditions that affect the nervous system. Early in embryogenesis, some of the neural crest cells migrate to form the peripheral nervous system. In some cases, these cells can form tumors.

Neurofibromatosis type 1 (NF1)

including melanocytes. The cohort of NCCs from which melanocytes derive gives rise also to neurons and glial cells.

Neuroglial lesions

- Nodular neurofibromas
- Plexiform neurofibromas
- Optic glioma
- Prominent corneal nerves

Melanocytic lesions

- ?
- ?
- ?
- ?

What are the four classic melanocytic lesions in NF1?



Melanocytic Eyelid and Epibulbar Lesions

Melanocytes

Let's consider the embryology of melanocytes. From which primordial cell do they derive?
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Neurofibromatosis type 1 (NF1)

including melanocytes. The cohort of NCCs from which **melanocytes** derive gives rise also to **neurons and glial cells**.

Neuroglial lesions

- Nodular neurofibromas
- Plexiform neurofibromas
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- Prominent corneal nerves

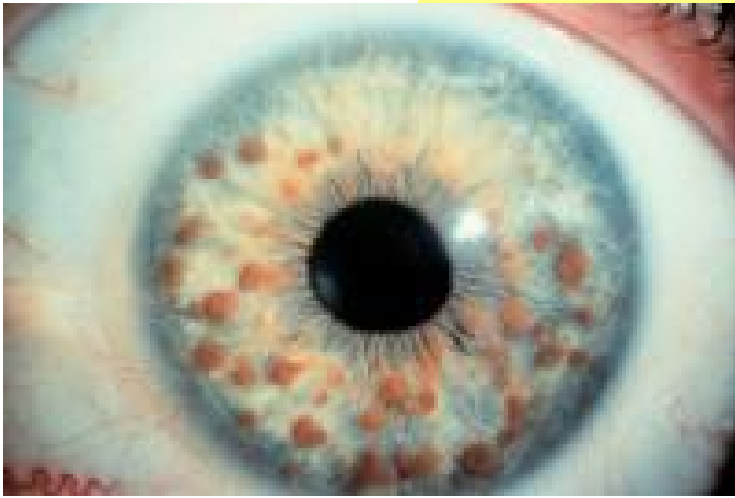
Melanocytic lesions

- Café au lait spots
- Axillary/inguinal freckles
- Lisch nodules
- Choroidal lesions

What are the four classic melanocytic lesions in NF1?



Eyelid and Epibulbar Lesions



Lisch nodules

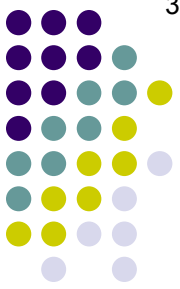


Café-au-lait spots



Axillary freckling

NF1: Melanocytic lesions



Melanocytic Eyelid and Epibulbar Lesions

Melanocytes

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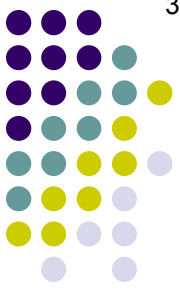
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- Prominent corneal nerves

Melanocytic lesions

- Café au lait spots
- Axillary/inguinal freckles
- Lisch nodules
- Choroidal lesions

In what fundamental way do these lesions differ (other than the cell type of origin, duh)?



Melanocytic Eyelid and Epibulbar Lesions

Melanocytes

Let's consider the embryology of melanocytes. From which primordial cell do they derive?
Neural crest cells (NCCs)

Briefly, what's the backstory on neural crest cells?

In one word, what sort of condition is NF1? **Neurofibromatosis type 1 (NF1)**. Early in embryogenesis, some of the neural crest cells migrate to form the peripheral nervous system. A phakomatosis is a group of conditions characterized by the presence of tumors, most of which are either melanocytic or neuroglial in origin. What is this condition?

Neurofibromatosis type 1 (NF1)

including melanocytes. The cohort of NCCs from which **melanocytes** derive gives rise also to **neurons and glial cells**.

Neuroglial lesions

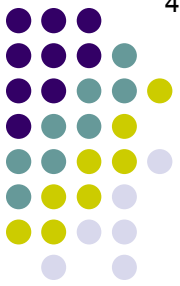
- Nodular neurofibromas
- Plexiform neurofibromas
- Optic glioma
- Prominent corneal nerves

Melanocytic lesions

- Café au lait spots
- Axillary/inguinal freckles
- Lisch nodules
- Choroidal lesions

In what fundamental way do these lesions differ (other than the cell type of origin, duh)?

The **neuroglial** lesions are of no clinical significance beyond establishing the diagnosis, whereas the **melanocytic** lesions are associated with significant ocular and/or systemic morbidity



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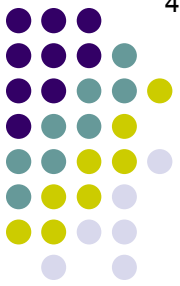
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For more on NF1 and other phakomatoses, see slide-set P10

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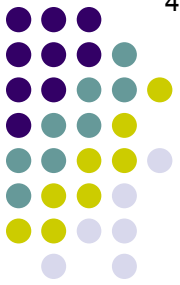
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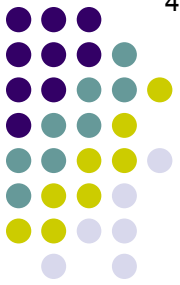
Melanocytic Eyelid and Epibulbar Lesions



Melanocytes

Next let's consider the function of surface melanocytes. What do they do?

Melanocytic Eyelid and Epibulbar Lesions

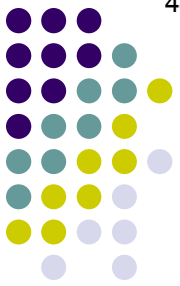


Melanocytes

Next let's consider the function of surface melanocytes. What do they do?

A surprising number of things, but for our purposes their function is manufacturing melanin, the main pigment of the body surface

Melanocytic Eyelid and Epibulbar Lesions

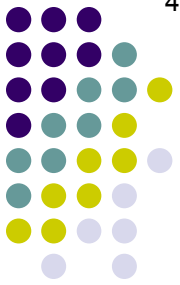


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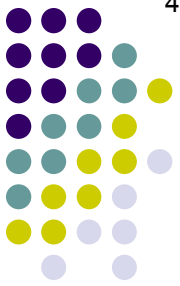
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What is the name of the membrane-bound structure in which melanin is contained?

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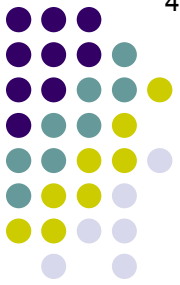
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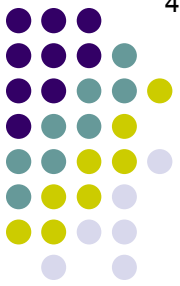
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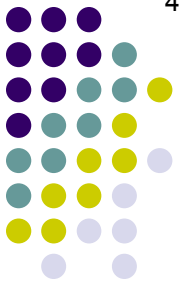
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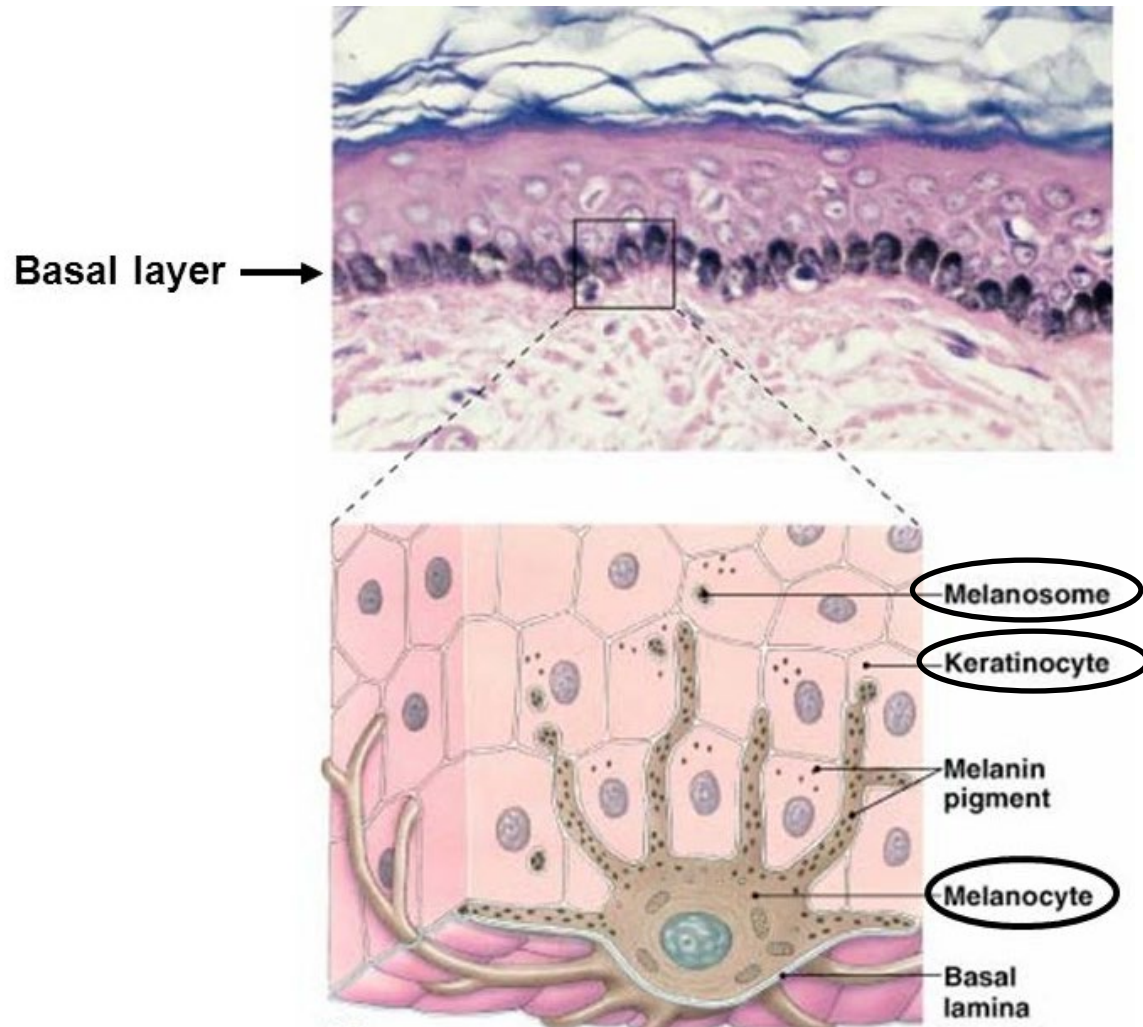
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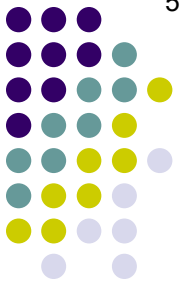
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Melanocytic Eyelid and Epibulbar Lesions



Melanocyte and its keratinocytes



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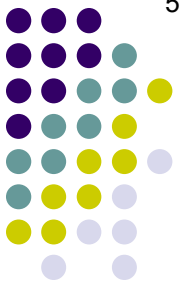
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No, the number of melanocytes does not vary with degree of pigmentation. People with darker complexion have more melanin in their keratinocytes.

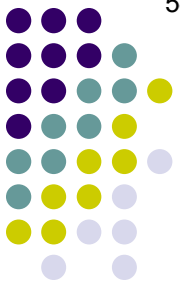
Melanocytic Eyelid and Epibulbar Lesions



Melanocytes

Now let's consider the histology of surface melanocytes. Where do they reside?

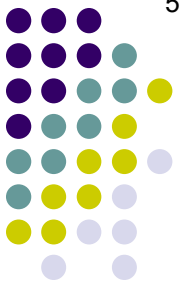
Melanocytic Eyelid and Epibulbar Lesions



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Most are found in the [] layer of the [] (if we're talking about skin)

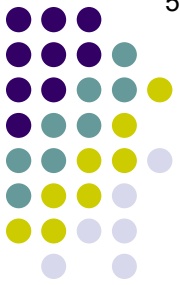
Melanocytic Eyelid and Epibulbar Lesions



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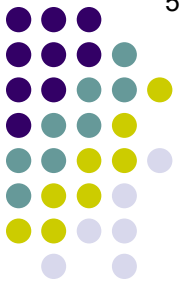
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Most are found in the basal layer of the epidermis (if we're talking about skin) or the layer of the (if we're talking about the conj).

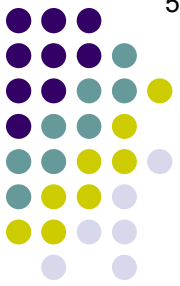


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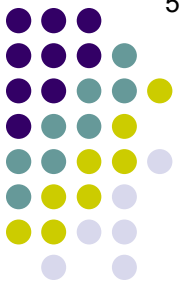


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Most are found in the basal layer of the epidermis (if we're talking about skin) or the basal layer of the epithelium (if we're talking about the conj). Some skin melanocytes are sub-epidermal (ie, located in the dermis). Likewise, some conj melanocytes are subepithelial; these are often located in the conj stroma (aka the two words), or in the underlying tissue.

Melanocytic Eyelid and Epibulbar Lesions

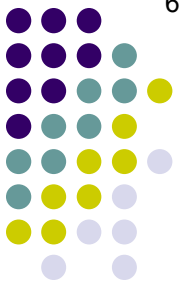


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Melanocytic Eyelid and Epibulbar Lesions



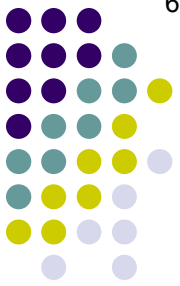
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In what key way do epithelial and dermal melanocytes differ?

Melanocytic Eyelid and Epibulbar Lesions



Melanocytes

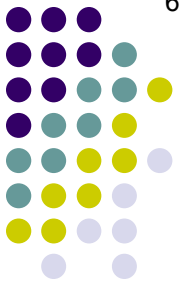
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Under normal conditions, dermal melanocytes do not produce melanin

Melanocytic Eyelid and Epibulbar Lesions

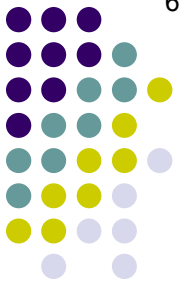


Melanocytes

Nevus cells

Now let's turn our attention to nevus cells. What are they?

Melanocytic Eyelid and Epibulbar Lesions



Melanocytes

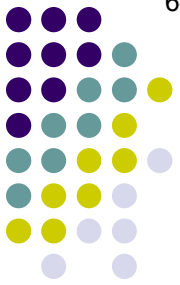
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Nevus cells are a type of



Melanocytic Eyelid and Epibulbar Lesions



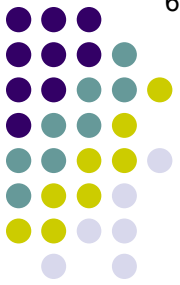
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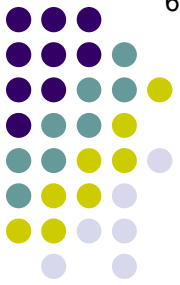
--With respect to

attribute #1

--With respect to

attribute #2

Melanocytic Eyelid and Epibulbar Lesions



Melanocytes

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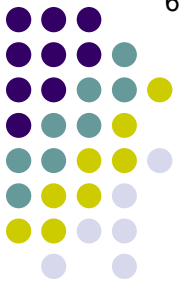
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--With respect to **shape**

--With respect to **distribution**

Melanocytic Eyelid and Epibulbar Lesions



Melanocytes

Nevus cells

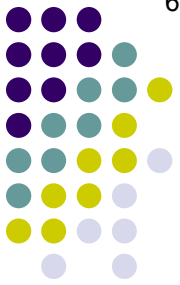
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Melanocytic Eyelid and Epibulbar Lesions



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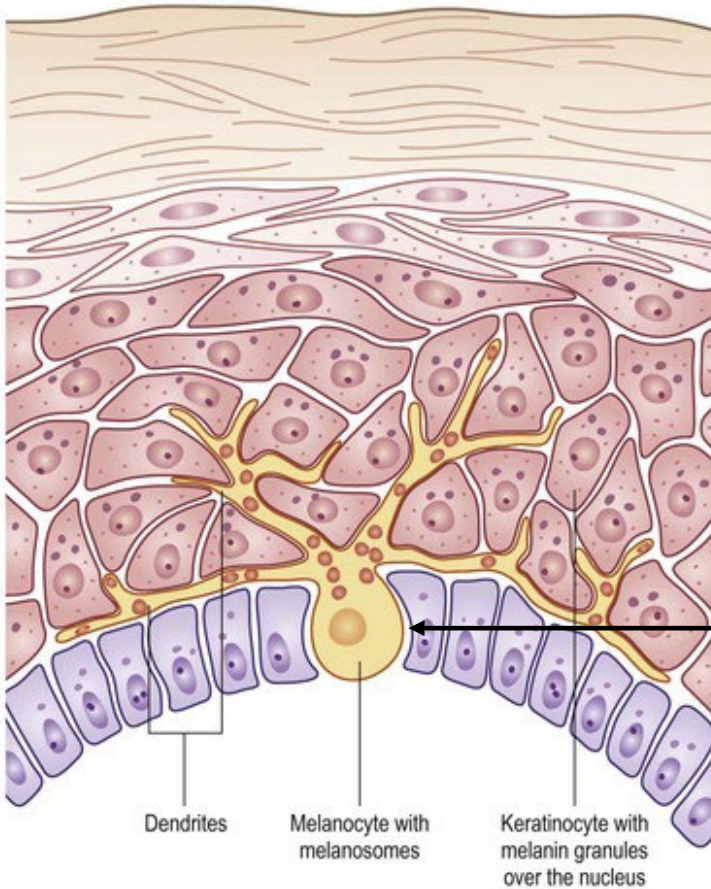
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--With respect to **shape** : Typical melanocytes are described as dendritic , whereas nevus cells are round

--With respect to **distribution**

Melanocytic Eyelid and Epibulbar Lesions

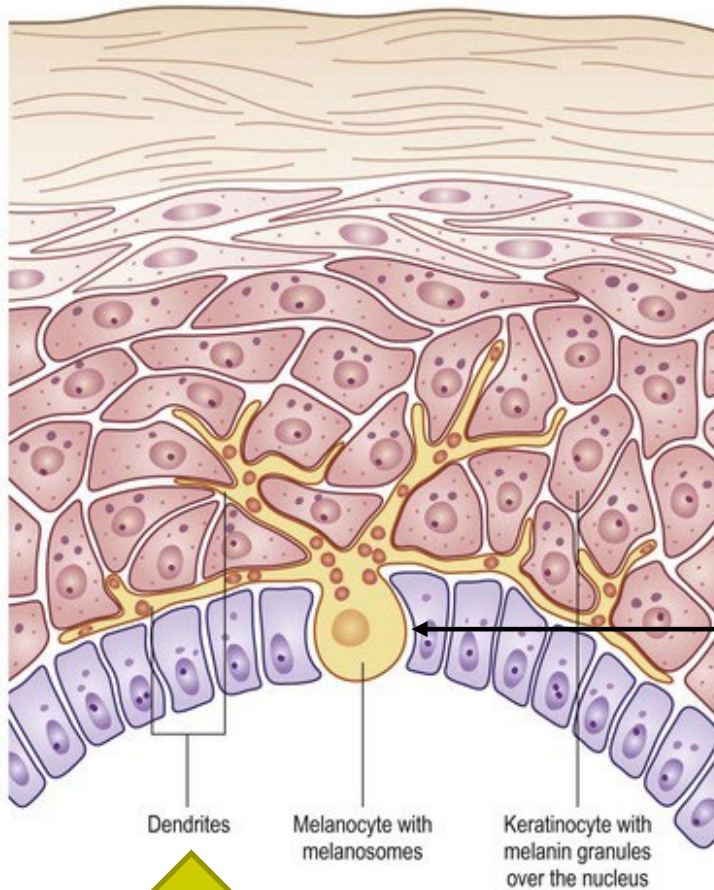


Melanocyte

Don't be fooled by the round cell body! Note the extensive network of processes snaking out amongst the keratinocytes

Melanocytes vs nevus cells

Melanocytic Eyelid and Epibulbar Lesions

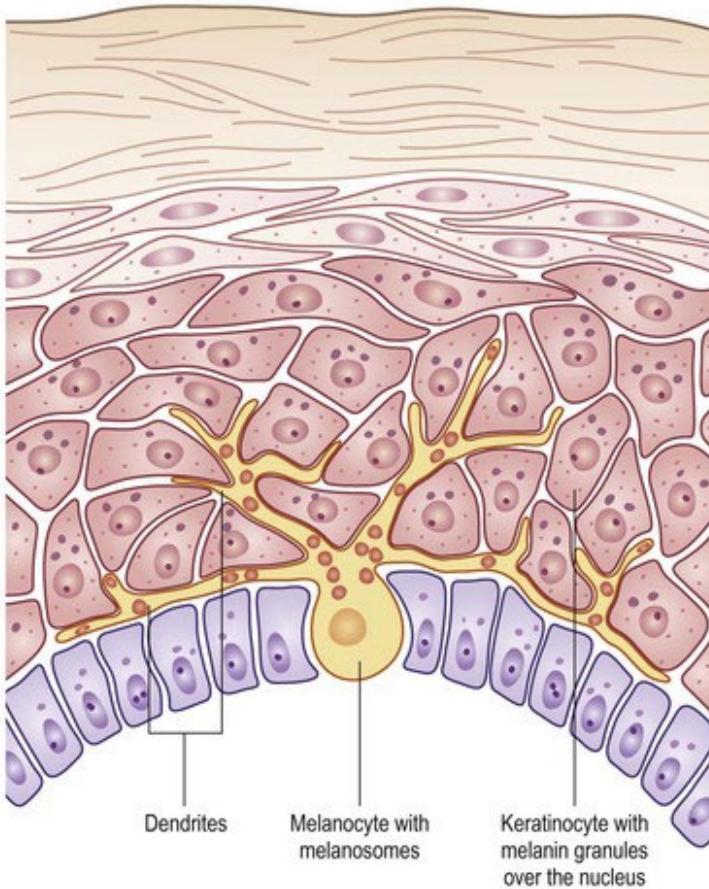
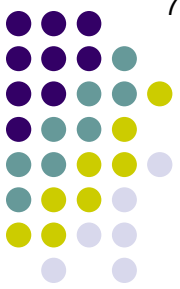


Melanocyte

Don't be fooled by the round cell body! Note the extensive network of processes snaking out amongst the keratinocytes. It's because of all these processes that melanocytes are described as 'dendritic.'

Melanocytes vs nevus cells

Melanocytic Eyelid and Epibulbar Lesions

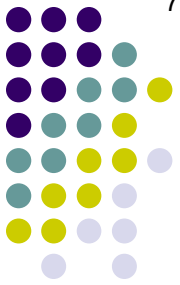


Melanocyte

Nevus cell

(If this is here, it means I have yet to find a satisfactory rendering of a nevus cell)

Melanocytes vs nevus cells



Melanocytic Eyelid and Epibulbar Lesions

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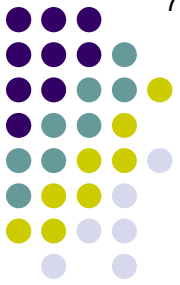
nevus cells are ~~round~~ dendritic?

--With respect to **distribution**

There is an exception to this rule, ie, there is one specific subset of nevus cells that have dendritic processes. With what 'colorful' nevus are these cells associated?

Which

Melanocytic Eyelid and Epibulbar Lesions



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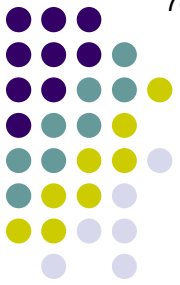
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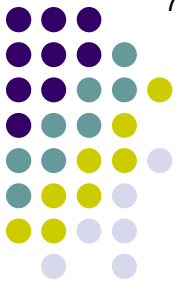
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Blue nevi (Note: Sometimes the term is used to describe their shape rather than 'dendritic,' so don't be thrown if you see that word used to describe them)



Melanocytic Eyelid and Epibulbar Lesions

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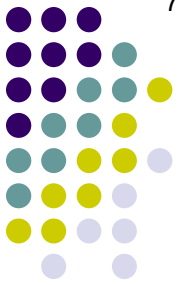
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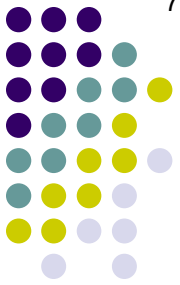
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evenly dispersed vs
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Melanocytic Eyelid and Epibulbar Lesions



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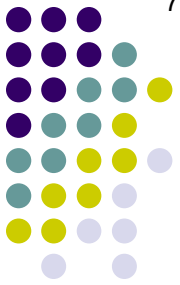
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Melanocytic Eyelid and Epibulbar Lesions



Melanocytes

Nevus cells

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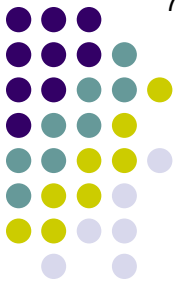
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What is the \$1 term for these clusters?

Melanocytic Eyelid and Epibulbar Lesions



Melanocytes

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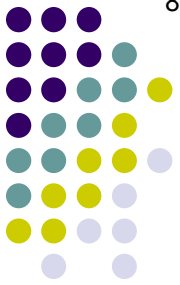
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'Nests'*

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Nevus cells

Now let's turn our attention to nevus cells. What are they?

Nevus cells are a type of melanocyte. However, they differ from typical melanocytes in two key ways:

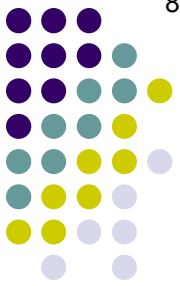
--With respect to **shape** : Typical melanocytes are described as dendritic , whereas nevus cells are round

--With respect to **distribution** : Typical melanocytes are found to be evenly dispersed throughout the tissue in which they reside, whereas nevus cells are **clustered together**

*What is the \$1 term for these clusters?
'Nests'*

What is the \$10 term for these nests?

Melanocytic Eyelid and Epibulbar Lesions



Melanocytes

Nevus cells

Now let's turn our attention to nevus cells. What are they?

Nevus cells are a type of melanocyte. However, they differ from typical melanocytes in two key ways:

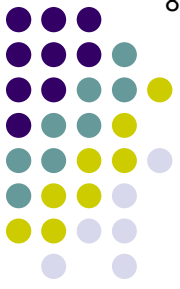
--With respect to **shape** : Typical melanocytes are described as dendritic , whereas nevus cells are round

--With respect to **distribution** : Typical melanocytes are found to be evenly dispersed throughout the tissue in which they reside, whereas nevus cells are **clustered together**

*What is the \$1 term for these clusters?
'Nests'*

*What is the \$10 term for these nests?
'Theques'*

Melanocytic Eyelid and Epibulbar Lesions

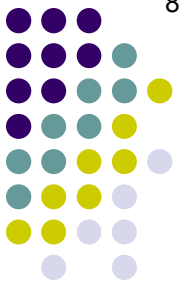


Eyelid Skin

At long last we're ready to start talking about Melanocytic lesions of the eyelid skin and epibulbar tissue. As we will see, equivalent lesions are found in each tissue type, so *if you can remember a lesion in one tissue, you can deduce the equivalent lesion in the other*. In order to facilitate this sort of understanding, we will review the lesions in tandem.

Epibulbar tissue

Melanocytic Eyelid and Epibulbar Lesions



Eyelid Skin

At long last we're ready to start talking about Melanocytic lesions of the eyelid skin and epibulbar tissue. As we will see, equivalent lesions are found in each tissue type, so *if you can remember a lesion in one tissue, you can deduce the equivalent lesion in the other*. In order to facilitate this sort of understanding, we will review the lesions in tandem.

Epibulbar tissue

Two notes before proceeding: This review is an amalgam of material from the *Path*, *Plastics*, *External Disease* and *Peds* books. As usual, small inconsistencies exist among the books; I have smoothed these over as best I can. (Regarding skin lesions I leaned into the *Plastics* book; for epibulbar lesions, *External Disease*.) Further, for some lesions the *BCSC* emphasized the cell type of origin, whereas for others it didn't; I followed suit. **As always, caveat emptor.**

Melanocytic Eyelid and Epibulbar Lesions



Eyelid Skin

?

?

?

All melanocytic lesions of the eyelid skin can be traced to one of three cell sources:

Epibulbar tissue

Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells



*All melanocytic lesions of the eyelid skin can be traced to one of three cell sources:
Melanocytes in the epidermis, melanocytes in the dermis, or nevus cells*

Epibulbar tissue

Melanocytic Eyelid and Epibulbar Lesions



Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

*All melanocytic lesions of the eyelid skin can be traced to one of three cell sources:
Melanocytes in the epidermis, melanocytes in the dermis, or nevus cells*

Epibulbar tissue

?

?

?

The analogous cell-sources of melanocytic lesions of the epibulbar tissue are:

Melanocytic Eyelid and Epibulbar Lesions



Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

All melanocytic lesions of the eyelid skin can be traced to one of three cell sources:
Melanocytes in the epidermis, melanocytes in the dermis, or nevus cells

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

The analogous cell-sources of melanocytic lesions of the epibulbar tissue are:
Melanocytes in the epithelium, melanocytes in the subepi tissues, or nevus cells

Melanocytic Eyelid and Epibulbar Lesions



Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

?
 ?
 ?

Melanocytic lesions in both the lid and epibulbar locations can be classified as...

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

?
 ?
 ?

Melanocytic lesions in both the lid and epibulbar locations can be classified as...

Melanocytic Eyelid and Epibulbar Lesions

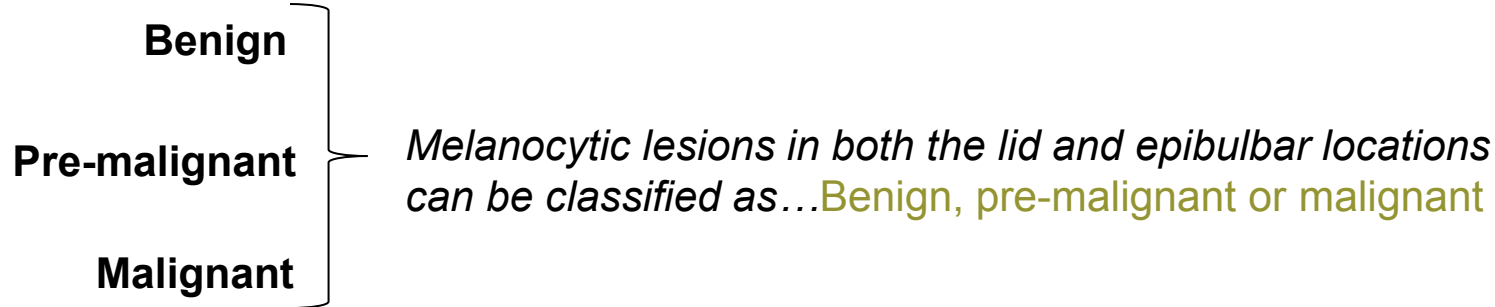


Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

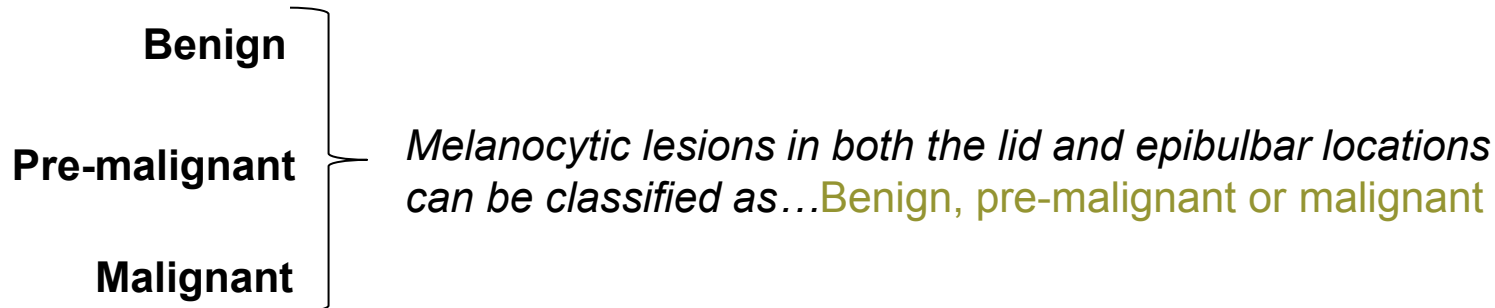


Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells



Melanocytic Eyelid and Epibulbar Lesions



Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Pre-malignant

Malignant

Let's start our review of melanocytic lesions with
*benign lesions deriving from epidermal and
epithelial melanocytes*

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Pre-malignant

Malignant

No question—proceed when ready

Melanocytic Eyelid and Epibulbar Lesions



Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

?

