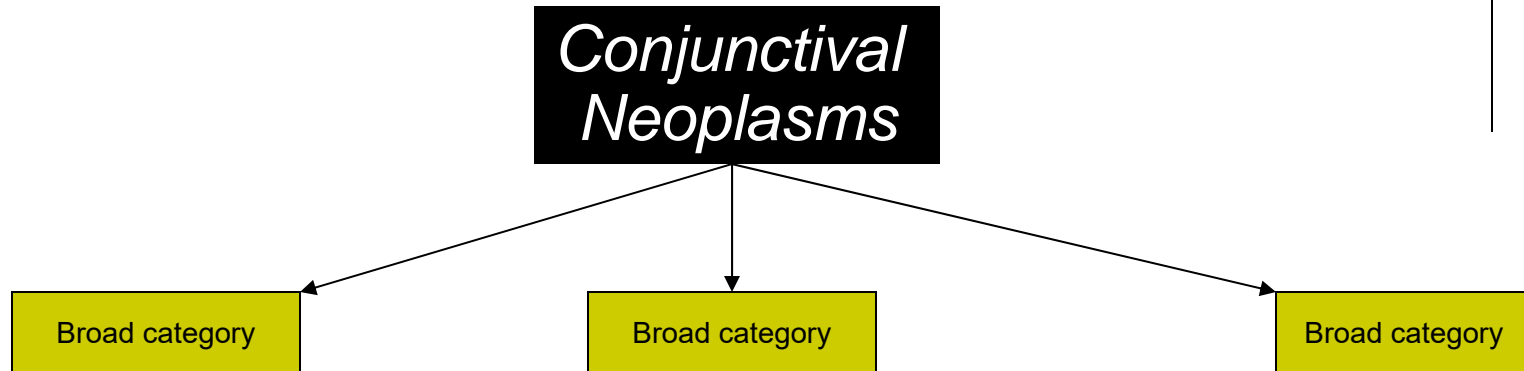
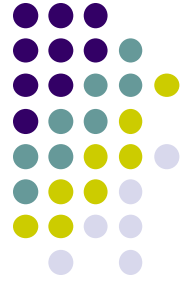
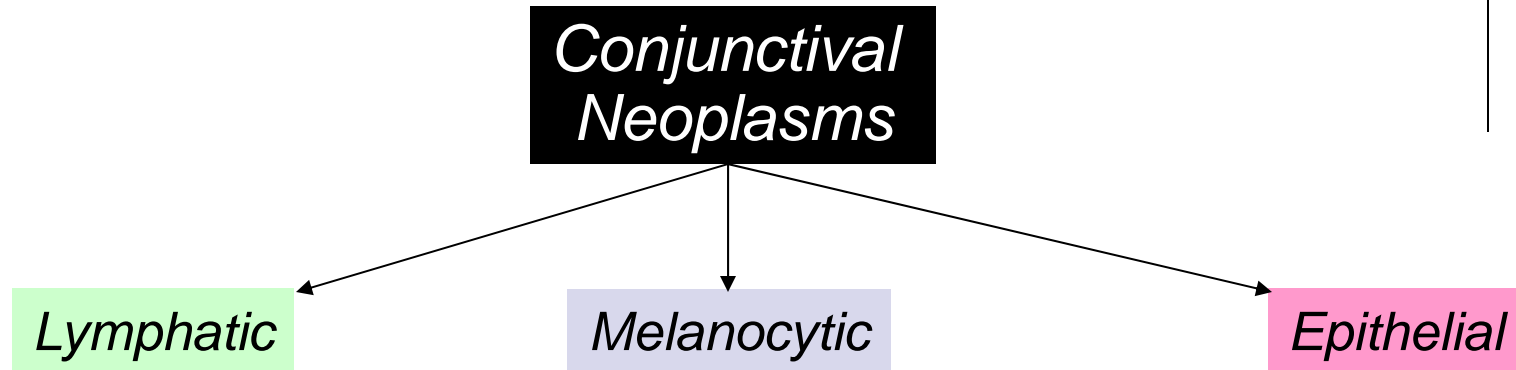


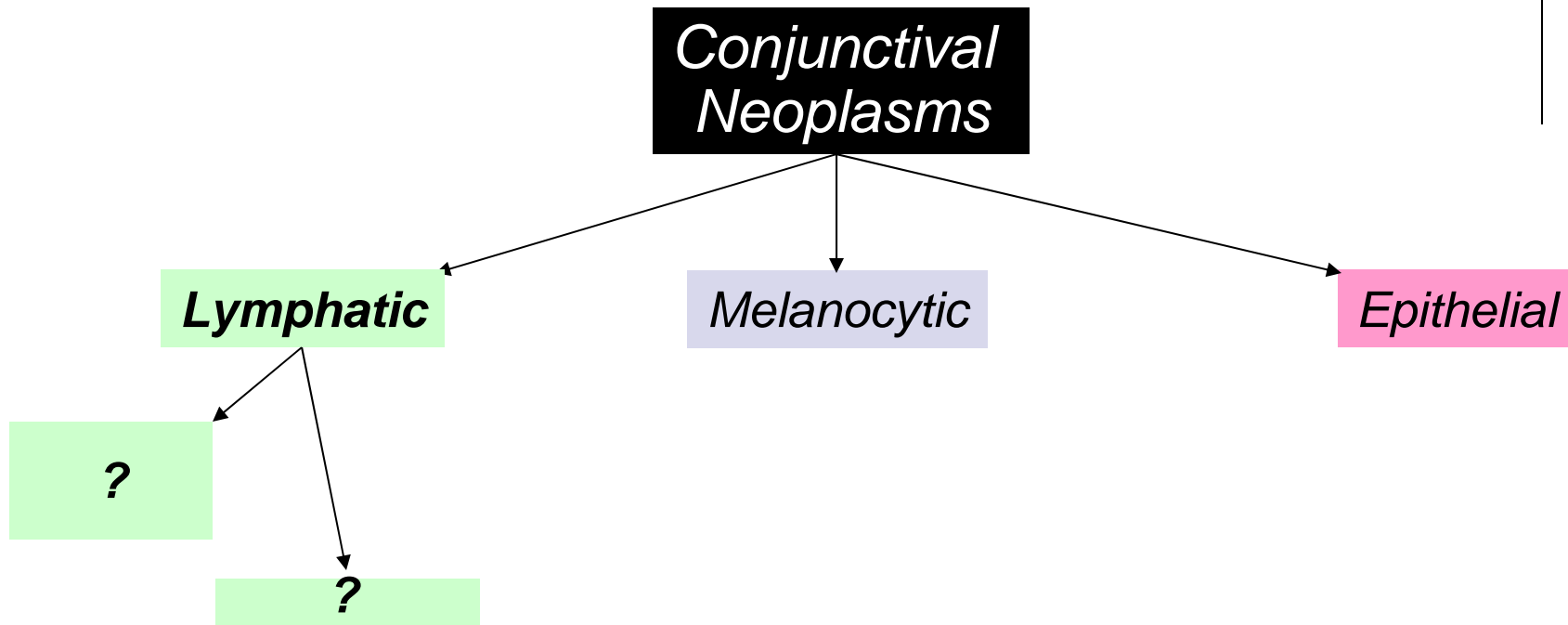
# Conjunctival Neoplasms



# Conjunctival Neoplasms

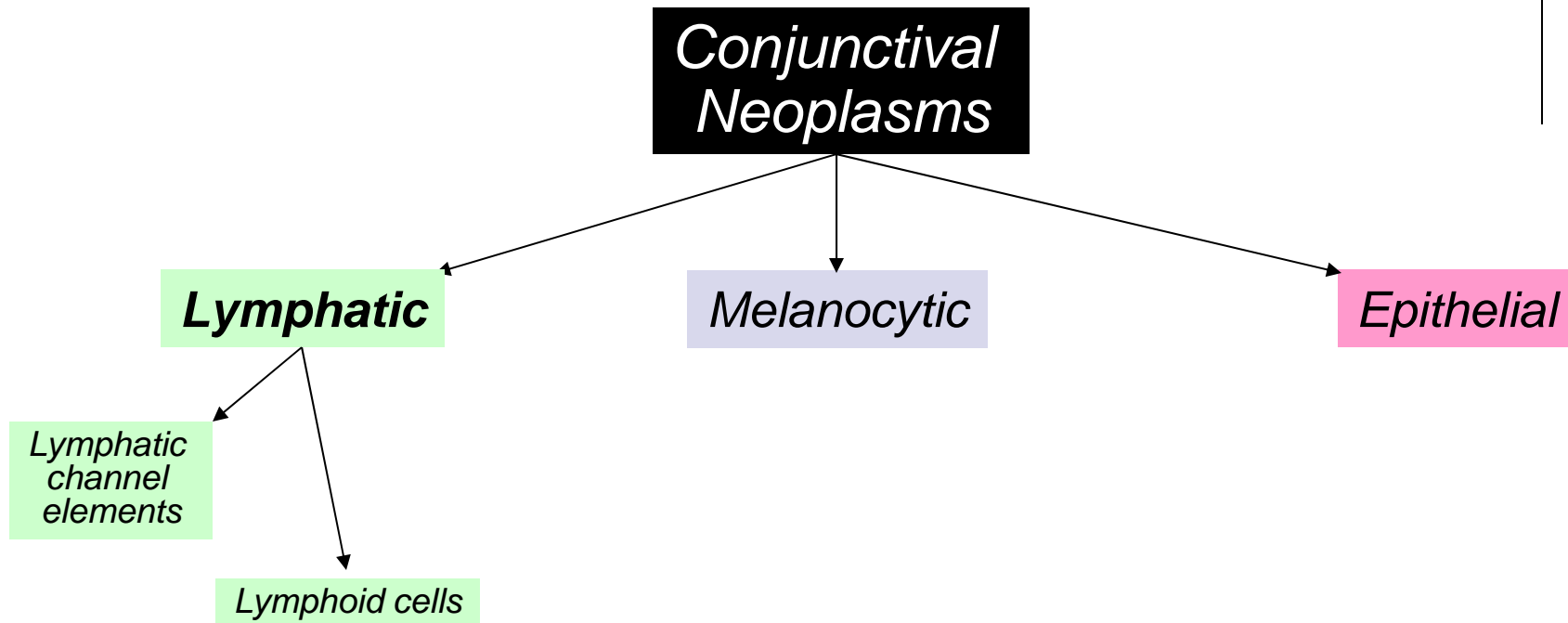


# Conjunctival Neoplasms





# Conjunctival Neoplasms





# Conjunctival Neoplasms

*Conjunctival  
Neoplasms*

*Lymphatic channel-element neoplasias*

1) ?

2) ?

**Lymphatic**

*Lymphatic  
channel  
elements*

*Lymphoid cells*



# Conjunctival Neoplasms

*Conjunctival  
Neoplasms*

*Lymphatic channel-element neoplasias*

1) Lymphangiectasia

2) Lymphangioma

**Lymphatic**

*Lymphatic  
channel  
elements*

*Lymphoid cells*



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic channel-element neoplasias

#### 1) Lymphangiectasia

definition thereof

#### 2) Lymphangioma

### Lymphatic

Lymphatic  
channel  
elements

Lymphoid cells



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic channel-element neoplasias

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

### Lymphatic

Lymphatic  
channel  
elements

Lymphoid cells



# Conjunctival Neoplasms



9



Low mag



High mag

Conjunctival lymphangiectasia



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic channel-element neoplasias

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

Lymphatic

Lymphatic  
channel  
elements

How does lymphangiectasia appear on anterior-segment OCT (AS-OCT)?

Lymphoid cells



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic channel-element neoplasias

#### 1) Lymphangiectasia

→ Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

### Lymphatic

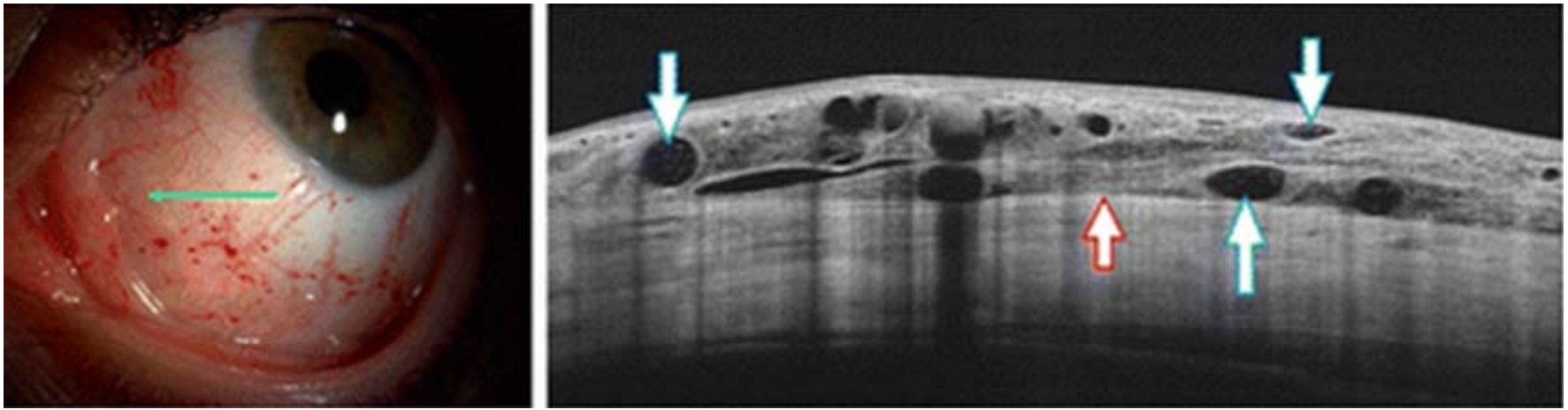
#### Lymphatic channel elements

How does lymphangiectasia appear on anterior-segment OCT (AS-OCT)?  
As an elevated subepi lesion with cyst-like structures

#### Lymphoid cells



# Conjunctival Neoplasms



**Lymphangiectasia.** Slit lamp photograph reveals diffuse chemosis, dilated, tortuous conjunctival vessels and hemorrhages with 'dot/blot' configuration affecting the temporal, nasal and inferior bulbar conjunctiva of the right eye. Green arrows showing the locations where OCT scan was taken.

**AS-OCT:** Dilated lymphatic vessels are shown as hyporeflective spaces (blue arrows) with widely varying calibers. The sclero-conjunctival interface is also easily visible in high resolution (red arrow).



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic channel-element neoplasias

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

-- definition thereof

### Lymphatic

Lymphatic  
channel  
elements

Lymphoid cells



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic channel-element neoplasias

#### Lymphatic

Lymphatic  
channel  
elements

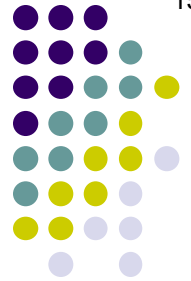
Lymphoid cells

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

--Proliferation of channel elements



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic channel-element neoplasias

#### Lymphatic

Lymphatic  
channel  
elements

Lymphoid cells

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

--Proliferation of channel elements

--Present at birth

--Enlarge slowly

# Conjunctival Neoplasms



Conjunctival lymphangioma





# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic channel-element neoplasias

#### Lymphatic

Lymphatic  
channel  
elements

Lymphoid cells

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

--Proliferation of channel elements

--Present at birth

--Enlarge slowly



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic channel-element neoplasias

#### Lymphatic

Lymphatic  
channel  
elements

Lymphoid cells

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

--Proliferation of channel elements

--Present at birth

--Enlarge slowly

} Similar in this regard to the another common ocular tumor



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic channel-element neoplasias

#### Lymphatic

Lymphatic  
channel  
elements

Lymphoid cells

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

--Proliferation of channel elements

--Present at birth

--Enlarge slowly

} Similar in this regard to the *capillary hemangioma*



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic channel-element neoplasias

#### Lymphatic

Lymphatic  
channel  
elements

Lymphoid cells

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

--Proliferation of channel elements

--Present at birth

--Enlarge slowly

--Intralesional hemorrhage → yum! cyst



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic channel-element neoplasias

#### Lymphatic

Lymphatic  
channel  
elements

Lymphoid cells

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

--Proliferation of channel elements

--Present at birth

--Enlarge slowly

--Intralesional hemorrhage → chocolate cyst

# Conjunctival Neoplasms



Conjunctival lymphangioma: Chocolate cyst



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic

Lymphatic  
channel  
elements

Lymphoid cells

### Lymphatic channel-element neoplasias

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

--Proliferation of channel elements

--Present at birth

--Enlarge slowly

--Intralesional hemorrhage → chocolate cyst

### Lymphoid-cell neoplasias

1) ?

2) ?



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic

Lymphatic  
channel  
elements

Lymphoid cells

### Lymphatic channel-element neoplasias

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

--Proliferation of channel elements

--Present at birth

--Enlarge slowly

--Intralesional hemorrhage → chocolate cyst

### Lymphoid-cell neoplasias

#### 1) Lymphoid hyperplasia

#### 2) Lymphoma





# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic

Lymphatic  
channel  
elements

Lymphoid cells

### Lymphatic channel-element neoplasias

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

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--Present at birth

--Enlarge slowly

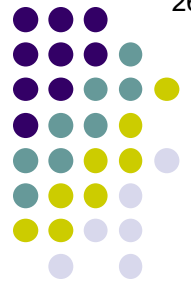
--Intralesional hemorrhage → chocolate cyst

### Lymphoid-cell neoplasias

#### 1) Lymphoid hyperplasia

--Minimally [redacted], [redacted] color [redacted]-colored, [redacted] texture [redacted] surface (follicles)

#### 2) Lymphoma



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic

Lymphatic  
channel  
elements

Lymphoid cells

### Lymphatic channel-element neoplasias

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

--Proliferation of channel elements

--Present at birth

--Enlarge slowly

--Intralesional hemorrhage → chocolate cyst

### Lymphoid-cell neoplasias

#### 1) Lymphoid hyperplasia

--Minimally **elevated**, **salmon**-colored, **pebbly** surface (follicles)

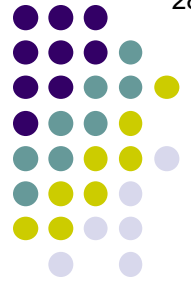
#### 2) Lymphoma



# Conjunctival Neoplasms



Lymphoid hyperplasia



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic

Lymphatic  
channel  
elements

Lymphoid cells

### Lymphatic channel-element neoplasias

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

--Proliferation of channel elements

--Present at birth

--Enlarge slowly

--Intralesional hemorrhage → chocolate cyst

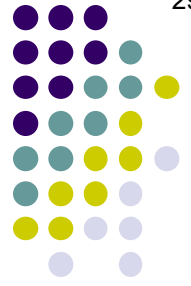
### Lymphoid-cell neoplasias

#### 1) Lymphoid hyperplasia

--Minimally elevated, salmon-colored, pebbly surface (follicles)

--Consider excision, topical steroids, RT (*Radiation therapy*)

#### 2) Lymphoma



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic

Lymphatic  
channel  
elements

Lymphoid cells

### Lymphatic channel-element neoplasias

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

--Proliferation of channel elements

--Present at birth

--Enlarge slowly

--Intralesional hemorrhage → chocolate cyst

### Lymphoid-cell neoplasias

#### 1) Lymphoid hyperplasia

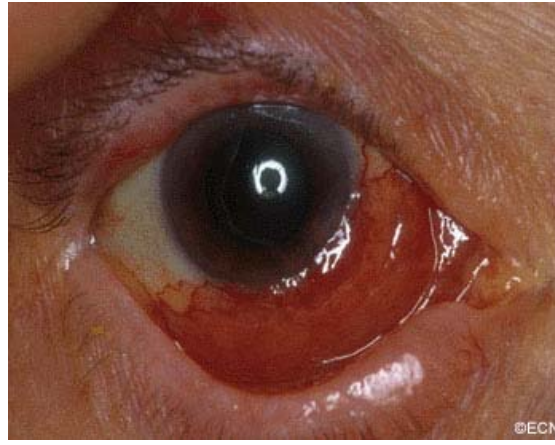
--Minimally **elevated**, **salmon**-colored, **pebbly** surface (follicles)

--Consider excision, topical steroids, RT

#### 2) Lymphoma

--Can be localized, or manifestation of systemic disease

# Conjunctival Neoplasms



Conjunctival lymphoma



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic

Lymphatic  
channel  
elements

Lymphoid cells

### Lymphatic channel-element neoplasias

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

--Proliferation of channel elements

--Present at birth

--Enlarge slowly

--Intralesional hemorrhage → chocolate cyst

### Lymphoid-cell neoplasias

#### 1) Lymphoid hyperplasia

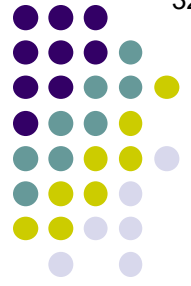
--Minimally **elevated**, **salmon**-colored, **pebbly** surface (follicles)

--Consider excision, topical steroids, RT

#### 2) Lymphoma

--Can be localized, or manifestation of systemic disease

--Most patients age > **50** (if younger, check for **dz**)



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic

Lymphatic  
channel  
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Lymphoid cells

### Lymphatic channel-element neoplasias

#### 1) Lymphangiectasia

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--Intralesional hemorrhage → chocolate cyst

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--Consider excision, topical steroids, RT

#### 2) Lymphoma

--Can be localized, or manifestation of systemic disease

--Most patients age > **50** (if younger, check for **HIV**)





# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic

Lymphatic  
channel  
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Lymphoid cells

### Lymphatic channel-element neoplasias

#### 1) Lymphangiectasia

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--Intralesional hemorrhage → chocolate cyst

### Lymphoid-cell neoplasias

#### 1) Lymphoid hyperplasia

--Minimally **elevated**, **salmon**-colored, **pebbly** surface (follicles)

--Consider excision, topical steroids, RT

#### 2) Lymphoma

--Can be localized, or manifestation of systemic disease

--Most patients age > **50** (if younger, check for **HIV**)

--Treatment: Localized → **abb.**

systemic →



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic

Lymphatic  
channel  
elements

Lymphoid cells

### Lymphatic channel-element neoplasias

#### 1) Lymphangiectasia

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--Present at birth

--Enlarge slowly

--Intralesional hemorrhage → chocolate cyst

### Lymphoid-cell neoplasias

#### 1) Lymphoid hyperplasia

--Minimally **elevated**, **salmon**-colored, **pebbly** surface (follicles)

--Consider excision, topical steroids, RT

#### 2) Lymphoma

--Can be localized, or manifestation of systemic disease

--Most patients age > **50** (if younger, check for **HIV**)

--Treatment: Localized → **RT** ; systemic → **chemo**



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic channel-element neoplasias

#### Lymphatic

Lymphatic  
channel  
elements

Lymphoid cells

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

--Proliferation of channel elements

--Present at birth

--Enlarge slowly

--Intralesional hemorrhage → chocolate cyst

### Lymphoid-cell neoplasias

How does lymphoma appear on AS-OCT?

colored, pebbly surface (follicles)  
keroids, RT

#### 2) Lymphoma

--Can be localized, or manifestation of systemic disease

--Most patients age > 50 (if younger, check for HIV)

--Treatment: Localized → RT ; systemic → chemo



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic channel-element neoplasias

#### Lymphatic

Lymphatic  
channel  
elements

#### Lymphoid cells

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

--Proliferation of channel elements

--Present at birth

--Enlarge slowly

--Intralesional hemorrhage → chocolate cyst

### Lymphoid-cell neoplasias

*How does lymphoma appear on AS-OCT?*

As a smooth-bordered, elevated subepi lesion with a homogeneously 'stippled' appearance

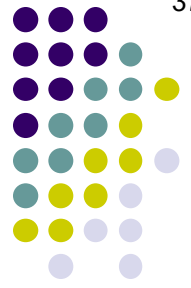
colored, pebbly surface (follicles)  
keroids, RT

#### 2) Lymphoma

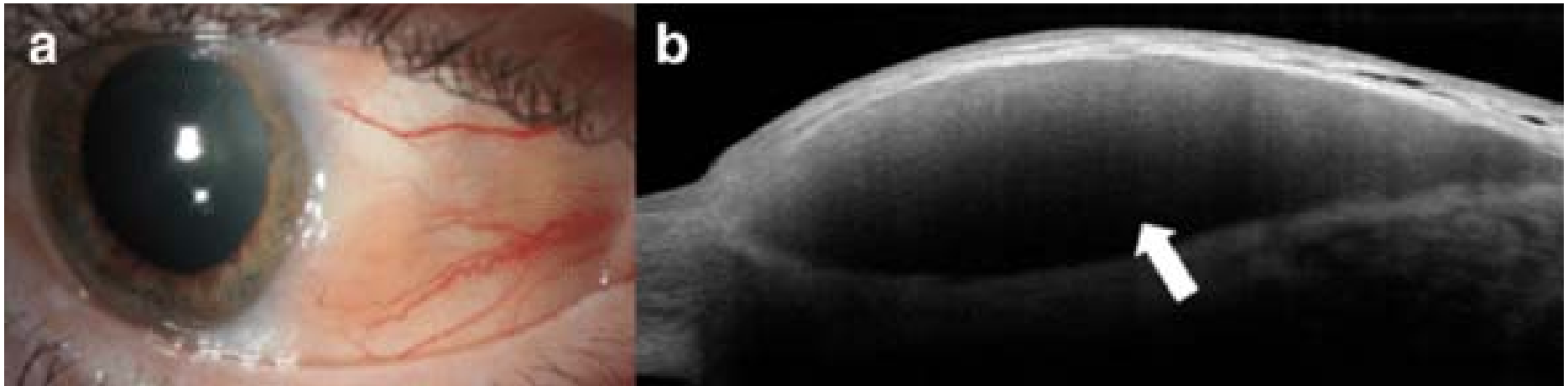
--Can be localized, or manifestation of systemic disease

--Most patients age > 50 (if younger, check for HIV)

--Treatment: Localized → RT ; systemic → chemo



# Conjunctival Neoplasms



Slit lamp photograph and AS-OCT of conjunctival lymphoma.

a) Slit lamp photograph of conjunctival lymphoma.

b) On AS-OCT, there is a homogeneous, dark, hyporeflective subepithelial lesion with smooth borders and overlying thin epithelium (arrow). The lesion contains monomorphic, stippled, dot-like infiltrates corresponding to the infiltration of monoclonal lymphocytes



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic channel-element neoplasias

#### Lymphatic

Lymphatic  
channel  
elements

#### Lymphoid cells

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

--Proliferation of channel elements

--Present at birth

--Enlarge slowly

--Intralesional hemorrhage → chocolate cyst

### Lymphoid-cell neoplasias

#### 1) Lymphoid hyperplasia

--Minimally **elevated**, **salmon**-colored, **pebbly** surface (follicles)

--Consider excision, topical steroids, RT

#### 2) Lymphoma

--Can be localized, or manifestation of systemic disease

--Most patients age > **50** (if younger, check for **HIV**)

--Treatment: Localized → **RT** ; systemic → **chemo**

Can these conditions be differentiated from one another at the slit lamp?



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic

Lymphatic  
channel  
elements

Lymphoid cells

### Lymphatic channel-element neoplasias

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

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--Present at birth

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--Intralesional hemorrhage → chocolate cyst

### Lymphoid-cell neoplasias

#### 1) Lymphoid hyperplasia

--Minimally elevated, salmon-colored, pebbly surface (follicles)

--Consider excision, topical steroids, RT

#### 2) Lymphoma

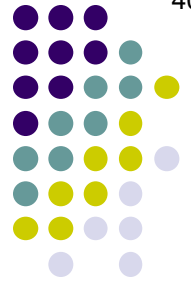
--Can be localized, or manifestation of systemic disease

--Most patients age > 50 (if younger, check for HIV)

--Treatment: Localized → RT ; systemic → chemo

Can these conditions be differentiated  
from one another at the slit lamp?

No—this can only be done via biopsy



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic

Lymphatic  
channel  
elements

Lymphoid cells

### Lymphatic channel-element neoplasias

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

--Proliferation of channel elements

--Present at birth

--Enlarge slowly

--Intralesional hemorrhage → chocolate cyst

Cannot be differentiated clinically--  
only via biopsy

--Both are usually B v T cell

### Lymphoid-cell neoplasias

#### 1) Lymphoid hyperplasia

--Minimally elevated, salmon-colored, pebbly surface (follicles)

--Consider excision, topical steroids, RT

#### 2) Lymphoma

--Can be localized, or manifestation of systemic disease

--Most patients age > 50 (if younger, check for HIV)

--Treatment: Localized → RT ; systemic → chemo





# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic

Lymphatic  
channel  
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Lymphoid cells

### Lymphatic channel-element neoplasias

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

--Proliferation of channel elements

--Present at birth

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### Lymphoid-cell neoplasias

#### 1) Lymphoid hyperplasia

--Minimally elevated, salmon-colored, pebbly surface (follicles)

--Consider excision, topical steroids, RT

#### 2) Lymphoma

--Can be localized, or manifestation of systemic disease

--Most patients age > 50 (if younger, check for HIV)

--Treatment: Localized → RT ; systemic → chemo

Cannot be differentiated clinically--  
only via biopsy

--Both are usually B-cells



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic

Lymphatic  
channel  
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Lymphoid cells

### Lymphatic channel-element neoplasias

#### 1) Lymphangiectasia

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#### 2) Lymphangioma

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### Lymphoid-cell neoplasias

#### 1) Lymphoid hyperplasia

--Minimally elevated, salmon-colored, pebbly surface (follicles)

--Consider excision, topical steroids, RT

#### 2) Lymphoma

--Can be localized, or manifestation of systemic disease

--Most patients age > 50 (if younger, check for HIV)

--Treatment: Localized → RT ; systemic → chemo

Cannot be differentiated clinically--  
only via biopsy

--Both are usually B-cells

--Both can be mistaken for

diff dz



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic

Lymphatic  
channel  
elements

Lymphoid cells

### Lymphatic channel-element neoplasias

#### 1) Lymphangiectasia

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### Lymphoid-cell neoplasias

#### 1) Lymphoid hyperplasia

--Minimally elevated, salmon-colored, pebbly surface (follicles)

--Consider excision, topical steroids, RT

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--Can be localized, or manifestation of systemic disease

--Most patients age > 50 (if younger, check for HIV)

--Treatment: Localized → RT ; systemic → chemo

Cannot be differentiated clinically--  
only via biopsy

--Both are usually B-cells

--Both can be mistaken for amyloid



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic channel-element neoplasias

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

--Proliferation of channel elements

--Present at birth

--Enlarge slowly

--Intralesional hemorrhage → chocolate cyst

### Lymphatic

Lymphatic  
channel  
elements

Lymphoid cells

### Lymphoid-cell neoplasias

#### 1) Lymphoid hyperplasia

--Minimally elevated, salmon-colored, pebbly surface (follicles)

--Consider excision, topical steroids, RT

Cannot be differentiated clinically--  
only via biopsy

--Both are usually B-cells

--Both can be mistaken for

amyloid

How does amyloid appear on AS-OCT?

systemic disease

(think for HIV)

→ chemo



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic channel-element neoplasias

#### Lymphatic

Lymphatic  
channel  
elements

Lymphoid cells

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

--Proliferation of channel elements

--Present at birth

--Enlarge slowly

--Intralesional hemorrhage → chocolate cyst

### Lymphoid-cell neoplasias

#### 1) Lymphoid hyperplasia

--Minimally elevated, salmon-colored, pebbly surface (follicles)

--Consider excision, topical steroids, RT

Cannot be differentiated clinically--  
only via biopsy

--Both are usually B-cells

--Both can be mistaken for

amyloid

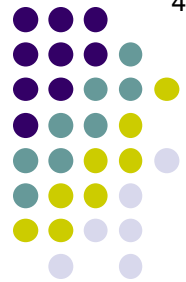
How does amyloid appear on AS-OCT?

Like lymphoma, as an elevated subepi lesion

systemic disease

(think for HIV)

→ chemo



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic channel-element neoplasias

#### Lymphatic

Lymphatic  
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Lymphoid cells

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

--Proliferation of channel elements

--Present at birth

--Enlarge slowly

--Intralesional hemorrhage → chocolate cyst

### Lymphoid-cell neoplasias

#### 1) Lymphoid hyperplasia

--Minimally elevated, salmon-colored, pebbly surface (follicles)

--Consider excision, topical steroids, RT

Cannot be differentiated clinically--  
only via biopsy

--Both are usually B-cells

--Both can be mistaken for

amyloid

How does amyloid appear on AS-OCT?

Like lymphoma, as an elevated subepi lesion. However, its borders are irregular, not smooth; and rather than having a homogeneous 'stippled' appearance, an amyloid lesion is more heterogeneous, and contains linear infiltrates

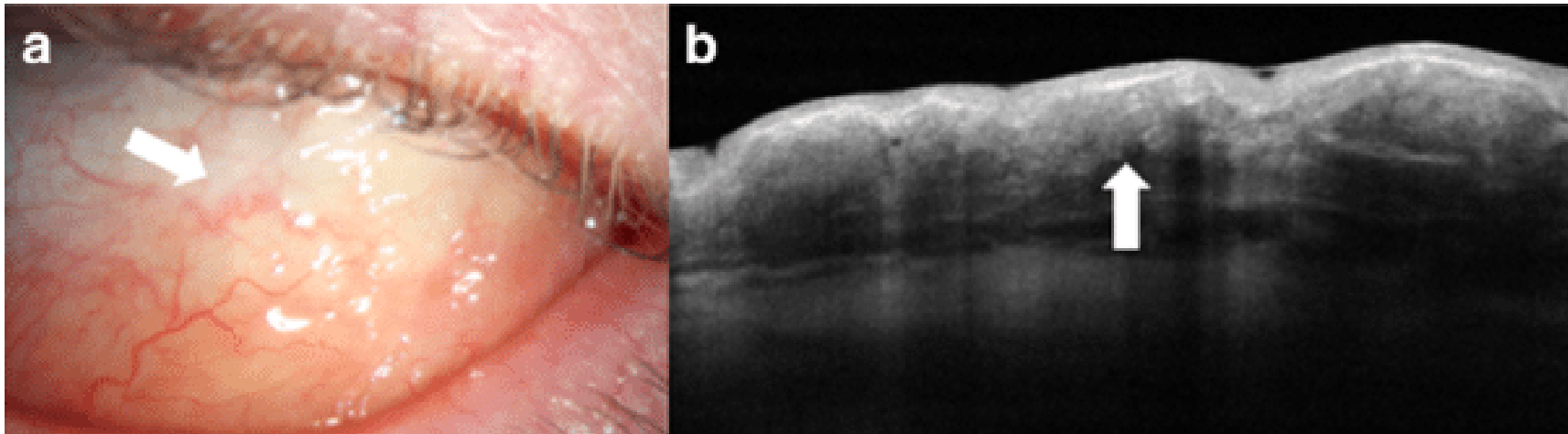
systemic disease

work for HIV)

→ chemo



# Conjunctival Neoplasms

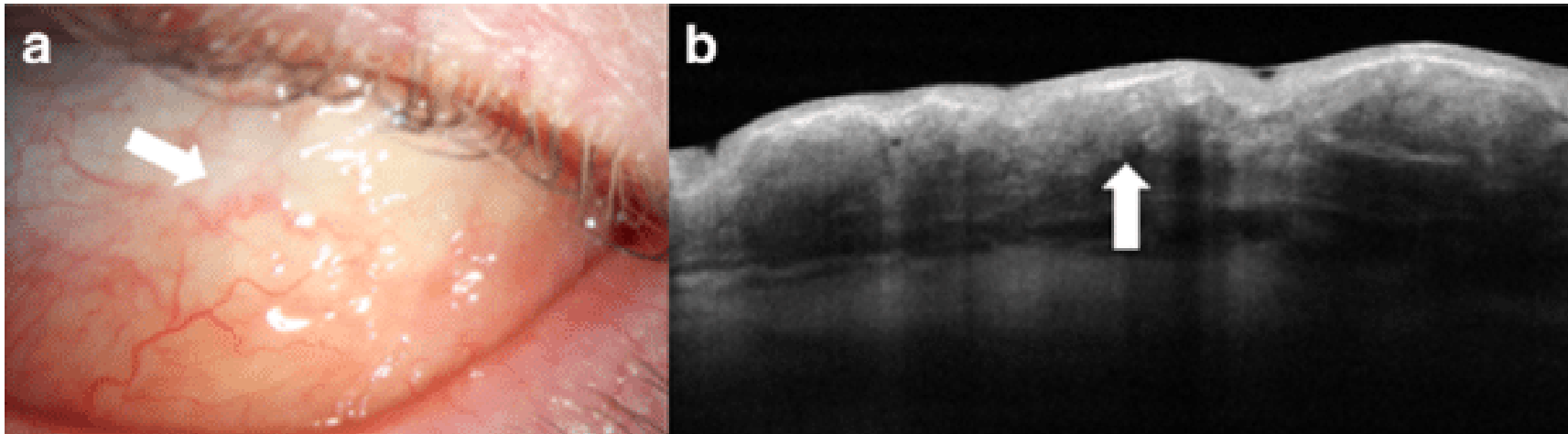
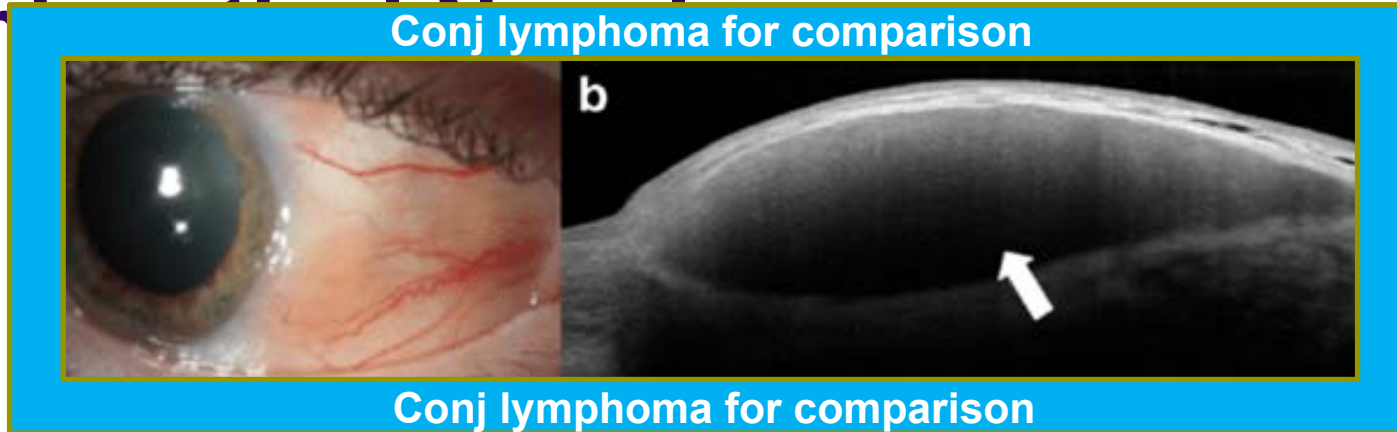


Slit lamp photograph and AS-OCT of conjunctival amyloidosis.

a) Slit lamp photograph of conjunctival amyloidosis (arrow).

b) AS-OCT image of conjunctival amyloidosis showing a heterogeneous, dark subepithelial lesion with irregular borders containing hyper-reflective linear infiltrates that correspond to amyloid deposition (arrow).