?

There are two benign eyelid skin lesions attributable to epidermal melanocytes—what are they?

Pre-malignant

Malignant

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Pre-malignant

Malignant

Melanocytic Eyelid and Epibulbar Lesions



Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

There are two benign eyelid skin lesions attributable to epidermal melanocytes—what are they?

Pre-malignant

Malignant

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Pre-malignant

Malignant

Melanocytic Eyelid and Epibulbar Lesions



Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Pre-malignant

Malignant

Epibulbar tissue

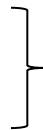
Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

?
?



What are the equivalent lesions of epibulbar tissue?

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Pre-malignant

Malignant

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

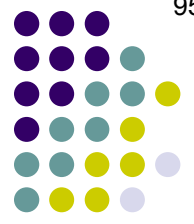
Benign

Ephelis
CAM

What are the equivalent lesions of epibulbar tissue?

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

What is the layperson word for ephelis?

Pre-m

M

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Pre-malignant

Malignant

Melanocytic Eyelid and Epibulbar Lesions



Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

Pre-m

What is the layperson word for ephelis?
'Freckle'

M

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis

CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Ephelis

Lentigines

Benign

Pre-malignant

What is the word for ephelis?
'Freckle'

Malignant

Epithelial
melanocytes

Ephelis

CAM

Benign

Pre-malignant

Malignant

Hol up... You're saying freckles of the ocular surface are a thing?

Melanocytic Eyelid and Epibulbar Lesions



Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

Pre-malignant

What is the word for ephelis?
'Freckle'

Malignant

Epithelial
melanocytes

Ephelis

CAM

Benign

Pre-malignant

Malignant

*Hol up... You're saying freckles of the ocular surface are a thing?
Apparently, yes*

Melanocytic Eyelid and Epibulbar Lesions



Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

Pre-malignant

What is the word for ephelis?
'Freckle'

Malignant

Epithelial
melanocytes

Ephelis

CAM

Benign

Pre-malignant

Malignant

*Hol up... You're saying freckles of the ocular surface are a thing?
Apparently, yes*

Are they, like, a big deal?

Melanocytic Eyelid and Epibulbar Lesions



Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

Pre-malignant

What is the word for ephelis?
'Freckle'

Malignant

Epithelial
melanocytes

Ephelis

CAM

Benign

Pre-malignant

Malignant

Hol up... You're saying freckles of the ocular surface are a thing?
Apparently, yes

Are they, like, a big deal?

Apparently, no—the *External Dz* book mentions 'ocular-surface ephelis' in a Table, but doesn't address them at all in text.

Because the book doesn't delve into them, neither will we.



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

Pre-m

What is the layperson word for ephelis?
'Freckle'

M

What is the plural of ephelis?

Next Q

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis

CAM

Pre-malignant

Malignant

Melanocytic Eyelid and Epibulbar Lesions



Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

Pre-m

What is the layperson word for ephelis?

'Freckle'

M

What is the plural of ephelis?

'Ephelides'

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis

CAM

Pre-malignant

Malignant

Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells



Benign

Ephelis

Lentiginos

What is the basic issue (ie, cause) underlying ephelides?

Pre-malignant

W
'F

M
'E

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Pre-malignant

Malignant

Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells



Ephelis

Benign

Lentiginos

Pre-malignant

W
'F

What is the basic issue (ie, cause) underlying ephelides?
Simply an increase in the production of melanin by typical melanocytes typically located (ie, in the basal layer of the epidermis)

M
'E

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Ephelis

Benign

Lentiginos

Pre-malignant

W
'F

What is the basic issue (ie, cause) underlying ephelides?
Simply an increase in the production of melanin by typical melanocytes typically located (ie, in the basal layer of the epidermis)

Malignant

W
'E

Are ephelides more likely in fair-skinned, or dark-skinned individuals?

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Pre-malignant

Malignant

Melanocytic Eyelid and Epibulbar Lesions



Nevus cells

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Ephelis

Benign

Lentiginos

Pre-malignant

W
'F

What is the basic issue (ie, cause) underlying ephelides?
Simply an increase in the production of melanin by typical melanocytes typically located (ie, in the basal layer of the epidermis)

Malignant

W
'E

Are ephelides more likely in fair-skinned, or dark-skinned individuals?
Fair skinned

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentiginos

Pre-malignant

W
'F

What is the basic issue (ie, cause) underlying ephelides?
Simply an increase in the production of melanin by typical melanocytes typically located (ie, in the basal layer of the epidermis)

Malignant

W
'E

Are ephelides more likely in fair-skinned, or dark-skinned individuals?
Fair skinned

Do ephelides change in response to sunlight exposure?

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentiginos

Pre-malignant

W
'F

What is the basic issue (ie, cause) underlying ephelides?
Simply an increase in the production of melanin by typical melanocytes typically located (ie, in the basal layer of the epidermis)

Malignant

W
'E

Are ephelides more likely in fair-skinned, or dark-skinned individuals?
Fair skinned

Do ephelides change in response to sunlight exposure?
Yes—they darken (and in the absence of exposure, they fade)

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Pre-malignant

Malignant

Melanocytic Eyelid and Epibulbar Lesions



Classic ephelides concentration across the sun-exposed malar region



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

In what fundamental ways do lentigines differ from ephelides?

--

--

Pre-malignant

Malignant

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

In what fundamental ways do lentigines differ from ephelides?

--Lentigines are a little

larger vs
smaller

--

Pre-malignant

Malignant

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

In what fundamental ways do lentigines differ from ephelides?
--Lentigines are a little larger
--

Pre-malignant

Malignant

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

In what fundamental ways do lentigines differ from ephelides?

--Lentigines are a little larger

--Unlike the normal number in ephelides, the number of melanocytes in lentigines is

increased vs
decreased

Pre-malignant

Malignant

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

In what fundamental ways do lentigines differ from ephelides?

--Lentigines are a little larger

--Unlike the normal number in ephelides, the number of melanocytes in lentigines is increased

Pre-malignant

Malignant

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Pre-malignant

Malignant

Melanocytic Eyelid and Epibulbar Lesions



Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

Pre-malignant

There are two basic types of lentigines—what are they?

Malignant

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis

CAM

Pre-malignant

Malignant

Melanocytic Eyelid and Epibulbar Lesions



Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

Pre-mal

There are two basic types of lentigines—what are they?
Simple lentigo and solar lentigo

Mal

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis

CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

Pre-malignant

There are two basic types of lentigines—what are they?

Simple lentigo and **solar lentigo**

By what variants of the terms simple lentigo and solar lentigo are these also known?

Epibulbar tissue

Subepithelial
melanocytes

Nevus cells

melanocytes

Ephelis

CAM

Benign

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

Pre-malignant

There are two basic types of lentigines—what are they?

Simple lentigo and **solar lentigo**

By what variants of the terms simple lentigo and solar lentigo are these also known?
'Lentigo simplex' and 'senile lentigo'

Epibulbar tissue

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis

CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

Pre-malignant

There are two basic types of lentigines—what are they?

Simple lentigo and **solar lentigo**

By what variants of the terms simple lentigo and solar lentigo are these also known?
'Lentigo simplex' and **'senile lentigo'**

*Why is it called **senile** lentigo?*

Subepithelial

melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis

CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

Pre-malignant

There are two basic types of lentigines—what are they?

Simple lentigo and **solar lentigo**

By what variants of the terms simple lentigo and solar lentigo are these also known?
'Lentigo simplex' and **'senile lentigo'**

*Why is it called **senile** lentigo?*

Because it is more common in the elderly

Subepithelial

melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis

CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

Pre-malignant

There are two basic types of lentigines—what are they?

Simple lentigo and **solar lentigo**

By what variants of the terms simple lentigo and solar lentigo are these also known?
'Lentigo simplex' and **'senile lentigo'**

*Why is it called **senile** lentigo?*
Because it is more common in

the elderly

...tissue

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis

CAM

Speaking of the elderly...What does Grandma call these lesions?

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

Pre-malignant

There are two basic types of lentigines—what are they?

Simple lentigo and **solar lentigo**

By what variants of the terms simple lentigo and solar lentigo are these also known?
'Lentigo simplex' and **'senile lentigo'**

*Why is it called **senile** lentigo?*
Because it is more common in **the elderly**

...tissue

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis

CAM

Speaking of the elderly...What does Grandma call these lesions?
'Liver spots'

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

Pre-malignant

There are two basic types of lentigines—what are they?

Simple lentigo and **solar lentigo**

By what variants of the terms simple lentigo and solar lentigo are these also known?
'Lentigo simplex' and 'senile lentigo'

Does lentigo simplex and/or solar lentigo have malignant potential?

Epibulbar tissue

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis

CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

Pre-malignant

There are two basic types of lentigines—what are they?

Simple lentigo and **solar lentigo**

By what variants of the terms simple lentigo and solar lentigo are these also known?
'Lentigo simplex' and 'senile lentigo'

Does lentigo simplex and/or solar lentigo have malignant potential?

No

Epibulbar tissue

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis

CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

Pre-mal

There are two basic types of lentigines—what are they?

Simple lentigo and **solar lentigo**

By what variants of the terms simple lentigo and solar lentigo are these also known?
'Lentigo simplex' and 'senile lentigo'

Does lentigo simplex and/or solar lentigo have malignant potential?
No

I coulda sworn lentigo simplex had malignant potential. You sure about this?

Benign

Ephelis

CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

Pre-mal

There are two basic types of lentigines—what are they?

Simple lentigo and **solar lentigo**

By what variants of the terms simple lentigo and solar lentigo are these also known?
'Lentigo simplex' and 'senile lentigo'

Does lentigo simplex and/or solar lentigo have malignant potential?
No

I coulda sworn lentigo simplex had malignant potential. You sure about this?

Yes, I'm sure. You're thinking of a pre-malignant melanocytic lesion of the skin.

two words

Benign

Ephelis

CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

Pre-mal

There are two basic types of lentigines—what are they?

Simple lentigo and **solar lentigo**

By what variants of the terms simple lentigo and solar lentigo are these also known?
'Lentigo simplex' and 'senile lentigo'

Does lentigo simplex and/or solar lentigo have malignant potential?
No

I coulda sworn lentigo simplex had malignant potential. You sure about this?

Yes, I'm sure. You're thinking of **lentigo maligna**, a pre-malignant melanocytic lesion of the skin.

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*There are two basic types of lentigines—what are they?
Simple lentigo and solar lentigo*

Mal

In what fundamental way do they differ?

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

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Melanocytic Eyelid and Epibulbar Lesions



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Lentigines

Pre-malignant

There are two basic types of lentigines—what are they?
Simple lentigo and solar lentigo

Malignant

In what fundamental way do they differ?

Simple lentigines are not related to sun exposure,
whereas solar lentigines are

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

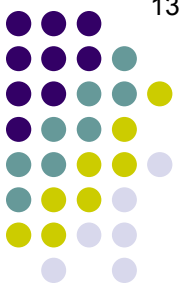
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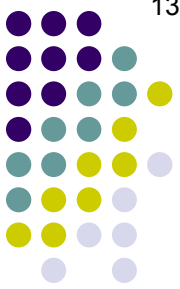
Malignant

Melanocytic Eyelid and Epibulbar Lesions



Solar lentigines: Classic location (dorsum of the hand)

Melanocytic Eyelid and Epibulbar Lesions



Solar lentigo of upper lid



Melanocytic Eyelid and Epibulbar Lesions

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What is the name of this syndrome?*

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Melanocytic Eyelid and Epibulbar Lesions



Peutz-Jeghers syndrome: Eyelid simple lentigines



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There are two basic types of lentigines—what are they?
and solar lentigo

Simple lentigo

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What is the name of this syndrome?

Peutz-Jeghers syndrome

How is Peutz-Jeghers pronounced?

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Peutz-Jeghers syndrome

How is Peutz-Jeghers pronounced?
Pyoots jeh-grrz

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Peutz-Jeghers syndrome

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Are lentigo simplex eyelid lesions the classic harbinger of Peutz-Jeghers syndrome?

Nevus cells

melanocytes

melanocytes

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What is the name of this syndrome?

Peutz-Jeghers syndrome

Epibulbar tissue

Are lentigo simplex eyelid lesions the classic harbinger of Peutz-Jeghers syndrome?

No, pigmented lesions of the [redacted] region are the classic/most common finding

melanocytes

melanocytes

Nevus cells

Benign

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Epibulbar tissue

Are lentigo simplex eyelid lesions the classic harbinger of Peutz-Jeghers syndrome?
No, pigmented lesions of the perioral region are the classic/most common finding

Nevus cells

melanocytes

melanocytes

Benign

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Melanocytic Eyelid and Epibulbar Lesions



Characteristic circumoral pigmentation in a patient with Peutz-Jeghers syndrome

Melanocytic Eyelid and Epibulbar Lesions



Speaking of: Did you notice the pigmented lip lesions in this pic?



Melanocytic Eyelid and Epibulbar Lesions

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Ephelis

Lentigines

Pre-malignant

There are two basic types of lentigines—what are they?

Simple lentigo and solar lentigo

*Simple lentigines have a **syndromic association with colon cancer***

What is the name of this syndrome?

When 'colon cancer + ophthalmic issue' is mentioned, three syndromes should come to mind. One is Peutz-Jeghers syndrome. What are the other two?

Epithelial
melanocytes

Subepithelial
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Nevus cells

Benign

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Nevus cells

Benign

Ephelis
Lentigines

Pre-malignant

There are two basic types of lentigines—what are they?
Simple lentigo and solar lentigo

Simple lentigines have a **syndromic association with colon cancer**.
What is the name of this syndrome?

When 'colon cancer + ophthalmic issue' is mentioned, three syndromes should come to mind.
One is Peutz-Jeghers syndrome. What are the other two?
Gardner syndrome and Muir-Torre syndrome

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Benign

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Pre-malignant *There are two basic types of lentigines—what are they?*
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Malignant *Simple lentigines have a syndromic association with colon cancer.
What is the name of this syndrome?*

*When 'colon cancer' is associated with a skin lesion, one is Peutz-Jegher syndrome.
Gardner syndrome is an important subtype of what class of condition?*

Gardner syndrome

Benign

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

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Malignant *Simple lentigines have a syndromic association with colon cancer*

What is the name of this syndrome?

When 'colon cancer' is associated with a skin lesion, what is the name of the syndrome?
One is Peutz-Jegher syndrome. The other is Gardner syndrome.

Gardner syndrome is an important subtype of what class of condition?
It is a form of 'familial adenomatous polyposis'

Gardner syndrome

Benign

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

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Pre-malignant *There are two basic types of lentigines—what are they?*
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Malignant *Simple lentigines have a syndromic association with colon cancer*
What is the name of this syndrome?

When 'colon cancer' is associated with skin lesions, it is often a form of 'familial adenomatous polyposis'.
One is Peutz-Jegher syndrome.

Gardner syndrome

Gardner syndrome is an important subtype of what class of condition?
It is a form of 'familial adenomatous polyposis'.

What transpires in a familial adenomatous polyposis that is concerning?

Benign

Pre-malignant

Malignant



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What is the name of this syndrome?

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Gardner syndrome is an important subtype of what class of condition?

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Gardner syndrome

What transpires in a familial adenomatous polyposis that is concerning?

Pts develop hundreds of colonic polyps, a significant number of which are malignant

Benign

Pre-malignant

Malignant

Intraocular Tumors of Childhood



Gardner syndrome: Colonic polyps



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Benign

Ephelis
Lentigines

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Pts develop hundreds of colonic polyps, a significant number of which are malignant

What proportion of untreated Gardner syndrome pts will develop colon cancer?

Benign

Pre-malignant

Malignant



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What proportion of untreated Gardner syndrome pts will develop colon cancer?

All of them

Benign

Pre-malignant

Malignant



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All of them

By what age will this occur?

Benign

Pre-malignant

Malignant



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All of them

Benign

Pre-malignant

By what age will this occur?
40, maybe a little later

Malignant



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40, maybe a little later

What is the treatment of choice?

Benign

Pre-malignant

Malignant



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When 'colon cancer'

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All of them

By what age will this occur?

40, maybe a little later

What is the treatment of choice?

Prophylactic colectomy

Benign

Pre-malignant

Malignant



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Gardner syndrome

What transpires in a familial adenomatous polyposis that is concerning?

What ocular finding is associated with Gardner syndrome?

s, a significant number of which are malignant

syndrome pts will develop colon cancer?

Prophylactic colectomy



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CHRPE-like lesions

...s, a significant number of which are malignant

...syndrome pts will develop colon cancer?

Prophylactic colectomy



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CHRPE-like lesions

What does CHRPE stand for in this context?

...s, a significant number of which are malignant

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Prophylactic colectomy



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CHRPE-like lesions

What does CHRPE stand for in this context?

Congenital hypertrophy of the RPE

s, a significant number of which are malignant

syndrome pts will develop colon cancer?

Prophylactic colectomy



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Congenital hypertrophy of the RPE

How does CHRPE present?

Prophylactic colectomy



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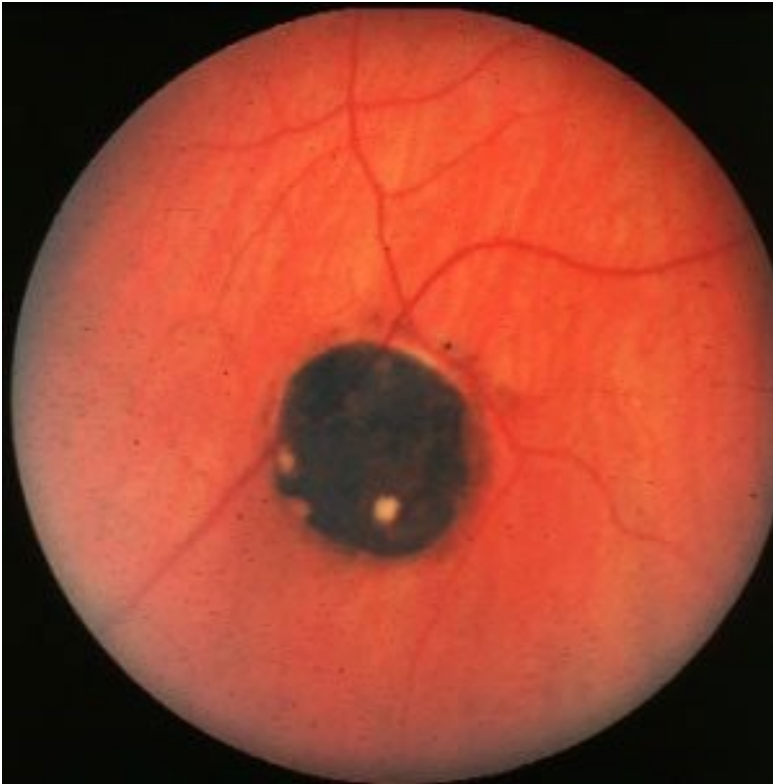
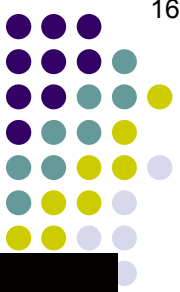
Congenital hypertrophy of the RPE

How does CHRPE present?

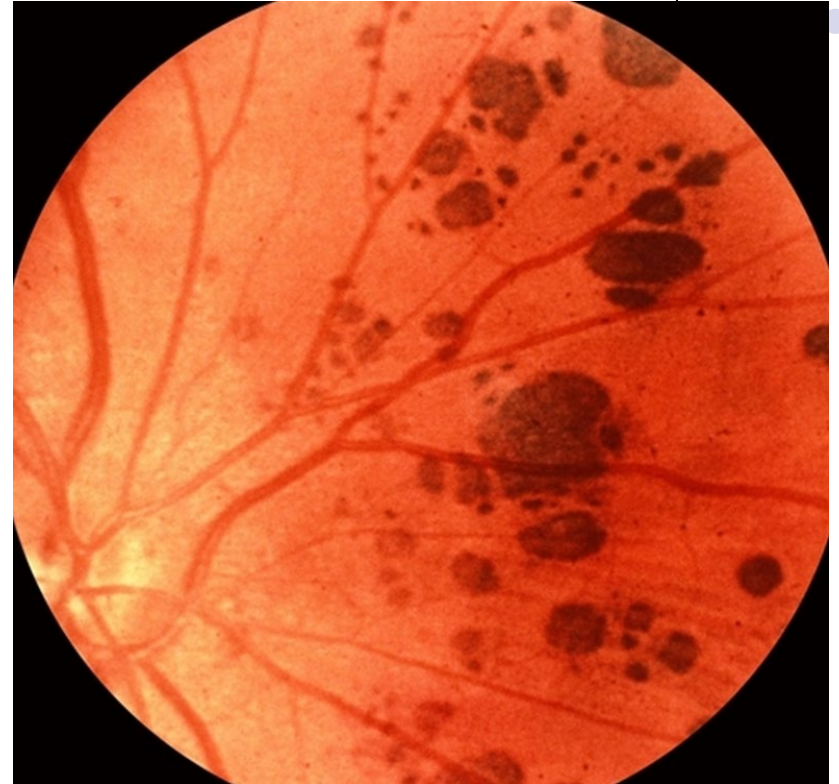
As solitary or grouped hyperpigmented lesions

Prophylactic colectomy

Intraocular Tumors of Childhood



Solitary



Grouped

CHRPE



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What ocular finding is associated with Gardner syndrome?

CHRPE-like lesions

...s, a significant number of which are malignant

What characteristics of a CHRPE-like presentation increase the likelihood that it is actually a manifestation of Gardner syndrome?

What do you see?

Congenital

--?

--?

How do you see?

--?

As solitary or grouped hyperpigmented lesions

Prophylactic colectomy



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CHRPE-like lesions

s, a significant number of which are malignant

What characteristics of a CHRPE-like presentation increase the likelihood that it is actually a manifestation of Gardner syndrome?

What does

Congenital --If it is bi- v unilateral (regular CHRPE is almost always bi- v unilateral)

--?

How does

--?

As solitary or grouped hyperpigmented lesions

Prophylactic colectomy



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CHRPE-like lesions

...s, a significant number of which are malignant

What characteristics of a CHRPE-like presentation increase the likelihood that it is actually a manifestation of Gardner syndrome?

What does Conger --If it is bilateral (regular CHRPE is almost always unilateral)

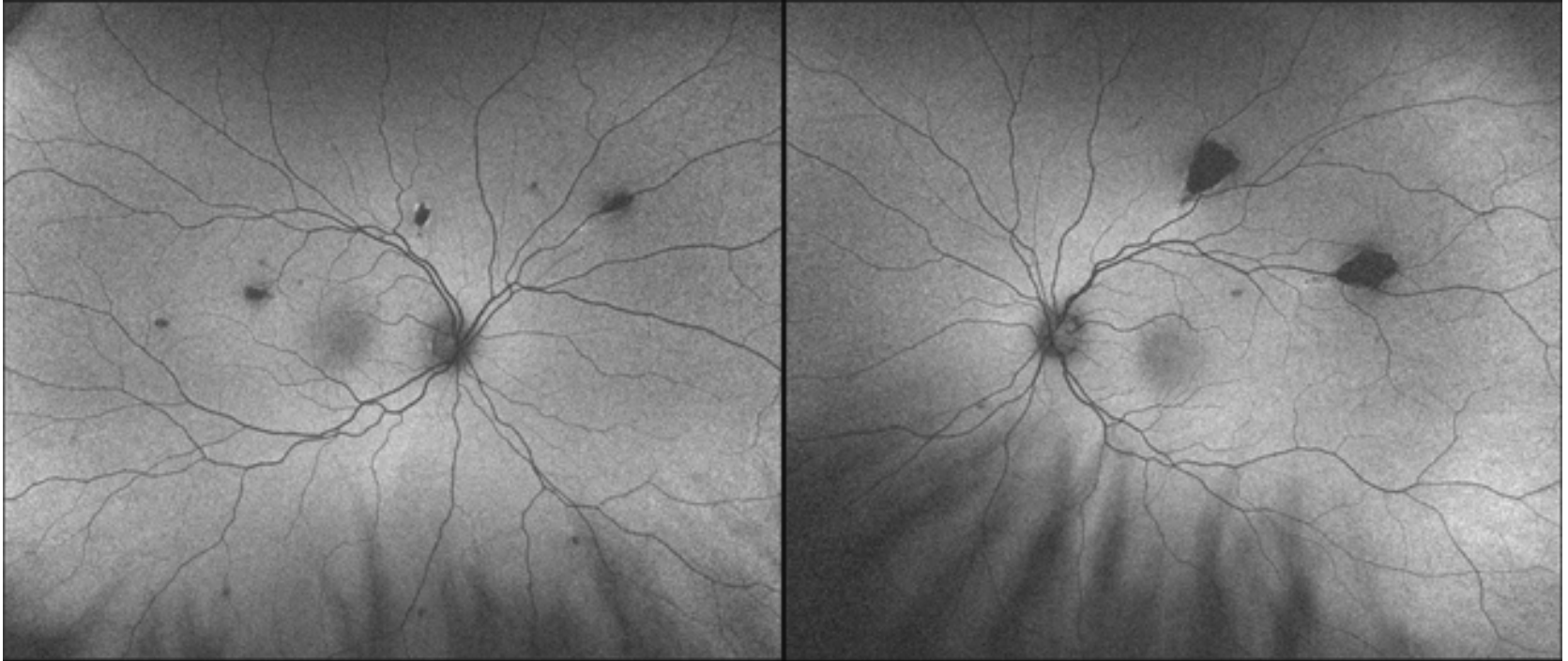
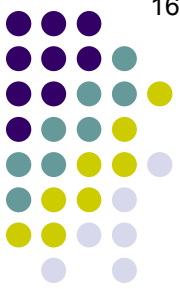
--?

How do --?

As solitary or grouped hyperpigmented lesions

Prophylactic colectomy

Melanocytic Eyelid and Epibulbar Lesions



CHRPE-like lesions of Gardner syndrome: Bilateral presentation



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

Pre-malignant There are two basic types of lentigines—what are they?
Simple lentigo and solar lentigo

Simple lentigines have a syndromic association with colon cancer

What is the name of this syndrome?

When 'colon cancer' Gardner syndrome is an important subtype of what class of condition?
One is Peutz-Jegher It is a form of 'familial adenomatous polyposis'

Gardner syndrome

What transpires in a familial adenomatous polyposis that is concerning?

What ocular finding is associated with Gardner syndrome?

CHRPE-like lesions

s, a significant number of which are malignant

What characteristics of a CHRPE-like presentation increase the likelihood that it is actually a manifestation of Gardner syndrome?

--If it is bilateral (regular CHRPE is almost always unilateral)

--If the lesions are

distribution pattern

How do they

As solitary or grouped hyperpigmented lesions

Prophylactic colectomy



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What is the name of this syndrome?

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One is Peutz-Jegher syndrome

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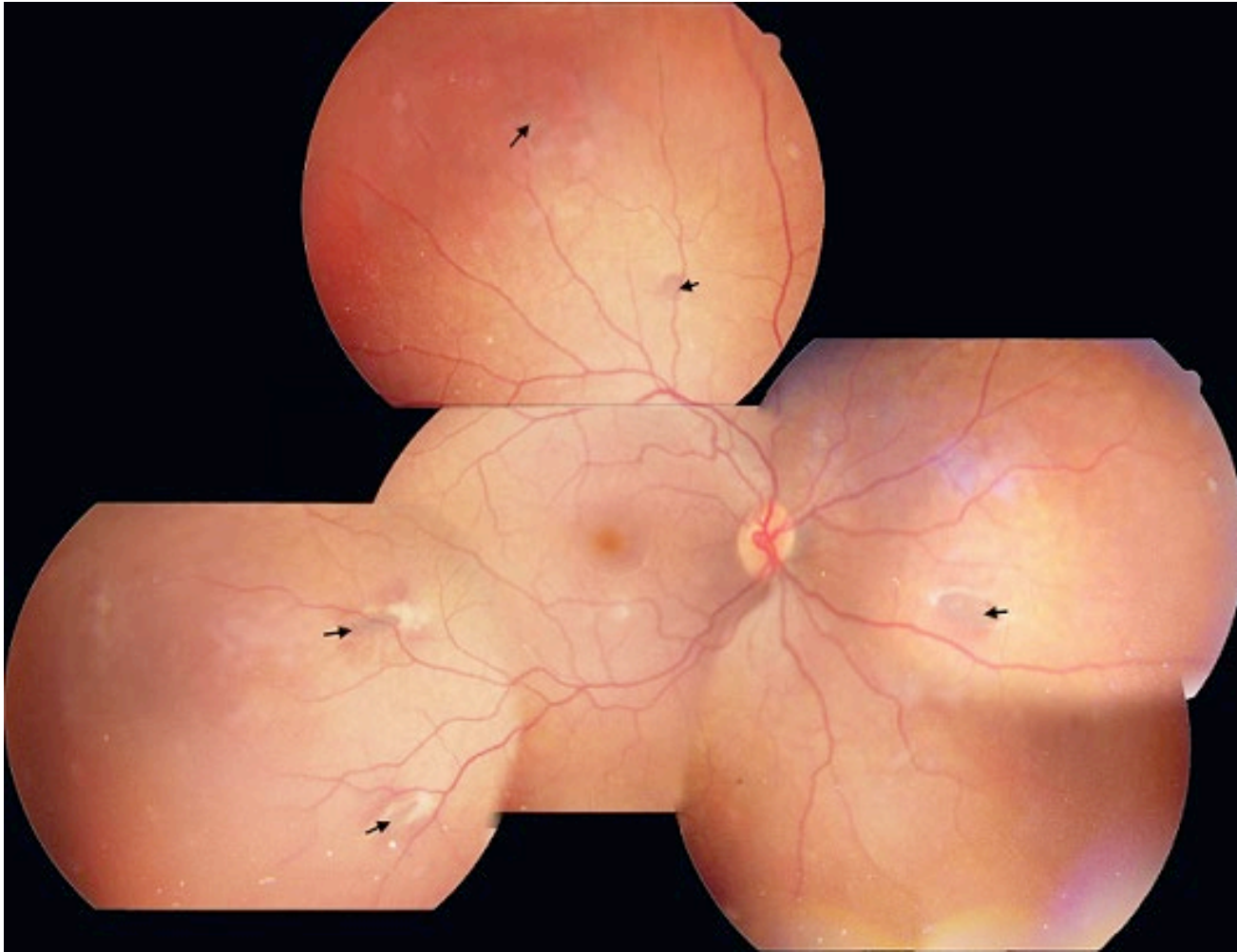
--If the lesions are scattered throughout multiple sectors of the eyes (ie, not 'grouped')

How do they present?

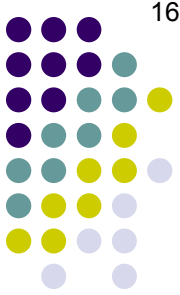
As solitary or grouped hyperpigmented lesions

Prophylactic colectomy

Melanocytic Eyelid and Epibulbar Lesions



CHRPE-like lesions of Gardner syndrome: Scattered distribution





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--If the lesions are scattered throughout multiple sectors of the eyes (ie, not 'grouped')

--If the shape of the lesions is

As solitary or grouped hyperpigmented lesions

Prophylactic colectomy



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Gardner syndrome

It is a form of 'familial adenomatous polyposis'

What transpires in a familial adenomatous polyposis that is concerning?

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What characteristics of a CHRPE-like presentation increase the likelihood that it is actually a manifestation of Gardner syndrome?

- If it is bilateral (regular CHRPE is almost always unilateral)
- If the lesions are scattered throughout multiple sectors of the eyes (ie, not 'grouped')
- If the shape of the lesions is pisciform

How do they present?
As solitary or grouped hyperpigmented lesions

Prophylactic colectomy



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What characteristics of a CHRPE-like presentation increase the likelihood that it is malignant?

What does it actually a manifestation of Gardner syndrome?

Congenital --If it is bilateral (regular CHRPE is almost always unilateral)

--If the lesions are scattered throughout multiple sectors of the eye (ie not 'grouped')

How do they look? --If the shape of the lesions is pisciform

What does pisciform mean?

As solitary or grouped hyperpigmented lesions

Prophylactic colectomy



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--If the lesions are scattered throughout multiple sectors of the eye (ie, not 'grouped')

How do they look? --If the shape of the lesions is **pisciform**

What does pisciform mean?

It means 'fish-shaped'

As solitary or grouped hyperpigmented lesions

Prophylactic colectomy

Melanocytic Eyelid and Epibulbar Lesions



CHRPE-like lesions of Gardner syndrome: Pisciform shape



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One is Peutz-Jeghers syndrome. What are the other two?
Gardner syndrome and **Muir-Torre syndrome***

How is Muir-Torre pronounced?