# Conj

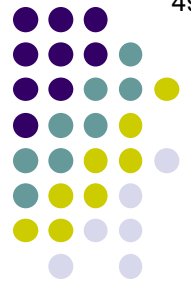


Slit lamp photograph and AS-OCT of conjunctival amyloidosis.

a) Slit lamp photograph of conjunctival amyloidosis (arrow).

b) AS-OCT image of conjunctival amyloidosis showing a heterogeneous, dark subepithelial lesion with irregular borders containing hyper-reflective linear infiltrates that correspond to amyloid deposition (arrow). Compare with the homogeneous, smooth-bordered, well-defined appearance of a conj lymphoma (top)





# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Lymphatic channel-element neoplasias

#### Lymphatic

Lymphatic  
channel  
elements

#### Lymphoid cells

#### 1) Lymphangiectasia

--Irregularly dilated lymphatic channels of bulbar conjunctiva

#### 2) Lymphangioma

--Proliferation of channel elements

--Present at birth

--Enlarge slowly

--Intralesional hemorrhage → chocolate cyst

### Lymphoid-cell neoplasias

#### 1) Lymphoid hyperplasia

--Minimally **elevated**, **salmon**-colored, **pebbly** surface (follicles)

--Consider excision, topical steroids, RT

#### 2) Lymphoma

--Can be localized, or manifestation of systemic disease

--Most patients age > **50** (if younger, check for **HIV**)

--Treatment: Localized → **RT** ; systemic → **chemo**

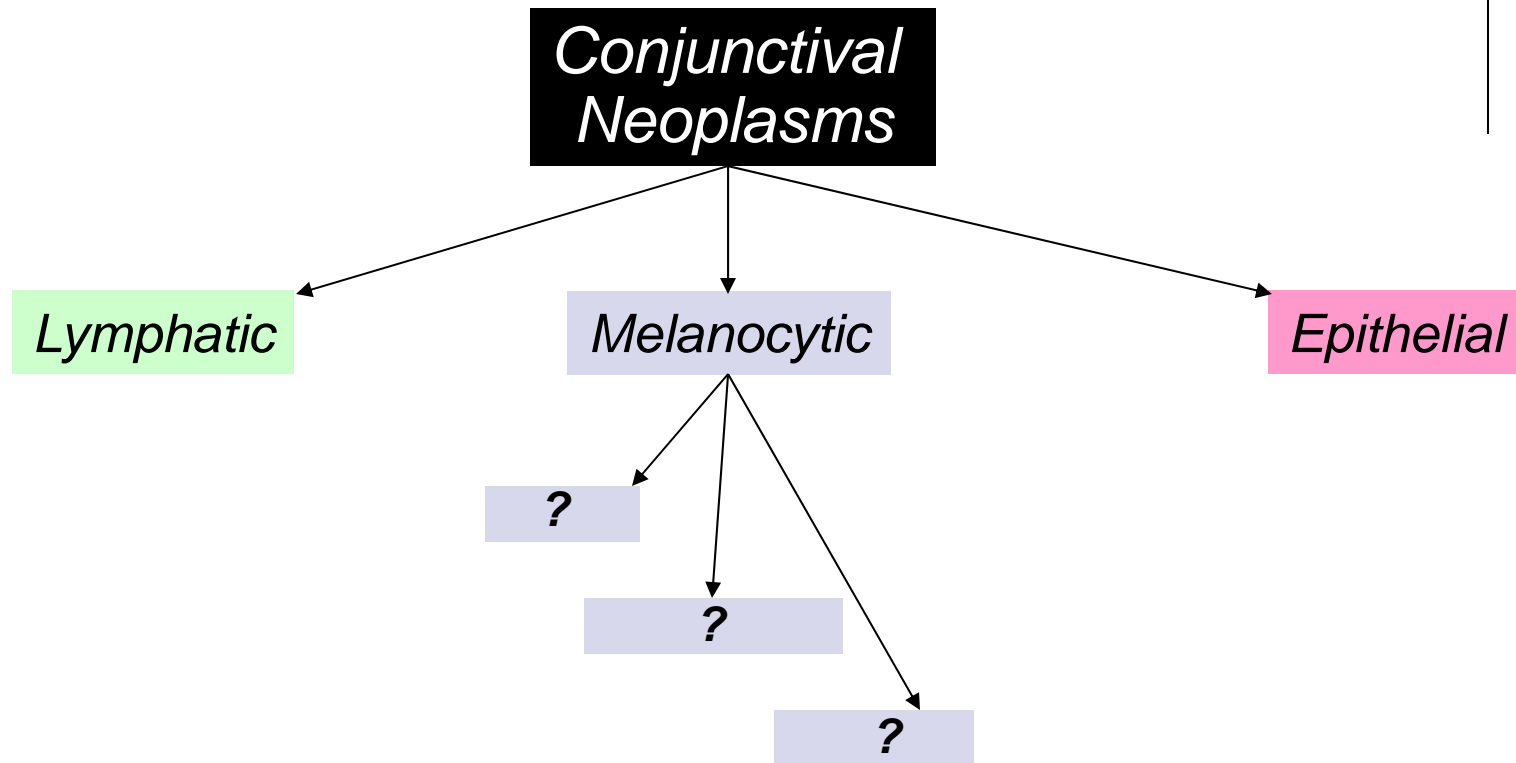
**Cannot be differentiated clinically--  
only via biopsy**

--Both are usually **B-cells**

--Both can be mistaken for **amyloid**

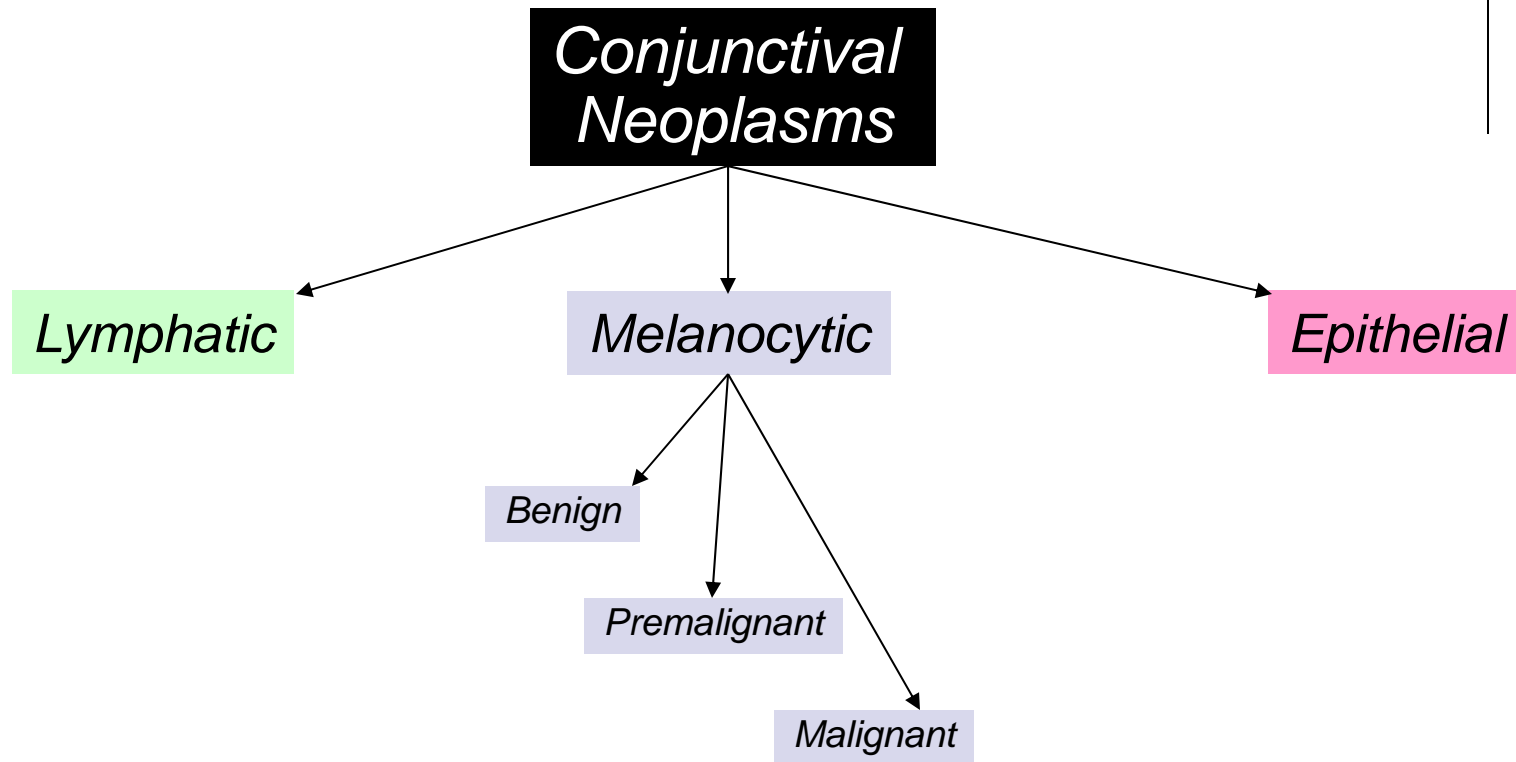
--**Because 'benign' disease can  
transform, get Heme-Onc consult  
whether the lesion is benign or  
malignant on biopsy!**

# Conjunctival Neoplasms





# Conjunctival Neoplasms





# Conjunctival Neoplasms

*Conjunctival  
Neoplasms*

*Melanocytic*

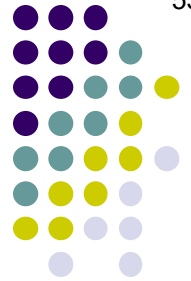
*Benign*

*Premalignant*

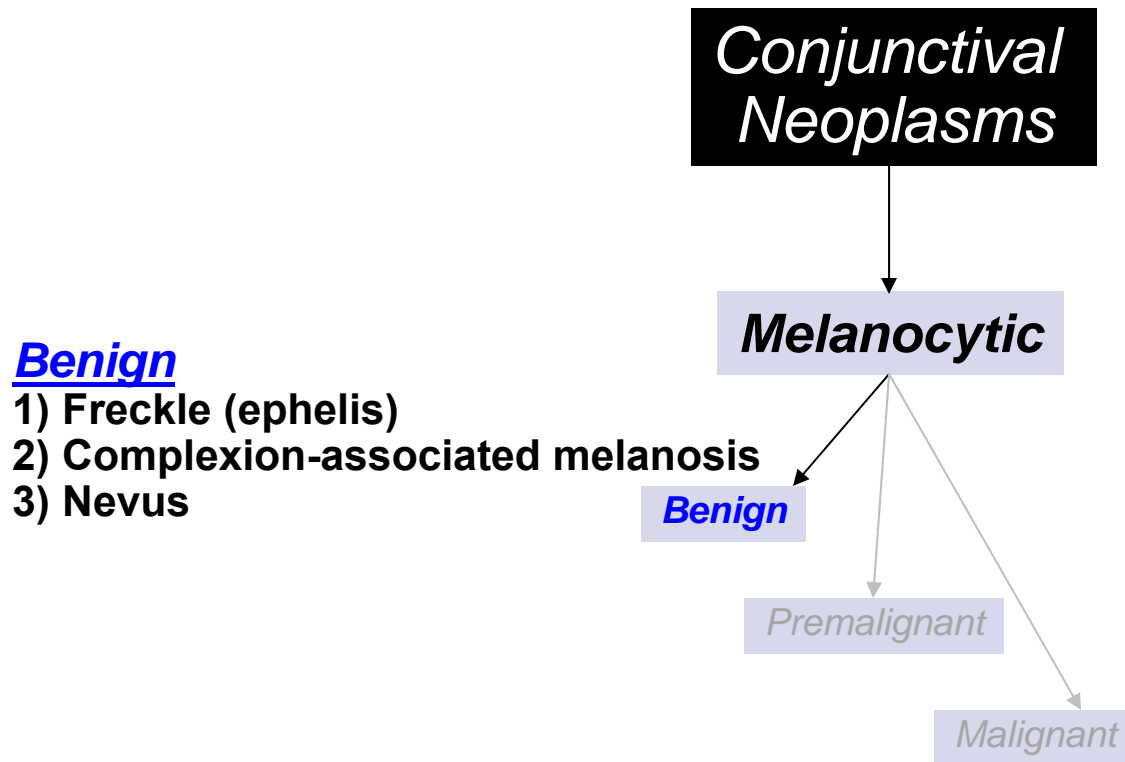
*Malignant*

*Benign*

- 1)
- 2)
- 3)



# Conjunctival Neoplasms





# Conjunctival Neoplasms

*Conjunctival  
Neoplasms*

*Melanocytic*

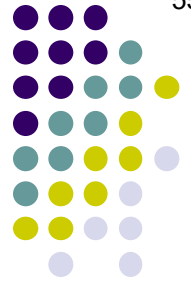
**Benign**

- 1) Freckle (ephelis)
- 2) Complexion-associated melanosis

*Freckles and CAM share what histologic quality?*

*Premalignant*

*Malignant*



# Conjunctival Neoplasms

*Conjunctival  
Neoplasms*

*Melanocytic*

**Benign**

- 1) Freckle (ephelis)
- 2) Complexion-associated melanosis

*Freckles and CAM share what histologic quality?*  
*Both arise from melanocytes located within the epithelium*

*Premalignant*

*Malignant*

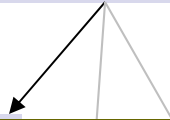


# Conjunctival Neoplasms

*Conjunctival  
Neoplasms*



*Melanocytic*



## Benign

1) Freckle (ephelis)

2) Complexion-associated melanosis

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

--?

--?

--?

--?

--?

nt



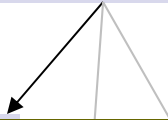


# Conjunctival Neoplasms

*Conjunctival  
Neoplasms*



*Melanocytic*



## Benign

1) Freckle (ephelis)

2) **Complexion-associated melanosis**

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

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

nt



# Conjunctival Neoplasms

*Conjunctival  
Neoplasms*

*Melanocytic*

**Benign**

- 1) Freckle (ephelis)
- 2) Complexion-associated melanosis
- 3) Nevus

*Who is prone to developing CAM?*

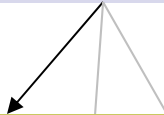


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*Conjunctival  
Neoplasms*



*Melanocytic*

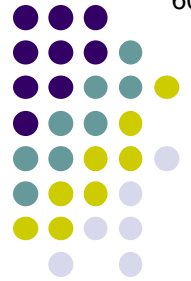


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*Who is prone to developing CAM?*

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

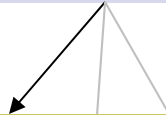


# Conjunctival Neoplasms

*Conjunctival  
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*At what age does it first appear?*



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*Conjunctival  
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*At what age does it first appear?*

Young adulthood, although it often progresses with advancing age

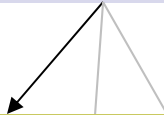


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*Which portion of the conj is most likely to be involved?*

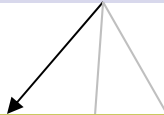


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*Who is prone to developing CAM?*

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



# Conjunctival Neoplasms



CAM: Perilimbal involvement





# Conjunctival Neoplasms

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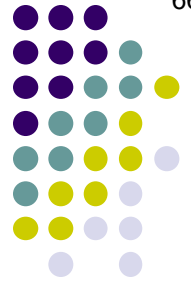
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*Which portion of the conj is most likely to be involved?*

The perilimbal region

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



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*Conjunctival  
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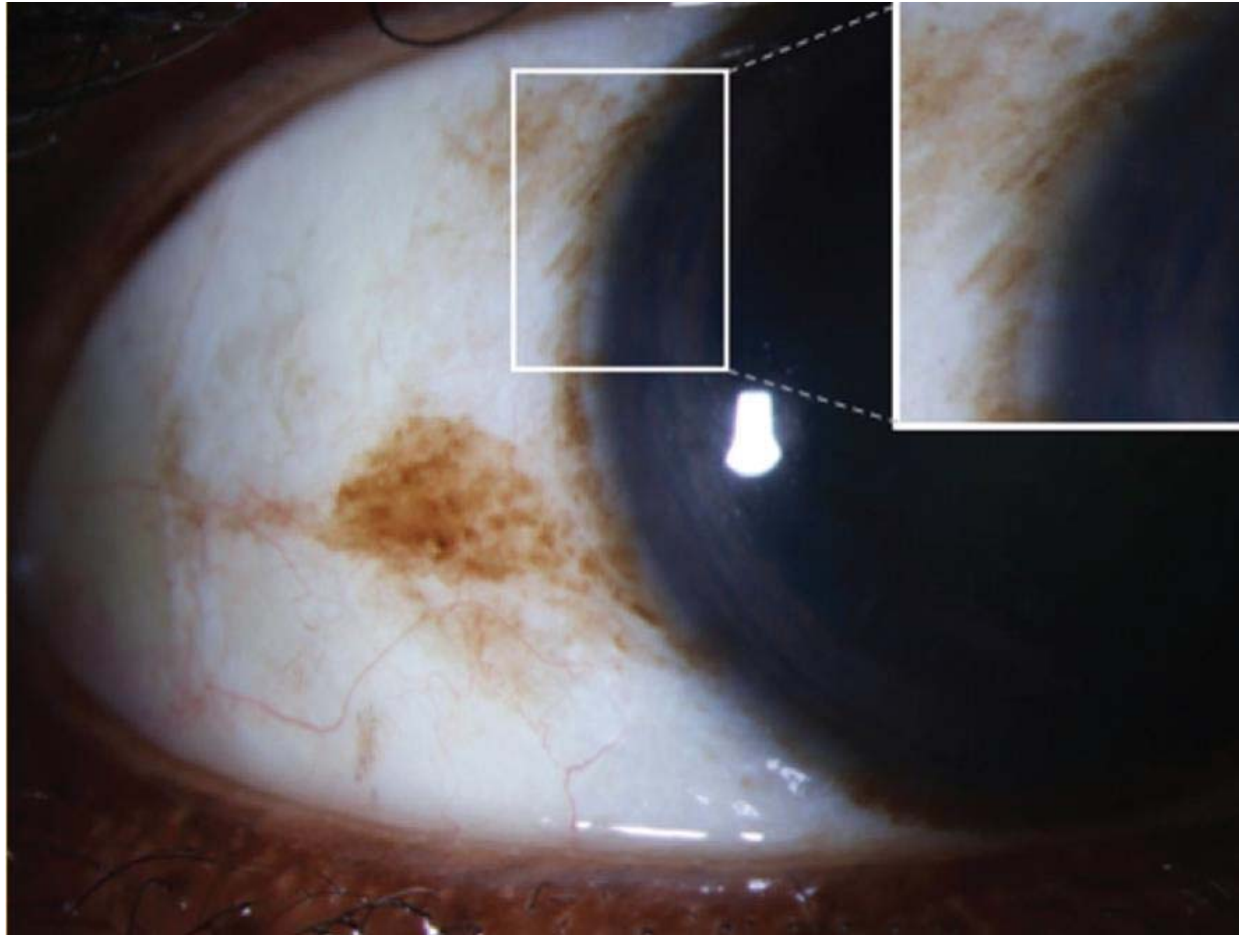
The perilimbal region

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

'Microfolds' (see the next slide)



# Conjunctival Neoplasms



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



# Conjunctival Neoplasms

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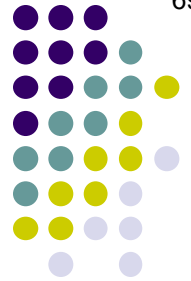
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*Which portion of the conj is most likely to be involved?*

The perilimbal region

*Does it present in unilateral, or bilateral fashion?*



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*Does it present in unilateral, or bilateral fashion?*

Bilateral (and fairly symmetrically so)



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Bilateral (and fairly symmetrically so)

*Can the palpebral conj be involved?*



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*Conjunctival  
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*Does it present in unilateral, or bilateral fashion?*

Bilateral (and fairly symmetrically so)

*Can the palpebral conj be involved?*

Yes



# Conjunctival Neoplasms

*Conjunctival  
Neoplasms*

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Bilateral (and fairly symmetrically so)

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

Yes.





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Neoplasms*

*Melanocytic*

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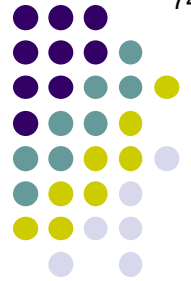
The perilimbal region

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Yes. Yes.



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*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.



# Conjunctival Neoplasms

*Conjunctival  
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**Melanocytic**

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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

two words



# Conjunctival Neoplasms

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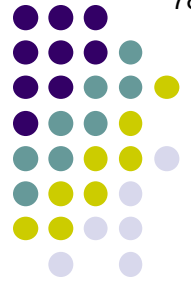
Yes. Yes. Yes—it's called *striate melanokeratosis*.



# Conjunctival Neoplasms



CAM: Striate melanokeratosis



# Conjunctival Neoplasms

*Conjunctival  
Neoplasms*

**Melanocytic**

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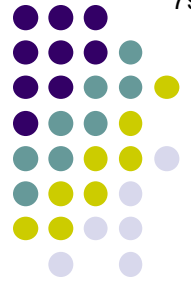
*Does it present in unilateral, or bilateral fashion?*

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?*



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*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



# Conjunctival Neoplasms

*Conjunctival  
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*Melanocytic*

## Benign

- 1) Freckle (ephelis)
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- 3) Nevus

*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 conjunctiva 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?*

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

***What is its malignant potential?***  
***Essentially none***





# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Melanocytic

#### Benign

- 1) Freckle (ephelis)
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- 3) Nevus

*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 eye is most likely to be involved?*

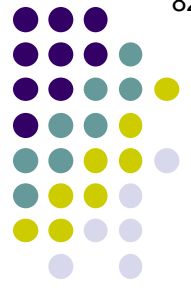
*There's a simple, commonsense reason why these highly pigmented lesions have essentially no malignant potential. What is it?*

It's because the increased pigment in CAM stems **not** from a proliferation of melanocytes (with its attendant risk of malignant transformation), but rather from an increase in rate of melanin synthesis and transfer to adjacent basal epithelial cells

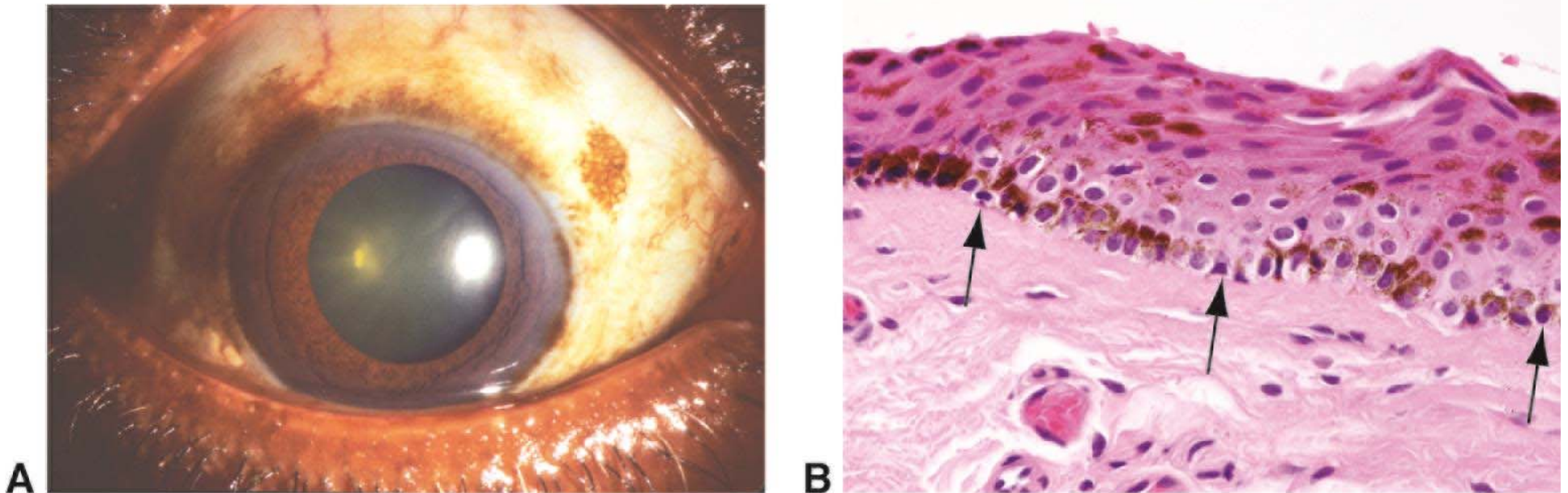
Yes. Yes. Yes—it's called *striate melanokeratosis*.

***What is its malignant potential?***

**Essentially none**



# Conjunctival Neoplasms



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



# Conjunctival Neoplasms

*Conjunctival  
Neoplasms*

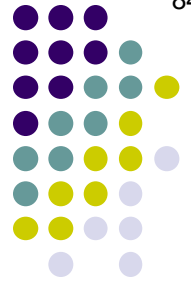
*Melanocytic*

**Benign**

- 1) Freckle (ephelis)
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*Benign*

*In what fundamental way does the histology of a nevus differ from that of freckles and CAM?*



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*Conjunctival  
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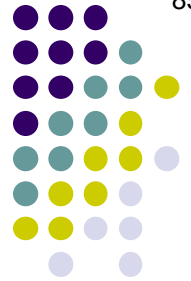
*Melanocytic*

## Benign

- 1) Freckle (ephelis)
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*Benign*

*In what fundamental way does the histology of a nevus differ from that of freckles and CAM?  
Whereas freckles and CAM derive from melanocytes, nevi derive from nevus cells*



# Conjunctival Neoplasms

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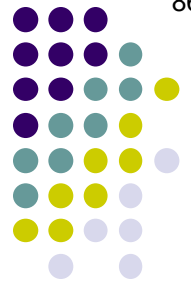
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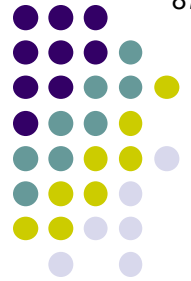
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*In what fundamental way does the histology of a nevus differ from that of freckles and CAM?  
Whereas freckles and CAM derive from melanocytes, nevi derive from nevus cells*

*What's the difference between melanocytes and nevus cells?*

It's pretty subtle. Nevus cells are a subpopulation of melanocytes that differ from non-nevus melanocytes in that:

- They are round (not dendritic in shape like other melanocytes)
- They tend to cluster in nests (the fancy term for such a nest is  )



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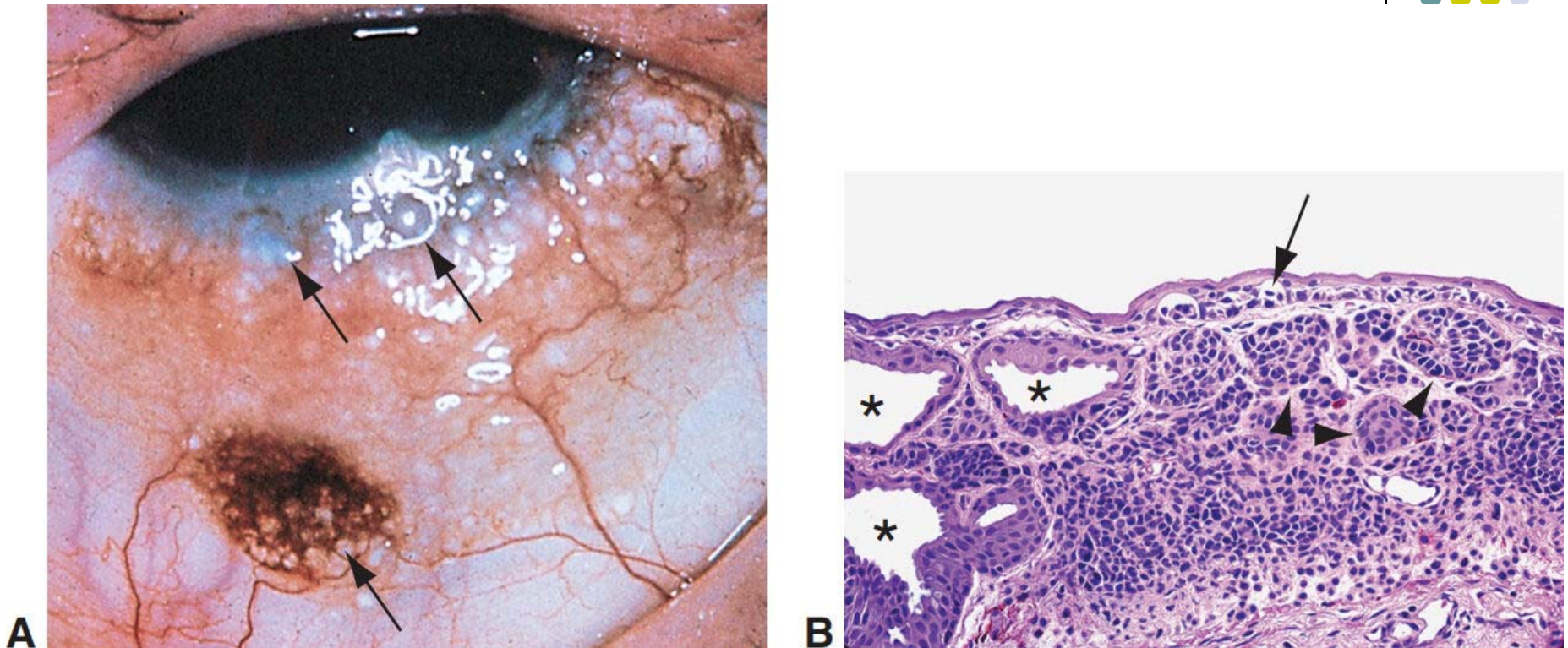
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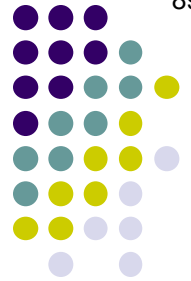
# Conjunctival Neoplasms



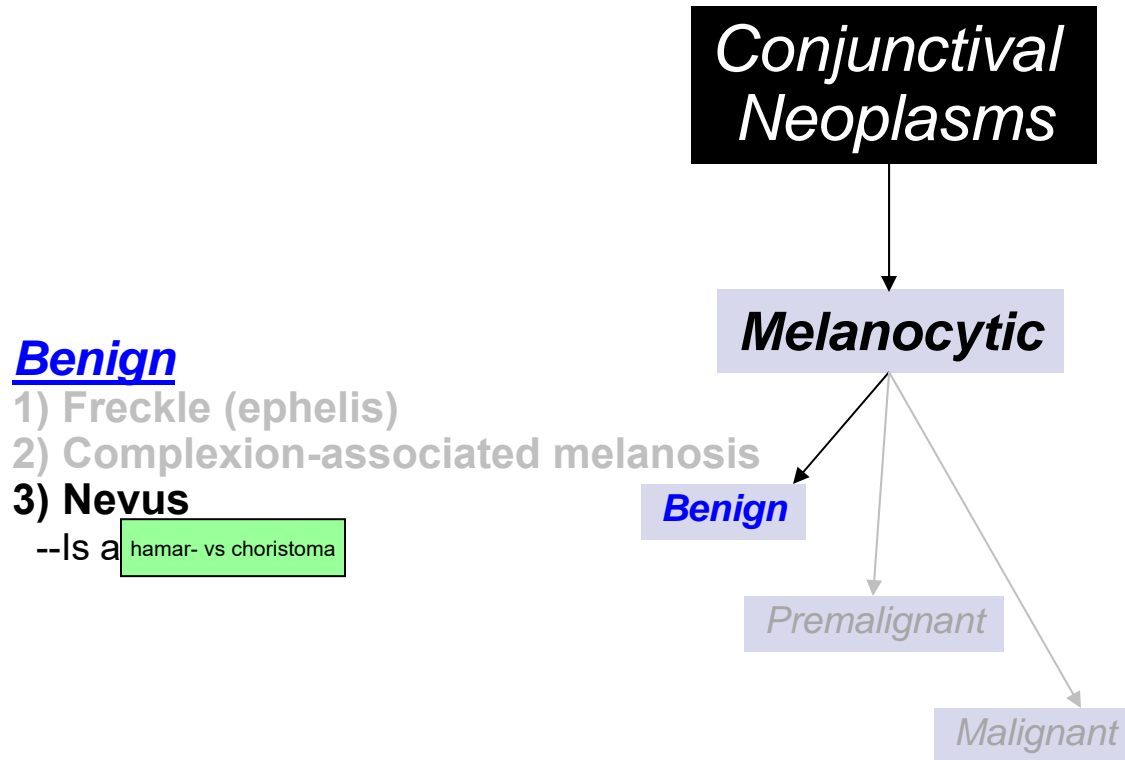
**A**, Clinical appearance with characteristic cystic areas (*arrows*). **B**, Histologically, the nevus cells have round, oval, or pear-shaped nuclei with a moderate amount of cytoplasm, mostly arranged in nests (*arrowheads*).

Conj nevus



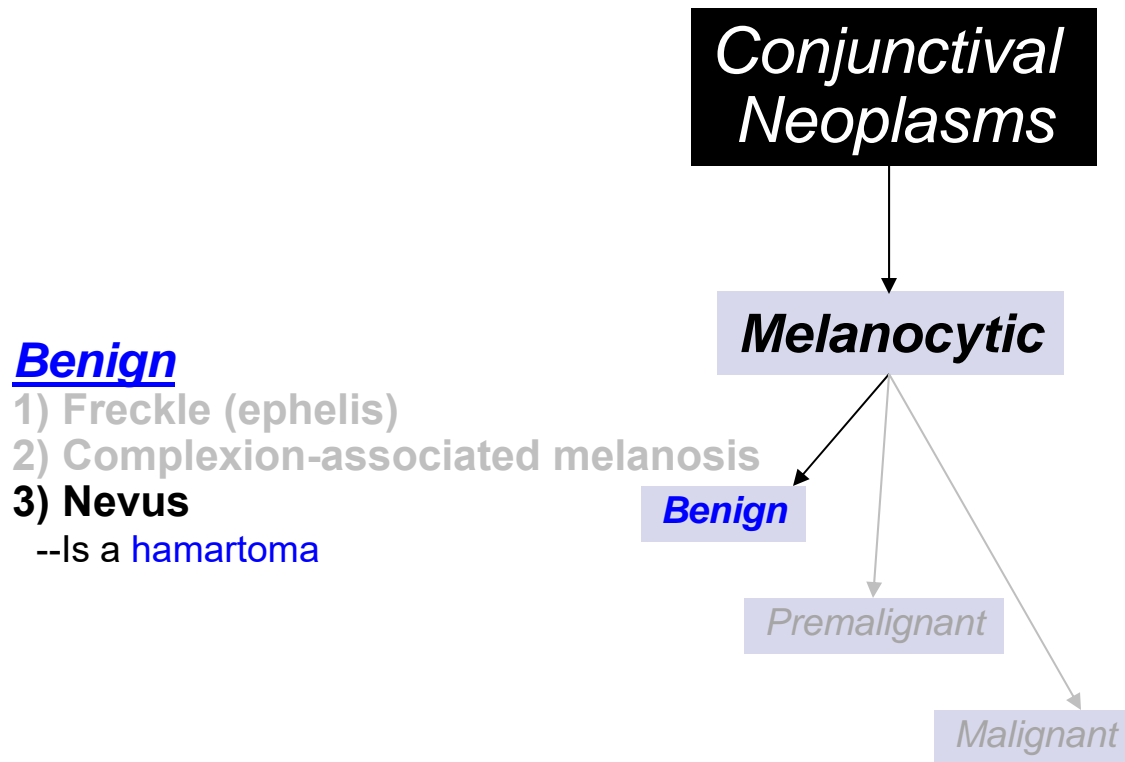


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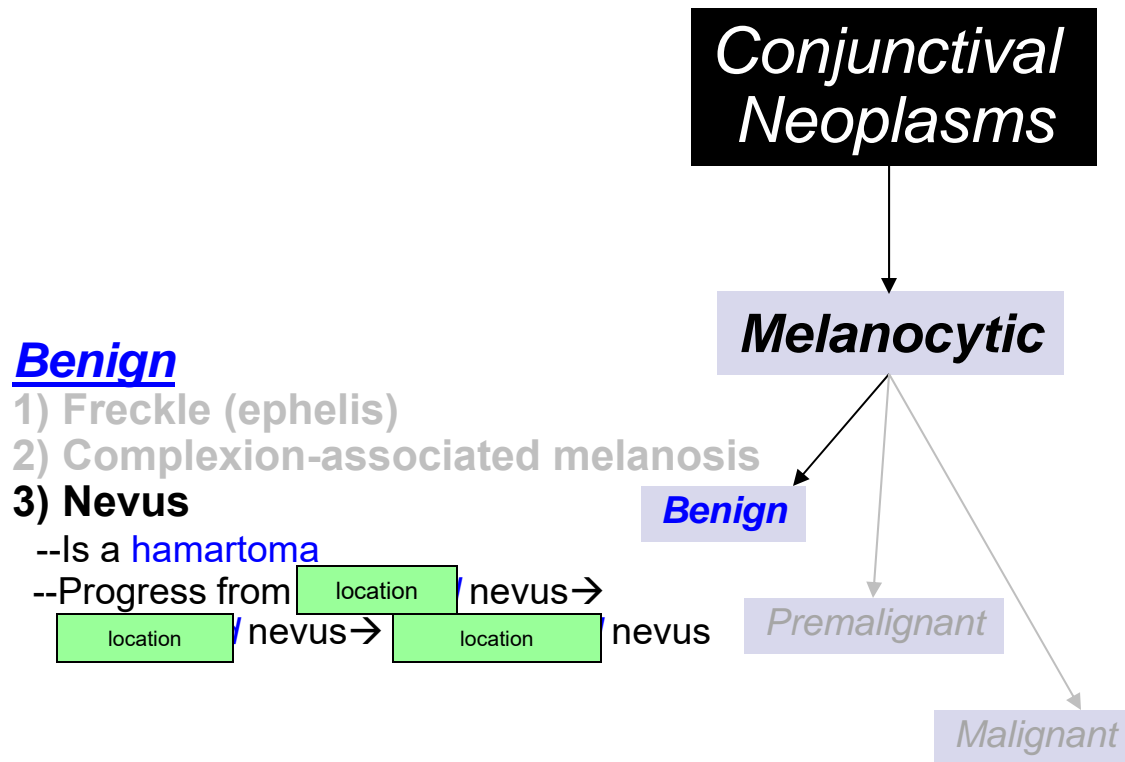


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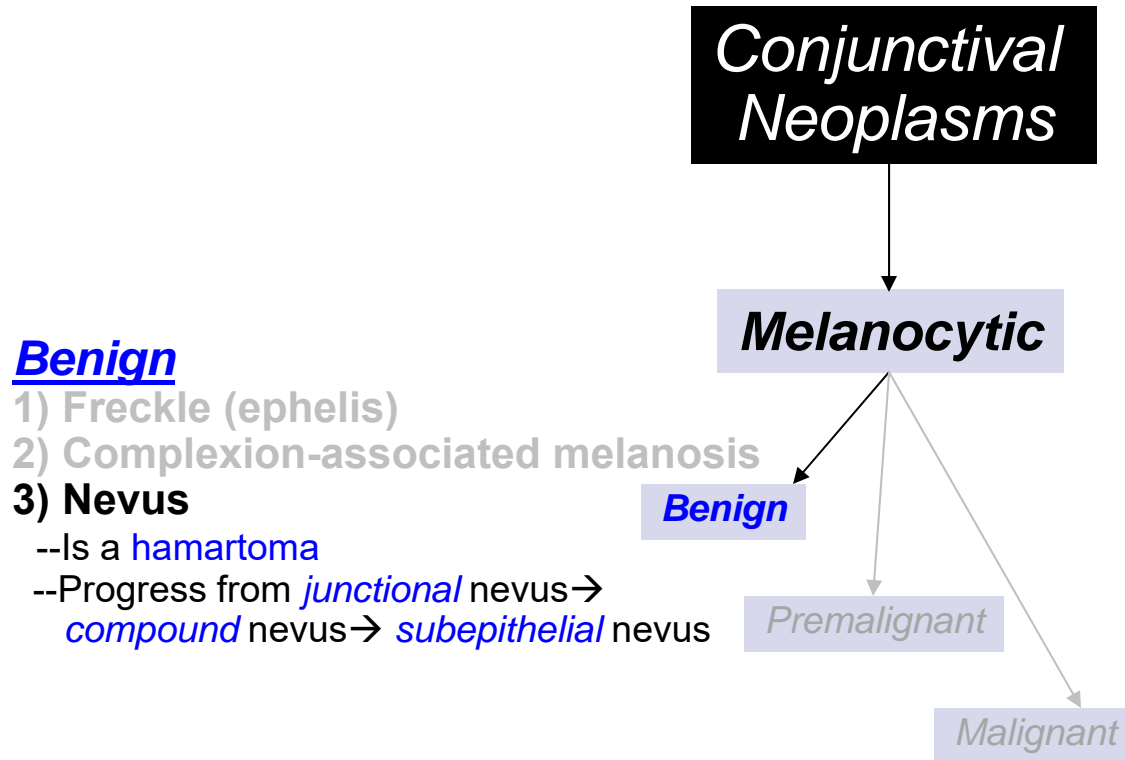


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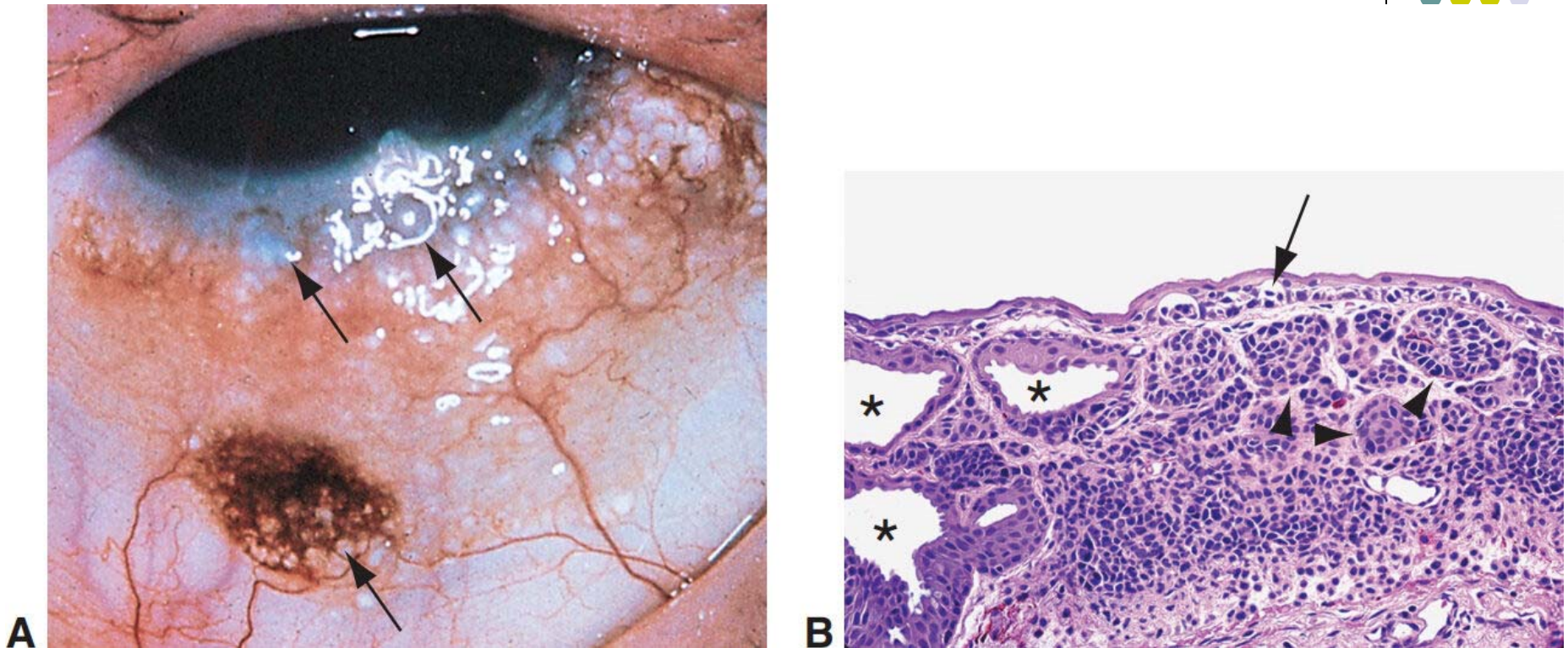