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Pre-malignant

Malignant



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Mure (rhymes with pure) tore-ay*

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What is the main ophthalmic manifestation of Muir-Torre syndrome?

Pre-malignant



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Nevus cells

What is the main ophthalmic manifestation of Muir-Torre syndrome?
Multiple sebaceous lesions of (but not necessarily limited to) the eyelids

Pre



Melanocytic Eyelid and Epibulbar Lesions

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Epidermal
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What sort of sebaceous lesions?

Pre-malignant



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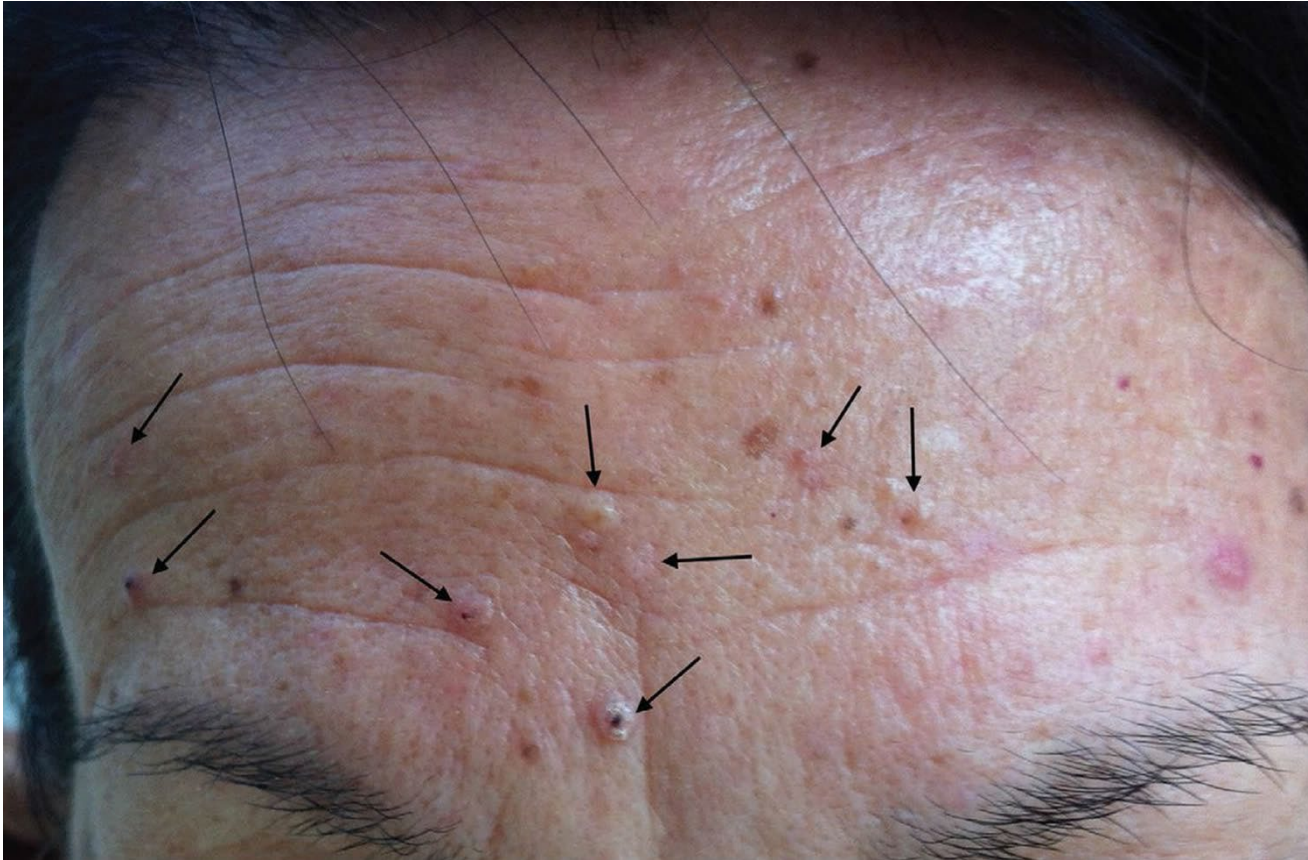
Multiple sebaceous lesions of (but not necessarily limited to) the eyelids

What sort of sebaceous lesions?

Mainly sebaceous-cell adenomas and carcinomas

Pre-malignant

Melanocytic Eyelid and Epibulbar Lesions



Multiple skin-colored to yellow–pink papules (arrows) on the face of a 64-year-old woman with a history of colon and cervical cancer. A skin biopsy confirmed a diagnosis of sebaceous adenoma resulting from Muir–Torre syndrome



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

Pre-malignant

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Pre-malignant

Does Muir-Torre present with multiple adenomatous polyps of the colon as in Peutz-Jeghers and Gardner syndrome?



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Epidermal
melanocytes

Dermal
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Lentigines

Pre-malignant

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Mainly sebaceous-cell adenomas and carcinomas

Prognosis

Does Muir-Torre present with multiple adenomatous polyps of the colon as in Peutz-Jeghers and Gardner syndrome?

No; Muir-Torre is an example of a disease spectrum called Hereditary Non-Polyposis Colorectal Cancer



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Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Pre-malignant

Malignant

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis

CAM

What does CAM stand for in this context?

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
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Dermal
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Nevus cells

Benign

Ephelis
Lentigines

Pre-malignant

Malignant

Epibulbar tissue

Epithelial
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Nevus cells

Benign

Ephelis

CAM

What does CAM stand for in this context?
Complexion-associated melanosis

Pre-malignant

Malignant



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Eyelid Skin

Epidermal
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Nevus cells

Benign

Ephelis
Lentigines

Pre-malignant

Malignant

Epibulbar tissue

Epithelial
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Subepithelial
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Nevus cells

Benign

Ephelis

CAM

What does CAM stand for in this context?
Complexion-associated melanosis

CAM is known by several other names—what are they?

--?

--?

--?

--?

--?

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

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Nevus cells

Benign

Ephelis
Lentigines

Pre-malignant

Malignant

Epibulbar tissue

Epithelial
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Subepithelial
melanocytes

Nevus cells

Benign

Ephelis

CAM

What does CAM stand for in this context?
Complexion-associated melanosis

Pre-malignant

Malignant

CAM is known by several other names—what are they?

- Racial melanosis
- Benign acquired melanosis
- Benign epithelial melanosis
- Primary conjunctival melanosis
- Acquired hypermelanosis

Melanocytic Eyelid and Epibulbar Lesions



Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Pre-malignant

Malignant

Who is prone to developing CAM?

Epithelial
melanocytes

Ephelis

CAM

Benign

Pre-malignant

Malignant

S



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Pre-malignant

Malignant

Who is prone to developing CAM?

It can arise in any racial group, but is commonly associated with more darkly pigmented peoples

Epithelial
melanocytes

Benign

Ephelis

CAM

Pre-malignant

Malignant

S



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
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Dermal
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Nevus cells

Benign

Ephelis
Lentigines

Pre-malignant

Malignant

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Epithelial
melanoc

Ephelis

CAM

Benign

Pre-malignant

Malignant

At what life-stage does CAM typically first appear?

S



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
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Dermal
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Benign

Ephelis
Lentigines

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Epithelial
melanoc

Ephelis

CAM

Benign

Pre-malignant

Malignant

At what life-stage does CAM typically first appear?
Young adulthood

S



Melanocytic Eyelid and Epibulbar Lesions

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Nevus cells

Benign

Ephelis
Lentigines

Pre-malignant

Malignant

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Epithelial
melanoc

Ephelis

CAM

Benign

At what life-stage does CAM typically first appear?

Young adulthood

Does it tend to be static?

Pre-malignant

Malignant

S



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Pre-malignant

Malignant

Who is prone to developing CAM?

It can arise in any racial group, but is commonly associated with more darkly pigmented peoples

At what life-stage does CAM typically first appear?

Young adulthood

Does it tend to be static?

No, it typically progresses with advancing age

Epithelial
melanocytes

Ephelis

CAM

Benign

Pre-malignant

Malignant

S



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Pre-malignant

Malignant

Who is prone to developing CAM?

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Epithelial
melanocytes

Which portion of the conj is most likely to be involved?

Benign

Ephelis

CAM

Pre-malignant

Malignant

S



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Pre-malignant

Malignant

Who is prone to developing CAM?

It can arise in any racial group, but is commonly associated with more darkly pigmented peoples

Epithelial *Which portion of the conj is most likely to be involved?*
melanoc The perilimbal region

Benign

Ephelis

CAM

Pre-malignant

Malignant

S

Melanocytic Eyelid and Epibulbar Lesions



CAM: Perilimbal involvement



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

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Benign

Ephelis
Lentigines

Pre-malignant

Malignant

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Epithelial
melanoc

Which portion of the conj is most likely to be involved?

The perilimbal region

Benign

Ephelis

CAM

Pre-malignant

Malignant

Upon close inspection, CAM lesions often exhibit a subtle but distinctive pattern—what is it?



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melanoc

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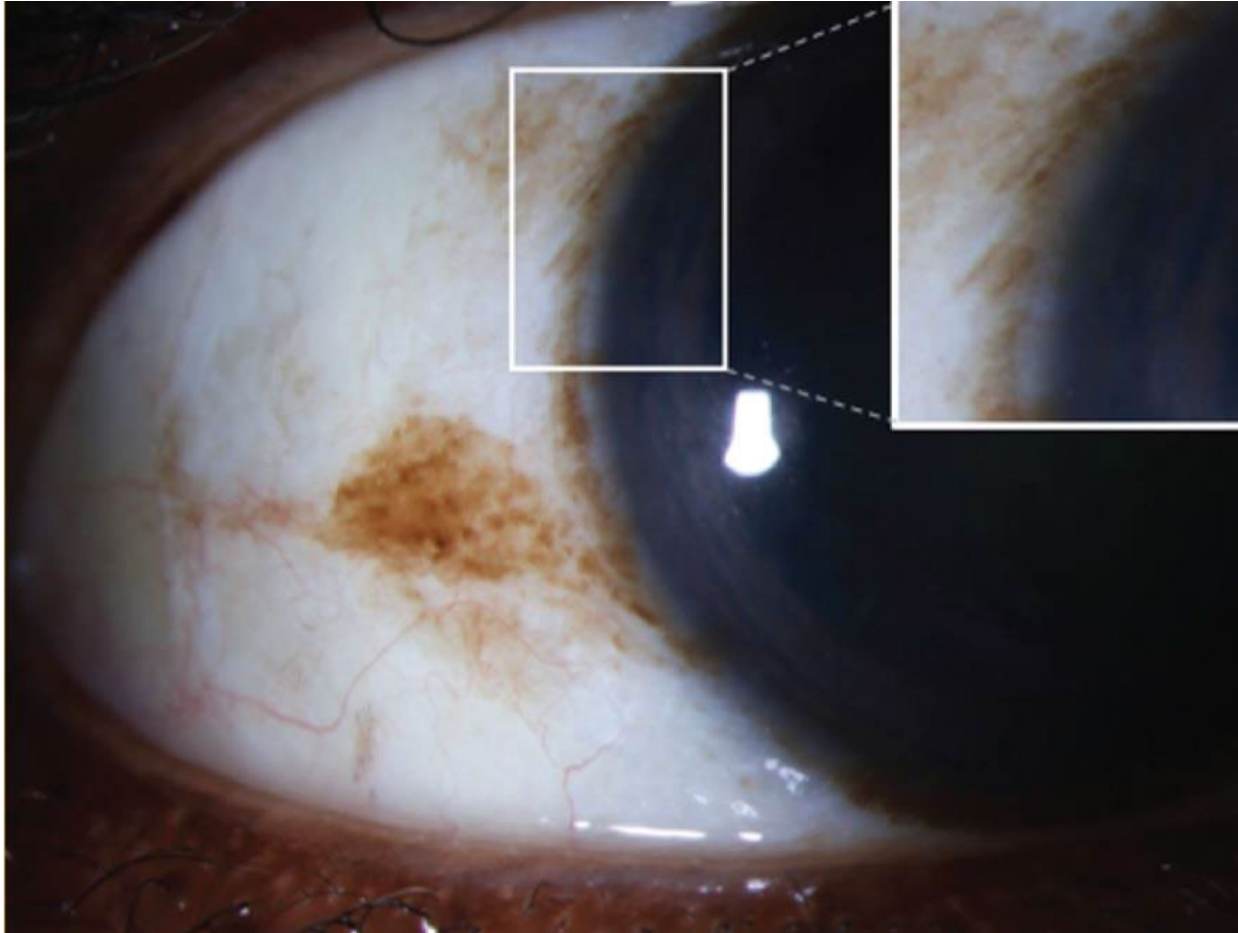
Malignant

Upon close inspection, CAM lesions often exhibit a subtle but distinctive pattern—what is it?

‘Microfolds’ (see the next slide)

S

Melanocytic Eyelid and Epibulbar Lesions



Complexion-associated melanosis. Slit-lamp photograph of a 73-year-old Black man that demonstrates conjunctival pigmentation with limbal “microfolds” [inset].



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Ephelis
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Pre-malignant

Malignant

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Epithelial
melanoc

Which portion of the conj is most likely to be involved?

The perilimbal region

Benign

Ephelis

CAM

Does it present in unilateral, or bilateral fashion?

Pre-malignant

Malignant

S



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melanoc

Which portion of the conj is most likely to be involved?

The perilimbal region

Benign

Ephelis

CAM

Does it present in unilateral, or bilateral fashion?

Bilateral (and fairly symmetrically so)

Pre-malignant

Malignant

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Bilateral (and fairly symmetrically so)

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Malignant

Can the palpebral conj be involved?

S



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Yes

Malignant

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Bilateral (and fairly symmetrically so)

Pre-malignant

Malignant

Can the palpebral conj be involved? The caruncle?

Yes

S



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Ephelis

CAM

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Bilateral (and fairly symmetrically so)

Pre-malignant

Malignant

*Can the palpebral conj be involved? The caruncle? The **cornea**??!!*

Yes. Yes.

S



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Pre-malignant

Malignant

Who is prone to developing CAM?

It can arise in any racial group, but is commonly associated with more darkly pigmented peoples

Epithelial
melanocytes

Which portion of the conj is most likely to be involved?

The perilimbal region

Benign

Ephelis

CAM

Does it present in unilateral, or bilateral fashion?

Bilateral (and fairly symmetrically so)

Pre-malignant

Malignant

*Can the palpebral conj be involved? The caruncle? The **cornea**??!!*

Yes. Yes. Yes—it's called

two words



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Pre-malignant

Malignant

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Epithelial
melanocytes

Which portion of the conj is most likely to be involved?
The perilimbal region

Benign

Ephelis

CAM

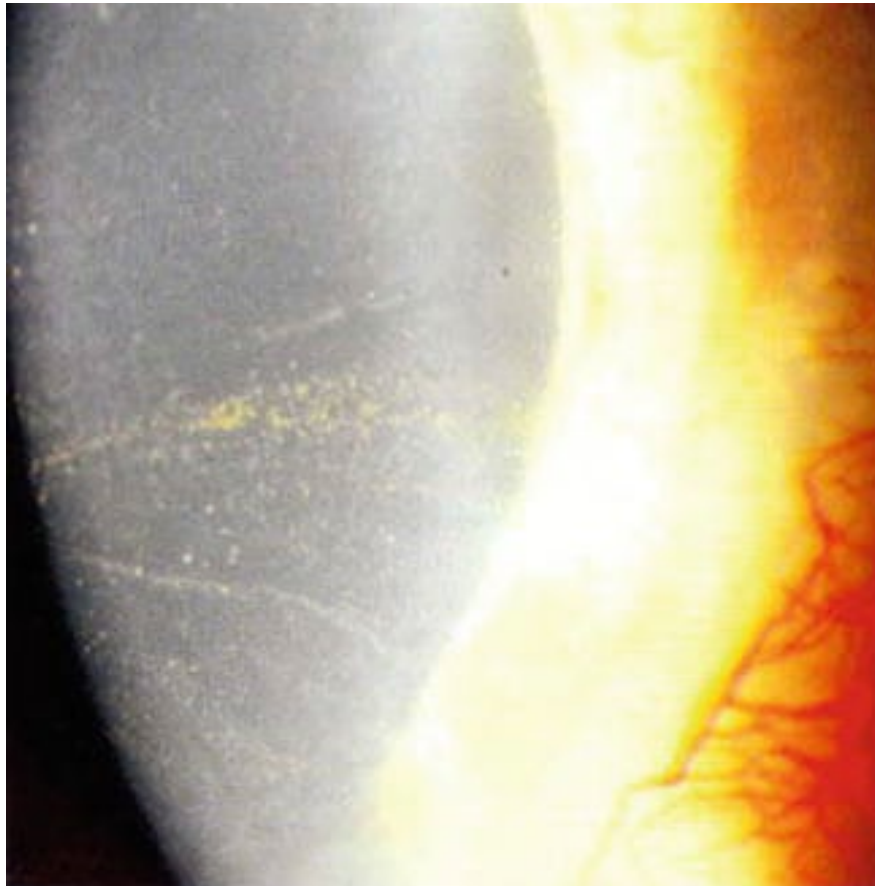
Does it present in unilateral, or bilateral fashion?
Bilateral (and fairly symmetrically so)

Pre-malignant

Malignant

*Can the palpebral conj be involved? The caruncle? The **cornea**??!!*
Yes. Yes. Yes—it's called *striate melanokeratosis*.

Melanocytic Eyelid and Epibulbar Lesions



CAM: Striate melanokeratosis





Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Pre-malignant

Malignant

Epithelial
melanoc

Who is prone to developing CAM?

It can arise in any racial group, but is commonly associated with more darkly pigmented peoples

Which portion of the conj is most likely to be involved?

The perilimbal region

Does it present in unilateral, or bilateral fashion?

Bilateral (and fairly symmetrically so)

*Can the palpebral conj be involved? The caruncle? The **cornea**??!!*

Yes. Yes. Yes—it's called *striate melanokeratosis*.

What is its malignant potential?

Benign

Ephelis

CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Pre-malignant

Malignant

Epithelial
melanoc

Who is prone to developing CAM?

It can arise in any racial group, but is commonly associated with more darkly pigmented peoples

Which portion of the conj is most likely to be involved?

The perilimbal region

Does it present in unilateral, or bilateral fashion?

Bilateral (and fairly symmetrically so)

*Can the palpebral conj be involved? The caruncle? The **cornea**??!!*

Yes. Yes. Yes—it's called *striate melanokeratosis*.

What is its malignant potential?

Essentially none

Benign

Ephelis

CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Pre-malignant

Malignant

Who is prone to developing CAM?

It can arise in any racial group, but is commonly associated with more darkly pigmented peoples

Epithelial
melanocytic

Which portion of the conj is most likely to be involved?

There's a simple, commonsense reason why these highly pigmented lesions have essentially no malignant potential. What is it?

Benign

Ephelis

CAM

Pre-malignant

Malignant

Yes. Yes. Yes—it's called "strawberry melanokeratosis."

What is its malignant potential?
Essentially none



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Pre-malignant

Malignant

Who is prone to developing CAM?

It can arise in any racial group, but is commonly associated with more darkly pigmented peoples

Epithelial
melanocytic

Which portion of the conj is most likely to be involved?

Benign

Ephelis

CAM

There's a simple, commonsense reason why these highly pigmented lesions have essentially no malignant potential. What is it?

It's because the increased pigment in CAM doesn't stem from the proliferation of melanocytes (with its attendant risk of malignant transformation)

Pre-malignant

Malignant

Yes. Yes. Yes—it's called *striae melanokeratosis*.

What is its malignant potential?
Essentially none



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Pre-malignant

Malignant

Who is prone to developing CAM?

It can arise in any racial group, but is commonly associated with more darkly pigmented peoples

Epithelial
melanocytic

Which portion of the conj is most likely to be involved?

Benign

Ephelis

CAM

There's a simple, commonsense reason why these highly pigmented lesions have essentially no malignant potential. What is it?

It's because the increased pigment in CAM doesn't stem from the proliferation of melanocytes (with its attendant risk of malignant transformation), but rather (as mentioned earlier) from an increase in the rate of melanin synthesis and transfer to adjacent basal epithelial cells

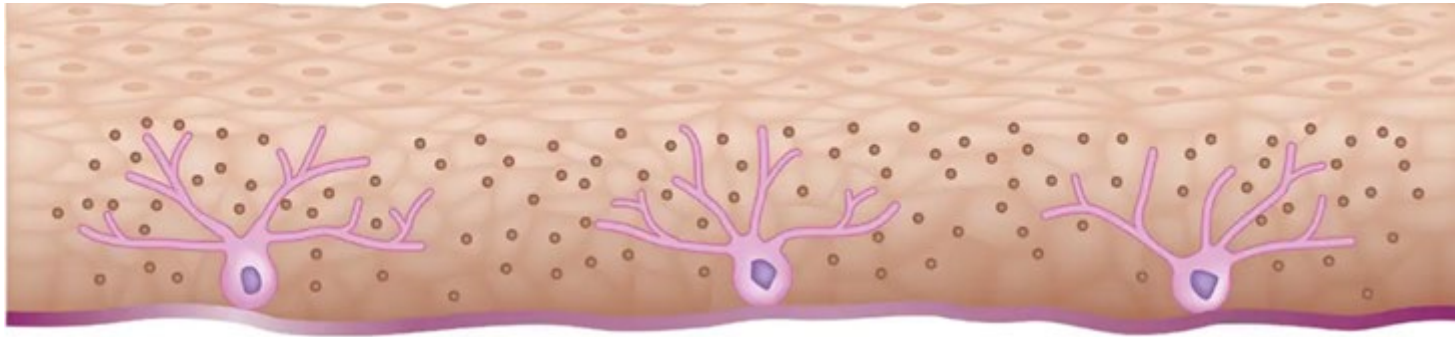
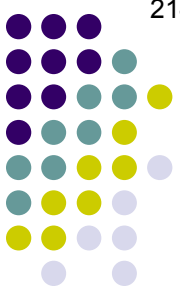
Pre-malignant

Malignant

*Yes. Yes. Yes—it's called *senile melanokeratosis*.*

What is its malignant potential?
Essentially none

Melanocytic Eyelid and Epibulbar Lesions



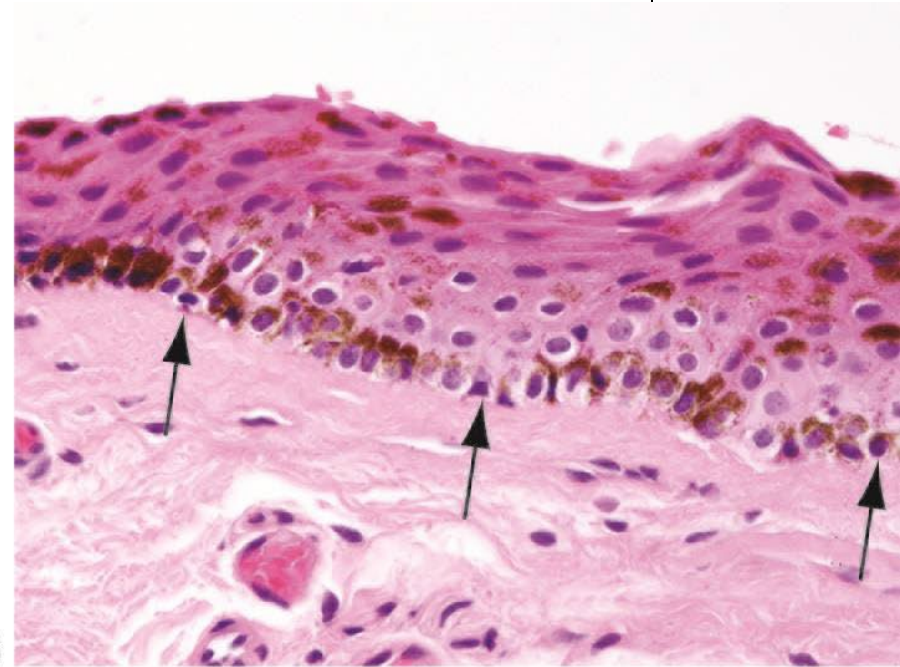
CAM is a *nonproliferative* process: The number of melanocytes is normal, they just produce an increased amount of melanin that gets transferred to the surrounding keratinocytes.

CAM

Melanocytic Eyelid and Epibulbar Lesions

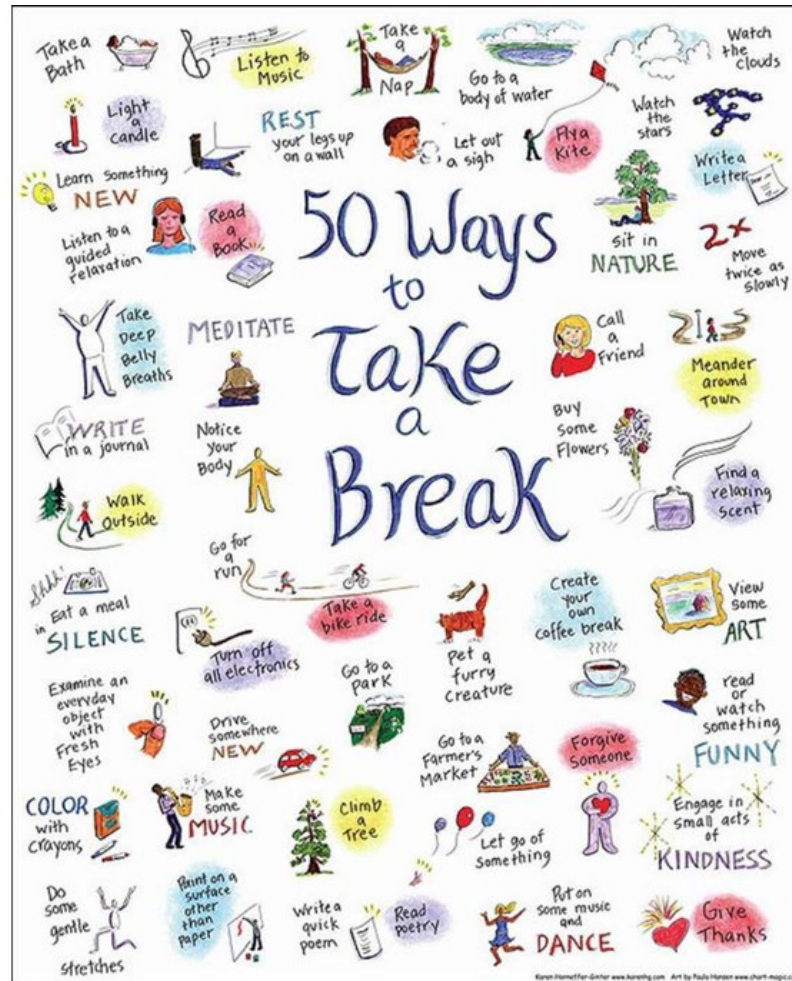


B



Complexion-associated melanosis. A, Clinical appearance. B, Histologic examination shows a normal density of small, morphologically unremarkable melanocytes confined mainly to the basal layer of the epithelium (arrows) with variable extension of pigment into more superficial epithelial layers

CAM



(This is a good point in the set to take a break)



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Pre-malignant

Next, let's look at *benign lesions deriving from dermal and subepithelial melanocytes*

Malignant

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Pre-malignant

Malignant

No question—proceed when ready



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

{
?
?

Pre-malignant

There are three benign eyelid skin lesions attributable to dermal melanocytes—what are they?

Malignant

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

{ Blue nevus
(Oculo)dermal melanocytosis

Pre-malignant

*There are three benign eyelid skin lesions
attributable to dermal melanocytes—what are they?*

Malignant

(Note: Oculodermal melanocytosis and dermal melanocytosis are separate conditions)

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

Pre-malignant

Malignant

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

{
?
?

Pre-malignant

Malignant

What are the equivalent lesions of epibulbar tissue?



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

Pre-malignant

Malignant

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

{ Blue nevus?
Ocular(dermal) melanocytosis

Pre-malignant

Malignant

What are the equivalent lesions of epibulbar tissue?

(Ditto for oculodermal melanocytosis and ocular melanocytosis)



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

Pre-malignant

Malignant

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Blue nevus?*
Ocular(dermal) melanocytosis

Pre-malignant

Malignant

What are the equivalent lesions of epibulbar tissue?

(Ditto for oculodermal melanocytosis and ocular melanocytosis)

**We'll unpack the question mark shortly*



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

Pre-malignant

Malignant

Note: The terms **dermal** melanocytosis and **ocular** melanocytosis refer to related but separate conditions at each location

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Blue nevus?
Ocular(dermal) melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Benign

Ephelis
Lentigines

Blue nevus

Oculo dermal melanocytosis

Pre-malignant

Malignant

Note: *But oculodermal melanocytosis refers to a single condition involving both locations*

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Benign

Ephelis
CAM

Blue nevus?

Oculo dermal melanocytosis

Pre-malignant

Malignant

Nevus cells

Nevus cells



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

(Oculo)dermal melanocytosis

Pre-malignant

*First things first. Surely something called a **blue nevus** is made up of nevus cells—specifically, those ‘blue nevus cells’ mentioned on an earlier slide?*

Malignant

Benign

Ephelis
CAM

Blue nevus?

Ocular(odermal) melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

(Oculo)dermal melanocytosis

Pre-malignant

Malignant

*First things first. Surely something called a **blue nevus** is made up of nevus cells—specifically, those ‘blue nevus cells’ mentioned on an earlier slide? You’d think so, wouldn’t you? And in truth, **they probably are**. But the latest edition (at the time of this writing) of the *Plastics* book refers to the responsible cells as “dermal melanocytes.” Caveat emptor.*

Benign

Ephelis
CAM

Blue nevus?

Ocular(odermal) melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

Blue nevus

(Oculo)dermal melanocytosis

Pre-malignant

Malignant

*First things first. Surely something called a **blue nevus** is made up of nevus cells—specifically, those ‘blue nevus cells’ mentioned on an earlier slide?*

*You’d think so, wouldn’t you? And in truth, **they probably are**. But the latest edition (at the time of this writing) of the *Plastics* book refers to the responsible cells as “dermal melanocytes.” Caveat emptor.*

Diameter-wise, are blue nevi large, or small?

Benign

Ephelis

CAM

Blue nevus?

Ocular(odermal) melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

Blue nevus

(Oculo)dermal melanocytosis

Pre-malignant

Malignant

*First things first. Surely something called a **blue nevus** is made up of nevus cells—specifically, those ‘blue nevus cells’ mentioned on an earlier slide?*

*You’d think so, wouldn’t you? And in truth, **they probably are**. But the latest edition (at the time of this writing) of the *Plastics* book refers to the responsible cells as “dermal melanocytes.” Caveat emptor.*

Diameter-wise, are blue nevi large, or small?

Small—less than

and units

Benign

Ephelis

CAM

Blue nevus?

Ocular(odermal) melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

(Oculo)dermal melanocytosis

Pre-malignant

Malignant

*First things first. Surely something called a **blue nevus** is made up of nevus cells—specifically, those ‘blue nevus cells’ mentioned on an earlier slide? You’d think so, wouldn’t you? And in truth, **they probably are**. But the latest edition (at the time of this writing) of the *Plastics* book refers to the responsible cells as “dermal melanocytes.” Caveat emptor.*

*Diameter-wise, are blue nevi large, or small?
Small—less than 10 mm*

Benign

Ephelis
CAM

Blue nevus?

Ocular(odermal) melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

(Oculo)dermal melanocytosis

Pre-malignant

Malignant

*First things first. Surely something called a **blue nevus** is made up of nevus cells—specifically, those ‘blue nevus cells’ mentioned on an earlier slide? You’d think so, wouldn’t you? And in truth, **they probably are**. But the latest edition (at the time of this writing) of the *Plastics* book refers to the responsible cells as “dermal melanocytes.” Caveat emptor.*

Diameter-wise, are blue nevi large, or small?

Small—less than 10 mm

Are they flat, or elevated?

Benign

Ephelis
CAM

Blue nevus?

Ocular(odermal) melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis

Lentigines

Blue nevus

(Oculo)dermal melanocytosis

Pre-malignant

Malignant

*First things first. Surely something called a **blue nevus** is made up of nevus cells—specifically, those ‘blue nevus cells’ mentioned on an earlier slide?*

*You’d think so, wouldn’t you? And in truth, **they probably are**. But the latest edition (at the time of this writing) of the *Plastics* book refers to the responsible cells as “dermal melanocytes.” Caveat emptor.*

Diameter-wise, are blue nevi large, or small?

Small—less than 10 mm

Are they flat, or elevated?

Elevated—looks like a small dark dome

Benign

Ephelis

CAM

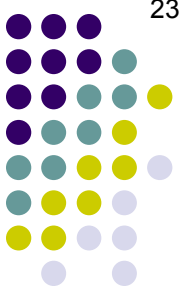
Blue nevus?