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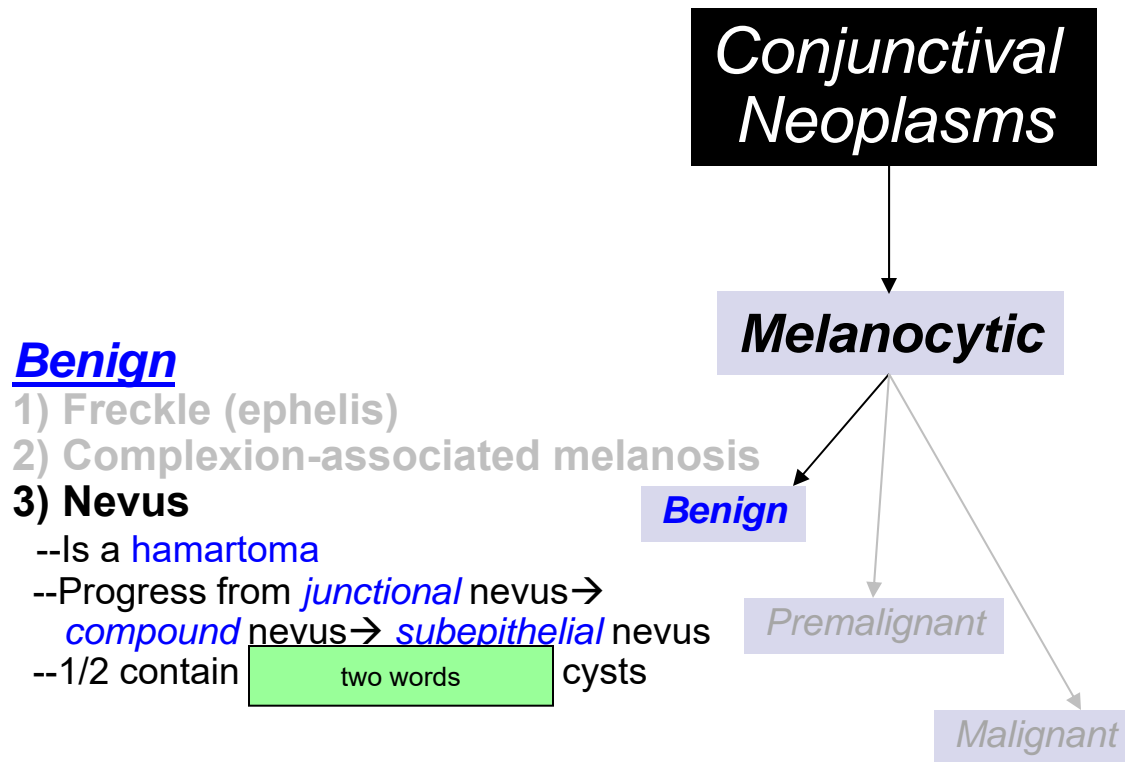


**A**, Clinical appearance with characteristic cystic areas (*arrows*). **B**, Histologically, the nevus cells have round, oval, or pear-shaped nuclei with a moderate amount of cytoplasm, mostly arranged in nests (*arrowheads*). **Nevus cells are also present at the epithelial–stromal junction (arrow); hence, this is a compound nevus.**

Conj nevus

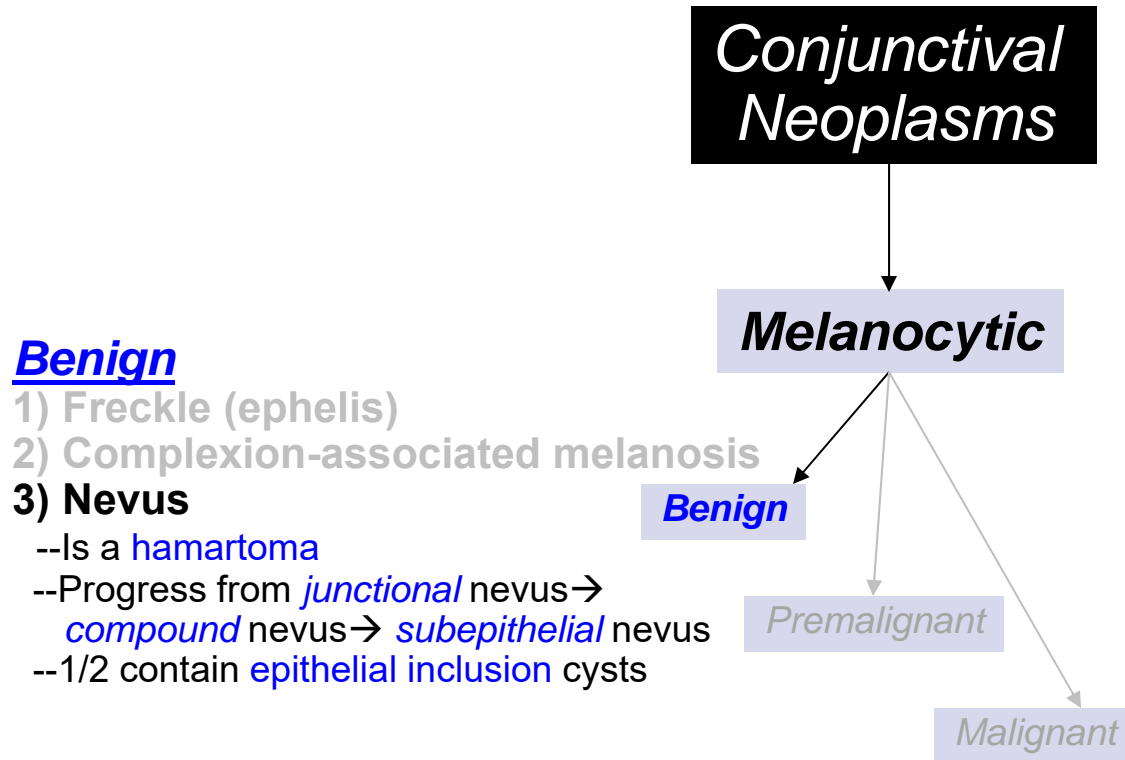


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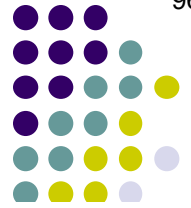




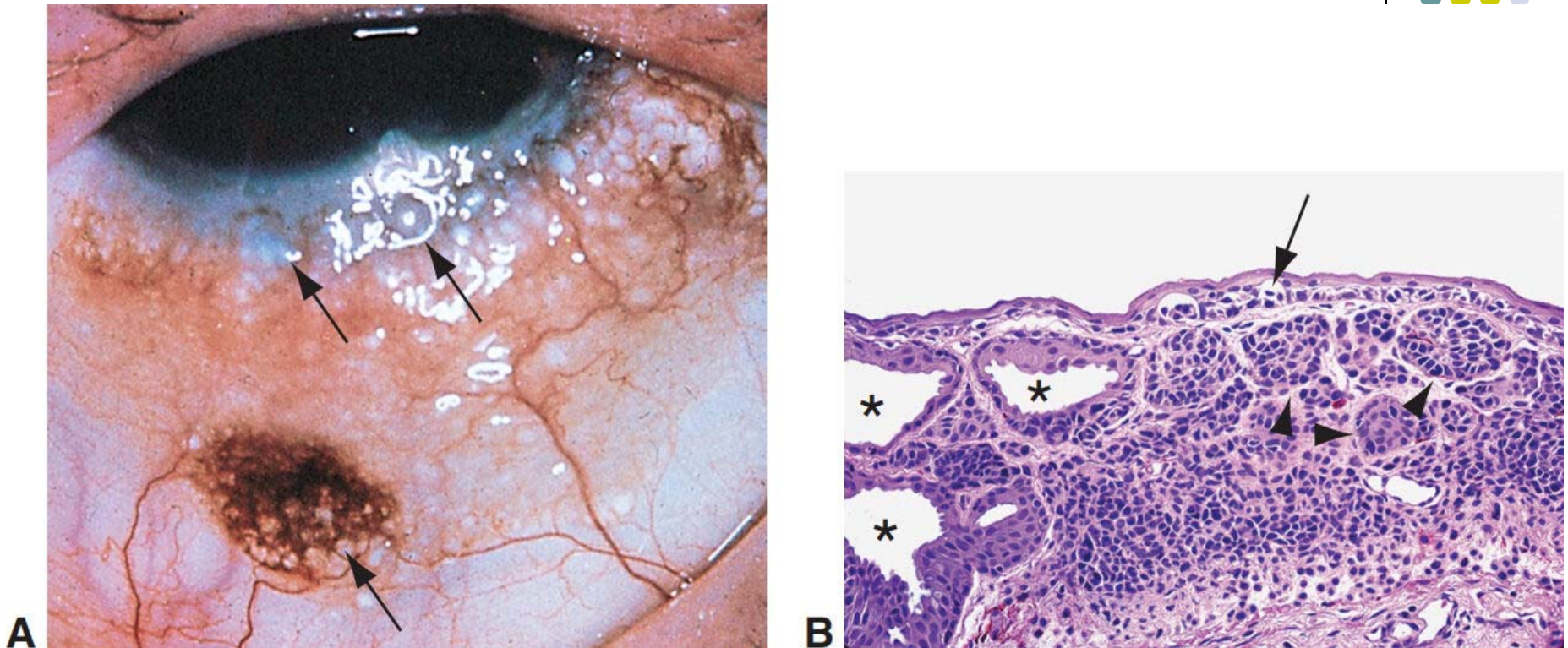
# Conjunctival Neoplasms







# Conjunctival Neoplasms



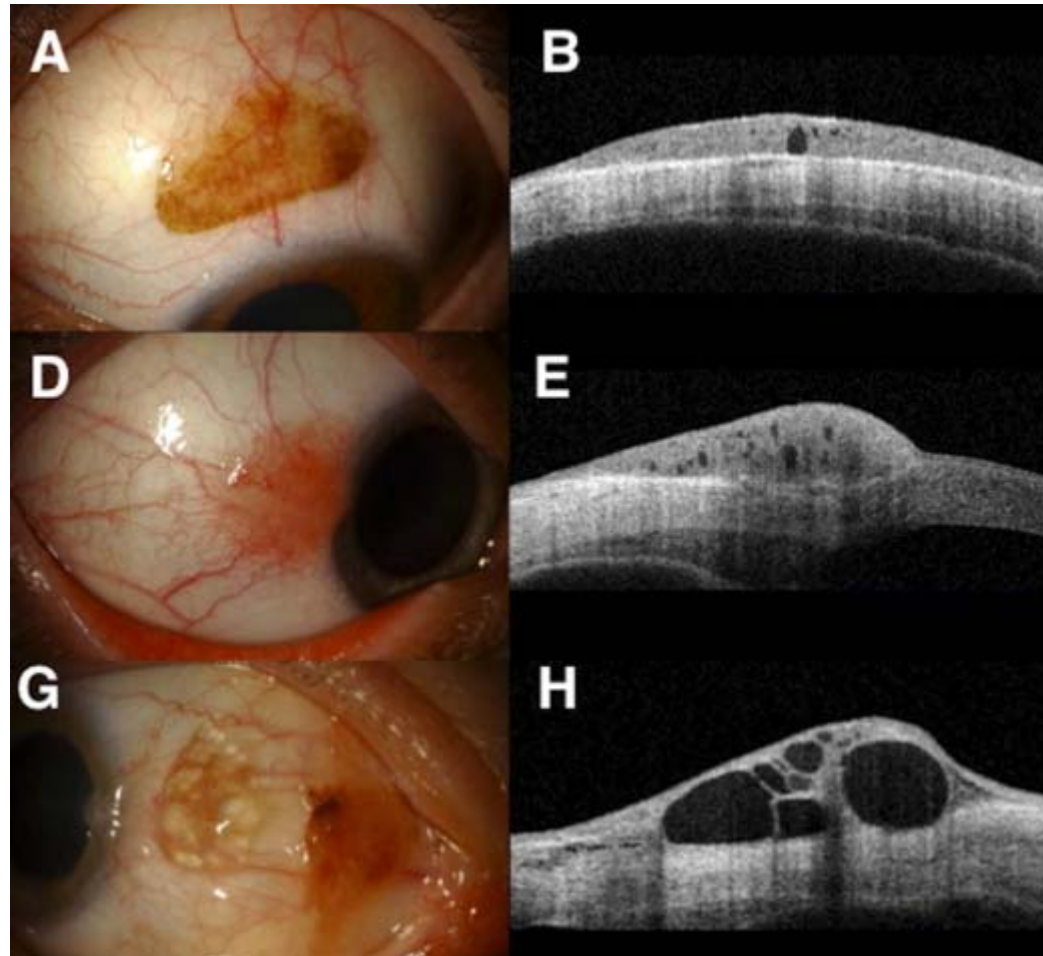
**A**, Clinical appearance with characteristic cystic areas (*arrows*). **B**, Histologically, the nevus cells have round, oval, or pear-shaped nuclei with a moderate amount of cytoplasm, mostly arranged in nests (*arrowheads*). Nevus cells are also present at the epithelial–stromal junction (*arrow*); hence, this is a compound nevus. **Note the epithelial inclusion cysts (*asterisks*) within the lesion, correlating with the clinical appearance.**

Conj nevus

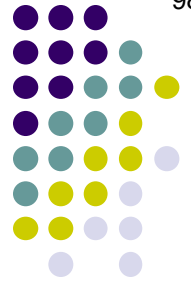




# Conjunctival Neoplasms



Conj nevus: Epithelial inclusion cysts on AS-OCT



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Melanocytic

#### Benign

#### Premalignant

#### Malignant

### Benign

1) Freckle (ephelis)

2) Complexion-associated melanosis

3) **Nevus**

--Is a **hamartoma**

--Progress from *junctional* nevus →

*compound* nevus → *subepithelial* nevus

--1/2 contain **epithelial inclusion** cysts

--Goblet cells in cyst secrete **stuff** →  
lesion enlarges → false impression of

bad thing



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*Conjunctival  
Neoplasms*

**Melanocytic**

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--Rapid enlargement during teens

common v  
uncommon

is/  
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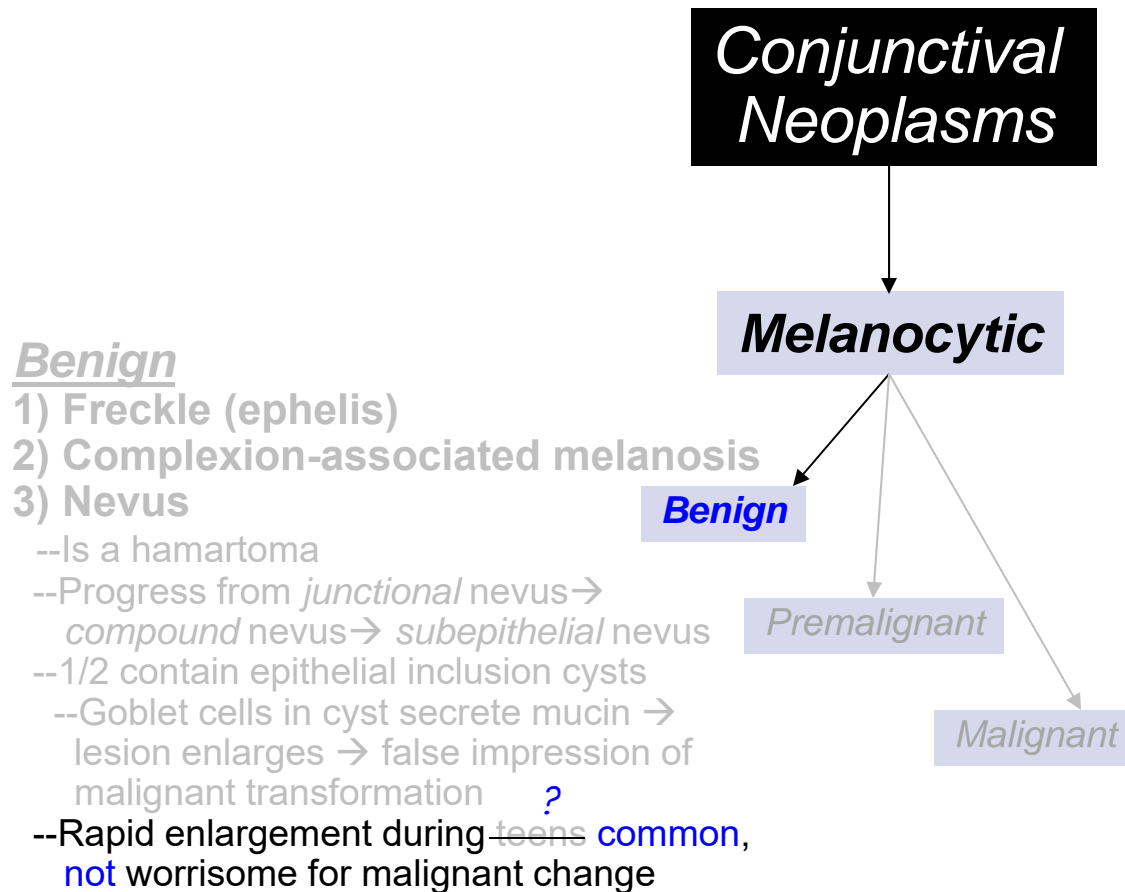
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# Conjunctival Neoplasms



*Enlargement during another life-event is also common and not a harbinger of malignant transformation. What is this other life-event?*



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--Rapid enlargement during <sup>pregnancy</sup> ~~teens~~ common,  
**not** worrisome for malignant change

*Enlargement during another life-event is also common and not a harbinger of malignant transformation. What is this other life-event?*  
Pregnancy



# Conjunctival Neoplasms

## Conjunctival Neoplasms

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

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**Mela**

**Benign**

**Pren**





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## Conjunctival Neoplasms

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

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During what period of life do conj nevi typically appear?  
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In what three locations are they most commonly found?

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--  
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Pre

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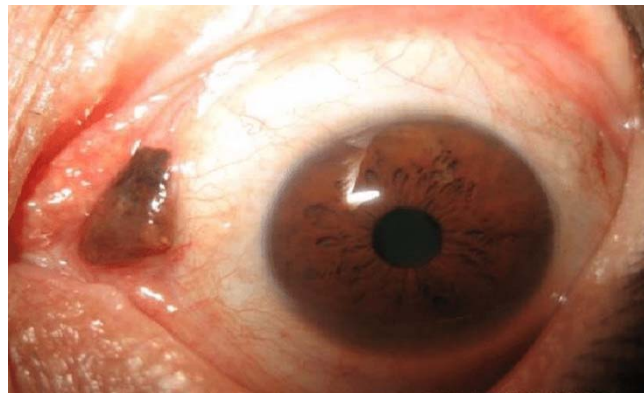
*In what three locations are they most commonly found?*

- Juxtalimbal
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- Caruncle

# Conjunctival Neoplasms



Juxtalimbal



Plica



Caruncle

Conjunctival nevus: Typical locations



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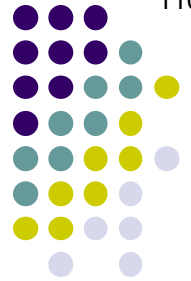
Pren

*During what period of life do conj nevi typically appear?*  
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*Can they be nonpigmented?*



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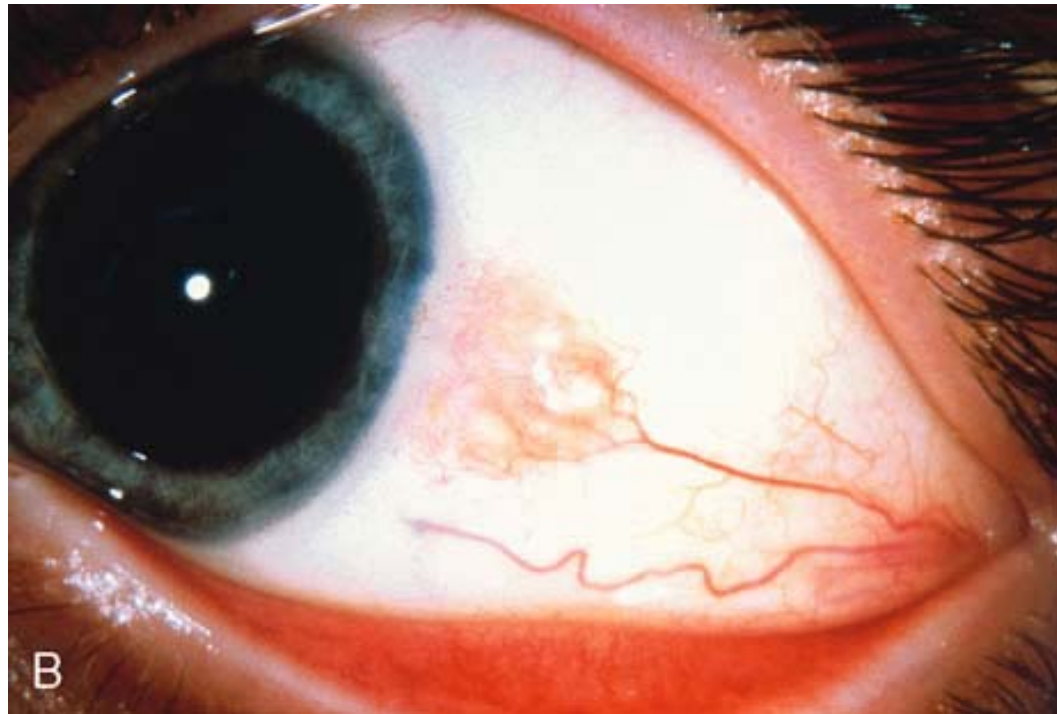
Unilateral

*Can they be nonpigmented?*

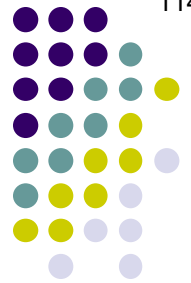
Yes—about 1/3 are nearly devoid of pigment



# Conjunctival Neoplasms



Conjunctival nevus: Nonpigmented



# Conjunctival Neoplasms

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Yes—about 1/3 are nearly devoid of pigment

*Do conj nevi carry a risk of malignant transformation?*



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*Can they be nonpigmented?*

Yes—about 1/3 are nearly devoid of pigment

*Do conj nevi carry a risk of malignant transformation?*

Yes, albeit a small one (<1%)



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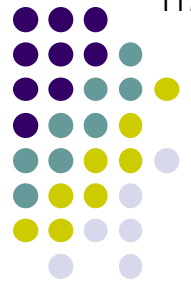
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There's a simple, commonsense reason why these pigmented lesions have a nonzero malignancy risk. What is it?

Do conj nevi carry a *risk of malignant transformation*?  
**Yes, albeit a small one (<1%)**



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**Melanocytoma**

**Benign**

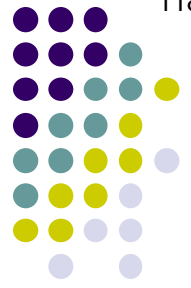
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There's a simple, commonsense reason why these pigmented lesions have a nonzero malignancy risk. What is it?  
It's that the evolution of a nevus does involve some replication of melanocytes, which introduces the opportunity for malignant transformation

Do conj nevi carry a **risk of malignant transformation**?  
**Yes, albeit a small one (<1%)**



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Do conj nevi carry a **risk of malignant transformation?**  
**Yes, albeit a small one (<1%)**

For this reason, conj nevi need to be followed on a regular basis with serial photography

# Conjunctival Neoplasms

**Conjunctival**

**Pre-malignant**

**PAM (primary acquired melanosis)**

*There's a simple, commonsense reason why PAM can carry a significant malignancy risk. What is it?*

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*PAM comes in two basic forms—what are they?*

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The usual suspects, including:

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--Nuclei that are [redacted], [redacted] and/or

[redacted]



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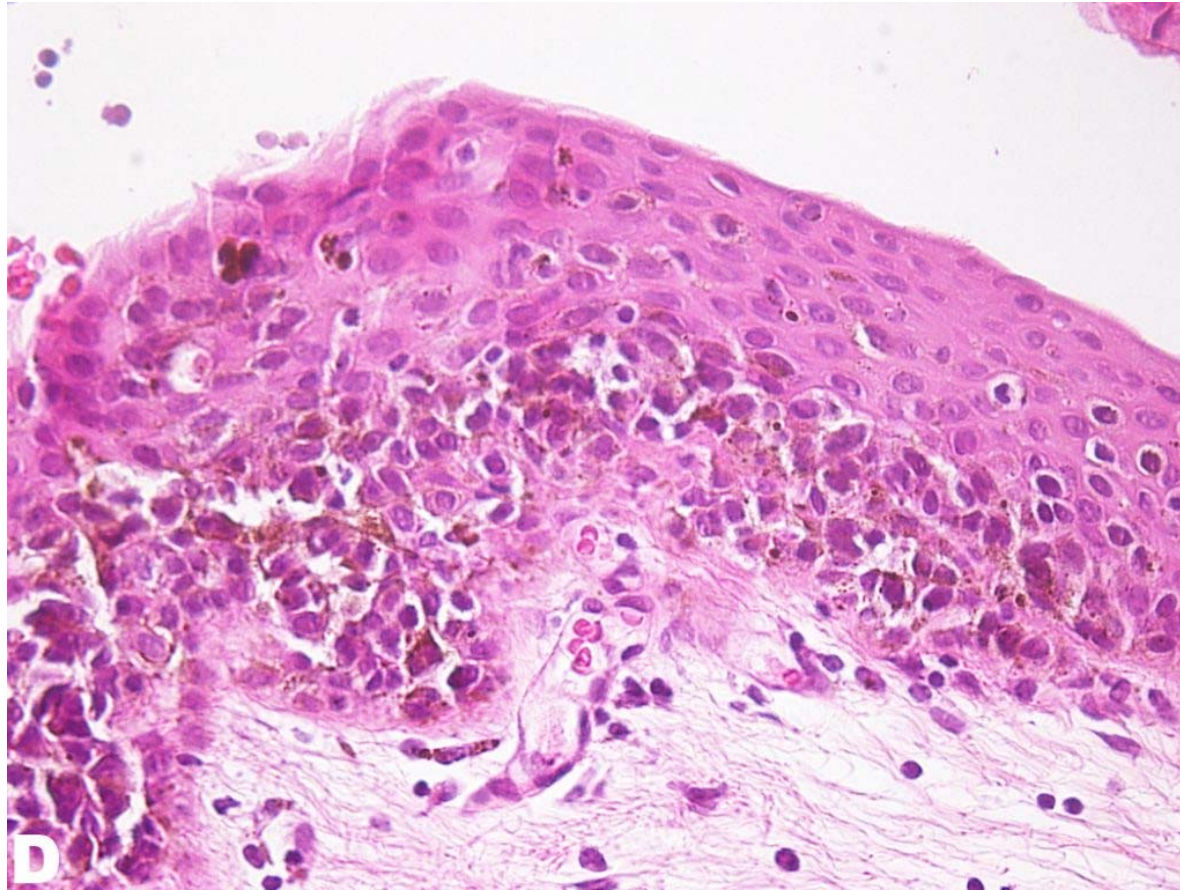
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*OK, what are 'atypical features' histologically?*

The usual suspects, including:

- Mitotic figures
- Nuclei that are large, pleomorphic and/or hyperchromatic

# Conjunctival Neoplasms



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



# Conjunctival Neoplasms

## Pre-malignant

**PAM (primary acquired melanosis)**

### Conjunctival

*There's a simple, commonsense reason why PAM can carry a significant malignancy risk. What is it?*

*In terms of both histology and clinical import, PAM without atypia is essentially identical to CAM*

cyte replication, which if transformation

*PAM comes in two basic forms—what are they? How does each behave?*

--**PAM without atypia**: The proliferating melanocytes are confined to the basal epithelial layer, and lack atypical features

--**PAM with atypia**: The proliferating melanocytes migrate into more superficial epithelial layers, and display **atypical features**

**Premalignant**

*How can you tell at the slit-lamp whether a PAM lesion has atypia?*

You can't—this call can only be made by your friend the pathologist

*OK, what are 'atypical features' histologically?*

The usual suspects, including:

- Mitotic figures
- Nuclei that are large, pleomorphic and/or hyperchromatic





# Conjunctival Neoplasms

## Pre-malignant

PAM (primary acquired melanosis)

### Conjunctival

*There's a simple, commonsense reason why PAM can carry a significant malignancy risk. What is it?*

It's that PAM can involve extensive melanocyte replication, which if present, provides opportunity for malignant transformation

*PAM comes in two basic forms—what are they? How does each behave?*

--PAM without atypia

--PAM with atypia

--PAM with atypia

--PAM with atypia

*Because this next section deals with pre-malignant lesions, it will concern PAM with atypia exclusively*

**Premalignant**

*How can you tell at the slit-lamp whether a PAM lesion has atypia?*

You can't—this call can only be made by your friend the pathologist

*OK, what are 'atypical features' histologically?*

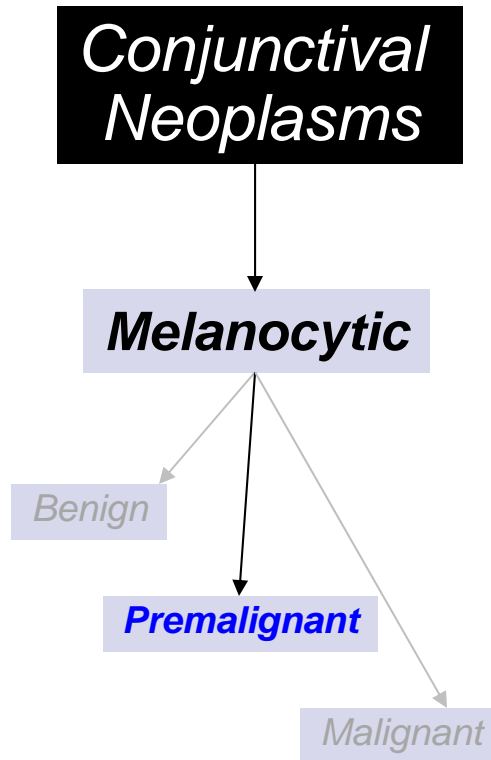
The usual suspects, including:

--Mitotic figures

--Nuclei that are large, pleomorphic and/or hyperchromatic



# Conjunctival Neoplasms



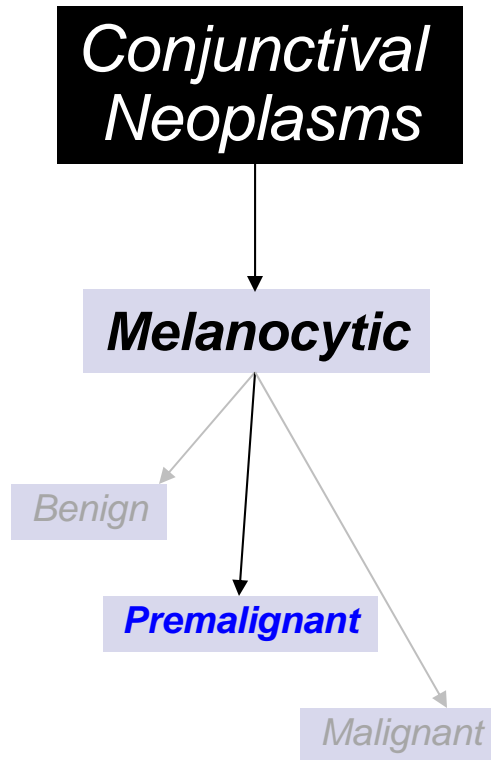
## Pre-malignant

**PAM** (primary acquired melanosis)

--Skin analog: two words



# Conjunctival Neoplasms



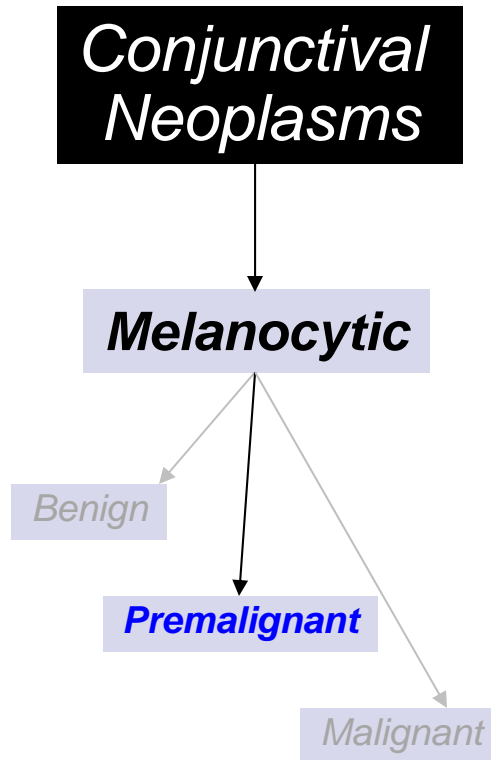
## Pre-malignant

**PAM** (primary acquired melanosis)

--Skin analog: [Lentigo maligna](#)



# Conjunctival Neoplasms



## Pre-malignant

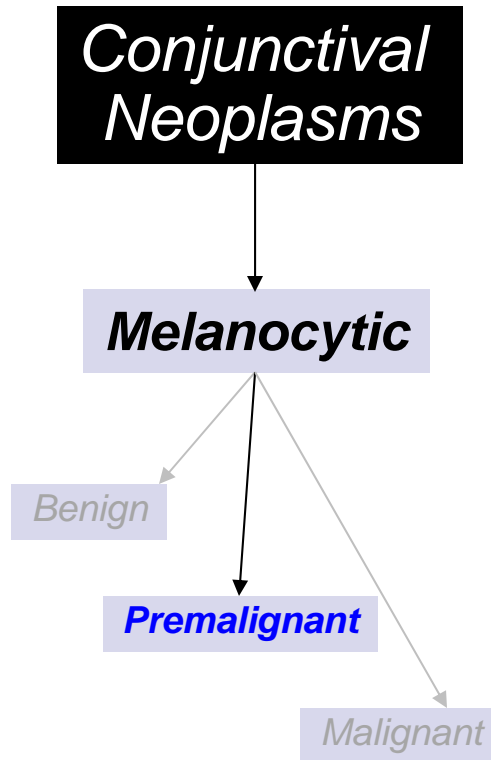
**PAM** (primary acquired melanosis)

--Skin analog: [Lentigo maligna](#)

--Cystic? (Y/N)



# Conjunctival Neoplasms



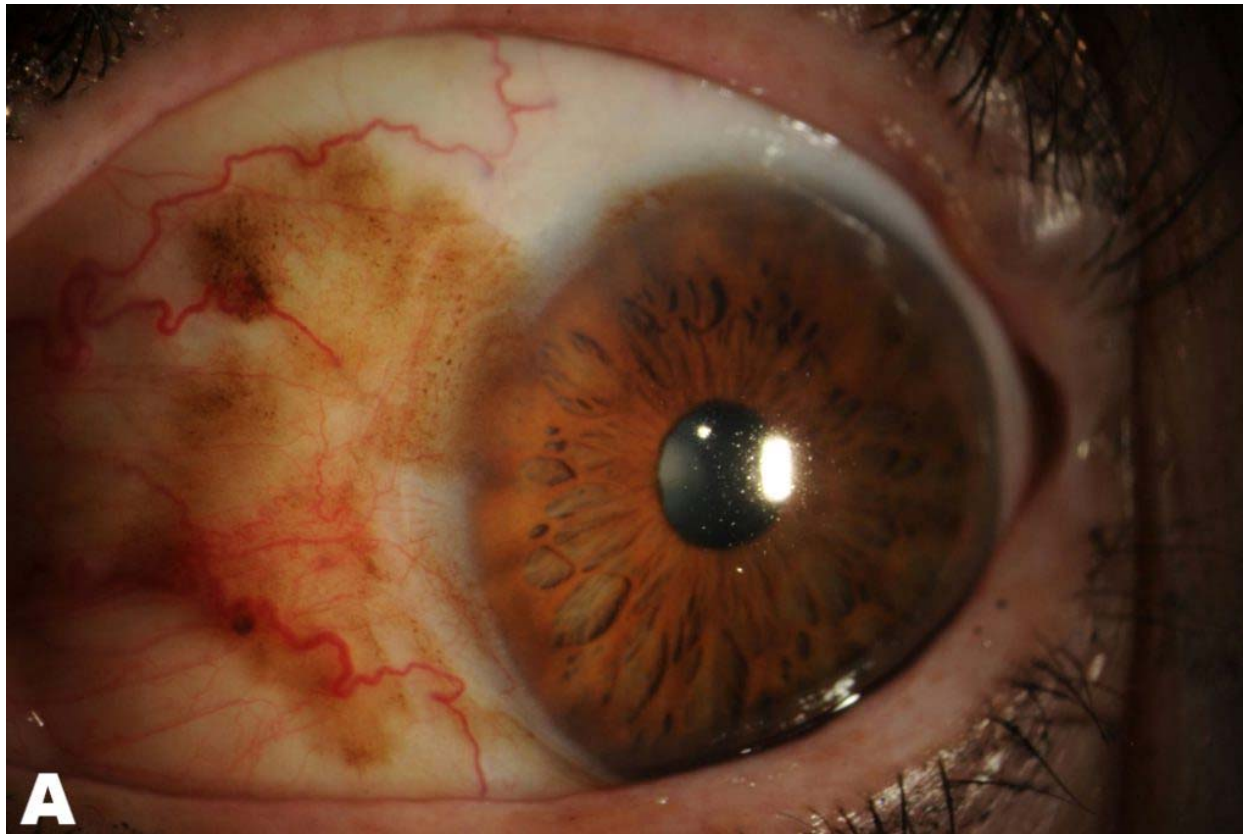
## Pre-malignant

**PAM** (primary acquired melanosis)

--Skin analog: **Lentigo maligna**

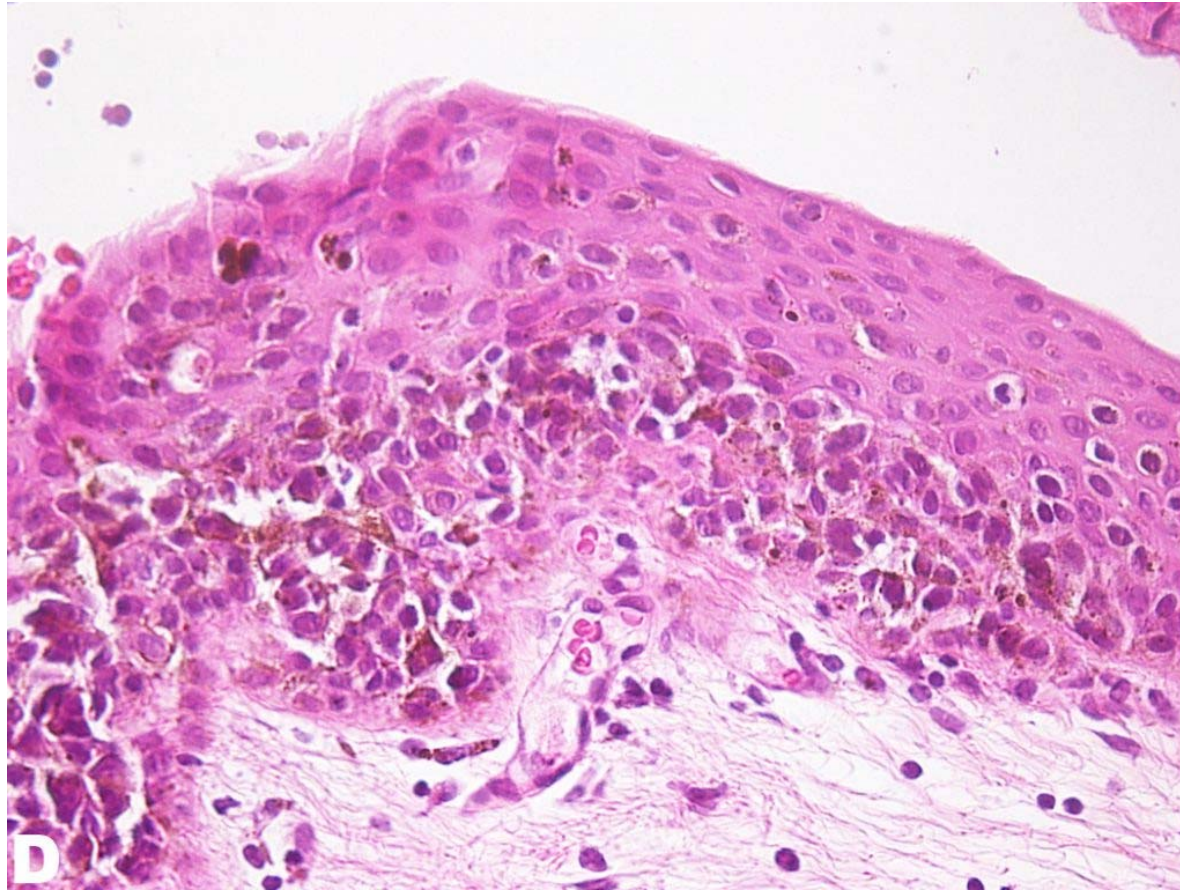
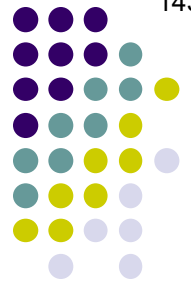
--Cystic? **NO**