Ocular(odermal) melanocytosis

Pre-malignant

Malignant

Melanocytic Eyelid and Epibulbar Lesions



Blue nevus (not eyelid, obvs)



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

Pre-malignant

Malignant

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Blue nevus?

Ocular(ocular) melanocytosis

Pre-malignant

Malignant

About that question mark: The latest (again, as I write this) edition of the *External Dz* book doesn't mention blue nevi of the conj. The *Path* book **might** (it's not entirely clear in context).



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

Pre-malignant

Malignant

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Blue nevus?

Ocular(ocular) melanocytosis

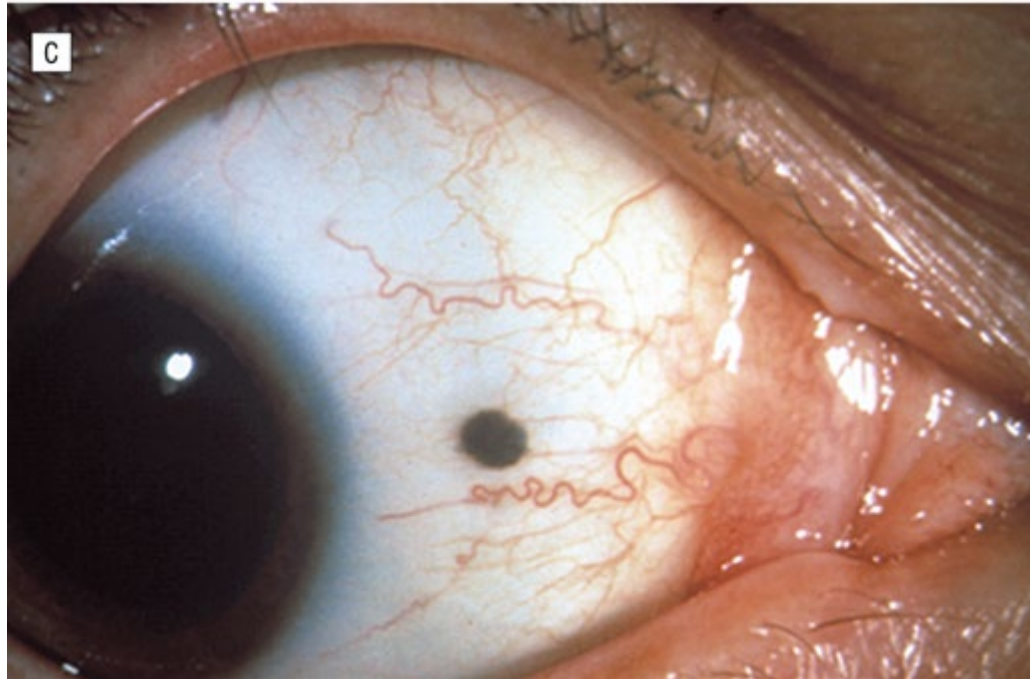
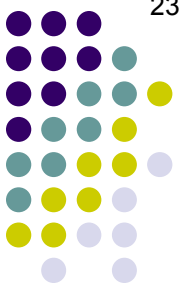
Pre-malignant

Malignant

About that question mark: The latest (again, as I write this) edition of the *External Dz* book doesn't mention blue nevi of the conj. The *Path* book **might** (it's not entirely clear in context). My take: The likelihood of encountering an OKAP question about blue nevi *of the conj* is too low to warrant fretting about (like I'm doing right now).

Melanocytic Eyelid and Epibulbar Lesions

235



Just because: Blue nevus of the conj

Melanocytic Eyelid and Epibulbar Lesions



Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

(Ocular) **dermal melanocytosis**

Pre-malignant

How does dermal melanocytosis present?

Malignant

Nevus cells

Benign

CAIM

Ocular (ocular) melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

(Ocular) **dermal melanocytosis**

Pre-malignant

Malignant

How does dermal melanocytosis present?

With eyelid and periocular skin containing patches of diffusely brown, gray or blue pigmentation

Nevus cells

Benign

CAM

Ocular (ocular) melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

(Ocular) **dermal melanocytosis**

Pre-malignant

How does dermal melanocytosis present?

Malignant

With eyelid and periorcular skin containing patches of diffusely brown, gray or blue pigmentation

The pigment tends to be distributed in a particular pattern—what is it?

Nevus cells

Benign

CAM

Ocular (ocular) melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

(Ocular) **dermal melanocytosis**

Pre-malignant

How does dermal melanocytosis present?

Malignant

With eyelid and periocular skin containing patches of diffusely brown, gray or blue pigmentation

The pigment tends to be distributed in a particular pattern—what is it?

It tends to be limited to the dermatomes of
and

a nerve

another nerve

nevus cells

Benign

CAM

Ocular (ocular) melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

(Ocular) **dermal melanocytosis**

Pre-malignant

How does dermal melanocytosis present?

Malignant

With eyelid and periorcular skin containing patches of diffusely brown, gray or blue pigmentation

The pigment tends to be distributed in a particular pattern—what is it?

It tends to be limited to the dermatomes of V_1 (aka the [redacted] nerve) and V_2 (aka the [redacted] nerve)

nevus cells

Benign

CAIM

Ocular (ocular) melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

(Ocular) **dermal melanocytosis**

Pre-malignant

How does dermal melanocytosis present?

Malignant

With eyelid and periocular skin containing patches of diffusely brown, gray or blue pigmentation

The pigment tends to be distributed in a particular pattern—what is it?

It tends to be limited to the dermatomes of V_1 (aka the *ophthalmic nerve*) and V_2 (aka the *maxillary nerve*)

Nevus cells

Benign

CAM

Ocular (ocular) melanocytosis

Pre-malignant

Malignant

Melanocytic Eyelid and Epibulbar Lesions



Dermal melanocytosis



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

(Ocular) **dermal melanocytosis**

Pre-malignant

Malignant

How does dermal melanocytosis present?

With eyelid and periorcular skin containing patches of diffusely brown, gray or blue pigmentation

Does it tend to be unilateral, or bilateral?

nevus cells

Benign

CAIM

Ocular (ocular) melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

(Ocular) **dermal melanocytosis**

Pre-malignant

Malignant

How does dermal melanocytosis present?

With eyelid and periorcular skin containing patches of diffusely brown, gray or blue pigmentation

Does it tend to be unilateral, or bilateral?

It is unilateral in about % of cases

nevus cells

Benign

CAIM

Ocular (ocular) melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

(Ocular) **dermal melanocytosis**

Pre-malignant

Malignant

How does dermal melanocytosis present?

With eyelid and periocular skin containing patches of diffusely brown, gray or blue pigmentation

Does it tend to be unilateral, or bilateral?

It is unilateral in about 95% of cases

Nevus cells

Benign

CAM

Ocular (ocular) melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

(Ocular) **dermal melanocytosis**

Pre-malignant

Malignant

How does dermal melanocytosis present?

With eyelid and periorcular skin containing patches of diffusely brown, gray or blue pigmentation

Does it tend to be unilateral, or bilateral?

It is unilateral in about 95% of cases

Is there a gender predilection?

nevus cells

Benign

CAIM

Ocular (ocular) melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

(Ocular) **dermal melanocytosis**

Pre-malignant

Malignant

How does dermal melanocytosis present?

With eyelid and periorcular skin containing patches of diffusely brown, gray or blue pigmentation

Does it tend to be unilateral, or bilateral?

It is unilateral in about 95% of cases

Is there a gender predilection?

Yes, M are more likely to be affected

Nevus cells

Benign

CAIM

Ocular (ocular) melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

(Ocular) **dermal melanocytosis**

Pre-malignant

Malignant

How does dermal melanocytosis present?

With eyelid and periorcular skin containing patches of diffusely brown, gray or blue pigmentation

Does it tend to be unilateral, or bilateral?

It is unilateral in about 95% of cases

Is there a gender predilection?

Yes, ♀ are more likely to be affected

Nevus cells

Benign

CAM

Ocular (ocular) melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

(Ocular) **dermal melanocytosis**

Pre-malignant

Malignant

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It is unilateral in about 95% of cases

Is there a gender predilection?

Yes, ♀ are more likely to be affected

Does it manifest an ethnicity predilection?

Benign

CAIM

Ocular (ocular) melanocytosis

nevus cells

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

(Ocular) **dermal melanocytosis**

Pre-malignant

Malignant

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Does it tend to be unilateral, or bilateral?

It is unilateral in about 95% of cases

Is there a gender predilection?

Yes, ♀ are more likely to be affected

Does it manifest an ethnicity predilection?

Yes, those of **three ethnicities** descent are at increased risk

Benign

Pre-malignant

Malignant

Nevus cells

CAIM

Ocular (dermal) melanocytosis



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

(Ocular) **dermal melanocytosis**

Pre-malignant

Malignant

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Does it tend to be unilateral, or bilateral?

It is unilateral in about 95% of cases

Is there a gender predilection?

Yes, ♀ are more likely to be affected

Does it manifest an ethnicity predilection?

Yes, those of Hispanic, African or Asian descent are at increased risk

Benign

Pre-malignant

Malignant

Nevus cells

CAIM

Ocular (dermal) melanocytosis



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

(Ocular) **dermal melanocytosis**

Pre-malignant

Malignant

How does it
With eyelid
gray or blue

Both the Path and Plastics books state that dermal melanocytosis is a form of another melanocytic lesion—which one? (It's already been mentioned.)

Does it tend to be unilateral or bilateral?
It is unilateral in about 95% of cases

Is there a gender predilection?
Yes, ♀ are more likely to be affected

Nevus cells

Benign

Does it manifest an ethnicity predilection?
Yes, those of Hispanic, African or Asian descent are at increased risk

CAIM

Ocular (ocular) melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

(Ocular) **dermal melanocytosis**

Pre-malignant

Malignant

How does it
With epidermal
gray or brown

Both the Path and Plastics books state that dermal melanocytosis is a form of another melanocytic lesion—which one? (It's already been mentioned.) Both books refer to it as a form of 'blue nevus.'

Does it tend to be unilateral or bilateral?
It is unilateral in about 95% of cases

Is there a gender predilection?
Yes, ♀ are more likely to be affected

Benign

Does it manifest an ethnicity predilection?
Yes, those of Hispanic, African or Asian descent are at increased risk

CAIM

Ocular (ocular) melanocytosis

Pre-malignant

Malignant

Nevus cells



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

(Ocular) **dermal melanocytosis**

Pre-malignant

Malignant

How does it
With e
gray o

Both the Path and Plastics books state that dermal melanocytosis is a form of another melanocytic lesion—which one? (It's already been mentioned.) Both books refer to it as a form of 'blue nevus.' Note that, with respect to cell of origin, this puts us in the same dilemma we were with blue nevi.

Does it tend to be unilateral, or bilateral?

It is unilateral in about 95% of cases

Is there a gender predilection?

Yes, ♀ are more likely to be affected

Does it manifest an ethnicity predilection?

Yes, those of Hispanic, African or Asian descent are at increased risk

Benign

CAIM

Ocular (ocular) melanocytosis

Pre-malignant

Malignant

nevus cells



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

(Oculo) **dermal melanocytosis**

Pre-malignant

How d
With e

Both the Path and Plastics book state that dermal melanocytosis is a form of another melanocytic lesion... which one? (It's already been mentioned.)

Malignant

Speaking of the *Plastics* book, an important observation: The current (2020-21) version states that dermal melanocytosis is aka *Nevus of Ota*. Per every other *BCSC* book that addresses the topic, as well as per other Academy sources, this assertion is erroneous—it is **oculodermal** melanocytosis (to be discussed very shortly) that is aka nevus of Ota, not **dermal** melanocytosis.

Is there a gender predilection?

Yes, ♀ are more likely to be affected

Nevus cells

Benign

Does it manifest an ethnicity predilection?

Yes, those of Hispanic, African or Asian descent are at increased risk

CAIM

Ocular (oculodermal) melanocytosis

Pre-malignant

Malignant

Melanocytic Eyelid and Epibulbar Lesions



Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

How does ocular melanocytosis present?

Pre-malignant

Malignant

Epithelial
melanocytes

Benign

Ephelis
CAM

Blue nevus

Ocular(odermal) **melanocytosis**

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

How does ocular melanocytosis present?
With slate-gray patches of **tissue** pigmentation

Pre-malignant

Malignant

Epithelial
melanocytes

Benign

Ephelis
CAM

Blue nevus

Ocular(odermal) **melanocytosis**

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

How does ocular melanocytosis present?
With slate-gray patches of episcleral pigmentation

Pre-malignant

Malignant

Epithelial
melanocytes

Benign

Ephelis
CAM

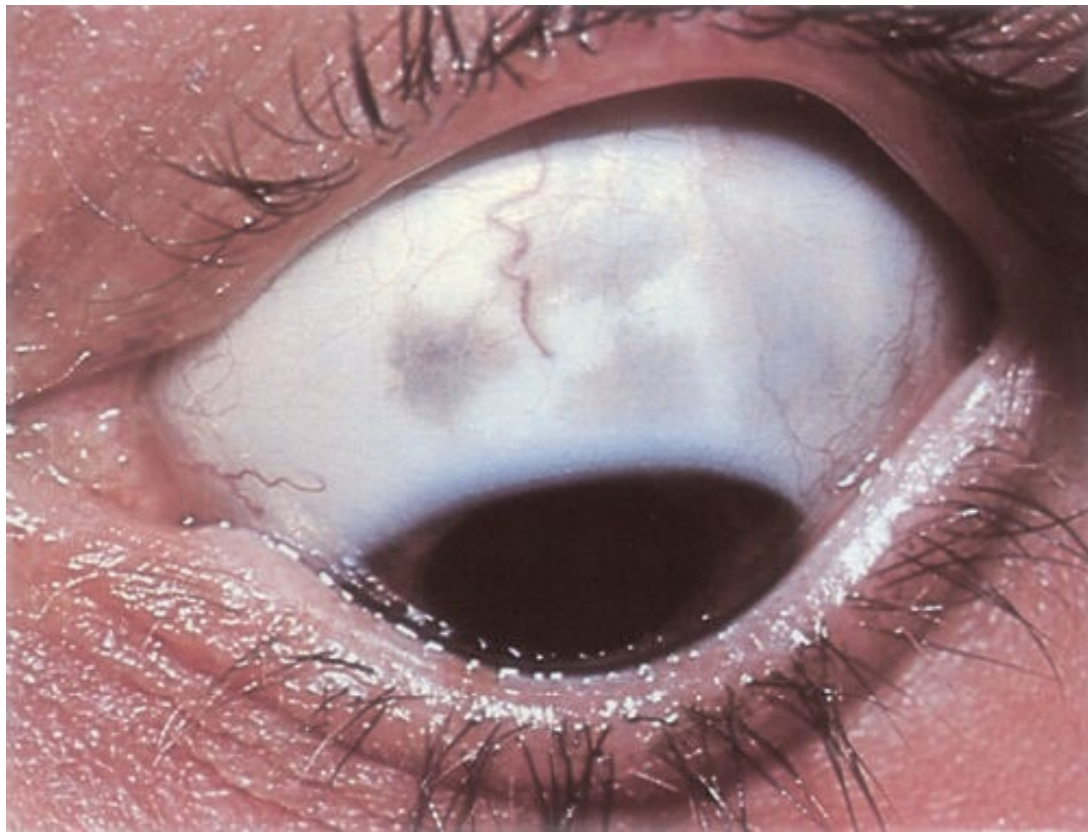
Blue nevus

Ocular(odermal) **melanocytosis**

Pre-malignant

Malignant

Melanocytic Eyelid and Epibulbar Lesions



Ocular melanocytosis

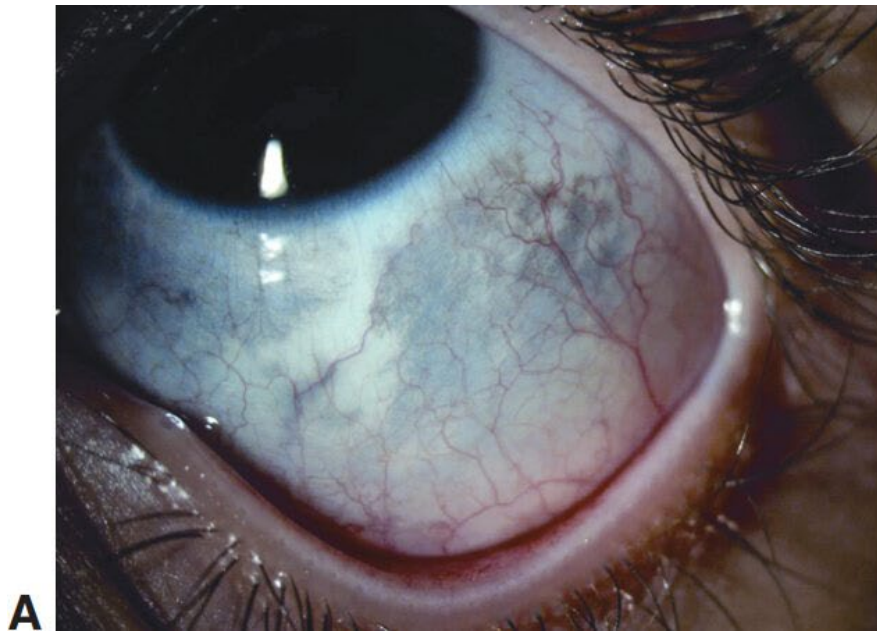
Melanocytic Eyelid and Epibulbar Lesions



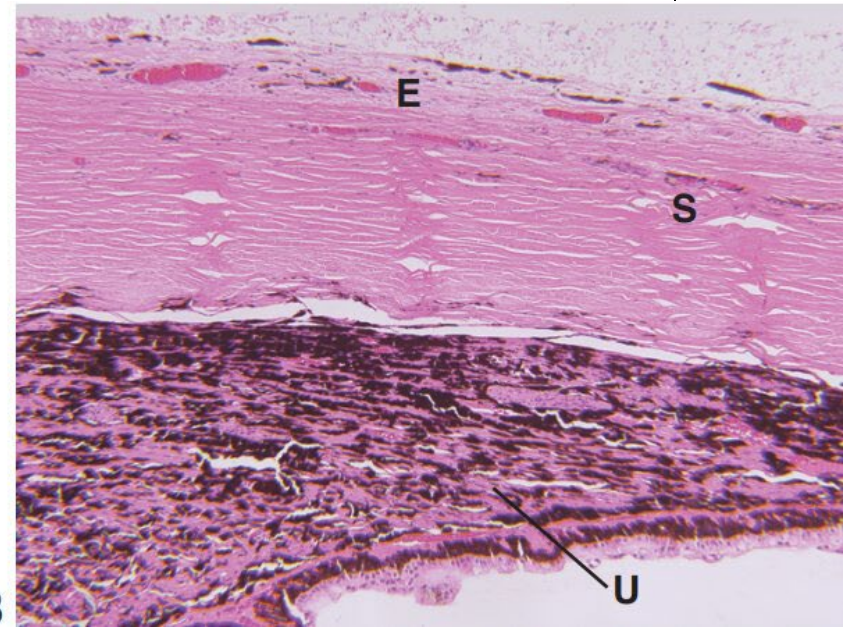
All Rights Reserved, 2009. Texas Tech University Health Sciences Center EyeAtlas

Ocular melanocytosis

Melanocytic Eyelid and Epibulbar Lesions



A



B

A, Clinical photograph illustrating slate-gray patches of pigmentation of the scleral surface.
B, Histologic examination shows an increased population of intensely pigmented spindle and dendritic melanocytes in the deep episclera (E), sclera (S), and uveal tract (U).

Ocular melanocytosis



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

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With slate-gray patches of episcleral pigmentation

Does it tend to be unilateral, or bilateral?

Pre-malignant

Malignant

Epithelial
melanocytes

Benign

Ephelis
CAM

Blue nevus

Ocular(odermal) **melanocytosis**

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
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Blue nevus

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With slate-gray patches of episcleral pigmentation

Pre-malignant

Does it tend to be unilateral, or bilateral?
It is usually unilateral

Malignant

Epithelial
melanocytes

Benign

Ephelis
CAM

Blue nevus

Ocular(odermal) **melanocytosis**

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

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Nevus cells

Benign

Ephelis
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Blue nevus

How does ocular melanocytosis present?
With slate-gray patches of episcleral pigmentation

Pre-malignant

Does it tend to be unilateral, or bilateral?
It is usually unilateral

Malignant

An eye with ocular melanocytosis is at increased risk of what potentially blinding ocular condition?

Epithelial
melanocytes

Benign

Ephelis
CAM

Blue nevus

Ocular(odermal) **melanocytosis**

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

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Nevus cells

Benign

Ephelis
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Blue nevus

How does ocular melanocytosis present?
With slate-gray patches of episcleral pigmentation

Does it tend to be unilateral, or bilateral?
It is usually unilateral

An eye with ocular melanocytosis is at increased risk of what potentially blinding ocular condition?
Glaucoma—about % of these eyes develop it

Pre-malignant

Malignant

Epithelial
melanocytes

Benign

Ephelis
CAM

Blue nevus

Ocular(odermal) **melanocytosis**

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

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Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

How does ocular melanocytosis present?
With slate-gray patches of episcleral pigmentation

Pre-malignant

Does it tend to be unilateral, or bilateral?
It is usually unilateral

Malignant

An eye with ocular melanocytosis is at increased risk of what potentially blinding ocular condition?
Glaucoma—about 10% of these eyes develop it

Epithelial
melanocytes

Benign

Ephelis
CAM

Blue nevus

Ocular(odermal) **melanocytosis**

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

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Nevus cells

Benign

Ephelis
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Blue nevus

How does ocular melanocytosis present?
With slate-gray patches of episcleral pigmentation

Pre-malignant

Does it tend to be unilateral, or bilateral?
It is usually unilateral

Malignant

An eye with ocular melanocytosis is at increased risk of what potentially blinding ocular condition?

Gla... about 40% of the cases have it

If you said melanoma, hold that thought...

Epithelial
melanocytes

Benign

Ephelis
CAM

Blue nevus

Ocular(odermal) melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

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melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

How does ocular melanocytosis present?
With slate-gray patches of episcleral pigmentation

Pre-malignant

Does it tend to be unilateral, or bilateral?
It is usually unilateral

Malignant

An eye with ocular melanocytosis is potentially blinding — a
Glaucoma

Is the glaucoma open angle, or closed?

Epithelial
melanocytes

Blue nevus

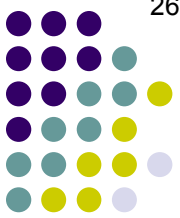
Benign

Ephelis
CAM

Ocular(odermal) **melanocytosis**

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

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With slate-gray patches of episcleral pigmentation

Pre-malignant

Does it tend to be unilateral, or bilateral?
It is usually unilateral

Malignant

An eye with ocular melanocytosis is potentially blinding — a
Glaucoma

Is the glaucoma open angle, or closed?
Open

Epithelial
melanocytes

Blue nevus

Benign

Ephelis
CAM

Ocular(odermal) **melanocytosis**

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

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With slate-gray patches of episcleral pigmentation

Pre-malignant

Does it tend to be unilateral, or bilateral?
It is usually unilateral

Malignant

An eye with ocular melanocytosis is potentially blinding — a
Glaucoma

Is the glaucoma open angle, or closed?
Open

Ah, so they're at risk for POAG?

Epithelial
melanocytes

Blue nevus

Benign

Ephelis
CAM

Ocular(odermal) **melanocytosis**

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

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Ephelis
Lentigines

Blue nevus

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With slate-gray patches of episcleral pigmentation

Pre-malignant

Does it tend to be unilateral, or bilateral?
It is usually unilateral

Malignant

An eye with ocular melanocytosis is potentially blinding — a
Glaucoma

Is the glaucoma open angle, or closed?
Open

Ah, so they're at risk for POAG?
No. Remember, the **P** in **POAG** stands for **primary**; the glaucoma in ocular melanocytosis is **secondary**.

Epithelial
melanocytes

Blue nevus

Benign

Ephelis
CAM

Ocular(odermal) **melanocytosis**

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

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Blue nevus

How does ocular melanocytosis present?
With slate-gray patches of episcleral pigmentation

Pre-malignant

Does it tend to be unilateral, or bilateral?
It is usually unilateral

Malignant

An eye with ocular melanocytosis is at increased risk of what potentially blinding ocular condition?
Glaucoma—about 10% of these eyes develop it

Does it manifest an ethnicity predilection?

Epithelial
melanocytes

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Ocular(odermal) **melanocytosis**

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

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With slate-gray patches of episcleral pigmentation

Does it tend to be unilateral, or bilateral?
It is usually unilateral

An eye with ocular melanocytosis is at increased risk of what potentially blinding ocular condition?
Glaucoma—about 10% of these eyes develop it

Does it manifest an ethnicity predilection?
Like the dermal version, it is more common among individuals of Hispanic, African, and/or Asian descent

Pre-malignant

Malignant

Epithelial
melanocytes

Blue nevus

Benign

Ephelis
CAM

Ocular(odermal) **melanocytosis**

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

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With slate-gray patches of episcleral pigmentation

Does it tend to be unilateral, or bilateral?
It is usually unilateral

An eye with ocular melanocytosis is at increased risk of ^{melanoma?} what potentially blinding ocular condition?

Getting back to the 'Hold that thought': Does ocular melanocytosis convey an increased risk of melanoma?

Epithelial
melanocytes

Benign

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CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

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An eye with ocular melanocytosis is at increased risk of ^{melanoma?} what potentially blinding ocular condition?

Getting back to the 'Hold that thought': Does ocular melanocytosis convey an increased risk of melanoma?

For a particular subset of pts, it does indeed

Epithelial
melanocytes

Benign

Ephelis
CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
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For a particular subset of pts, it does indeed

Which pts are at increased risk?

Epithelial
melanocytes

Benign

Ephelis
CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

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With slate-gray patches of episcleral pigmentation

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Getting back to the 'Hold that thought': Does ocular melanocytosis convey an increased risk of melanoma?

For a particular subset of pts, it does indeed

Which pts are at increased risk?

Those of [redacted] ethnicity

Benign

Epithelial
melanocytes
Ephelis
CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
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With slate-gray patches of episcleral pigmentation

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Getting back to the 'Hold that thought': Does ocular melanocytosis convey an increased risk of melanoma?

For a particular subset of pts, it does indeed

Which pts are at increased risk?

Those of Caucasian ethnicity

Benign

Epithelial
melanocytes
Ephelis
CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
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Getting back to the 'Hold that thought': Does ocular melanocytosis convey an increased risk of melanoma?

For a particular subset of pts, it does indeed

Which pts are at increased risk?

Those of Caucasian ethnicity

So when a melanoma arises, is it in the episcleral pigmented patch?

Pre-malignant

Malignant

Epithelial
melanocytes

Benign

Ephelis
CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

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For a particular subset of pts, it does indeed

Which pts are at increased risk?

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Well, that **can** happen, but it's very rare

Epithelial
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Benign

Ephelis
CAM

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Melanocytic Eyelid and Epibulbar Lesions

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Which pts are at increased risk?

Those of Caucasian ethnicity

So when a melanoma arises, is it in the episcleral pigmented patch?

Well, that **can** happen, but it's very rare. In fact, while a melanoma can occur anywhere—skin, conj, intraocular, even the orbit—the overwhelming majority occur in the [redacted]

Pre-malignant

Malignant

Epithelial
melanocytes

Benign

Ephelis
CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

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Pre-malignant

Malignant

Epithelial
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Ephelis
CAM

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

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An eye with ocular melanocytosis is at increased risk of ^{melanoma?} what potentially blinding ocular condition?

Getting back to the 'Hold that thought': Does ocular melanocytosis convey an increased risk of melanoma?

What is the lifetime risk of uveal melanoma in a white person without ocular melanocytosis?

eed

Be

episcleral pigmented patch?

Pre-malign

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majority occur in the uvea.

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

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Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

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With slate-gray patches of episcleral pigmentation

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It is usually unilateral

An eye with ocular melanocytosis is at increased risk of ^{melanoma?} what potentially blinding ocular condition?

Getting back to the 'Hold that thought': Does ocular melanocytosis convey an increased risk of melanoma?

What is the lifetime risk of uveal melanoma in a white person without ocular melanocytosis?
About 6 in a million

eed

Be

episcleral pigmented patch?

Pre-malign

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Malignant



Melanocytic Eyelid and Epibulbar Lesions

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What is the lifetime risk of uveal melanoma in a white person without ocular melanocytosis?
About 6 in a million

*What is the lifetime risk of uveal melanoma in a white person **with** ocular melanocytosis?*

majority occur in the uvea.

eed

episcleral pigmented patch?
In fact, while a melanoma can even the orbit—the overwhelming

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

How does ocular melanocytosis present?
With slate-gray patches of episcleral pigmentation

Does it tend to be unilateral, or bilateral?
It is usually unilateral

An eye with ocular melanocytosis is at increased risk of ^{melanoma?} what potentially blinding ocular condition?

Getting back to the 'Hold that thought': Does ocular melanocytosis convey an increased risk of melanoma?

What is the lifetime risk of uveal melanoma in a white person without ocular melanocytosis?
About 6 in a million

*What is the lifetime risk of uveal melanoma in a white person **with** ocular melanocytosis?*
About 1 in 400!

majority occur in the uvea.

eed

episcleral pigmented patch?
In fact, while a melanoma can even the orbit—the overwhelming

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

Oculo dermal melanocytosis

Pre-malignant

Remind me: Oculodermal melanocytosis is aka...

Malignant

Benign

Epithelioid
CAM

Blue nevus

Oculo dermal melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

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Ephelis
Lentigines

Blue nevus

Oculo dermal melanocytosis

Pre-malignant

*Remind me: Oculodermal melanocytosis is aka... **Nevus of Ota***

Malignant

Benign

Epithelioid
CAM

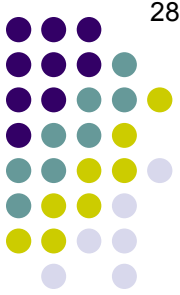
Blue nevus

Oculo dermal melanocytosis

Pre-malignant

Malignant

Melanocytic Eyelid and Epibulbar Lesions



Oculodermal melanocytosis (nevus of Ota)



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
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Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus

Oculo dermal melanocytosis

Pre-malignant

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Malignant

Does nevus of Ota tend to occur in a V1/V2 distribution like dermal melanocytosis?

Benign

Epithel
CAM

Blue nevus

Oculo dermal melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

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Epithelioid
CAM

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Oculo dermal melanocytosis

Pre-malignant

Malignant



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Pre-malignant

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Malignant

Does nevus of Ota tend to occur in a V1/V2 distribution like dermal melanocytosis? Yes

Does it convey a risk of melanoma in white folk like ocular melanocytosis?

Benign

Epithelioid
CAM

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Oculo dermal melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

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Pre-malignant

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Does it convey a risk of melanoma in white folk like ocular melanocytosis? Yes

Does it have a female preponderance like dermal melanocytosis?

Benign

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Oculo dermal melanocytosis

Pre-malignant

Malignant



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Oculo dermal melanocytosis

Pre-malignant

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Oculo dermal melanocytosis

Pre-malignant

Malignant



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Does it convey a risk of melanoma in white folk like ocular melanocytosis? Yes

Does it have a female preponderance like dermal melanocytosis? Yes

Does it convey a risk of glaucoma like ocular melanocytosis? Yes

Does it have an Asian/African/Hispanic preponderance like both ocular and dermal melanocytosis?

Benign

CAM

Blue nevus

Oculo dermal melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

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Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

Pre-malignant

Malignant

Next, let's look at *benign lesions
deriving from nevus cells*

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Blue nevus
Ocular(odermal) melanocytosis

Pre-malignant

Malignant

No question—proceed when ready

Melanocytic Eyelid and Epibulbar Lesions



Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

{ ?

Pre-malignant

What benign eyelid skin lesion is attributable to nevus cells?

Malignant

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Blue nevus
Ocular(odermal) melanocytosis

Pre-malignant

Malignant

Melanocytic Eyelid and Epibulbar Lesions



Eyelid Skin

Epidermal
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{ Nevus

Pre-malignant

What benign eyelid skin lesion is attributable to nevus cells?

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Epibulbar tissue

Epithelial
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Pre-malignant

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Melanocytic Eyelid and Epibulbar Lesions



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CAM

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Ocular(odermal) melanocytosis

{ ?

*What is its epibulbar
equivalent?*

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

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Ocular(odermal) melanocytosis

{ Nevus

Pre-malignant

Malignant

*What is its epibulbar
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Melanocytic Eyelid and Epibulbar Lesions

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Nevus

Are congenital eyelid nevi visible at birth?