# Conjunctival Neoplasms



PAM with (biopsy-proven) atypia. Note the absence of cysts

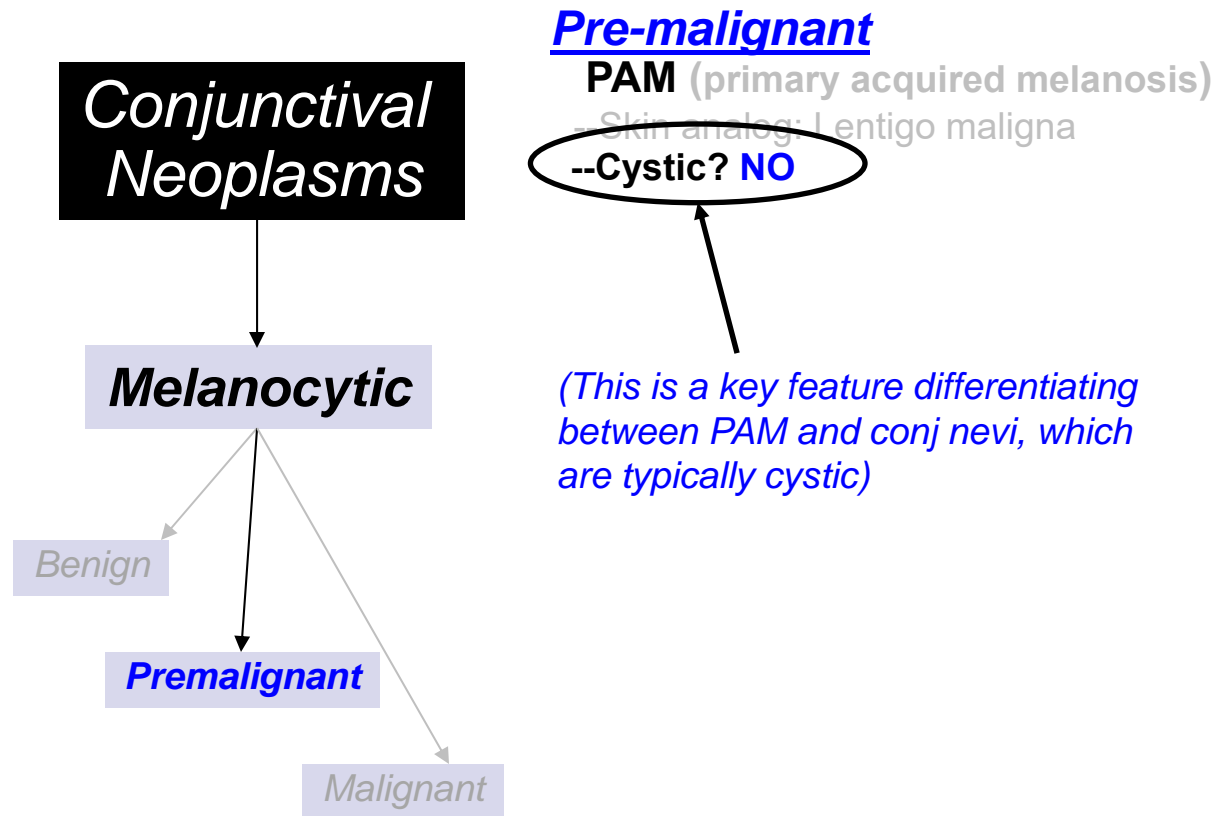
# Conjunctival Neoplasms



PAM with atypia: Re-presentation of image to point out the absence of cystic changes



# Conjunctival Neoplasms







# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Pre-malignant

PAM (primary acquired melanosis)

--Skin? analog: Lentigo maligna

--Cystic? YES

*While not cystic in appearance, PAM can manifest in a way that has a memorably spicy description. What is it?*

## Melanocytic

Benign

**Premalignant**

Malignant



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Pre-malignant

PAM (primary acquired melanosis)

*Peppery* log: Lentigo maligna

--Cystic? YES

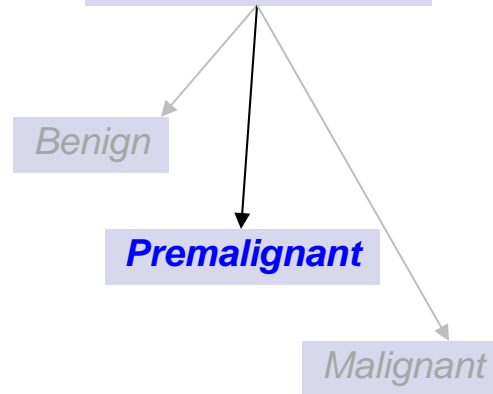
While not cystic in appearance, PAM can manifest in a way that has a memorably spicy description. What is it?  
PAM may appear 'peppery'

### Melanocytic

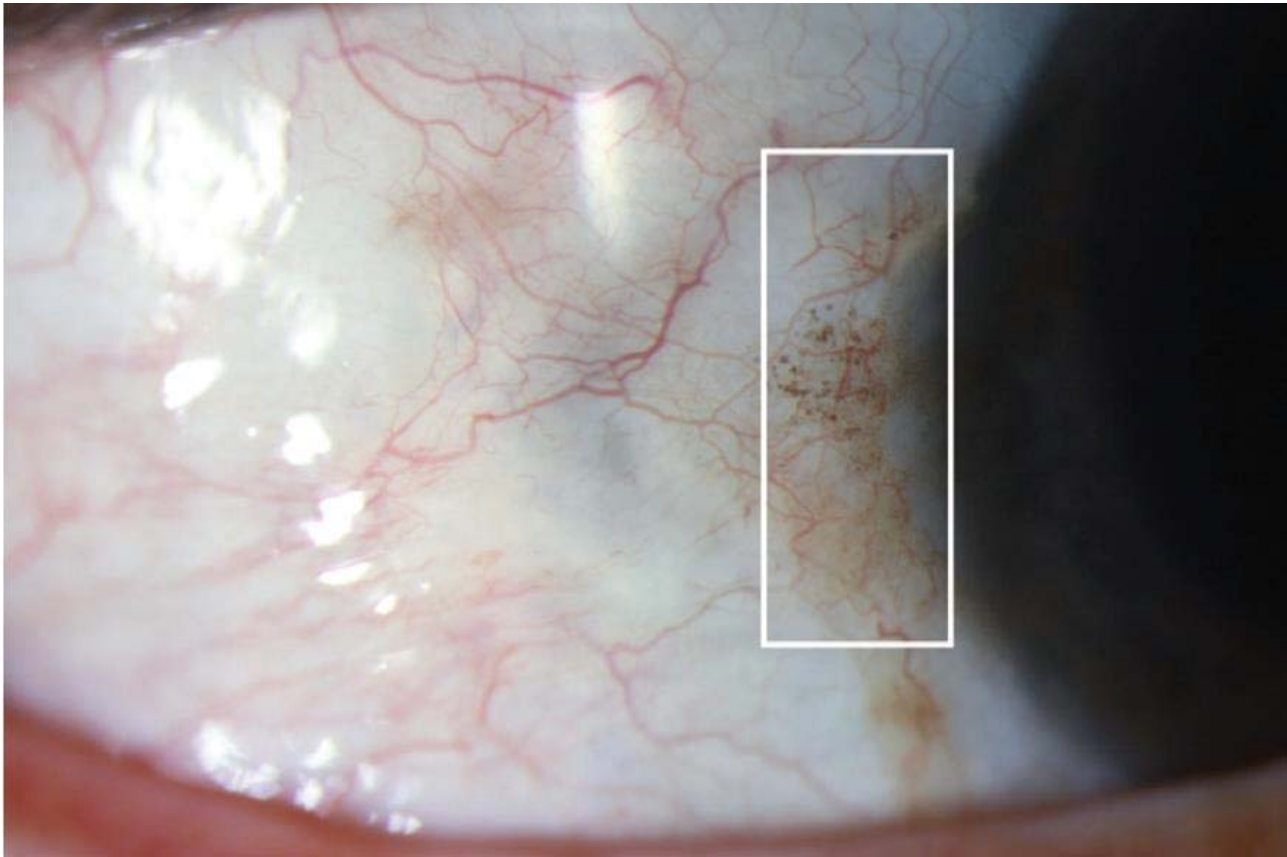
Benign

**Premalignant**

Malignant



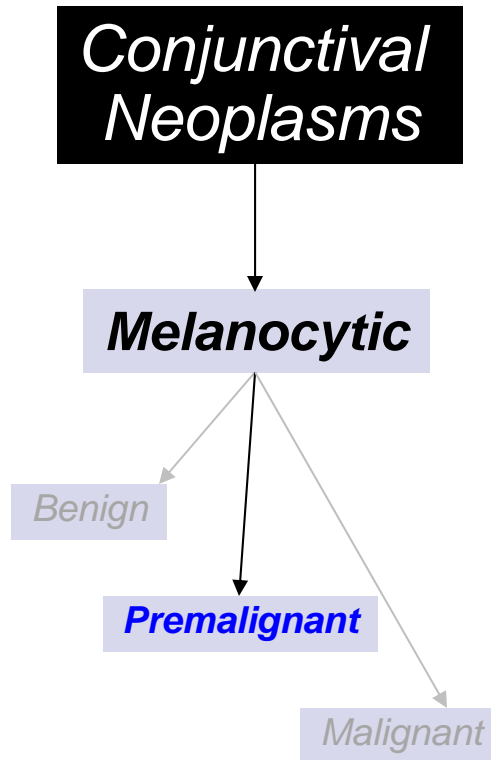
# Conjunctival Neoplasms



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



# Conjunctival Neoplasms



## Pre-malignant

**PAM (primary acquired melanosis)**

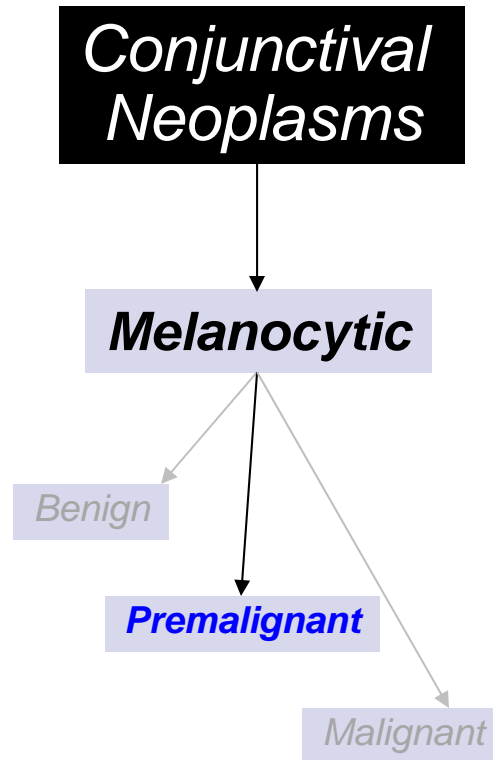
--Skin analog: **Lentigo maligna**

--Cystic? **NO**

--Bilateral? (Y/N)



# Conjunctival Neoplasms



## Pre-malignant

**PAM (primary acquired melanosis)**

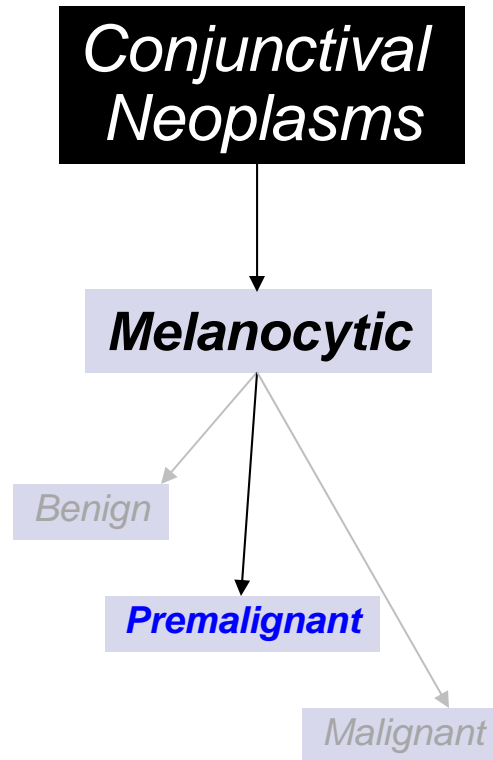
--Skin analog: **Lentigo maligna**

--Cystic? **NO**

--Bilateral? **NO**



# Conjunctival Neoplasms



## Pre-malignant

**PAM (primary acquired melanosis)**

--Skin analog: **Lentigo maligna**

--Cystic? **NO**

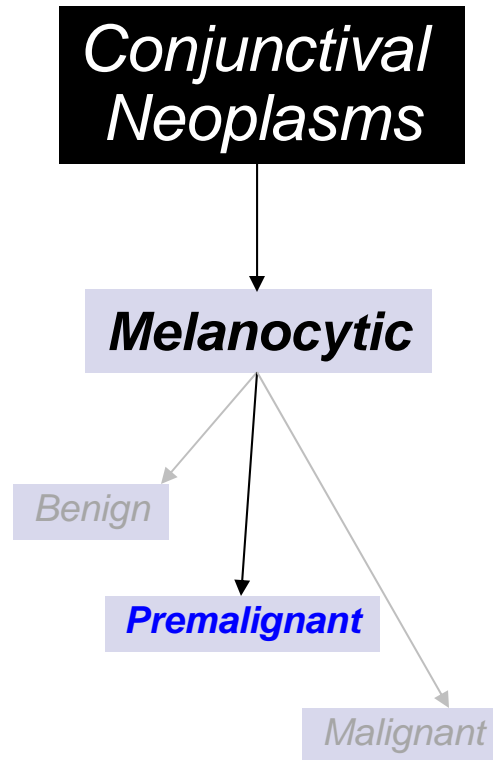
--Bilateral? **NO**

--Risk factors: race; age

complexion



# Conjunctival Neoplasms



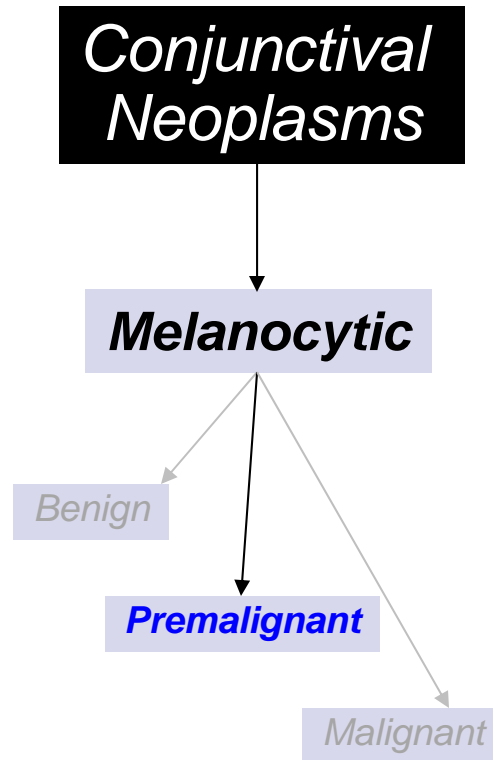
## Pre-malignant

**PAM (primary acquired melanosis)**

- Skin analog: **Lentigo maligna**
- Cystic? **NO**
- Bilateral? **NO**
- Risk factors: **White; middle-aged; fair complexion**



# Conjunctival Neoplasms



## Pre-malignant

**PAM (primary acquired melanosis)**

--Skin analog: **Lentigo maligna**

--Cystic? **NO**

--Bilateral? **NO**

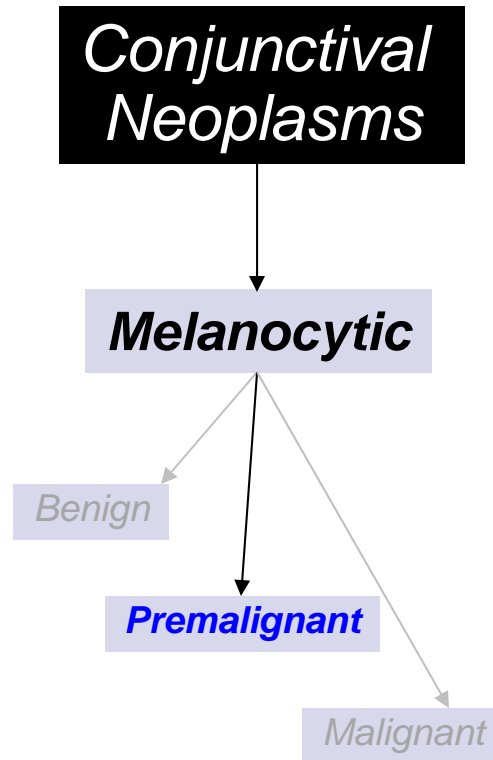
--Risk factors: **White; middle-aged; fair complexion**

--Malignant transformation indicated by 3 things





# Conjunctival Neoplasms



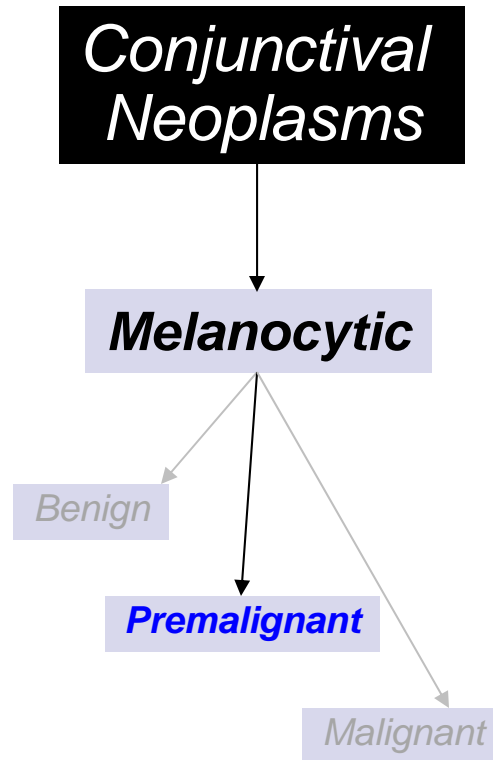
## Pre-malignant

**PAM (primary acquired melanosis)**

- Skin analog: **Lentigo maligna**
- Cystic? **NO**
- Bilateral? **NO**
- Risk factors: **White; middle-aged; fair complexion**
- Malignant transformation indicated by **↑ size, nodularity, ↑ vascularity**



# Conjunctival Neoplasms



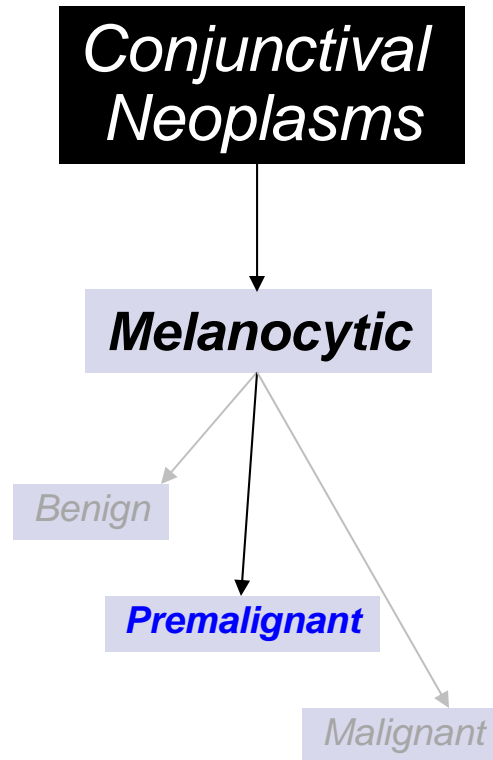
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# Conjunctival Neoplasms



## Pre-malignant

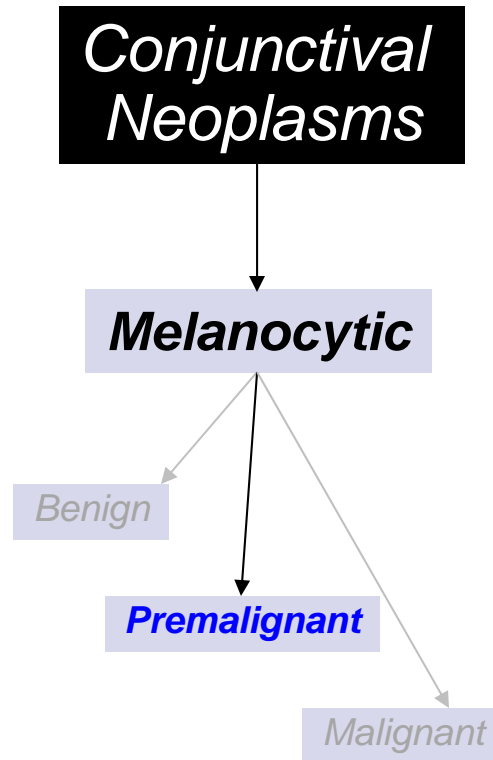
**PAM** (primary acquired melanosis)