Benign

Pre-malignant

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Epithelial
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You'd think so, but no

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Pre-malignant

Nevi have a three-stage 'life cycle.' What are the stages?

Malignant

--?

--?

--?

Epithelial
melanocytes

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Pre-malignant

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Nevus

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Pre-malignant

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Malignant

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Pre-malignant

Nevi have a three-stage 'life cycle.' What are the stages? To what do the stage-names refer?

Malignant

To where (ie, which skin layer) the nevus cells are found at that stage

--Junctional

--Compound

--Dermal

Epithelial
melanocytes

Ephelis

CAM

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melanocytes

Blue nevus

Ocular(odermal) melanocytosis

Nevus cells

Nevus

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Pre-malignant

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Melanocytic Eyelid and Epibulbar Lesions

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*Nevi have a three-stage 'life cycle.' What are the stages? **To what do the stage-names refer?***

Malignant

Where are the nevus cells at each stage?

To where (ie, which skin layer) the nevus cells are found at that stage

--Junctional: ?

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Epithelial
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Malignant

Where are the nevus cells at each stage?

To where (ie, which skin layer) the nevus cells are found at that stage

--Junctional: The dermis-epidermis junction

--Compound

--Dermal

Epithelial
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Ephelis

CAM

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Blue nevus

Ocular(odermal) melanocytosis

Nevus cells

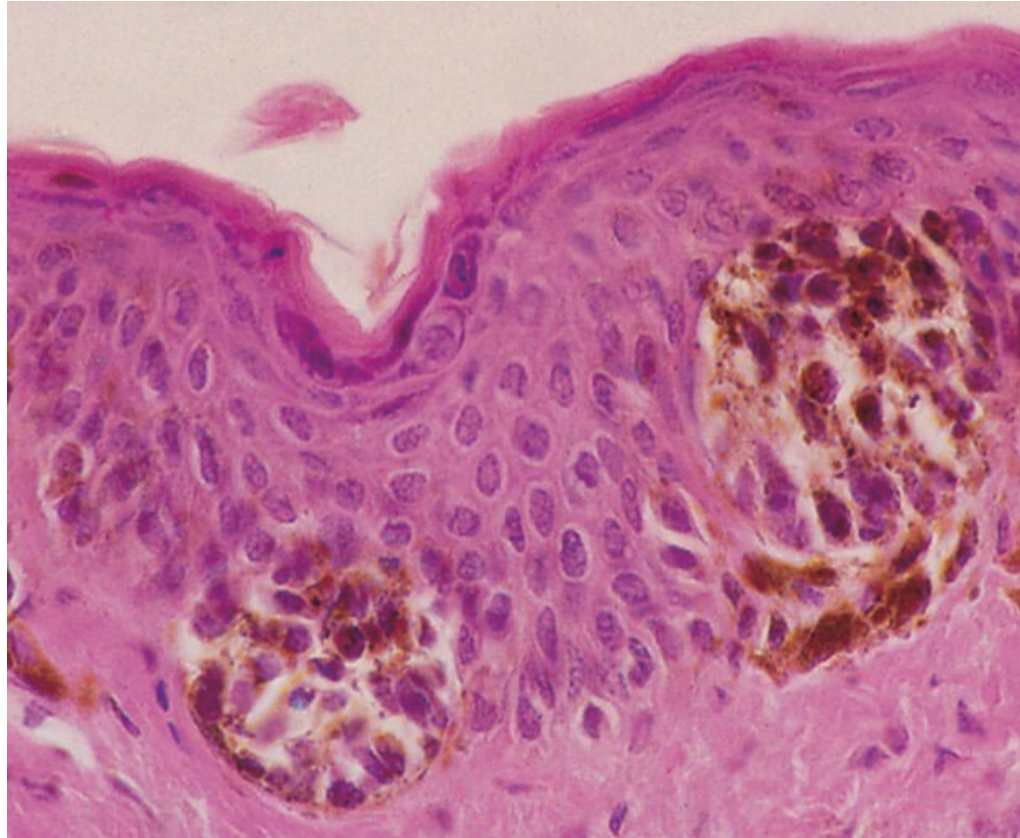
Nevus

Benign

Pre-malignant

Malignant

Melanocytic Eyelid and Epibulbar Lesions



Junctional nevus. Nests of nevus cells (pigmented in this case) are apparent at the dermal–epidermal junction





Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Ephelis

Dermal
melanocytes

Blue nevus

Nevus cells

Nevus

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Pre-malignant

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Malignant

Where are the nevus cells at each stage?

To where (ie, which skin layer) the nevus cells are found at that stage

--Junctional: The dermis-epidermis junction

--Compound: ?

Next Q

--Dermal

Epithelial
melanocytes

Ephelis

CAM

Subepithelial
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Ocular(odermal) melanocytosis

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Pre-malignant

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Malignant

Where are the nevus cells at each stage?

To where (ie, which skin layer) the nevus cells are found at that stage

--Junctional: The dermis-epidermis junction

--Compound: Extending down into the dermis, up through the epidermis

--Dermal

Epithelial
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CAM

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Ocular(odermal) melanocytosis

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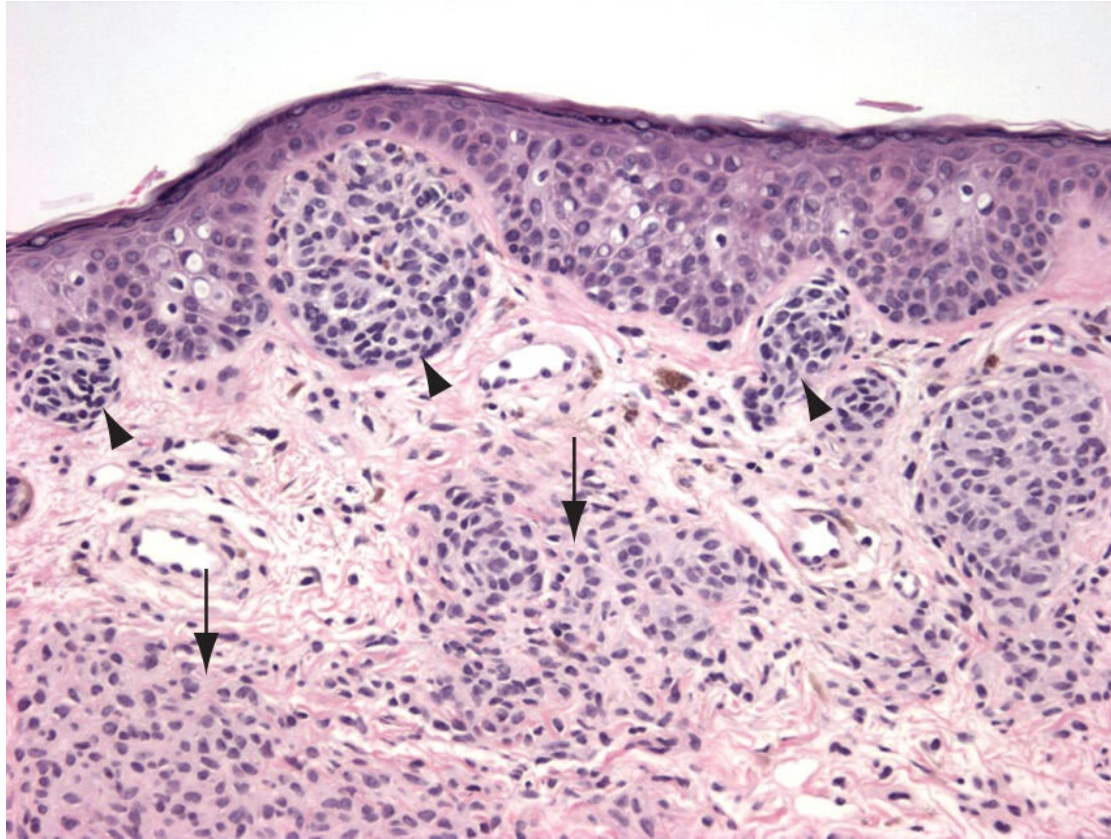
Nevus

Benign

Pre-malignant

Malignant

Melanocytic Eyelid and Epibulbar Lesions



Compound nevus. Nests of nevus cells are present in the dermis (*arrows*) as well as at the dermal–epidermal junction (*arrowheads*)



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Ephelis

Dermal
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Blue nevus

Nevus cells

Nevus

Benign

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Pre-malignant

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To where (ie, which skin layer) the nevus cells are found at that stage

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Malignant

Where are the nevus cells at each stage?

To where (ie, which skin layer) the nevus cells are found at that stage

--Junctional: The dermis-epidermis junction

--Compound: Extending down into the dermis, up through the epidermis

--Dermal: Dermis only

Epithelial
melanocytes

Ephelis

CAM

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To where (ie, which skin layer) the nevus cells are found at that stage

--Junctional: The dermis-epidermis junction

--Compound: Extending down into the dermis, up through the epidermis

--Dermal: **Dermis only**

Epithelial

What happens to the portion of the nevus that was up in the epidermis?

Subepithelial
melanocytes

Blue nevus

Ocular(odermal) melanocytosis

Nevus cells

Nevus

Pre-malignant

Malignant

CAM



Melanocytic Eyelid and Epibulbar Lesions

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Ocular(odermal) melanocytosis

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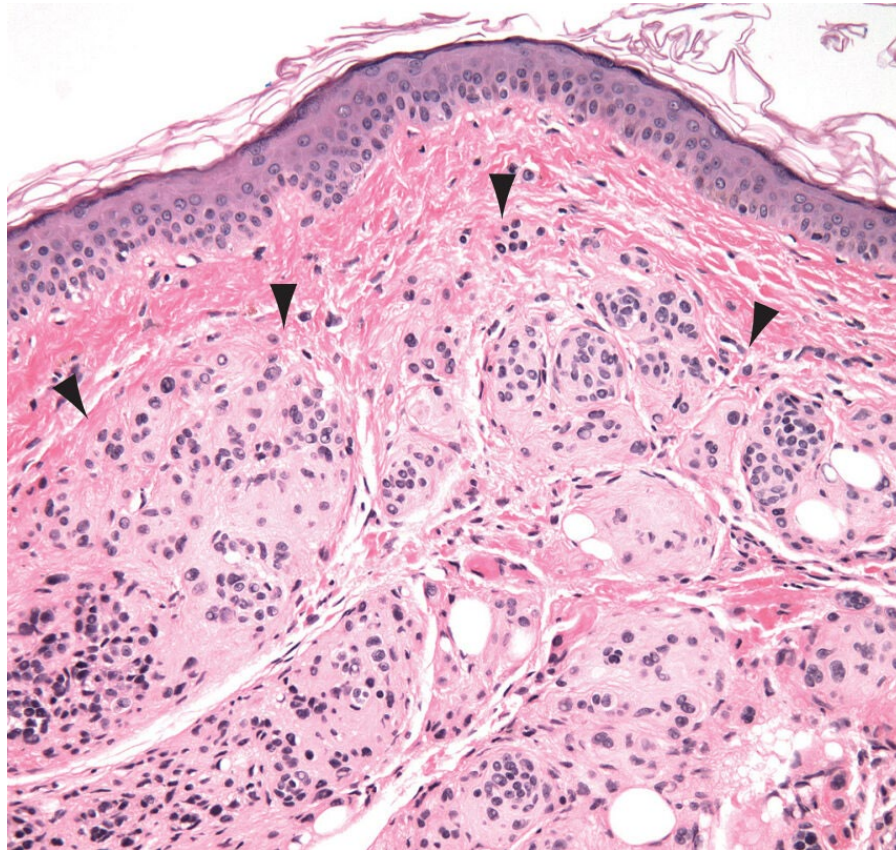
Nevus

Pre-malignant

Malignant

CAM

Melanocytic Eyelid and Epibulbar Lesions



Dermal nevus. The nests of nevus cells are confined to the dermis, and there is no junctional component. The superficial extent of the nevus cell nests is indicated with *arrowheads*.



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Ephelis

Dermal
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Blue nevus

Nevus cells

Nevus

Benign

Are congenital eyelid nevi visible at birth?
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Pre-malignant

Nevi have a three-stage 'life cycle.' What are the stages? *To what do the stage-names refer?*
Where are the nevus cells at each stage? *What does each stage look like?*

Malignant

To where (ie, which skin layer) the nevus cells are found at that stage

--Junctional: The dermis-epidermis junction. ?
--Compound: Extending down into the dermis, up through the epidermis

--Dermal: Dermis only

Next Q

(this is part of it too)

Epithelial
melanocytes

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CAM

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Ocular(odermal) melanocytosis

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Melanocytic Eyelid and Epibulbar Lesions

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Pre-malignant

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Where are the nevus cells at each stage? What does each stage look like?

To where (ie, which skin layer) the nevus cells are found at that stage

--Junctional: The dermis-epidermis junction. **Small, pigmented, flat lesion**

--Compound: Extending down into the dermis, up through the epidermis

--Dermal: Dermis only

Epithelial
melanocytes

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Melanocytic Eyelid and Epibulbar Lesions

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Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Ephelis

Dermal
melanocytes

Blue nevus

Nevus cells

Nevus

Benign

Are congenital eyelid nevi visible at birth?
You'd think so, but no

Pre-malignant

Nevi have a three-stage 'life cycle.' What are the stages? To what do the stage-names refer?
Where are the nevus cells at each stage? What does each stage look like?

Malignant

To where (ie, which skin layer) the nevus cells are found at that stage

--Junctional: The dermis-epidermis junction. **Small, pigmented, flat lesion**

--Compound: Extending down into the dermis, up through the epidermis. **Somewhat larger, somewhat more pigmented, somewhat elevated lesion**

--Dermal: Dermis only

Epithelial
melanocytes

Ephelis

CAM

Subepithelial
melanocytes

Blue nevus

Ocular(odermal) melanocytosis

Nevus cells

Nevus

Benign

Pre-malignant

Malignant

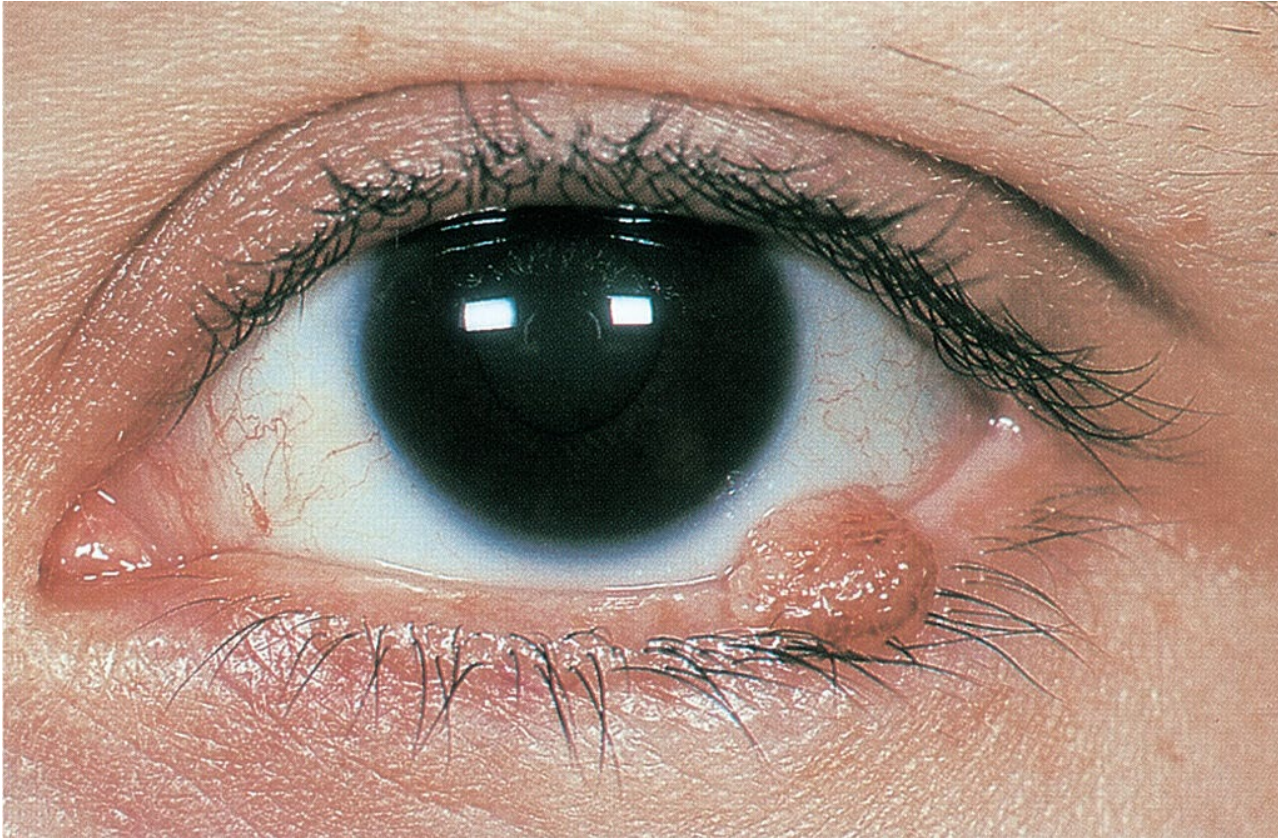
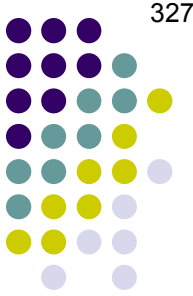
Melanocytic Eyelid and Epibulbar Lesions



Compound nevus



Melanocytic Eyelid and Epibulbar Lesions



Eyelid margin nevus



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Ephelis

Dermal
melanocytes

Blue nevus

Nevus cells

Nevus

Benign

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melanocytes

Ephelis

CAM

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Blue nevus

Ocular(odermal) melanocytosis

Nevus cells

Nevus

Benign

Pre-malignant

Malignant



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Epidermal
melanocytes

Ephelis

Dermal
melanocytes

Blue nevus

Nevus cells

Nevus

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melanocytes

Ephelis

CAM

Subepithelial
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Nevus cells

Nevus

Benign

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Ephelis

Dermal
melanocytes

Blue nevus

Nevus cells

Nevus

Benign

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To where (ie. which skin layer) the nevus cells are found at that stage

Junctional: The dermis-epidermis junction. **Small, pigmented, flat lesion**

--Compound-- Extending down into the dermis, up through the epidermis. Somewhat larger,

sc
When do junctional nevi appear?

--l

Nevus cells

Nevus

Benign

CAM

Ocular(odermal) melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Ephelis

Dermal
melanocytes

Blue nevus

Nevus cells

Nevus

Benign

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Pre-malignant

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To where (ie. which skin layer) the nevus cells are found at that stage

Junctional: The dermis-epidermis junction. **Small, pigmented, flat lesion**

--Compound-- Extending down into the dermis, up through the epidermis. Somewhat larger,

sc **When do junctional nevi appear?**

-- In childhood

Nevus cells

Nevus

Benign

CAM

Ocular(odermal) melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Ephelis

Dermal
melanocytes

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Nevus cells

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Malignant

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To where (ie, which skin layer) the nevus cells are found at that stage

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--**Compound**: Extending down into the dermis, up through the epidermis. Somewhat larger,

When do junctional nevi appear?

-- In childhood

A small flat pigmented lesion—sounds like an ephelis to me. How are junctional nevi and ephelides differentiated clinically?

Nevus cells

Nevus

Benign

CAM

Ocular(odermal) melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Ephelis

Dermal
melanocytes

Blue nevus

Nevus cells

Nevus

Benign

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Pre-malignant

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Malignant

Where are the nevus cells at each stage? What does each stage look like?

To where (ie, which skin layer) the nevus cells are found at that stage

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--**Compound**: Extending down into the dermis, up through the epidermis. Somewhat larger,

When do junctional nevi appear?

-- In childhood

A small flat pigmented lesion—sounds like an ephelis to me. How are junctional nevi and ephelides differentiated clinically?

They're not (by which I mean they can't be—they are indistinguishable)

Benign

CAM

Ocular(odermal) melanocytosis

Nevus cells

Nevus

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Ephelis

Blue nevus

Nevus

Benign

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Pre-malignant

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Malignant

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To where (ie, which skin layer) the nevus cells are found at that stage

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--Compound: Extending down into the dermis, up through the epidermis. **Somewhat larger, somewhat more pigmented, somewhat elevated lesion**

--Dermal: Dermis only. Varies, but usually unpigmented and flat

At what age do junctional nevi start evolving into compound nevi?

Epidermal
melanocytes

dermal
melanocytes

Nevus cells

Ephelis

Blue nevus

Nevus

CAM

Ocular(odermal) melanocytosis

Benign

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Ephelis

Dermal
melanocytes

Blue nevus

Nevus cells

Nevus

Benign

Are congenital eyelid nevi visible at birth?
You'd think so, but no

Pre-malignant

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Malignant

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To where (ie, which skin layer) the nevus cells are found at that stage

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--Compound: Extending down into the dermis, up through the epidermis. **Somewhat larger, somewhat more pigmented, somewhat elevated lesion**

--Dermal: Dermis only. Varies, but usually unpigmented and flat

At what age do junctional nevi start evolving into compound nevi?

Adolescence

Epidermal
melanocytes

dermal
melanocytes

Nevus cells

Benign

Ephelis

CAM

Blue nevus

Ocular(odermal) melanocytosis

Nevus

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Ephelis

Blue nevus

Nevus

Benign

Are congenital eyelid nevi visible at birth?
You'd think so, but no

Pre-malignant

Nevi have a three-stage 'life cycle.' What are the stages? To what do the stage-names refer?

Malignant

Where are the nevus cells at each stage? What does each stage look like?

To where (ie, which skin layer) the nevus cells are found at that stage

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--Dermal: Dermis only. **Varies, but usually unpigmented and flat**

At what age do compound nevi evolve into dermal nevi?

Nevus cells

Nevus

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Ephelis

Blue nevus

Nevus

Benign

Are congenital eyelid nevi visible at birth?
You'd think so, but no

Pre-malignant

Nevi have a three-stage 'life cycle.' What are the stages? To what do the stage-names refer?

Malignant

Where are the nevus cells at each stage? What does each stage look like?

To where (ie, which skin layer) the nevus cells are found at that stage

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At what age do compound nevi evolve into dermal nevi?

The *BCSC* doesn't specify, but the *Plastics* book does say that virtually all nevi have reached the dermal stage by age **#**

Nevus cells

Nevus

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Ephelis

Dermal
melanocytes

Blue nevus

Nevus cells

Nevus

Benign

Are congenital eyelid nevi visible at birth?
You'd think so, but no

Pre-malignant

Nevi have a three-stage 'life cycle.' What are the stages? To what do the stage-names refer?

Malignant

Where are the nevus cells at each stage? What does each stage look like?

To where (ie, which skin layer) the nevus cells are found at that stage

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At what age do compound nevi evolve into dermal nevi?

The *BCSC* doesn't specify, but the *Plastics* book does say that virtually all nevi have reached the dermal stage by age 70

Nevus cells

Nevus

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Ephelis

Dermal
melanocytes

Blue nevus

Nevus cells

Nevus

Benign

Are congenital eyelid nevi visible at birth?
You'd think so, but no

Pre-malignant

Nevi have a three-stage 'life cycle.' What are the stages? To what do the stage-names refer?
Where are the nevus cells at each stage? What does each stage look like?

Malignant

To where (ie, which skin layer) the nevus cells are found at that stage

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At what age do compound nevi evolve into dermal nevi?

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Nevus cells

Nevus

A small nonpigmented lesion—sounds like unaffected skin to me. How are dermal nevi distinguished from the surrounding skin?

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Ephelis

Dermal
melanocytes

Blue nevus

Nevus cells

Nevus

Benign

Are congenital eyelid nevi visible at birth?
You'd think so, but no

Pre-malignant

Nevi have a three-stage 'life cycle.' What are the stages? To what do the stage-names refer?
Where are the nevus cells at each stage? What does each stage look like?

Malignant

To where (ie, which skin layer) the nevus cells are found at that stage

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Nevus cells

Nevus

Pre-malignant

A small nonpigmented lesion—sounds like unaffected skin to me. How are dermal nevi distinguished from the surrounding skin?

If they're no longer elevated, they might not be distinguishable

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Ephelis

Dermal
melanocytes

Blue nevus

Nevus cells

Nevus

Benign

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You'd think so, but no

Pre-malignant

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Where are the nevus cells at each stage? What does each stage look like?

Malignant

To where (ie, which skin layer) the nevus cells are found at that stage

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If they're no longer elevated, they might not be distinguishable

Pre-malignant

Malignant

This is why the elderly—like young children—seem to have few (if any) nevi. As the dermatologists say: 'We come into the world without moles, and we leave without moles.'



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Ephelis

Dermal
melanocytes

Blue nevus

Nevus cells

Nevus

Benign

Are congenital eyelid nevi visible at birth?
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Pre-malignant

Nevi have a three-stage 'life cycle.' What are the stages? To what do the stage-names refer?

Malignant

Where are the nevus cells at each stage? What does each stage look like?

To where (ie, which skin layer) the nevus cells are found at that stage

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--Dermal: Dermis only. Varies, but usually **unpigmented and flat**

At what age do compound nevi evolve?
The BCSC doesn't specify, but the PI nevi have reached the dermal stage by age 1

Pre-malignant

A small nonpigmented lesion—sound dermal nevi distinguished from the sunburned skin.
If they're no longer elevated, they might be dermal.

Malignant

This is why the elderly—like young children—have moles.
As the dermatologists say: 'We come to the eye without moles.'

Type of Nevus	Pigmented?	Elevated?
Junctional	?	?
Compound		
Subepi/Dermal		



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Ephelis

Dermal
melanocytes

Blue nevus

Nevus cells

Nevus

Benign

Are congenital eyelid nevi visible at birth?
You'd think so, but no

Pre-malignant

Nevi have a three-stage 'life cycle.' What are the stages? To what do the stage-names refer?

Malignant

Where are the nevus cells at each stage? What does each stage look like?

To where (ie, which skin layer) the nevus cells are found at that stage

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dermal nevi distinguished from the su
If they're no longer elevated, they mig

Pre-malignant

Malignant

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leave without moles.'

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Junctional	Yes	No
Compound	?	?
Subepi/Dermal		



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To where (ie, which skin layer) the nevus cells are found at that stage

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If they're no longer elevated, they might be dermal.

Malignant

This is why the elderly—like young children—have moles.
As the dermatologists say: 'We come to the beach and leave without moles.'

Type of Nevus	Pigmented?	Elevated?
Junctional	Yes	No
Compound	Yes	Yes
Subepi/Dermal	?	?



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
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Ephelis

Dermal
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Malignant

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As the dermatologists say: 'We come here to leave without moles.'

Type of Nevus	Pigmented?	Elevated?
Junctional	Yes	No
Compound	Yes	Yes
Subepi/Dermal	No	No (or very little)



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

Nevus

Pre-malignant

During what period of life do conj nevi typically appear?

Malignant

Epithel
melanc

Nevus cells

Benign

Ephelis
CAM

Ocular(odermal) melanocytosis

Nevus

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

Nevus

Pre-malignant

During what period of life do conj nevi typically appear?
The first or second decade—similar to lid nevi

Malignant

Epithel
melanc

Nevus cells

Benign

Ephelis
CAM

Ocular(odermal) melanocytosis

Nevus

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

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Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

Nevus

Pre-malignant

During what period of life do conj nevi typically appear?
The first or second decade—similar to lid nevi

Malignant

In what three locations are they most commonly found?
--?
--?
--?

Epithel
melanc

Nevus cells

Benign

Ephelis
CAM

Ocular(odermal) melanocytosis

Nevus

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

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Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

Nevus

Pre-malignant

During what period of life do conj nevi typically appear?
The first or second decade—similar to lid nevi

Malignant

In what three locations are they most commonly found?
--Juxtalimbal
--Plica
--Caruncle

Epithel
melanc

Nevus cells

Benign

Ephelis
CAM

Ocular(odermal) melanocytosis

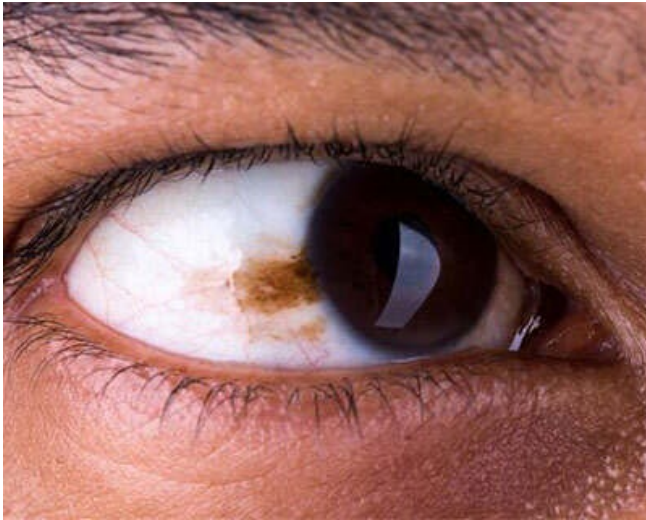
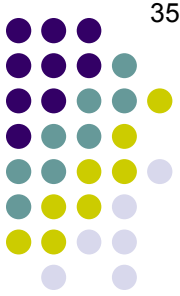
Nevus

Pre-malignant

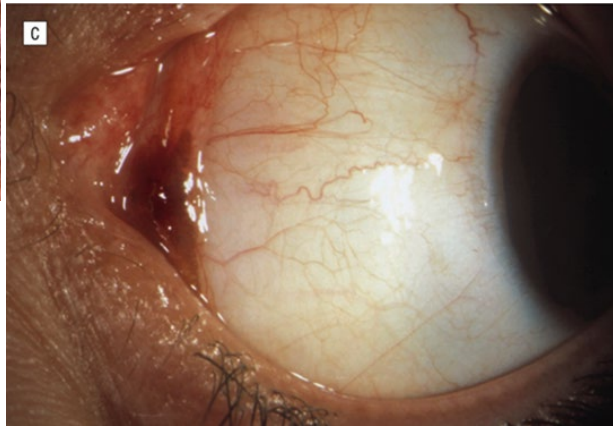
Malignant

Melanocytic Eyelid and Epibulbar Lesions

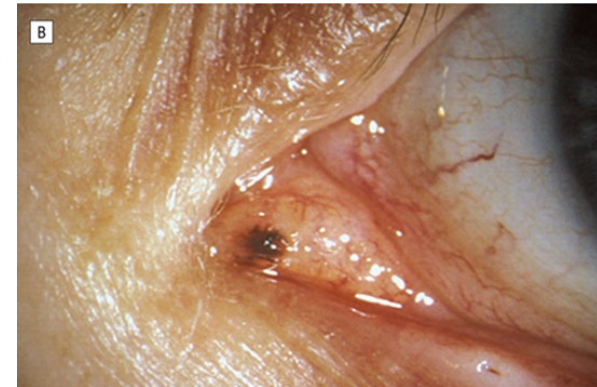
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Juxtalimbal



Plica



Caruncle

Conjunctival nevus: Typical locations



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

Nevus

Pre-malignant

During what period of life do conj nevi typically appear?
The first or second decade—similar to lid nevi

Malignant

In what ^{two} locations are they ^{not} most commonly found?
--?
--?

On which portions of the conj are nevi typically not found?
--?
--?

Benign

Nevus cells

Nevus

melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

Nevus

Pre-malignant

During what period of life do conj nevi typically appear?
The first or second decade—similar to lid nevi

Malignant

In what ^{two} locations are they ^{not} most commonly found?
--Forniceal
--Palpebral

On which portions of the conj are nevi typically not found?
--Forniceal
--Palpebral

Nevus cells

Benign

Nevus

melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

Nevus

Pre-malignant

During what period of life do conj nevi typically appear?
The first or second decade—similar to lid nevi

Malignant

In what ~~three~~^{two} locations are they ~~most commonly~~^{not} found?
--Forniceal
--Palpebral

On which portions of the conj are nevi typically not found?
--Forniceal
--Palpebral

Benign

What should you do if you find a nevus-like lesion in one of these areas?

Nevus cells

Nevus

melanocytosis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

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--Forniceal
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Biopsy it

Pre-malignant

Malignant

Nevus cells

Nevus

melanocytosis



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During what period of life do conj nevi typically appear?
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Malignant

Which location is the most common?

In what three locations are they most commonly found?
--Juxtalimbal?
--Plica?
--Caruncle?



Ben

Pre-malignant

Malignant

Epithel
melanc
Ephelis
CAM

Ocular(odermal) melanocytosis

Nevus cells

Nevus



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Regarding juxtalimbal nevi:

Do they tend to be elevated, or flat?

Nevus cells

Nevus

Benign

CAM

Ocular(odermal) melanocytosis

Pre-malignant

Malignant



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Regarding juxtalimbal nevi:

Do they tend to be elevated, or flat?

They are essentially always

Nevus cells

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Yes—about % of all nevi at this location contain them

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Yes—about half of all nevi at this location contain them

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CAM

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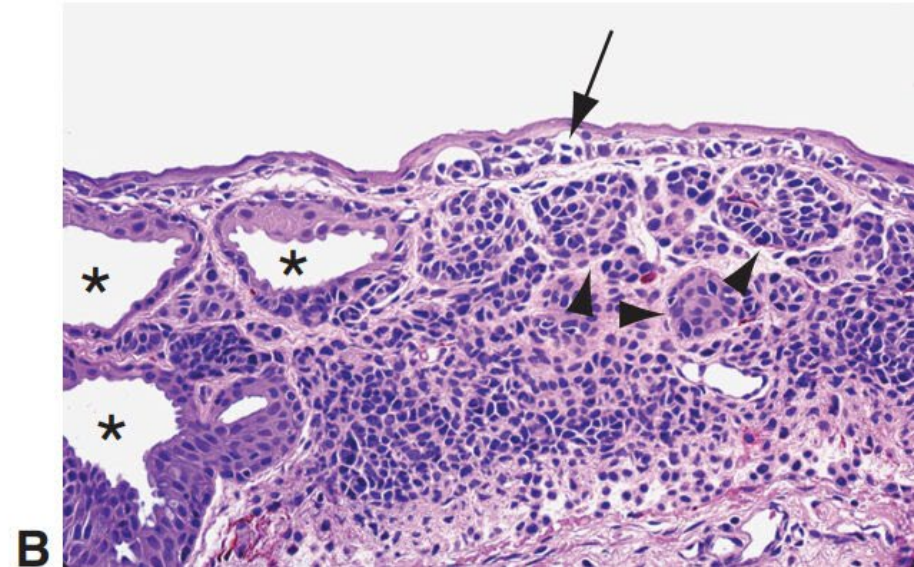
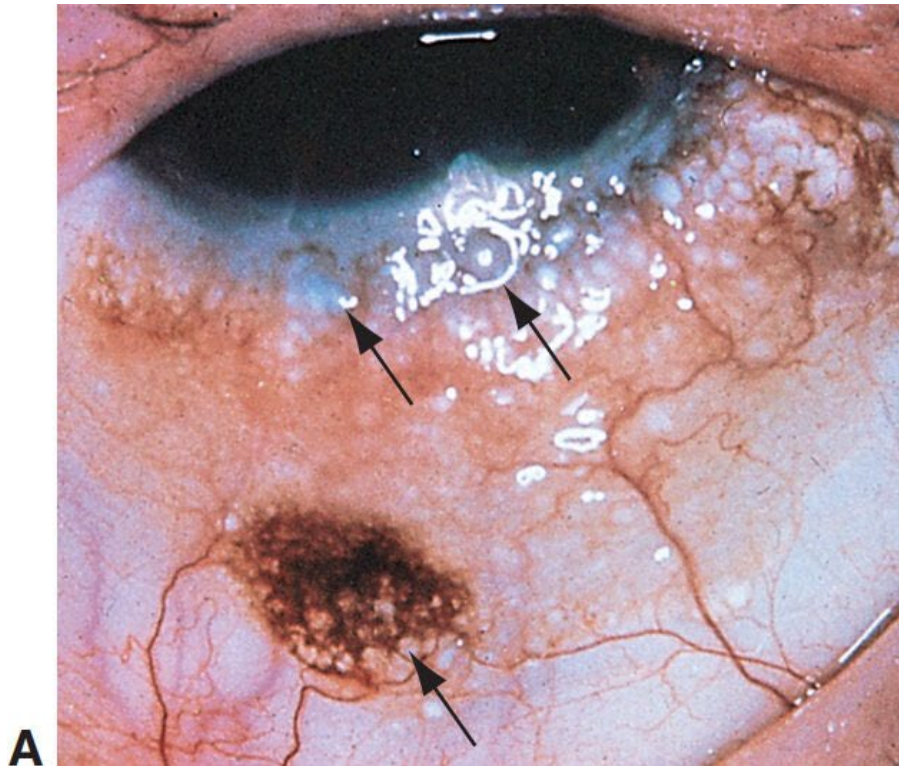
Nevus cells

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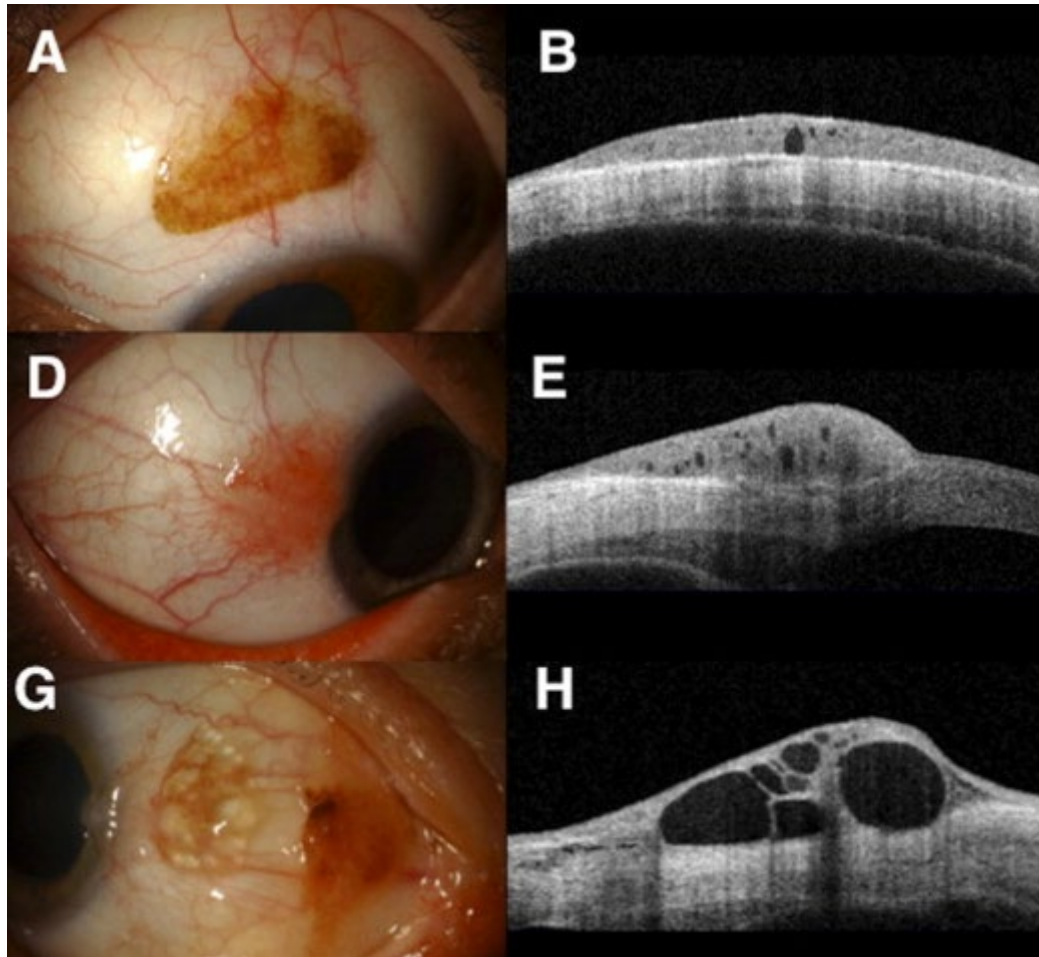
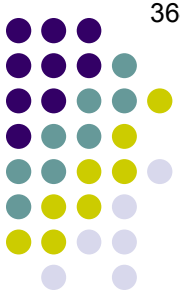
Melanocytic Eyelid and Epibulbar Lesions



A, Clinical appearance with characteristic cystic areas (*arrows*). B, Histologically, the nevus cells have round, oval, or pear-shaped nuclei with a moderate amount of cytoplasm, mostly arranged in nests (*arrowheads*). Note the epithelial inclusion cysts (*asterisks*) within the lesion, correlating with the clinical appearance.

Conj nevus

Melanocytic Eyelid and Epibulbar Lesions



Conj nevus: Epithelial inclusion cysts on AS-OCT



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cells in the cyst wall secrete causing the cyst (and lesion) to enlarge



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The second decade, specifically during **period**

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Does this enlargement tend to occur slowly, or rapidly?

Epithelial cysts can cause nevus enlargement. What is the mechanism for this?

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A parent notes rapid enlargement of a pigmented spot on her child's eye. Not surprisingly, what is the concern?

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Malignant transformation

Is the concern justified—does malignant transformation occur at this age?

Epithelial cysts can cause nevus enlargement. What is the mechanism for this?

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A parent notes rapid enlargement of a pigmented spot on her child's eye. Not surprisingly, what is the concern?
 Malignant transformation

Is the concern justified—does malignant transformation occur at this age?

Essentially never. Reassure the parent that such enlargement is common, expected, and of no clinical concern.

Epithelial cysts can cause nevus enlargement. What is the mechanism for this?

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The second decade, **specifically during puberty**

So you're saying conj nevi carry essentially no risk of malignant transformation?

Increasingly, what is the concern?

*Is the concern justified—**does malignant transformation occur at this age?***

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So you're saying conj nevi carry essentially no risk of malignant transformation?

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Is the risk of malignant transformation large, or small?

*Is the concern justified—**does malignant transformation occur at this age?***

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Is the risk of malignant transformation large, or small?

Quite small

%

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Is the risk of malignant transformation large, or small?

Quite small (<1%)

*Is the concern justified—**does malignant transformation occur at this age?***

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Is the risk of malignant transformation

Quite small (<1%)

There's a simple, commonsense reason why these pigmented lesions have a nonzero malignancy risk. What is it?

Is the concern justified—does mali

Essentially never

Reassure the patient that conj nevi are common, benign, and the clinical concern

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The second decade, **specifically during puberty**

So you're saying conj nevi carry essentially no risk of malignant transformation?

No, I'm saying the risk **during puberty** is essentially zero. **It can occur later in life.**

Is the risk of malignant transformation

Quite small (<1%)

There's a simple, commonsense reason why these pigmented lesions have a nonzero malignancy risk. What is it?

Is the concern justified—does mali

Essentially never

Reassure the patient

It's that the evolution of a nevus **does** involve replication of melanocytes, which introduces the opportunity for malignant transformation

Epithelial cysts can cause nevus enlargement. What is the mechanism for this?

Goblet cells in the cyst wall secrete mucin, causing the cyst (and **lesion**) to enlarge



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

	Epidermal melanocytes	Dermal melanocytes	Nevus cells
Benign	Ephelis Lentigines	Blue nevus (Oculo)dermal melanocytosis	Nevus
Pre-malignant	<p><i>During what period of life do conj nevi typically appear?</i> The first or second decade—similar to lid nevi</p>		
Malignant	<p><i>In what three locations are they most commonly found?</i> -Juxtalimbal</p>		

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For this reason, most conj nevi should be followed with serial photography every 6-12 months or so



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

Nevus

Pre-malignant

During what period of life do conj nevi typically appear?
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Malignant

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*Epithelial
Goblet*

most conj nevi should be followed serial photography every 6-12 months or so



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

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Those on the [] or [] conj, remember?

opportunity for malignant transformation

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Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
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Is the risk of malignant transformation of a nevus does involve replication of melanocytes, opportunity for malignant transformation
Quite small (<1%)

Wait, most? Which nevi shouldn't be followed like this?

Those on the palpebral or forniceal conj, remember?

most conj nevi should be followed serial photography every 6-12 months or so

Melanocytic Eyelid and Epibulbar Lesions



PAM of the palpebral conjunctiva



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
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Nevus

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Essential
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Epithelial
Goblet

Remind me: How should they be managed?

most conj nevi should be followed serial photography every 6-12 months or so



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
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Remind me: How should they be managed?
Biopsy them at the time they're discovered

most conj nevi should be followed serial photography every 6-12 months or so



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
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Nevus

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A p... surprisingly, what is the concern?
Malignant transformation

Is the concern justified—does malignant transformation occur at this age?

Essentially never. Reassure the parent that such enlargement is common, expected, and of no clinical concern.

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Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
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Nevus cells

Benign

Ephelis
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Blue nevus
(Oculo)dermal melanocytosis

Nevus

Pre-malignant

During what period of life do conj nevi typically appear?
The first or second decade—similar to lid nevi

Malignant

In what three locations are they most commonly found?
--Juxtalimbal
--Plica
--Caruncle

Are they usually unilateral, or bilateral?

Epithel
melanc

Nevus cells

Benign

Ephelis
CAM

Ocular(odermal) melanocytosis

Nevus

Pre-malignant

Malignant

**N
e
x
t**



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
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Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

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Ephelis
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Epithel
melanc

Can they be nonpigmented?

Nevus cells

Benign

Ephelis
CAM

Ocular(odermal) melanocytosis

Nevus

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
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Epithel
melanc

Can they be nonpigmented?

Benign

Ephelis
CAM

Yes—about % are nearly devoid of pigment

Ocular(odermal) melanocytosis

Nevus cells

Nevus

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

Nevus

Pre-malignant

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The first or second decade—similar to lid nevi

Malignant

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--Juxtalimbal
--Plica
--Caruncle

Are they usually unilateral, or bilateral?
Unilateral

Epithel
melanc

Can they be nonpigmented?

Yes—about 1/3 are nearly devoid of pigment

Nevus cells

Benign

Ephelis
CAM

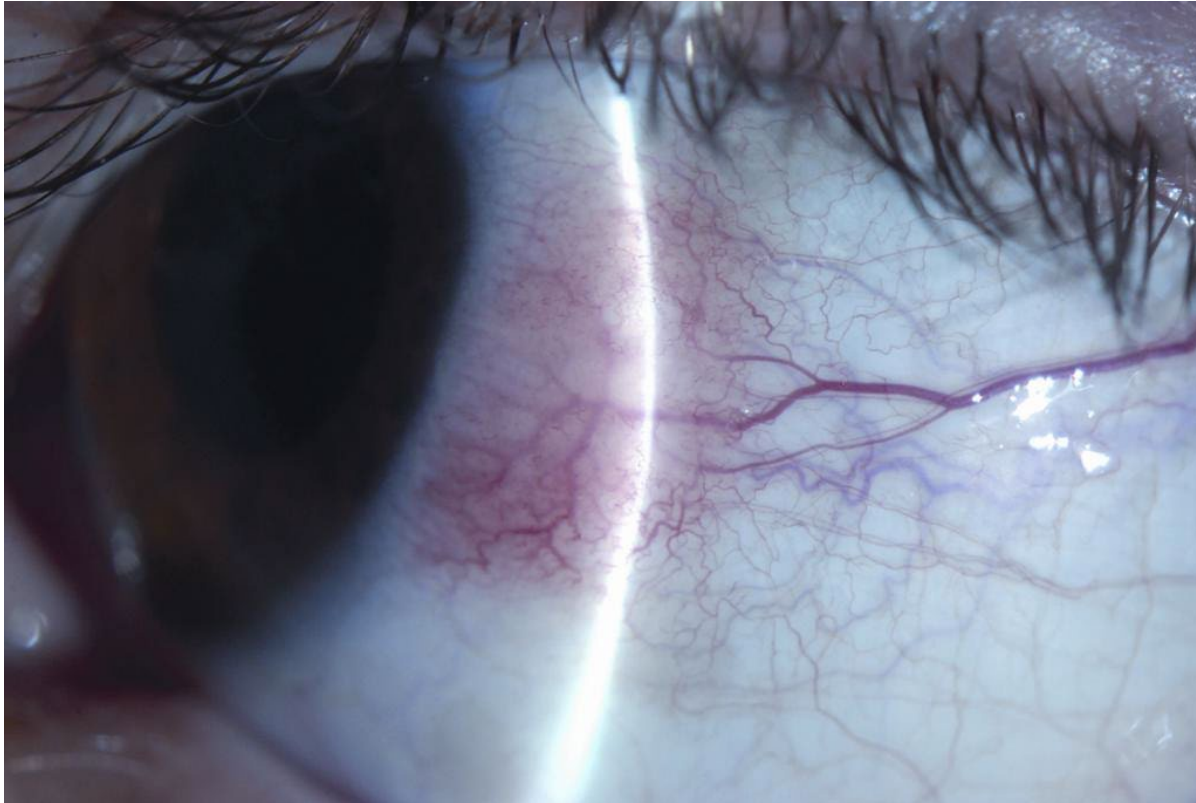
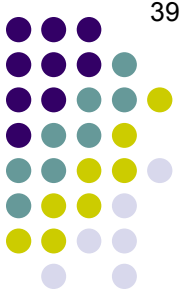
Ocular(odermal) melanocytosis

Nevus

Pre-malignant

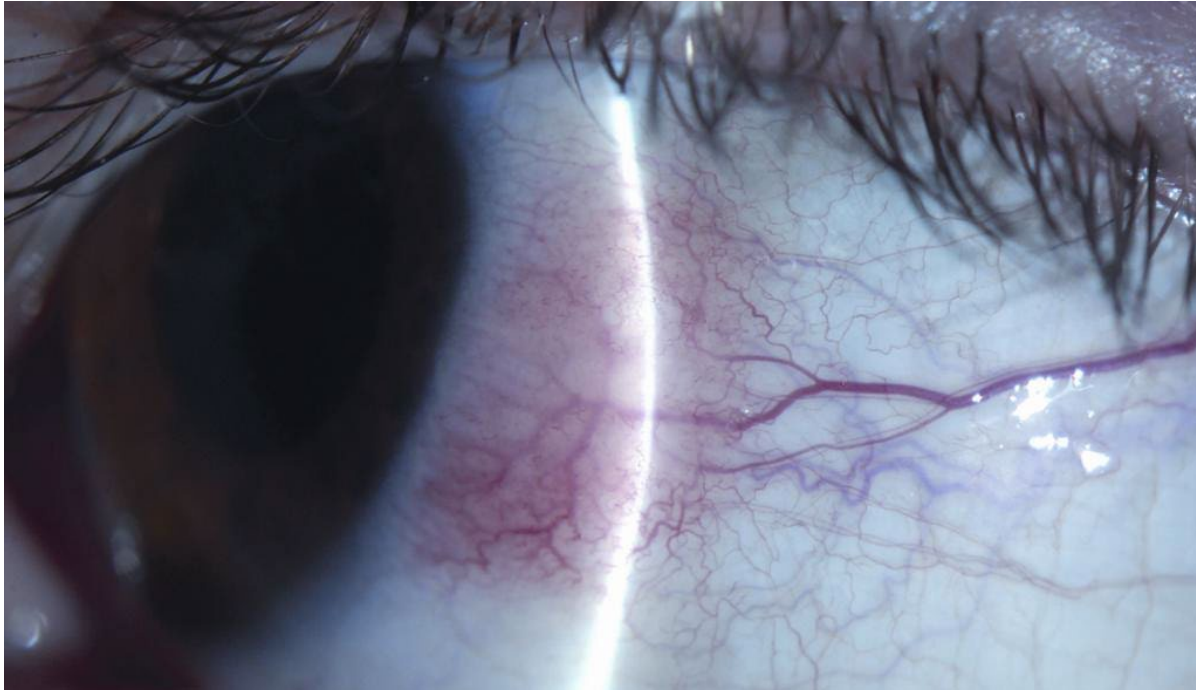
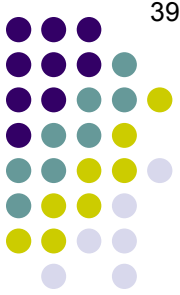
Malignant

Melanocytic Eyelid and Epibulbar Lesions



Conjunctival nevus: Nonpigmented

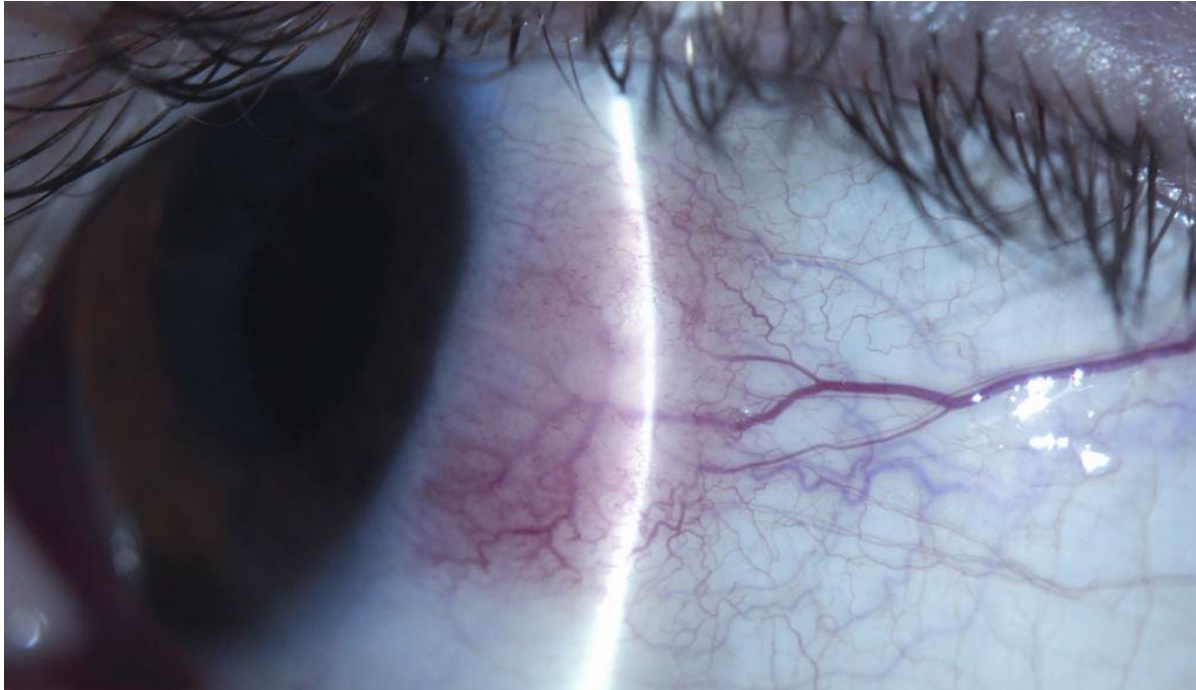
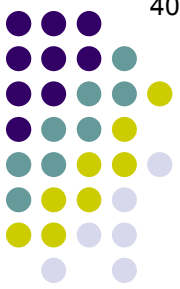
Melanocytic Eyelid and Epibulbar Lesions



But...But I can still see it—it clearly has a pinkish color. How can it be called 'nonpigmented'?

Conjunctival nevus: Nonpigmented

Melanocytic Eyelid and Epibulbar Lesions



But...But I can still see it—it clearly has a pinkish color. How can it be called ‘nonpigmented’?
The term *nonpigmented* here doesn’t mean ‘lacking in color’; it means lacking in *pigment*, specifically the pigment known as melanin. (The more term *amelanotic* is more accurate, probably preferable.)

Conjunctival nevus: Nonpigmented



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Do conj nevi go through the same three-stage life cycle as lid nevi?

Pre-m

M

--Junctional
--Compound
--Dermal

?

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Blue nevus
Ocular(odermal) melanocytosis

Nevus

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Do conj nevi go through the same three-stage life cycle as lid nevi?

Essentially yeah, but of course there's no dermis in the conj, so there can't be a dermal stage.

Pre-m

M

- Junctional
- Compound
- Dermal

Epithelial
melanocytes

Subepithelial
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CAM

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Pre-m

M

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--Compound
--?

Epithelial
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Nevus cells

Benign

Ephelis
CAM

Blue nevus
Ocular(odermal) melanocytosis

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Pre-malignant

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Melanocytic Eyelid and Epibulbar Lesions

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As noted earlier in the set, the conj 'dermis' is the *subepithelium* or *stroma*.

Pre-m

M

- Junctional
- Compound
- Stromal/subepithelial*

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Blue nevus
Ocular(odermal) melanocytosis

Nevus

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

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Pre-malignant *Where are the nevus cells at each stage?*

Malignant

--Junctional: ?

--Compound

--*Stromal/subepithelial*

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Blue nevus

Ocular(odermal) melanocytosis

Nevus

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

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Pre-malignant *Where are the nevus cells at each stage?*

Note that the conj has an *epithelium*, not an epidermis, so the 'junction' of the junctional stage is that of the epithelium and stroma/subepi.

--Junctional: The epithelial-stromal/subepi junction

--Compound

--*Stromal/subepithelial*

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis

CAM

Blue nevus

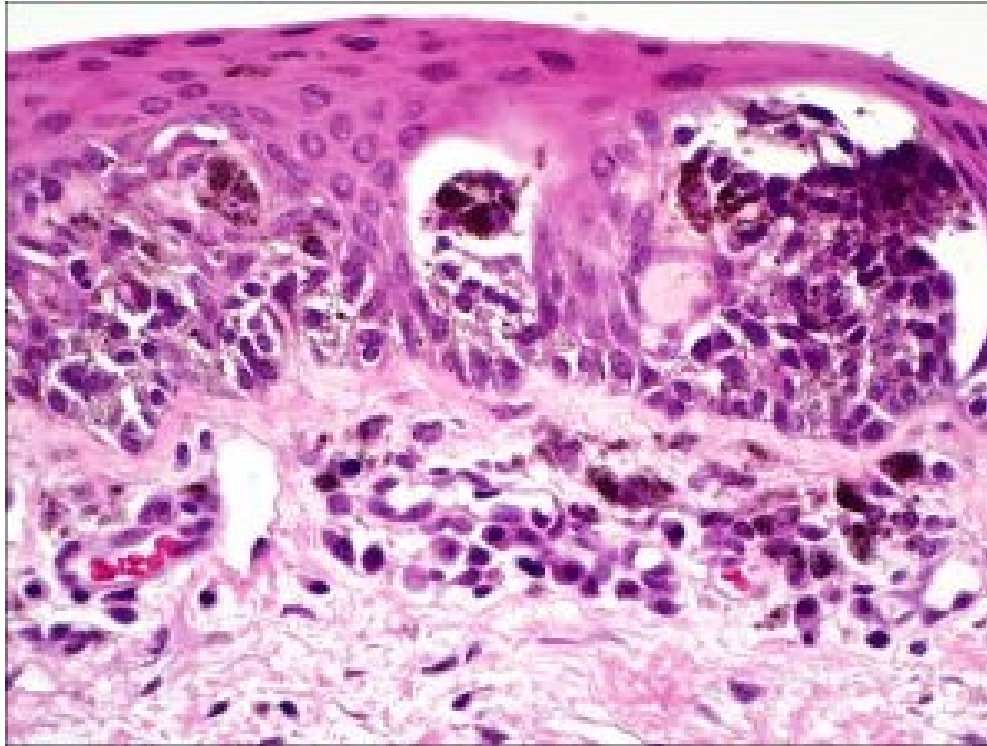
Ocular(odermal) melanocytosis

Nevus

Pre-malignant

Malignant

Melanocytic Eyelid and Epibulbar Lesions



Conjunctival nevus: Junctional



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

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--Junctional: The epithelial-stromal/subepi junction

--Compound: ?

--Stromal/subepithelial

Next Q

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Blue nevus

Ocular(odermal) melanocytosis

Nevus

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
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Pre-malignant *Where are the nevus cells at each stage?*

Note that the conj has an *epithelium*, not an epidermis, so the 'junction' of the junctional stage is that of the epithelium and stroma/subepi. Similarly, the 'compound stage' involves nevus cells extending down into the stroma/subepi and up through the epithelium.

--Junctional: The epithelial-stromal/subepi junction

--Compound: Extending down into the stroma/subepi, and up through the epithelium

--*Stromal/subepithelial*

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Blue nevus

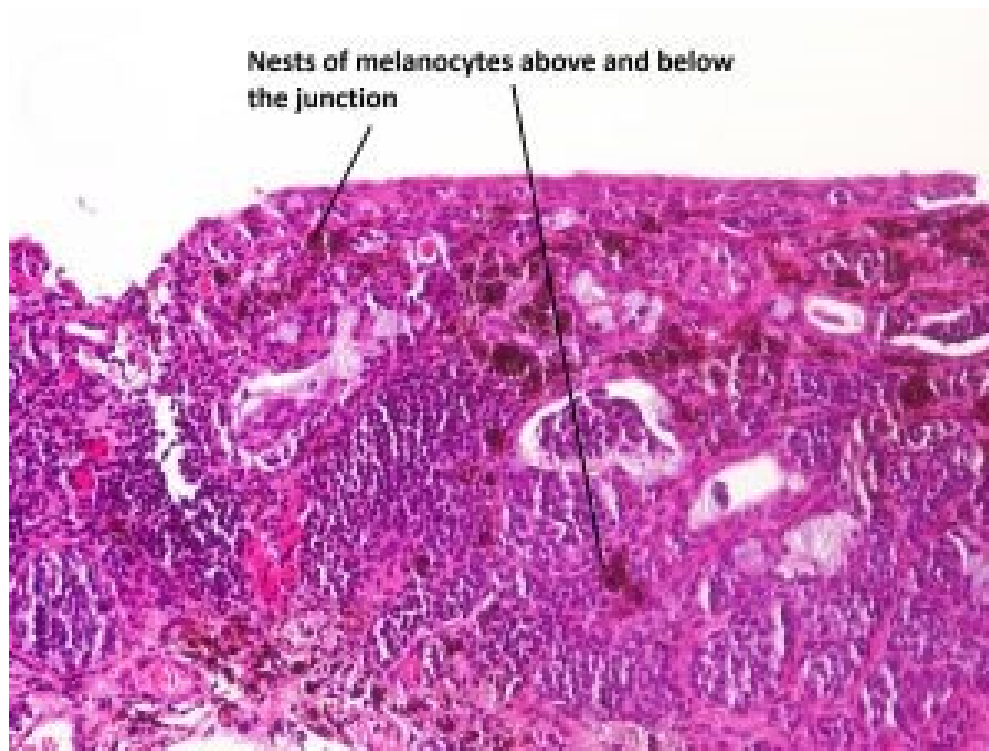
Ocular(odermal) melanocytosis

Nevus

Pre-malignant

Malignant

Melanocytic Eyelid and Epibulbar Lesions



Conjunctival nevus: Compound



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
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Nevus cells

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--Stromal/subepithelial: ?

Next Q

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Blue nevus

Ocular(odermal) melanocytosis

Nevus

Pre-malignant

Malignant



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melanocytes

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--Junctional: The epithelial-stromal/subepi junction

--Compound: Extending down into the stroma/subepi, and up through the epithelium

--Stromal/subepithelial

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis

CAM

Blue nevus

Ocular(odermal) melanocytosis

Nevus

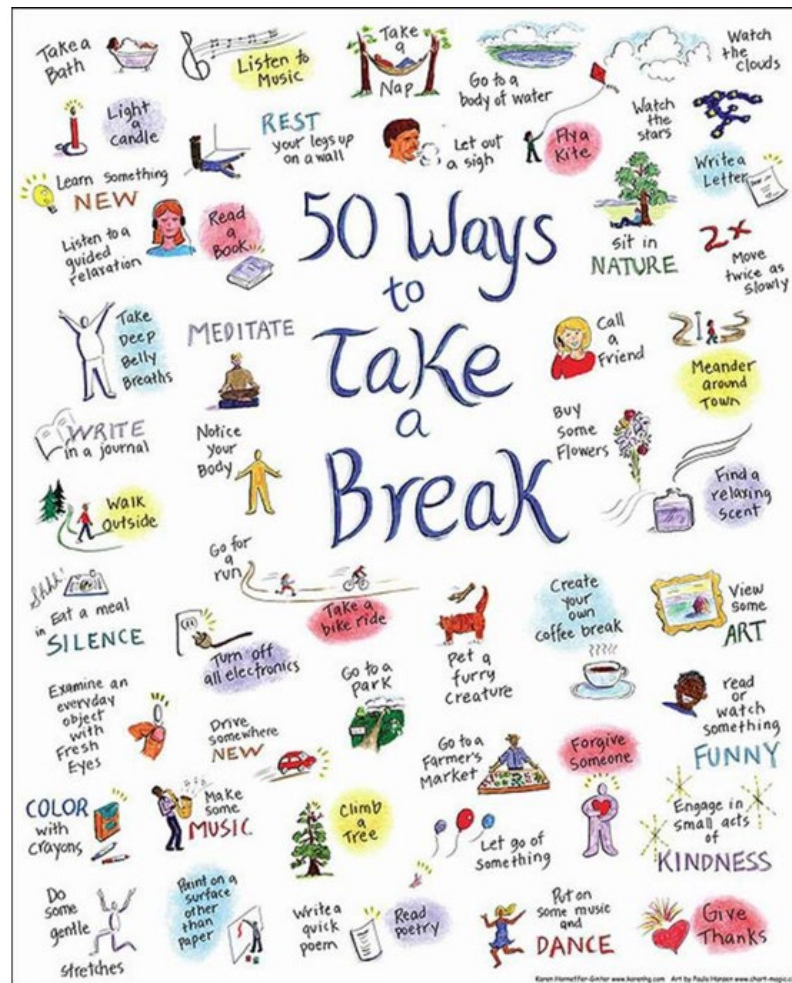
Pre-malignant

Malignant

Melanocytic Eyelid and Epibulbar Lesions



Conjunctival nevus: Stromal



(This is a good point in the set to take a break)



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

Nevus

Pre-malignant

Malignant

Next, let's look at *pre-malignant lesions deriving from dermal and subepithelial melanocytes*

Epibulbar tissue

Epithelial
melanocytes

Subepithelial
melanocytes

Nevus cells

Benign

Ephelis
CAM

Blue nevus
Ocular(odermal) melanocytosis

Nevus

Pre-malignant

Malignant

No question—proceed when ready



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

	Epidermal melanocytes	Dermal melanocytes	Nevus cells
Benign	Ephelis Lentigines	Blue nevus (Oculo)dermal melanocytosis	Nevus
Pre-malignant	?	} <i>What pre-malignant eyelid skin lesion is attributable to epidermal melanocytes?</i>	
Malignant		(We mentioned it previously)	

Epibulbar tissue

	Epithelial melanocytes	Subepithelial melanocytes	Nevus cells
Benign	Ephelis CAM	Blue nevus Ocular(odermal) melanocytosis	Nevus
Pre-malignant			
Malignant			



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

	Epidermal melanocytes	Dermal melanocytes	Nevus cells
Benign	Ephelis Lentigines	Blue nevus (Oculo)dermal melanocytosis	Nevus
Pre-malignant	Lentigo maligna	<i>What pre-malignant eyelid skin lesion is attributable to epidermal melanocytes?</i> (We mentioned it previously)	
Malignant			

Epibulbar tissue

	Epithelial melanocytes	Subepithelial melanocytes	Nevus cells
Benign	Ephelis CAM	Blue nevus Ocular(odermal) melanocytosis	Nevus
Pre-malignant			
Malignant			



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

	Epidermal melanocytes	Dermal melanocytes	Nevus cells
Benign	Ephelis Lentigines	Blue nevus (Oculo)dermal melanocytosis	Nevus
Pre-malignant	Lentigo maligna		
Malignant			

Epibulbar tissue

	Epithelial melanocytes	Subepithelial melanocytes	Nevus cells
Benign	Ephelis CAM	Blue nevus Ocular(odermal) melanocytosis	Nevus
Pre-malignant	? } <i>What is its epibulbar equivalent?</i>		
Malignant			



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

	Epidermal melanocytes	Dermal melanocytes	Nevus cells
Benign	Ephelis Lentigines	Blue nevus (Oculo)dermal melanocytosis	Nevus
Pre-malignant	Lentigo maligna		
Malignant			

Epibulbar tissue

	Epithelial melanocytes	Subepithelial melanocytes	Nevus cells
Benign	Ephelis CAM	Blue nevus Ocular(odermal) melanocytosis	Nevus
Pre-malignant	PAM } <i>What is its epibulbar equivalent?</i>		
Malignant			



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

	Epidermal melanocytes	Dermal melanocytes	Nevus cells
Benign	Ephelis Lentigines	Blue nevus (Oculo)dermal melanocytosis	Nevus
Pre-malignant	Lentigo maligna		
Malignant			

Epibulbar tissue

	Epithelial melanocytes	Subepithelial melanocytes	Nevus cells
Benign	Ephelis CAM	Blue nevus Ocular(odermal) melanocytosis	Nevus
Pre-malignant	PAM	What does PAM stand for in this context?	
Malignant			



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

	Epidermal melanocytes	Dermal melanocytes	Nevus cells
Benign	Ephelis Lentigines	Blue nevus (Oculo)dermal melanocytosis	Nevus
Pre-malignant	Lentigo maligna		
Malignant			

Epibulbar tissue

	Epithelial melanocytes	Subepithelial melanocytes	Nevus cells
Benign	Ephelis CAM	Blue nevus Ocular(odermal) melanocytosis	Nevus
Pre-malignant	PAM	<i>What does PAM stand for in this context?</i> Primary acquired melanosis	
Malignant			

Melanocytic Eyelid and Epibulbar Lesions



Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

Nevus

Pre-malignant

Lentigo maligna

Who is at risk for lentigo maligna?

M

vus cells

evus

Pre-malignant

PAM

Malignant

Melanocytic Eyelid and Epibulbar Lesions



Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

Nevus

Pre-malignant

Lentigo maligna

Who is at risk for lentigo maligna?

M Old white people—the older and whiter they are, the greater the risk

vus cells

evus

Pre-malignant

PAM

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

Nevus

Pre-malignant

Lentigo maligna

Who is at risk for lentigo maligna?

M Old white people—the older and **whiter** they are, the greater the risk

“The whiter”—what does this mean exactly?

Pre-malignant

PAM

Malignant

vus cells

evus



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Ephelis
Lentigines

Dermal melanocytes

Blue nevus
(Oculo)dermal melanocytosis

Nevus cells

Nevus

Benign

Pre-malignant

Lentigo maligna

Who is at risk for lentigo maligna?

M Old white people—the older and **whiter** they are, the greater the risk

“The whiter”—what does this mean exactly?

Simply that individuals with a fairer complexion are at greater risk

Pre-malignant

PAM

Malignant

vus cells

evus



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Ephelis
Lentigines

Dermal melanocytes

Blue nevus
(Oculo)dermal melanocytosis

Nevus cells

Nevus

Benign

Pre-malignant

Lentigo maligna

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When lentigo maligna of the lids is present, it often has spread from what location?

Pre-malignant

PAM

Malignant

vus cells

evus



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Ephelis
Lentigines

Dermal melanocytes

Blue nevus
(Oculo)dermal melanocytosis

Nevus cells

Nevus

Benign

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That sun-exposed part of the face, specifically the region

vus cells

evus

Pre-malignant

PAM

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Ephelis
Lentigines

Dermal melanocytes

Blue nevus
(Oculo)dermal melanocytosis

Nevus cells

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That sun-exposed part of the face, specifically the malar region

vus cells

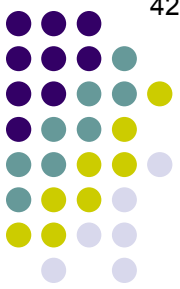
evus

Pre-malignant

PAM

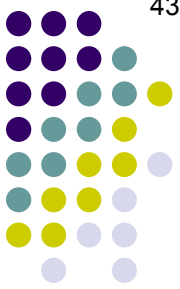
Malignant

Melanocytic Eyelid and Epibulbar Lesions



Lentigo maligna that has spread from the malar region to the lid

Melanocytic Eyelid and Epibulbar Lesions



Callback to a pic from earlier in the set that referred to the malar region as “sun-exposed”

Classic ephelides concentration across the sun-exposed malar region



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Ephelis
Lentigines

Dermal melanocytes

Blue nevus
(Oculo)dermal melanocytosis

Nevus cells

Nevus

Benign

Pre-malignant

Lentigo maligna

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That sun-exposed part of the face, specifically the malar region

How can lentigo maligna be distinguished from simple and solar lentigines?

vus cells

evus

Pre-malignant

PAM

Malignant



Melanocytic Eyelid and Epibulbar Lesions

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Lentigo maligna lesions tend to be

larger vs
smaller

vus cells

vus

Pre-malignant

PAM

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Ephelis
Lentigines

Dermal melanocytes

Blue nevus
(Oculo)dermal melanocytosis

Nevus cells

Nevus

Benign

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Lentigo maligna lesions tend to be larger

vus cells

evus

Pre-malignant

PAM

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Ephelis
Lentigines

Dermal melanocytes

Blue nevus
(Oculo)dermal melanocytosis

Nevus cells

Nevus

Benign

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Lentigo maligna lesions tend to be larger, to have borders that are more

regular vs
irregular

Pre-malignant

PAM

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Ephelis
Lentigines

Dermal melanocytes

Blue nevus
(Oculo)dermal melanocytosis

Nevus cells

Nevus

Benign

Pre-malignant

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vus cells

evus

Pre-malignant

PAM

Malignant



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Epidermal melanocytes

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Lentigo maligna lesions tend to be larger, to have borders that are more irregular, and to have more vs less color variation within them than do the lentigines

vus cells

evus

Pre-malignant

PAM

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Ephelis
Lentigines

Dermal melanocytes

Blue nevus
(Oculo)dermal melanocytosis

Nevus cells

Nevus

Benign

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Lentigo maligna

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That sun-exposed part of the face, specifically the malar region

How can lentigo maligna be distinguished from simple and solar lentigines?

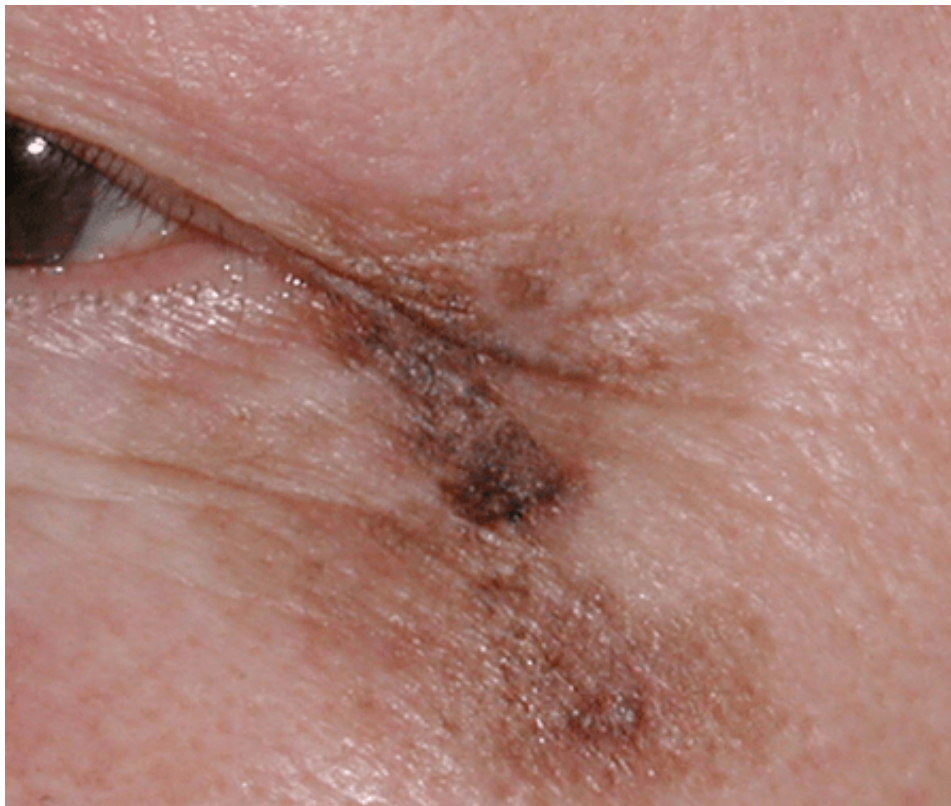
Lentigo maligna lesions tend to be larger, to have borders that are more irregular, and to have more color variation within them than do the lentigines

Pre-malignant

PAM

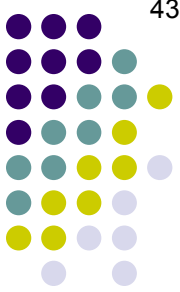
Malignant

Melanocytic Eyelid and Epibulbar Lesions



Lentigo maligna. Note the color variation, irregular borders

Melanocytic Eyelid and Epibulbar Lesions



Solar lentigines for comparison. Within each lesion note the regular borders, uniform coloring.



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Ephelis
Lentigines

Dermal melanocytes

Blue nevus
(Oculo)dermal melanocytosis

Nevus cells

Nevus

Benign

Pre-malignant

Lentigo maligna

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When lentigo maligna of the lids is present, it often has spread from what location?

That sun-exposed part of the face, specifically the malar region

How can lentigo maligna be distinguished from simple and solar lentigines?

Lentigo maligna lesions tend to be **larger**, to have borders that are more irregular, and to have more color variation within them than do the lentigines

The size of a lentigo maligna lesion differ from that of the lentigines in another important way—what is it?

Pre-malignant

PAM

Malignant

Nevus cells

Nevus



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Ephelis
Lentigines

Dermal melanocytes

Blue nevus
(Oculo)dermal melanocytosis

Nevus cells

Nevus

Benign

Pre-malignant

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Lentigo maligna lesions tend to be **larger and larger and larger and irregular**, and to have more color variation within them than do the lentigines

The size of a lentigo maligna lesion differ from that of the lentigines in another important way—what is it?

The size of the maligna lesion expands—rapid radial growth is the rule

Pre-malignant

PAM

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Ephelis
Lentigines

Dermal melanocytes

Blue nevus
(Oculo)dermal melanocytosis

Nevus cells

Nevus

Benign

Pre-malignant

Lentigo maligna

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The size of a lentigo maligna lesion differ from that of the lentigines in another important way—what is it?

The size of the maligna lesion expands—**rapid radial growth** is the rule

Pre-malignant

PAM

What is the underlying cause of this radial growth?

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Ephelis
Lentigines

Dermal melanocytes

Blue nevus
(Oculo)dermal melanocytosis

Nevus cells

Nevus

Benign

Pre-malignant

Lentigo maligna

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The size of a lentigo maligna lesion differ from that of the lentigines in another important way—what is it?

The size of the maligna lesion expands—**rapid radial growth** is the rule

Pre-malignant

PAM

What is the underlying cause of this radial growth?
Unchecked intradermal proliferation of melanocytes

Malignant

Nevus cells

Nevus



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

Nevus

Pre-malignant

Lentigo maligna

Who is at risk for lentigo maligna?

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When lentigo maligna of the lids is present, it often has spread from what location?

That sun-exposed part of the face, specifically the malar region

How can lentigo maligna be distinguished from simple and solar lentigines?

Lentigo maligna lesions tend to be **larger and larger and larger and** irregular, and to have more color variation within them than do the lentigines

Can an eyelid lentigo maligna lesion spread from that of the lentigines in
across the gray line to the palpebral conj?

rapid radial growth is the rule

Pre-malignant

PAM

What is the underlying cause of this radial growth?
Unchecked intradermal proliferation of melanocytes

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Ephelis
Lentigines

Dermal melanocytes

Blue nevus
(Oculo)dermal melanocytosis

Nevus cells

Nevus

Benign

Pre-malignant

Lentigo maligna

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When lentigo maligna of the lids is present, it often has spread from what location?

That sun-exposed part of the face, specifically the malar region

How can lentigo maligna be distinguished from simple and solar lentigines?

Lentigo maligna lesions tend to be **larger and larger and larger and** irregular, and to have more color variation within them than do the lentigines

Can an eyelid lentigo maligna lesion spread across the gray line to the palpebral conj?

Indeed it can

rapid radial growth is the rule

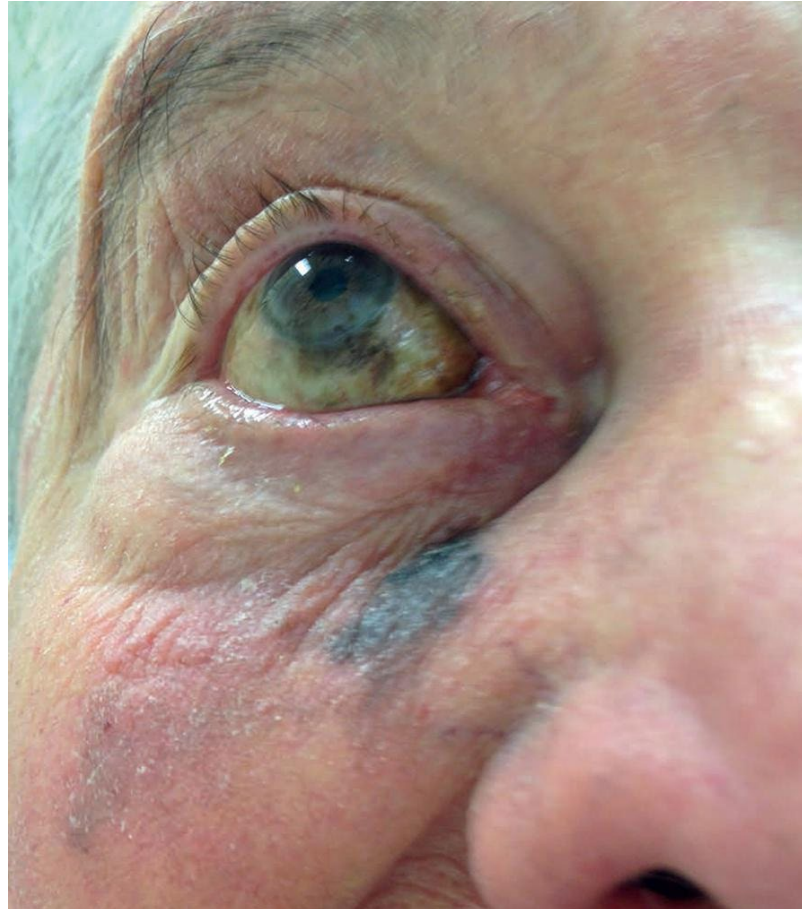
Pre-malignant

PAM

What is the underlying cause of this radial growth?
Unchecked intradermal proliferation of melanocytes

Malignant

Melanocytic Eyelid and Epibulbar Lesions



Lentigo maligna crossing onto the palpebral conj



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Ephelis
Lentigines

Dermal melanocytes

Blue nevus
(Oculo)dermal melanocytosis

Nevus cells

Nevus

Benign

Pre-malignant

Lentigo maligna

Who is at risk for lentigo maligna?

Old white people—the older and whiter they are, the greater the risk

When lentigo maligna of the lids is present, it often has spread from what location?

That sun-exposed part of the face, specifically the malar region

How can lentigo maligna be distinguished from simple and solar lentigines?

Lentigo maligna lesions tend to be larger, to have borders that are more irregular, and to have more color variation within them than do the lentigines

Are lentigo maligna lesions flat, or elevated?

Pre-malignant

PAM

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Ephelis
Lentigines

Dermal melanocytes

Blue nevus
(Oculo)dermal melanocytosis

Nevus cells

Nevus

Benign

Pre-malignant

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Flat

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Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

Nevus

Pre-malignant

Lentigo maligna

Who is at risk for lentigo maligna?

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*What is suggested by the presence of an **elevated** component to an otherwise flat lentigo maligna lesion?*

*ad from what location?
gion*

olar lentigines?

*that are more irregular,
ntigines*

Nevus cells

Nevus

Are lentigo maligna lesions flat, or elevated?

Flat

Pre-malignant

PAM

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
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Blue nevus
(Oculo)dermal melanocytosis

Nevus

Pre-malignant

Lentigo maligna

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*What is suggested by the presence of an **elevated** component to an otherwise flat lentigo maligna lesion?*

That this portion of the lesion is now undergoing *vertical* growth

ad from what location?
gion

olar lentigines?

that are more irregular,
ntigines

vus cells

vus

Are lentigo maligna lesions flat, or elevated?

Flat

Pre-malignant

PAM

Malignant

Melanocytic Eyelid and Epibulbar Lesions



Lentigo maligna lesion containing several areas of vertical growth



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

Nevus

Pre-malignant

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Vertical growth is an ominous sign—why?

ad from what location?
gion

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us cells

evus

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Flat

Pre-malignant

PAM

Malignant



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Pre-malignant

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That this portion of the lesion is now undergoing *vertical* growth

Vertical growth is an ominous sign—why?

It indicates this portion has transformed from lentigo maligna into full-blown lentigo maligna **melanoma**

ad from what location?
gion

olar lentigines?

that are more irregular,
ntigines

vus cells

evus

Are lentigo maligna lesions flat, or elevated?

Flat

Pre-malignant

PAM

Malignant



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Eyelid Skin

Epidermal
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ad from what location?
gion

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It indicates this portion has **transformed from lentigo maligna into full-blown melanoma**

olar lentigines?
that are more irregular,
ntigines

vus cells

Are lentigo maligna flat to transform into melanoma?

vus

Pre-malignant

PAM

Malignant



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Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

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ad from what location?
gion

Vertical growth is an ominous sign—why?

It indicates this portion has **transformed from lentigo maligna into full-blown melanoma**

olar lentigines?

that are more irregular,
ntigines

vus cells

Are lentigo maligna flat

Is this a common occurrence—for lentigo maligna to transform into melanoma?

Not really—only % - % will do so

vus

Pre-malignant

PAM

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
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ad from what location?
gion

Vertical growth is an ominous sign—why?

It indicates this portion has **transformed from lentigo maligna into full-blown melanoma**

solar lentigines?

that are more irregular,
ntigines

vus cells

Are lentigo maligna lesions flat?

Is this a common occurrence—for lentigo maligna to transform into melanoma?

Not really—only 2-3% will do so

evus

Pre-malignant

PAM

Malignant

Melanocytic Eyelid and Epibulbar Lesions



Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Ephelis

Blue nevus

Nevus

Who is at risk for developing PAM?

Pre-malignant

PAM

Malignant

Nevus cells

Nevus

sis

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To be clear: *What I'm saying is, if you encounter a lesion suspicious for PAM, you must perform an excisional biopsy!*

Nevus cells

Nevus

sis

Pre-malignant

PAM

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No question—proceed when ready



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Yes; these include:

--Whereas % of conj nevi are cystic, the proportion of PAM lesions that are cystic is %

--

--

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Yes; these include:

--Whereas half of conj nevi are cystic, the proportion of PAM lesions that are cystic is none

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Pre-malignant

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Yes; these include:

--Whereas half of conj nevi are cystic, the proportion of PAM lesions that are cystic is none

--PAM pigment is often distributed in a pattern described as **spicy**

--

--

--

Pre-malignant

PAM

Malignant



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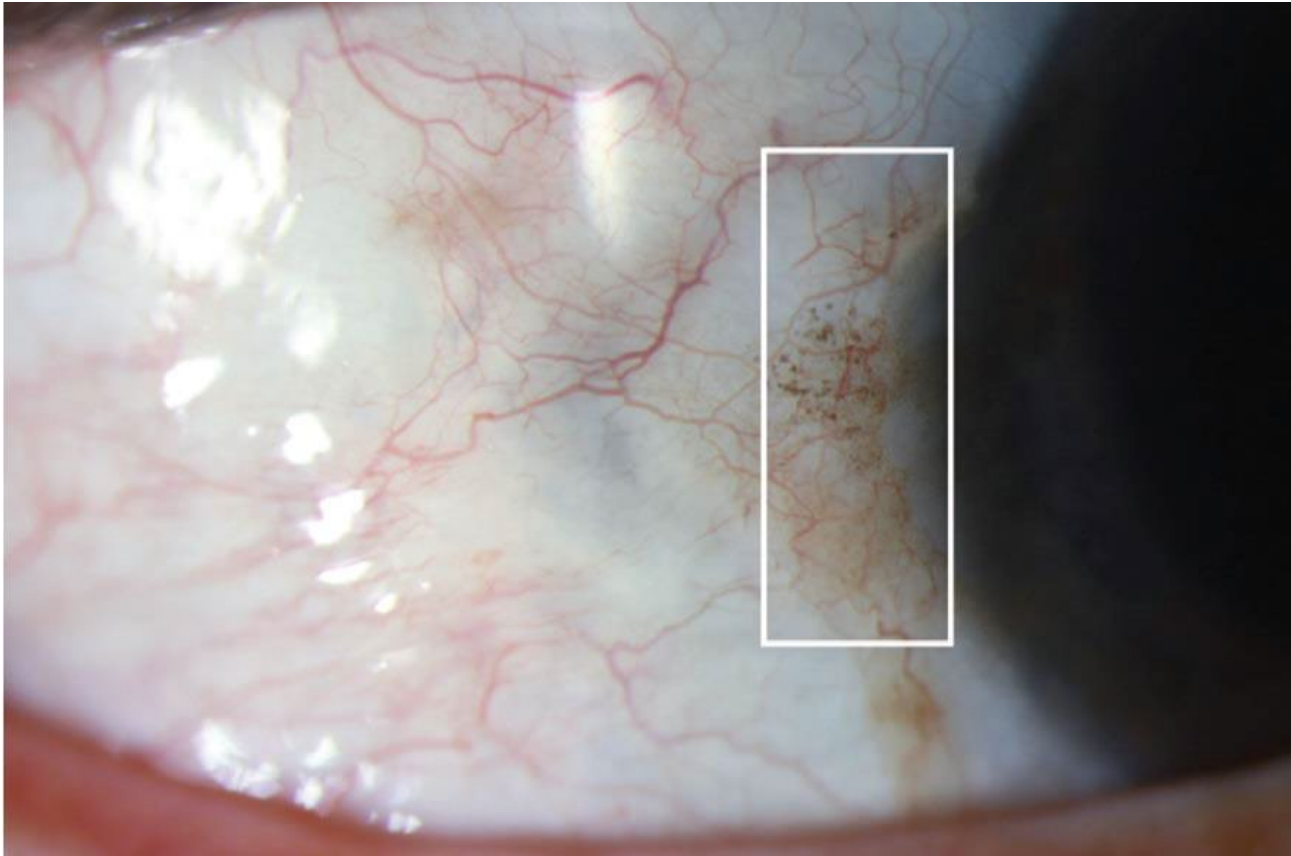
--
--
--

Pre-malignant

PAM

Malignant

Melanocytic Eyelid and Epibulbar Lesions



Primary acquired melanosis (PAM). Slit-lamp photograph of a 72-year- old white man that shows “peppery” pigmentation of the perilimbal conjunctiva [rectangle].



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--PAM pigment is often distributed in a pattern described as 'peppery'

--If the lesion continues to enlarge after life-stage

--

--

Pre-malignant

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-
-

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a nevus?

t are cystic is none

--If the lesion **continues to enlarge** after puberty

--

--

s cells

Nevus

sis

Pre-malignant

PAM

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--If the lesion **continues to enlarge** after puberty

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- PAM pigment is often distributed in a pattern described as 'peppery'
- If the lesion continues to enlarge after puberty
- If develop within it
-

Pre-malignant

PAM

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-

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- If the lesion continues to enlarge after puberty
- If nodules develop within it
- If it has two words

Pre-malignant

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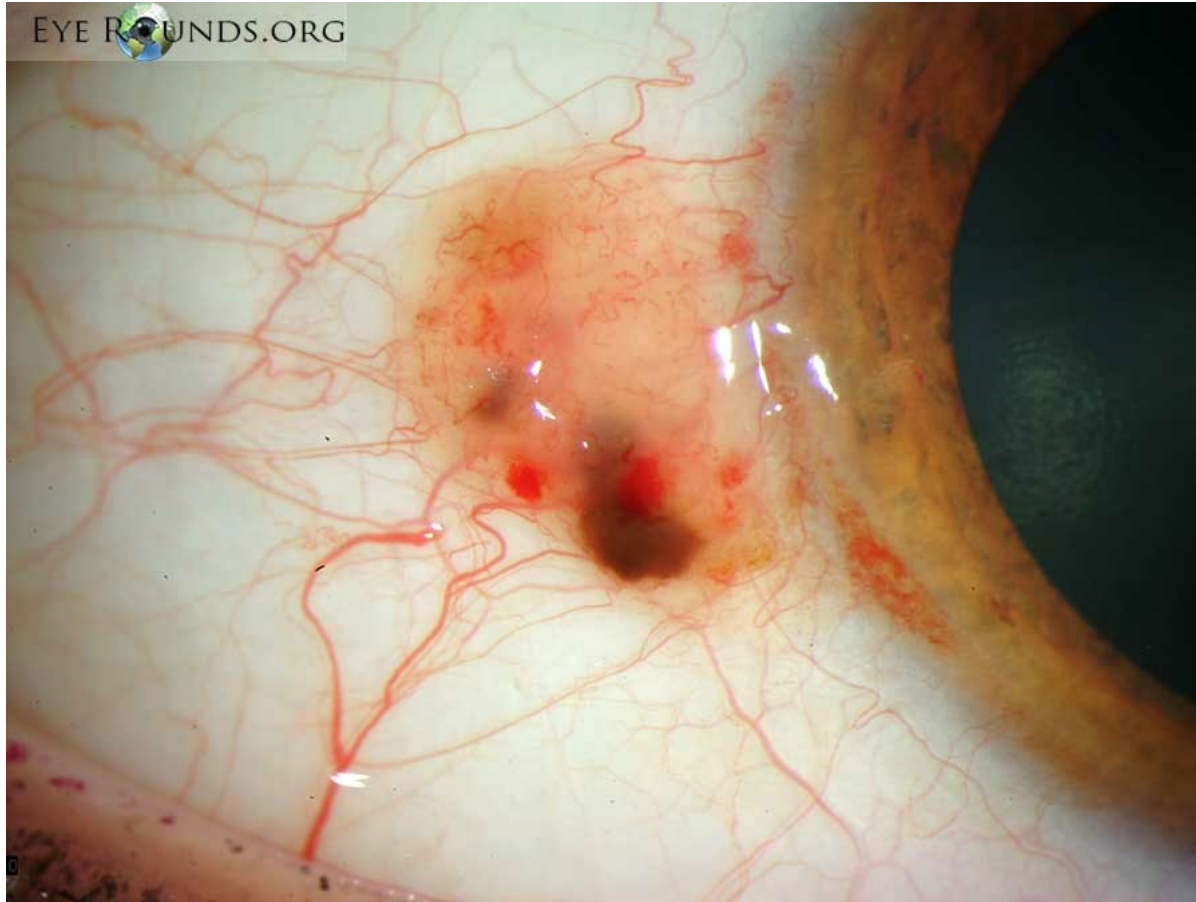
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- PAM pigment is often distributed in a pattern described as 'peppery'
- If the lesion continues to enlarge after puberty
- If nodules develop within it
- If it has feeder vessels

Pre-malignant

PAM

Malignant

Melanocytic Eyelid and Epibulbar Lesions



Note the nodularity, and feeder vessels (disclosure: this is a melanoma, not PAM)



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Pre-malignant

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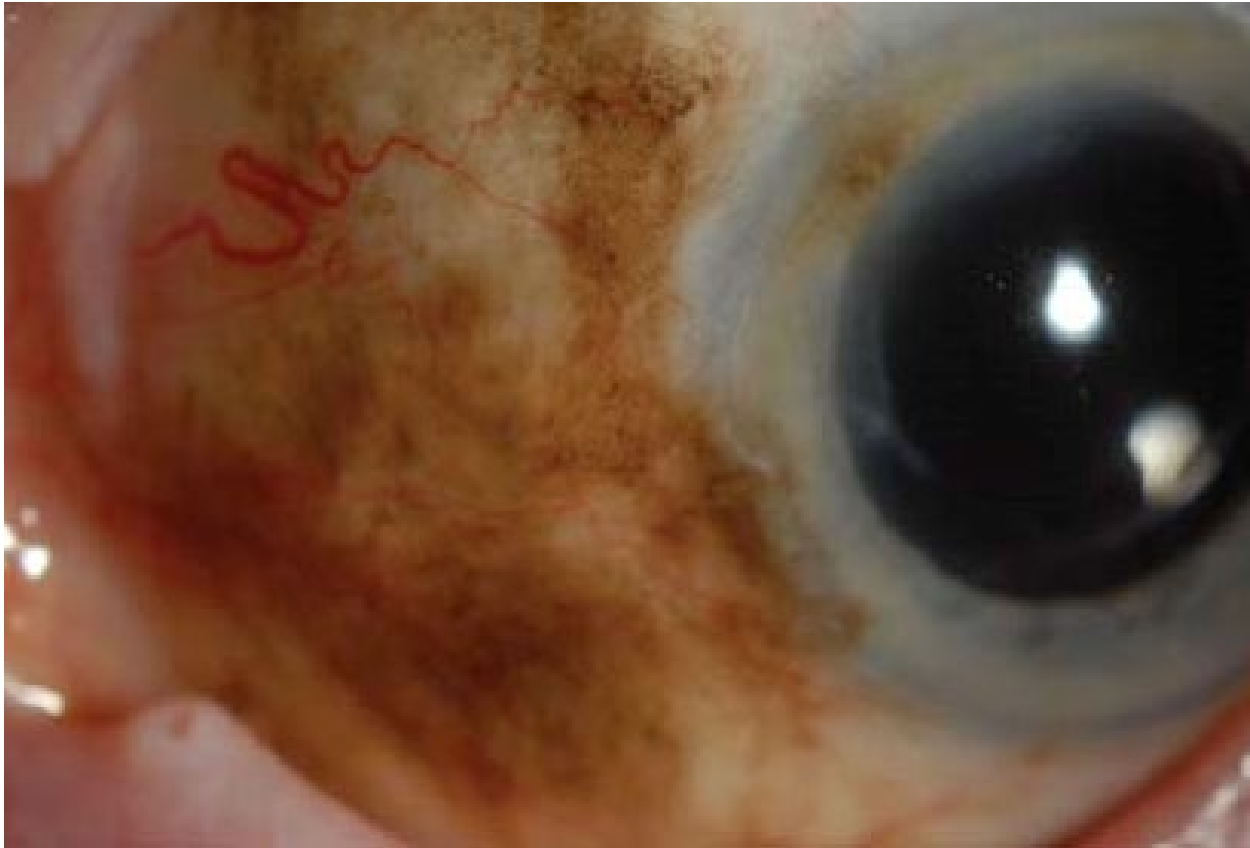
Flat (like lentigo maligna)

Pre-malignant

PAM

Malignant

Melanocytic Eyelid and Epibulbar Lesions



PAM, bulbar conj: Large, flat, no cysts; pt white, elderly
(I'm inferring they're aged by the fact they're s/p CE)



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PAM

Malignant

Nevus cells

Nevus

sis



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Also like lentigo maligna: Is malignant transformation of PAM an unlikely occurrence?

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Yes, but...(we will unpack this shortly)

Pre-malignant

PAM

Malignant

Nevus cells

Nevus

sis



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Speaking of the pathologist...She divvies PAM into two types. What are they?

--?

--?

How do you differentiate between PAM and lentigo maligna at the slit lamp?

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sis



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Speaking of the pathologist...She divvies PAM into two types. What are they?

--PAM without word

--PAM with same word

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sis



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Speaking of the pathologist...She divvies PAM into two types. What are they?

- PAM without atypia
- PAM with atypia

How do you differentiate between PAM and lentigo maligna at the slit lamp?
 You don't—this can only be done at **the pathologist's bench**

Are PAM lesions flat, or elevated?
 Flat (like lentigo maligna)

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 Yes

Also like lentigo maligna: Is malignant transformation of PAM an unlikely occurrence?
 Yes, but...(we will unpack this shortly)

Pre-malignant

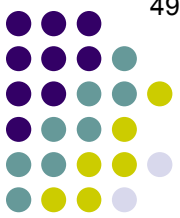
PAM

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Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Speaking of the pathologist...She divvies PAM into two types. What are they?

--PAM without atypia

--PAM with atypia

Proliferating melanocytes are found in both types. What determines whether a lesion is with vs without atypia?

Are PAM lesions flat, or elevated?

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Eyelid Skin

Speaking of the pathologist...She divvies PAM into two types. What are they?

--PAM without atypia

--PAM with atypia

Proliferating melanocytes are found in both types. What determines whether a lesion is with vs without atypia?

It hinges upon two aspects of the melanocytes: Their [redacted], and whether they display [redacted] features

Are PAM lesions flat, or elevated?

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Eyelid Skin

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--PAM without atypia

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It hinges upon two aspects of the melanocytes: Their location, and whether they display atypical features

Are PAM lesions flat, or elevated?

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Are PAM lesions flat, or elevated?

Flat (like lentigo maligna)

As is the case with the lentigo maligna component an alarming
Yes

Also like lentigo maligna
Yes, but...(we will unpack this later)

What are 'atypical features' histologically?

Atypical growth

occurrence?

Nevus cells

Nevus

sis

Pre-malignant

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Melanocytic Eyelid and Epibulbar Lesions

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atypical features

Are PAM lesions flat, or elevated?

Flat (like lentigo maligna)

What are 'atypical features' histologically?

The usual suspects, including:

--Mitotic

As is the case with the lentigo maligna component an alarming
Yes

Also like lentigo maligna
Yes, but...(we will unpack this)

ical growth

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sis

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--Mitotic figures

As is the case with the lentigo maligna component an alarming
Yes

Also like lentigo maligna
Yes, but...(we will unpack this)

atypical growth

occurrence?

Nevus cells

Nevus

sis

Pre-malignant

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Speaking of the pathologist...She divvies PAM into two types. What are they?

- PAM without atypia
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Proliferating melanocytes are found in both types. What determines whether a lesion is with vs without atypia?

*It hinges upon two aspects of the melanocytes: Their location, and whether they display **atypical features***

Are PAM lesions flat, or elevated?

Flat (like lentigo maligna)

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Yes

Also like lentigo maligna
Yes, but...(we will unpack this later)

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The usual suspects, including:

--Mitotic figures

--Cells that are:

abn big vs abn small

something-'oid'

in appearance

Pre-malignant

Malignant

atypical growth

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- Cells that are:
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 - 'Epithelioid' in appearance

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- Nuclei that are:

abn big vs abn small

shape issue

color issue

Pre-malignant

Malignant

ical growth

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- Cells that are:
 - Enlarged
 - 'Epithelioid' in appearance
- Nuclei that are:
 - Enlarged
 - Pleomorphic
 - Hyperchromatic

As is the case with the component an alarming
Yes

Also like lentigo maligna
Yes, but...(we will unpack)

Pre-malignant

Malignant

ical growth

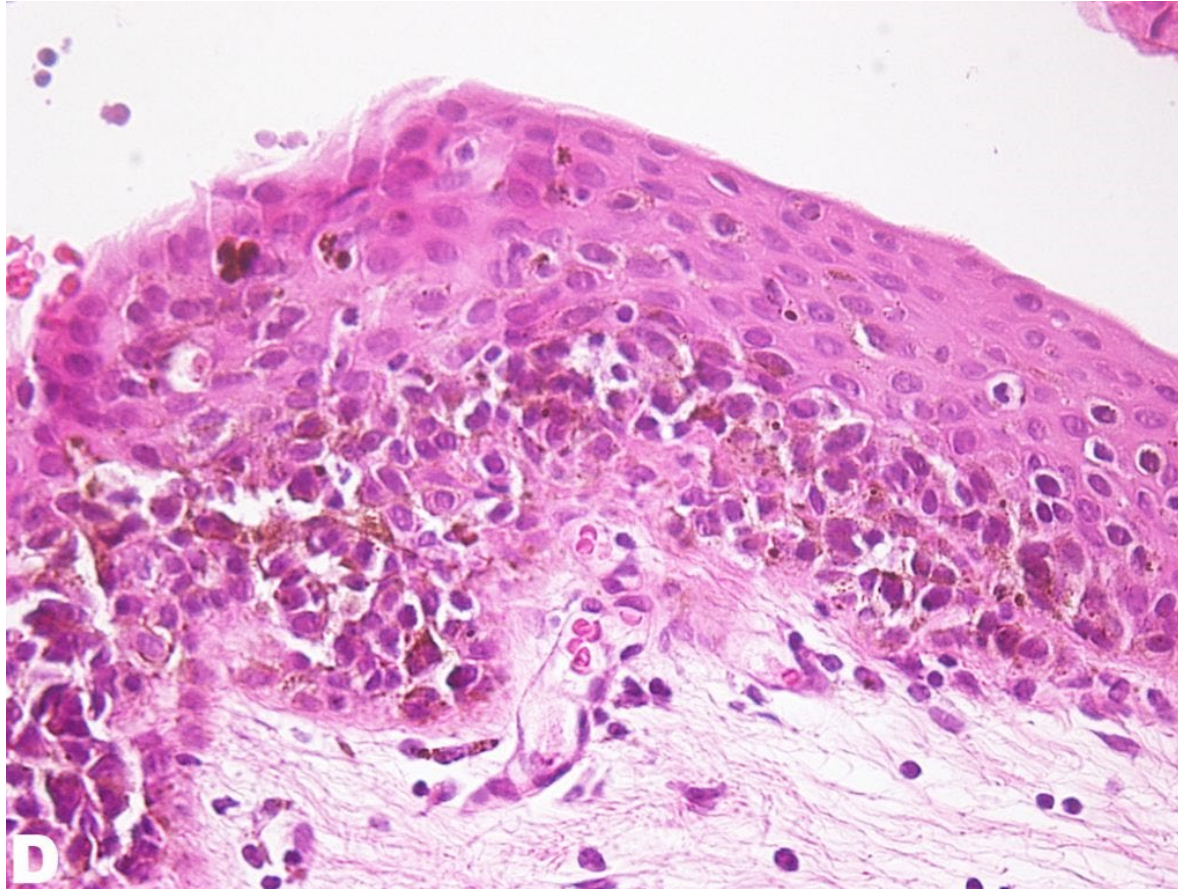
Nevus cells

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Melanocytic Eyelid and Epibulbar Lesions



PAM with atypia. Atypical, melanin-laden cells are present approximately midway through the epithelium



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

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Pre-malignant

PAM

Malignant

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Next question

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Pre-malignant

PAM

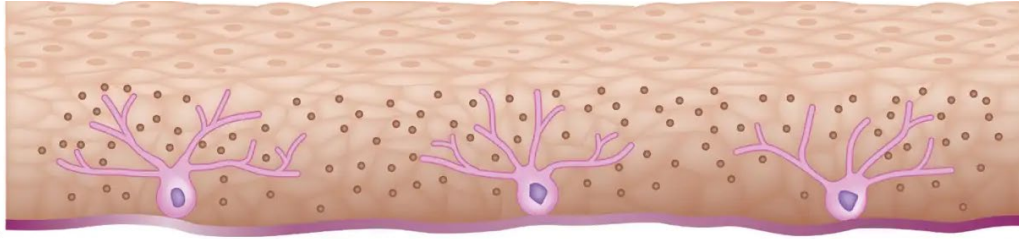
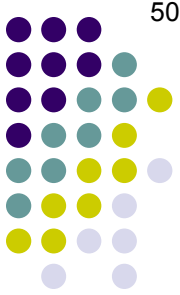
Malignant

Nevus cells

Nevus

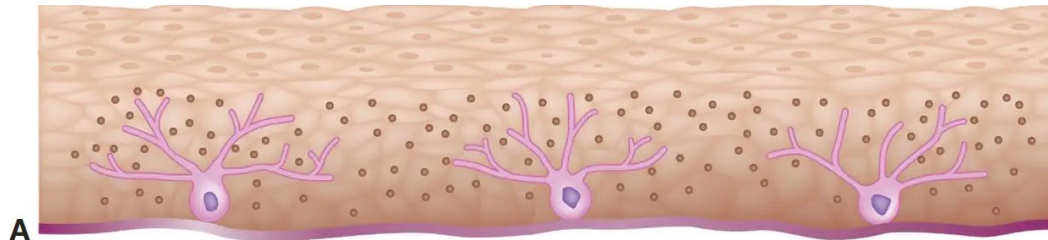
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Melanocytic Eyelid and Epibulbar Lesions

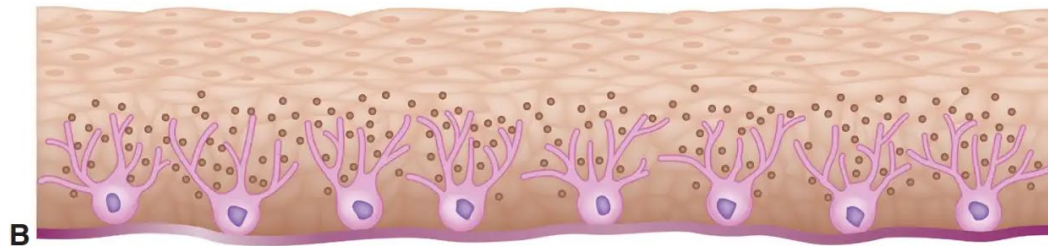


A, CAM. Recall that CAM is a *nonproliferative* process: The number of melanocytes is normal, they just produce an increased amount of melanin that gets transferred to the surrounding keratinocytes.

Melanocytic Eyelid and Epibulbar Lesions

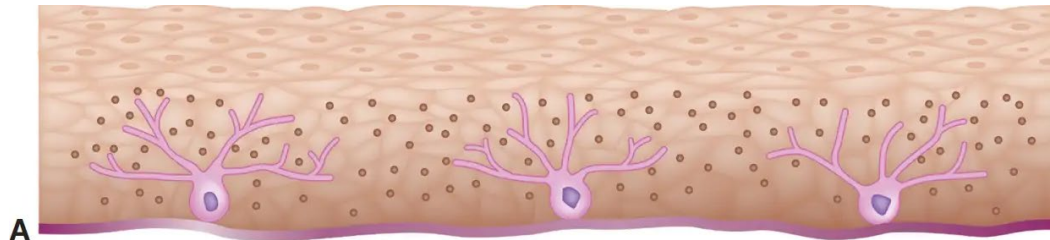


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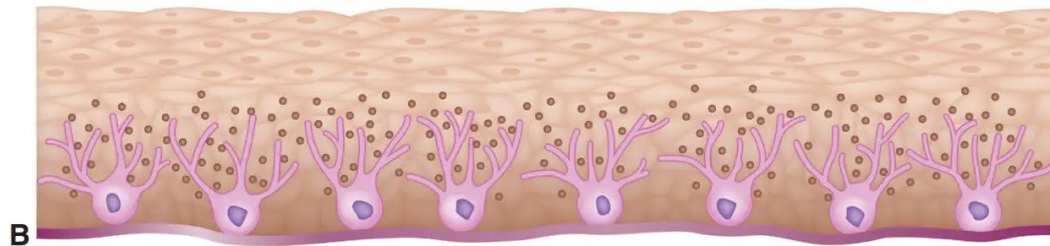


B, PAM without atypia, or with mild atypia. There is both increased pigment production and an increased number of melanocytes, but no or very mild change in melanocyte morphology.

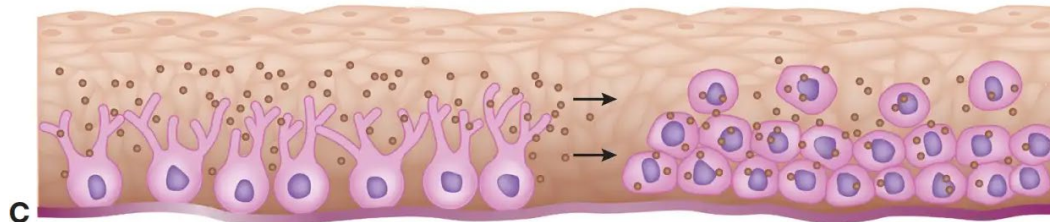
Melanocytic Eyelid and Epibulbar Lesions



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B, PAM without atypia, or with mild atypia. There is both increased pigment production and an increased number of melanocytes, but no or very mild change in melanocyte morphology.



C, PAM with moderate to severe atypia. There is increased pigment production and number of melanocytes, **and** 1) migration of melanocytes into the more superficial epithelial layers, as well as 2) atypical melanocyte morphology.

PAM w/ moderate atypia
Note: Cells less dendritic-y

PAM w/ severe atypia
Note: Cells epithelioid-ish



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

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Yes, but...(we will unpack this shortly)

Pre-malignant

Remember when we hedged regarding how likely PAM is to undergo malignant transformation...

Malignant

No question—proceed when ready

ells

Nevus cells

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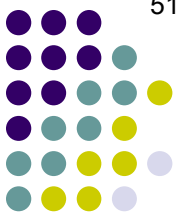
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Melanocytic Eyelid and Epibulbar Lesions

When it comes to prognosis, this is how PAM shakes out:



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Melanocytic Eyelid and Epibulbar Lesions

When it comes to prognosis, this is how PAM shakes out:

PAM without atypia

PAM with mild atypia

PAM without atypia and PAM with mild atypia behave alike

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Melanocytic Eyelid and Epibulbar Lesions

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Malignant

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Nevus



Melanocytic Eyelid and Epibulbar Lesions

When it comes to prognosis, this is how PAM shakes out:

PAM without atypia

PAM with mild atypia

PAM with moderate atypia

PAM with severe atypia

PAM without atypia and PAM with mild atypia behave alike

So group them in your head like this!

PAM with moderate and PAM with severe atypia behave alike

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Both *PAM without atypia* and *PAM with mild atypia* have a probability of malignant transformation.

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Nevus cells

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If the biopsy returns as one of these, the appropriate management is

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If the biopsy returns as one of these, the appropriate management is observation
—every **amount of time** or so

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If the biopsy returns as one of these, the appropriate management is [redacted].

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As is the case with their lentigo maligna cousin, is the presence of a vertical growth component an alarming development?

If the biopsy returns as one of these, the appropriate management is **complete excision**.

Also like lentigo maligna: Is malignant transformation likely?

What if complete excision is not feasible?

Pre-malignant

Remember when we hedged regarding how likely PAM is to undergo malignant transformation...

Malignant



Melanocytic Eyelid and Epibulbar Lesions

When it comes to prognosis, this is how PAM shakes out:

PAM without atypia

PAM with mild atypia

PAM with moderate atypia

PAM with severe atypia

Both *PAM without atypia* and *PAM with mild atypia* have a **near-zero chance** of malignant transformation.

In contrast, *PAM with moderate or severe atypia* carry a **significant risk** (10%–15%) of transformation

You don't—this can only be done at **the pathologist's bench**

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route & med

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Also like lentigo maligna: Is malignant transformation likely?

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Adjuvant chemotherapy can be employed with topical MMC

Pre-malignant

Remember when we hedged regarding how likely PAM is to undergo malignant transformation...

Malignant



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

	Epidermal melanocytes	Dermal melanocytes	Nevus cells
Benign	Ephelis Lentigines	Blue nevus (Oculo)dermal melanocytosis	Nevus
Pre-malignant	Lentigo maligna		
Malignant	Melanoma	Melanoma	Melanoma

Next, let's look at *malignant lesions, specifically melanoma*

Epibulbar tissue

	Epithelial melanocytes	Subepithelial melanocytes	Nevus cells
Benign	Ephelis CAM	Blue nevus Ocular(odermal) melanocytosis	Nevus
Pre-malignant	PAM		
Malignant	Melanoma	Melanoma	Melanoma

No question—proceed when ready



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Dermal melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

Nevus

Pre-malignant

Lentigo maligna

Malignant

Melanoma

Melanoma

Melanoma

There are four types of cutaneous melanoma, one of which accounts for almost all melanomas of the eyelid. Which one is that?

Nevus cells

Nevus

Pre

Malignant

Melanoma

Melanoma

Melanoma



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Dermal melanocytes

Nevus cells

Benign

Ephelis
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Lentigo maligna melanoma

Nevus cells

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Melanoma

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Melanocytic Eyelid and Epibulbar Lesions

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Epidermal melanocytes

Dermal melanocytes

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Which biopsy technique is preferred in establishing a diagnosis of melanoma?

Nevus cells

Nevus

Pre

Malignant

Melanoma

Melanoma

Melanoma



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Dermal melanocytes

Nevus cells

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Malignant

Melanoma

Melanoma

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Lentigo maligna melanoma

Which biopsy technique is preferred in establishing a diagnosis of melanoma?

Punch biopsy

Nevus cells

Nevus

Pre

Malignant

Melanoma

Melanoma

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Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Dermal melanocytes

Nevus cells

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Punch biopsy

Does punch biopsy increase the risk of metastasis?

Nevus cells

Nevus

Pre

Malignant

Melanoma

Melanoma

Melanoma



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

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Nevus

Pre

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Why is punch the preferred technique?

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Nevus

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Melanoma

Melanoma

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Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

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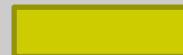
Lentigo maligna melanoma

Which biopsy technique is preferred in establishing a diagnosis of melanoma?

Punch biopsy

Why is punch the preferred technique?

Because it allows for the determination of tumor



Nevus cells

Nevus

s

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Malignant

Melanoma

Melanoma

Melanoma



Melanocytic Eyelid and Epibulbar Lesions

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Epidermal melanocytes

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Why is punch the preferred technique?

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Why is it important to determine tumor thickness?

Because of its prognostic value

Nevus cells

Nevus

Melanoma

Pre

malignant

melanoma

melanoma



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Eyelid Skin

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Dermal melanocytes

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Nevus cells

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Because of its

malignant

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--?

--?

--?

elanoma



Melanocytic Eyelid and Epibulbar Lesions

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Nevus

Pre

Why is it important?

Because of its

malignant

When it comes to eyelid melanoma thickness, there are three numbers to bear in mind. What are they?

--0.75 mm

--1.5 mm

--4 mm

elanoma



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Dermal melanocytes

Nevus cells

Benign

Ephelis
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Nevus

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--0.75 mm: ?

--1.5 mm

--4 mm

elanoma



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Dermal melanocytes

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Nevus cells

Nevus

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elanoma



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

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Dermal melanocytes

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--**1.5 mm**

--**4 mm**

elanoma



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Dermal melanocytes

Nevus cells

Benign

Ephelis
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elanoma



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Dermal melanocytes

Nevus cells

Benign

Ephelis
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Nevus

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three words

--**4 mm**

elanoma



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

	Epidermal melanocytes	Dermal melanocytes	Nevus cells
Benign	Ephelis Lentigines	Blue nevus (Oculo)dermal melanocytosis	Nevus
Pre-malignant	Lentigo maligna		
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Why is punch the preferred technique?

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Why is it important to determine tumor thickness?

Because of its prognostic significance

Malignant

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--**4 mm**

melanoma



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

	Epidermal melanocytes	Dermal melanocytes	Nevus cells
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melanoma



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

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elanoma



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

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elanoma



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

Nevus

Pre-malignant

Lentigo maligna

Malignant

Melanoma

Melanoma

Melanoma

There are four types of eyelid melanomas:
all melanomas
Lentigo maligna

Which biopsy technique is preferred?
Punch biopsy

Why is punch the preferred technique?
Because it allows for the determination of tumor thickness

Pre-malignant
Why is it important to determine tumor thickness?
Because of its prognostic significance

What is the preferred tx for eyelid melanoma?

When it comes to eyelid melanoma thickness, there are three numbers to bear in mind. What are they? What does each signify?

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melanoma



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

Dermal
melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
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Nevus

Pre-malignant

Lentigo maligna

Malignant

Melanoma

Melanoma

Melanoma

There are four types of
all melanomas
Lentigo maligna

What is the preferred tx for eyelid melanoma?

Complete tumor removal via

three words

Which biopsy
Punch biopsy

Why is punch the preferred technique?
Because it allows for the determination of

tumor thickness

Pre

Why is it important
Because of its
malignant

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melanoma



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal
melanocytes

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melanocytes

Nevus cells

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Nevus

Pre-malignant

Lentigo maligna

Malignant

Melanoma

Melanoma

Melanoma

There are four types of eyelid melanomas:
all melanomas
Lentigo maligna

What is the preferred tx for eyelid melanoma?
Complete tumor removal via wide surgical excision

Which biopsy technique is preferred?
Punch biopsy

Why is punch the preferred technique?
Because it allows for the determination of tumor thickness

Pre

Why is it important to determine tumor thickness?
Because of its prognostic significance

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melanoma



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Eyelid Skin

Epidermal melanocytes

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Pre-malignant

Lentigo maligna

Malignant

Melanoma

Melanoma

Melanoma

There are four types of eyelid melanomas:
all melanomas
Lentigo maligna

What is the preferred tx for eyelid melanoma?

Complete tumor removal via wide surgical excision, with intra-op confirmation of clean margins by Pathology using sections

Which biopsy technique is preferred?
Punch biopsy

Why is punch the preferred technique?
Because it allows for the determination of tumor thickness

Pre-malignant

Why is it important to know tumor thickness?
Because of its prognostic significance

When it comes to eyelid melanoma thickness, there are three numbers to bear in mind. What are they? What does each signify?

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eyelid melanoma



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Dermal melanocytes

Nevus cells

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Pre-malignant

Lentigo maligna

Malignant

Melanoma

Melanoma

Melanoma

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all melanomas
Lentigo maligna

What is the preferred tx for eyelid melanoma?

Complete tumor removal via wide surgical excision, with intra-op confirmation of clean margins by Pathology using permanent sections

Which biopsy technique is preferred?
Punch biopsy

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eyelid melanoma



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Lentigo maligna

What is the preferred tx for eyelid melanoma?

Complete tumor removal via wide surgical excision, with intra-op confirmation of clean margins by Pathology using permanent sections

Which biopsy technique is preferred?
Punch biopsy

The Plastics book mentions another option described as a "first-line treatment." What is it?

Why is punch the preferred technique?
Because it allows for the determination of tumor thickness

Pre-malignant

Why is it important to know tumor thickness?
Because of its prognostic significance

When it comes to eyelid melanoma thickness, there are three numbers to bear in mind. What are they? What does each signify?

--0.75 mm: Tumors thinner than this have a 5-yr survival rate of 98%

--1.5 mm: Tumors thicker than this require a full metastatic workup

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eyelid melanoma



Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

Epidermal melanocytes

Dermal melanocytes

Nevus cells

Benign

Ephelis
Lentigines

Blue nevus
(Oculo)dermal melanocytosis

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--?
--?
--0.7 mm?
--1.5 mm?

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When to be suspicious of melanoma?

--0.7 mm

--1.5 mm

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- Oncolytic virus therapy
- Cytokines
- Checkpoint inhibitors



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--Checkpoint inhibitors

All three are indicated only for the really bad cases:
Metastatic, advanced, unresectable or recurrent

When to be
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Melanocytic Eyelid and Epibulbar Lesions

Eyelid Skin

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Is there **Does it matter whether the original melanoma was pigmented?**

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No
Recurrent lesions

Is there a difference in recurrence rates between pigmented and amelanotic conj melanomas?
Yes—conj melanomas are more likely to recur

Does it matter whether the original melanoma was pigmented?
Nope—pigmented melanomas also give rise to amelanotic recurrences

Are all conj melanomas pigmented?

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That they require close follow-up for the rest of their lives

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In terms of incidence, how do these stack up: Choroidal, skin, and conj melanoma?
Skin is an order of magnitude more common than choroidal, which is in turn an order more common than conj

Just how (un)common is conj melanoma?

In white folk the incidence is only 1 per 2 million ; in black and Asian pops it's probably an order of magnitude less common

Is there a gender predilection?

No

Is there an age predilection?

Yes—conj melanoma is a disease of the middle-aged and elderly

Are all conj melanomas pigmented?

No. A surprisingly high proportion (25%) are amelanotic

What are the three origins for a conj melanoma, ie, what can they arise from?

What proportion of conj melanomas arise from each?

--De novo: ~25%

--From a nevus: ~2%

--From PAM

Malignant

Melanoma

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Melanocytic Eyelid and Epibulbar Lesions

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Pre-malignant --From PAM: **~70%**

Malignant

Melanoma

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, skin, and conj melanoma?

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, skin, and conj melanoma?

idial, which is in turn an order cells

By what route does choroidal melanoma usually metastasize?

Is mortality gen

Metastatic dz

Malign

Is t
No

Is t
Yes

Are
No.

Ben

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Pre-malign

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Malignant

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Hematogenous

Is mortality generally

Metastatic dz

Malign

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Hematogenous

Is mortality generally high?

Metastatic dz

By what route does eyelid (ie, **skin**) melanoma usually metastasize?

Malign

Is the mortality rate high?
No

Is the mortality rate high?
Yes

Are the lesions usually benign?
No

Ben

What is the usual route of metastasis?
--D

Pre-malign

--Fr

Malignant

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Hematogenous

Is mortality greater for conj melanoma?

Metastatic dz

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Lymphatics

Malign

Is the mortality rate for conj melanoma greater than for eyelid melanoma?

No

Does conj melanoma metastasize hematogenously like choroidal melanoma, or

Is the conj melanoma more lymphatically like skin?

Yes

Lymphatically, like skin

Are there any other factors that influence the outcome of conj melanoma?

What does this indicate about the first place metastatic conj melanoma will appear?

That it will be in local lymph nodes

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What are the two locations for nodes to which the conj drains?

The preauricular nodes, and the submandibular nodes

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Check these locations for signs of metastasis

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Is mortality generally high?

Metastatic dz

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Lymphatics

Is it?

Malign

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Is it?

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Lymphatically, like skin

*To what distant location does **choroidal** melanoma tend to spread?*

Are?

No

Ben

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Pre-malign

--F

Malignant

Melanoma

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To what distant location does **choroidal** melanoma tend to spread?

The liver. Of pts who succumb to choroidal melanoma, % have liver involvement

Malignant

Melanoma

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Melanocytic Eyelid and Epibulbar Lesions



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Are
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*By what route does eyelid (ie, **skin**) melanoma usually metastasize?*

Lymphatics

Malign

Is the mortality rate high?
No

Does conj melanoma metastasize hematogenously like choroidal melanoma, or lymphatically like skin?

Yes

Lymphatically, like skin

Are there any distant locations where conj melanoma tends to spread?
No

*To what distant location does **choroidal** melanoma tend to spread?*

The liver. Of pts who succumb to choroidal melanoma, 95% have liver involvement (and % of such cases have **only** liver involvement)

Ben

What is the overall mortality rate for conj melanoma?
Wh

Pre-malign

--D
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Yes Lymphatically, like skin

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Wh **skin** melanoma tend to spread?

--D

--Fr

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Metastatic dz

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Why?

Ben

Why?

*To what distant location does **skin** melanoma tend to spread?*

--D Widely to many tissues—no one in particular

--Fr

Pre-malign

--Fr

Malignant

Melanoma

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, skin, and conj melanoma?

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Metastatic dz

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Lymphatics

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Lymphatically, like skin

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*To what distant location does **skin** melanoma tend to spread?*

Widely to many tissues—no one in particular

Does conj melanoma metastasize to the liver like choroidal does, or widely like skin?

Malignant

Melanoma

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Metastatic dz

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Hematogenous

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Lymphatics

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Widely like skin

Malignant

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Melanocytic Eyelid and Epibulbar Lesions

Is conj melanoma carry a significant mortality rate?

Indeed it does

What is the overall mortality rate for conj melanoma?

There
a rea

What is the preferred treatment for conj melanoma?

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*Are To what distant location does **choroidal** melanoma tend to spread?*

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Wh

Ben

*Wh To what distant location does **skin** melanoma tend to spread?*

--D Widely to many tissues—no one in particular

--Fr

Pre-malign

--Fr *Does conj melanoma metastasize to the liver like choroidal does, or widely like skin?*

Widely like skin

Malignant

Melanoma

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What is the preferred treatment for conj melanoma?

Complete tumor removal via wide surgical excision

Is mo

Meta

Ma

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*Wh To what distant location does **skin** melanoma tend to spread?*

--D Widely to many tissues—no one in particular

--Fr

Pre-malign

--Fr Does conj melanoma metastasize to the liver like choroidal does, or widely like skin?

Widely like skin

Malignant

Melanoma

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Melanocytic Eyelid and Epibulbar Lesions

Is conj melanoma carry a significant mortality rate?

Indeed it does

What is the overall mortality rate for conj melanoma?

There
a rea

What is the preferred treatment for conj melanoma?

Complete tumor removal via wide surgical excision

Is mo

Meta

How wide should the margins be around the lesion?

*Are To what distant location does **choroidal** melanoma tend to spread?*

No. The liver. Of pts who succumb to choroidal melanoma, 95% have liver involvement (and 33% of such cases have **only** liver involvement)

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What is the concern motivating the 'no touch' technique?

The liver. Up to 50% of pts who succumb to choroidal melanoma, 66% have liver involvement (and 33% of such cases have **only** liver involvement)

Why?

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What is the concern motivating the 'no touch' technique?

That intraop lesion manipulation might seed the ocular surface with tumor cells

The liver. Of pts who succumb to choroidal melanoma, 88% have liver involvement (and 33% of such cases have **only** liver involvement)

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In light of this concern, what alternative to excisional biopsy is obviously unacceptable?

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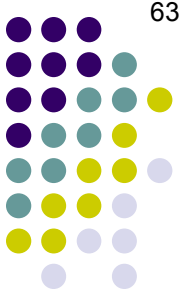
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Melanocytic Eyelid and Epibulbar Lesions



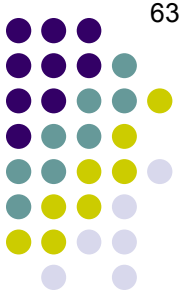
*You see the depicted lesion in clinic. Note that it seems to have all the hallmarks of a conj melanoma: It is juxtalimbal and pigmented. It is elevated. It has feeder vessels. It has no cysts. Despite all this, it definitively is **not** a conj melanoma. What is it?*

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Melanocytic Eyelid and Epibulbar Lesions



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Melanoma of the ciliary body with extrascleral extension, presenting as an ocular surface mass. Note that there is no PAM surrounding the nodule, a clue that the lesion might have an intraocular origin. Also note that the lesion is associated with deep episcleral/scleral vessels (sentinel vessels, *arrow*) and does not obscure the overlying conjunctival vessels. This indicates that the lesion is deep to the conjunctiva.