- Skin analog: Lentigo maligna
- Cystic? NO
- Bilateral? NO
- Risk factors: White; middle-aged; fair complexion
- Malignant transformation indicated by ↑ size, nodularity, ↑ **vascularity**

(ie, the presence of 'two words')



# Conjunctival Neoplasms



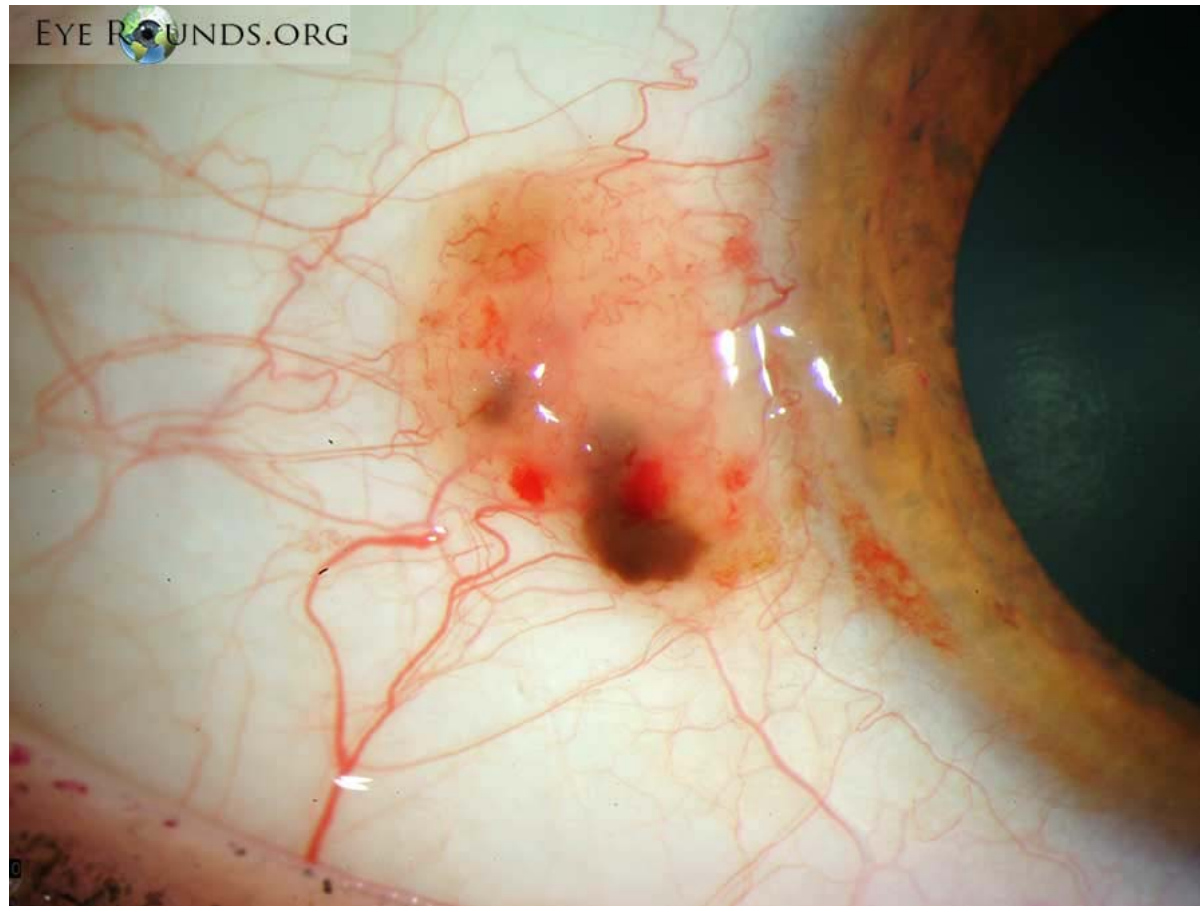
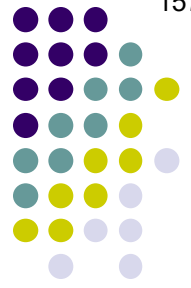
## Pre-malignant

**PAM (primary acquired melanosis)**

- Skin analog: Lentigo maligna
- Cystic? NO
- Bilateral? NO
- Risk factors: White; middle-aged; fair complexion
- Malignant transformation indicated by ↑ size, nodularity, ↑ **vascularity**

(ie, the presence of 'feeder vessels')

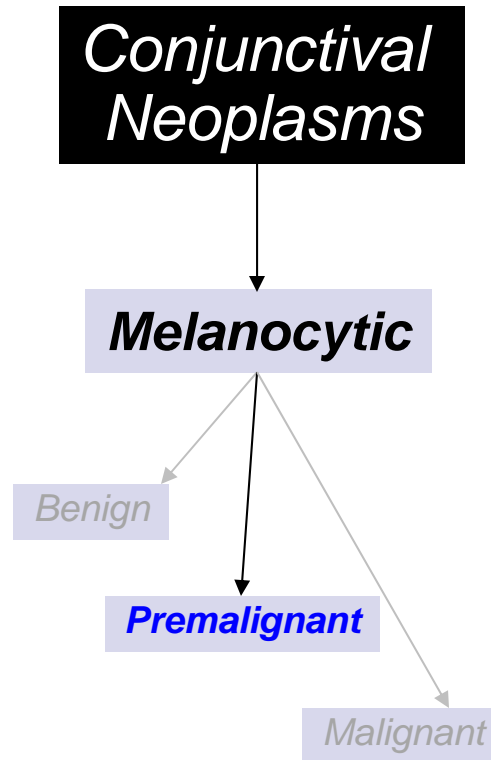
# Conjunctival Neoplasms



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



# Conjunctival Neoplasms



## Pre-malignant

**PAM (primary acquired melanosis)**

--Skin analog: **Lentigo maligna**

--Cystic? **NO**

--Bilateral? **NO**

--Risk factors: **White; middle-aged; fair complexion**

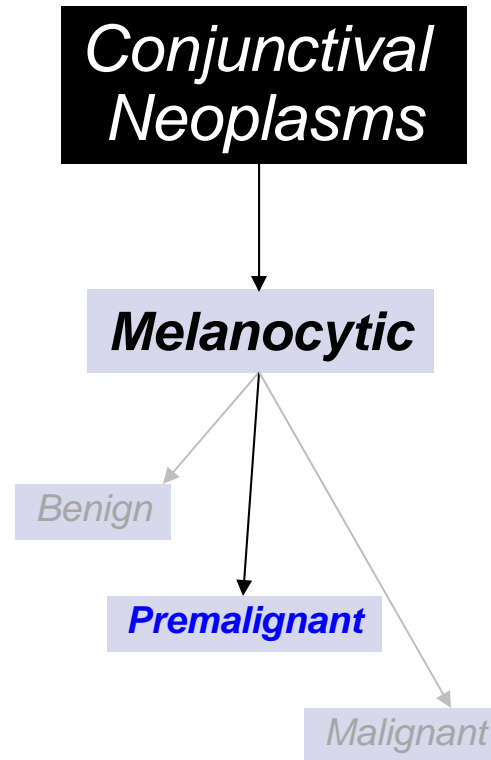
--Malignant transformation indicated by **↑ size, nodularity, ↑ vascularity**

--Management:

--**Bulbar.**  If suspect malignant change,



# Conjunctival Neoplasms



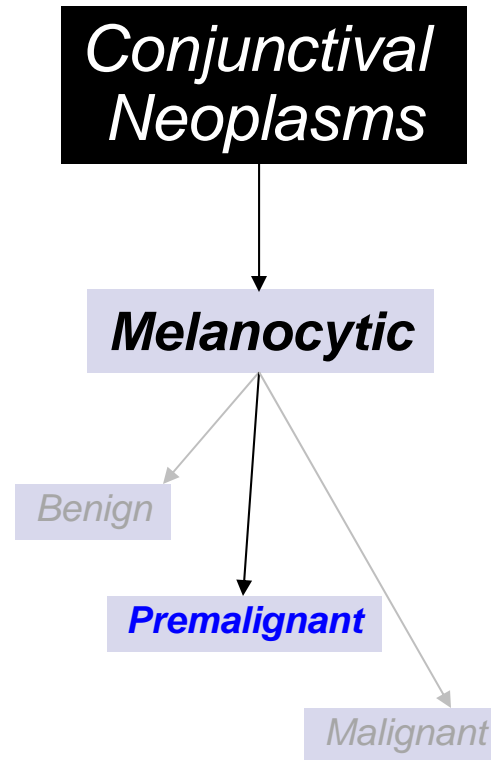
## Pre-malignant

**PAM (primary acquired melanosis)**

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- Cystic? **NO**
- Bilateral? **NO**
- Risk factors: **White; middle-aged; fair complexion**
- Malignant transformation indicated by **↑ size, nodularity, ↑ vascularity**
- Management:
  - Bulbar**. **Observe**. If suspect malignant change, **excise**



# Conjunctival Neoplasms



## Pre-malignant

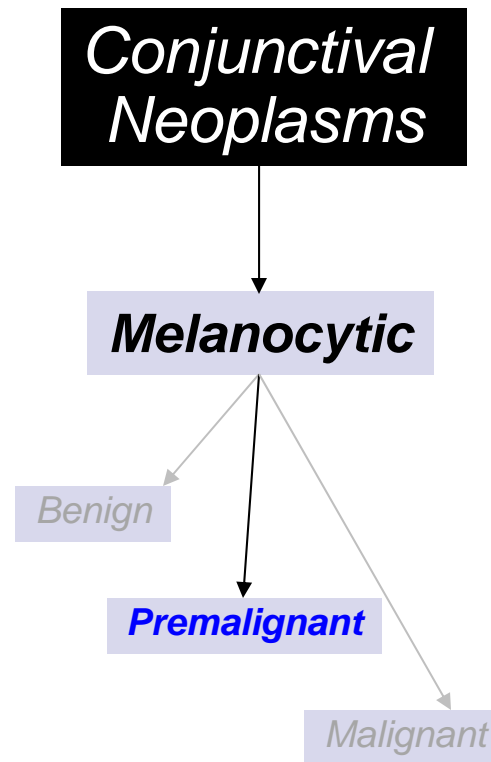
**PAM (primary acquired melanosis)**

- Skin analog: **Lentigo maligna**
- Cystic? **NO**
- Bilateral? **NO**
- Risk factors: **White; middle-aged; fair complexion**
- Malignant transformation indicated by **↑ size, nodularity, ↑ vascularity**
- Management:
  - Bulbar**: **Observe**. If suspect malignant change, **excise**
  - Palpebral**:





# Conjunctival Neoplasms



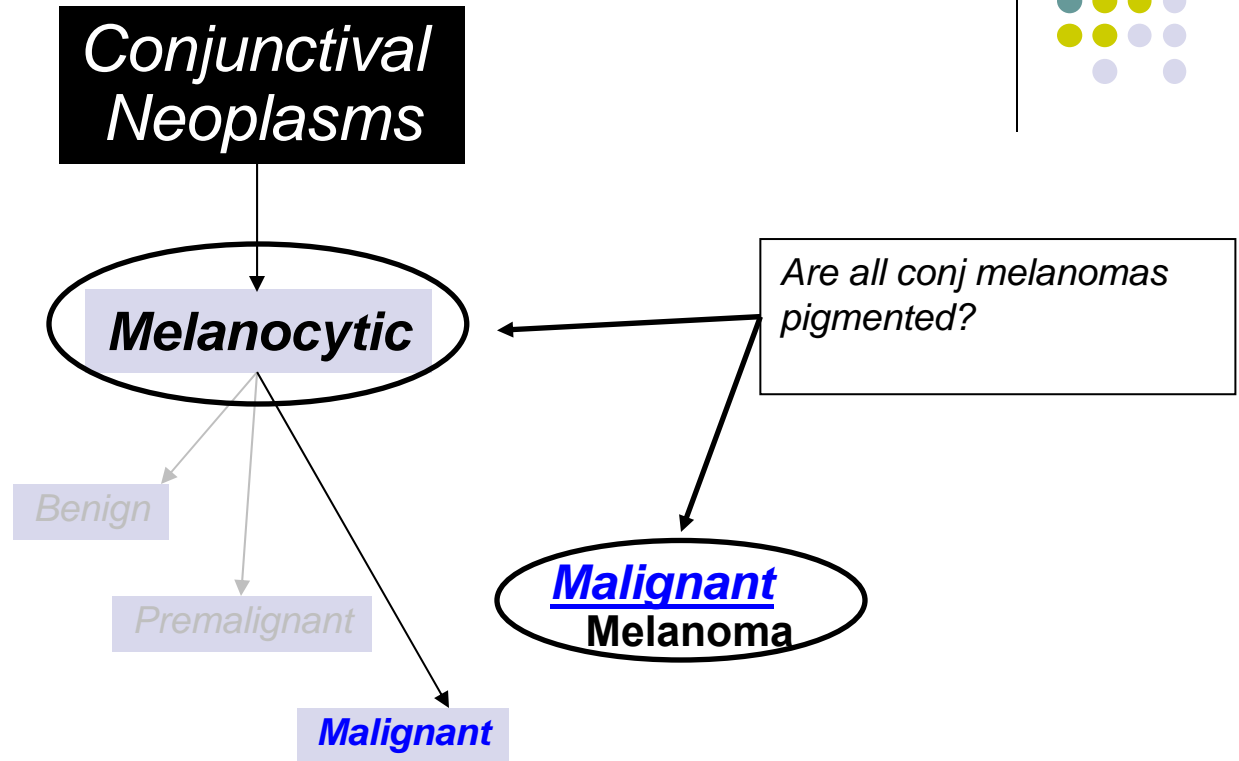
## Pre-malignant

**PAM (primary acquired melanosis)**

- Skin analog: **Lentigo maligna**
- Cystic? **NO**
- Bilateral? **NO**
- Risk factors: **White; middle-aged; fair complexion**
- Malignant transformation indicated by **↑ size, nodularity, ↑ vascularity**
- Management:
  - Bulbar**: **Observe**. If suspect malignant change, **excise**
  - Palpebral**: **Don't observe—excise!**

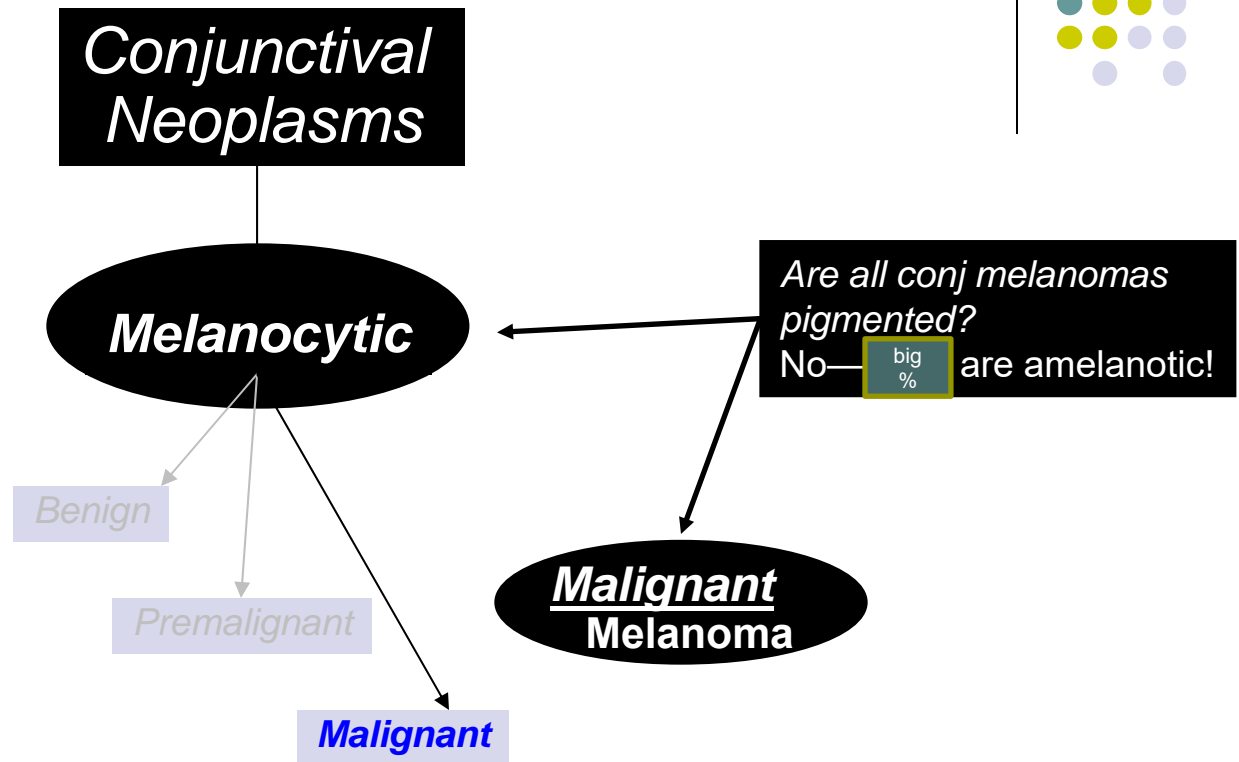


# Conjunctival Neoplasms



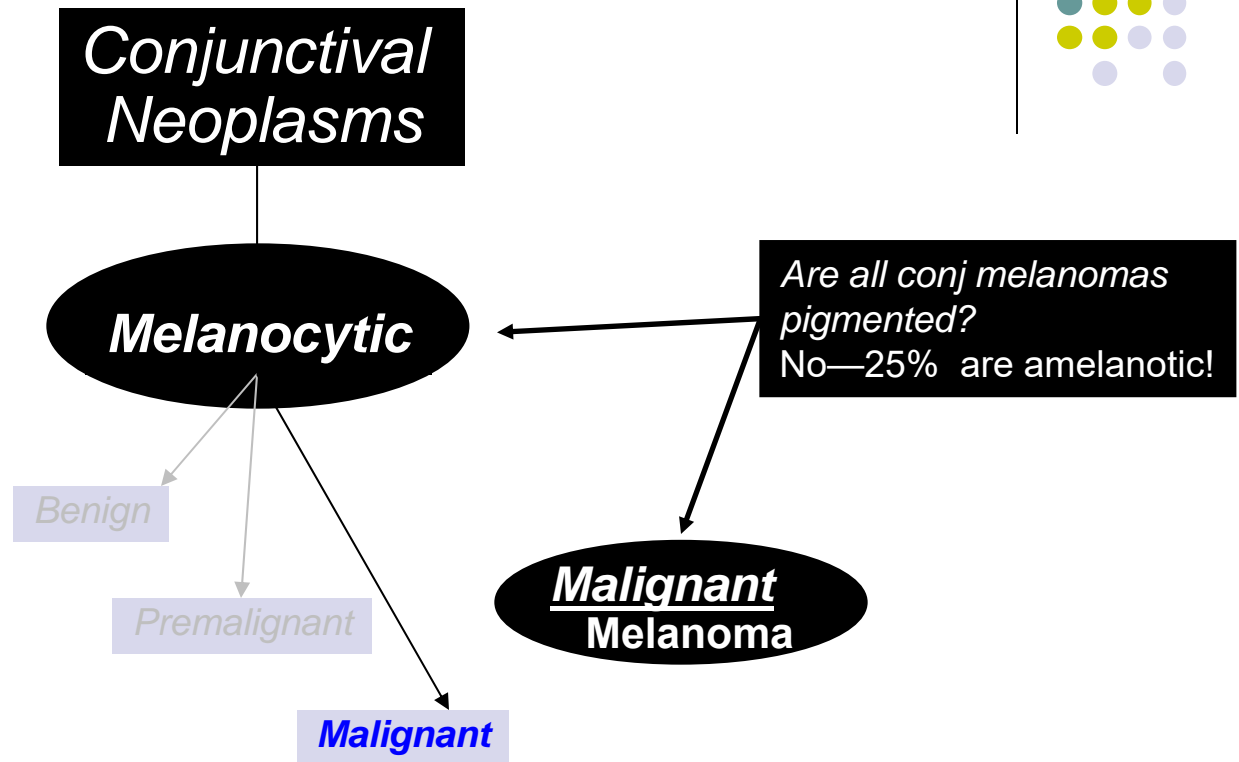


# Conjunctival Neoplasms





# Conjunctival Neoplasms



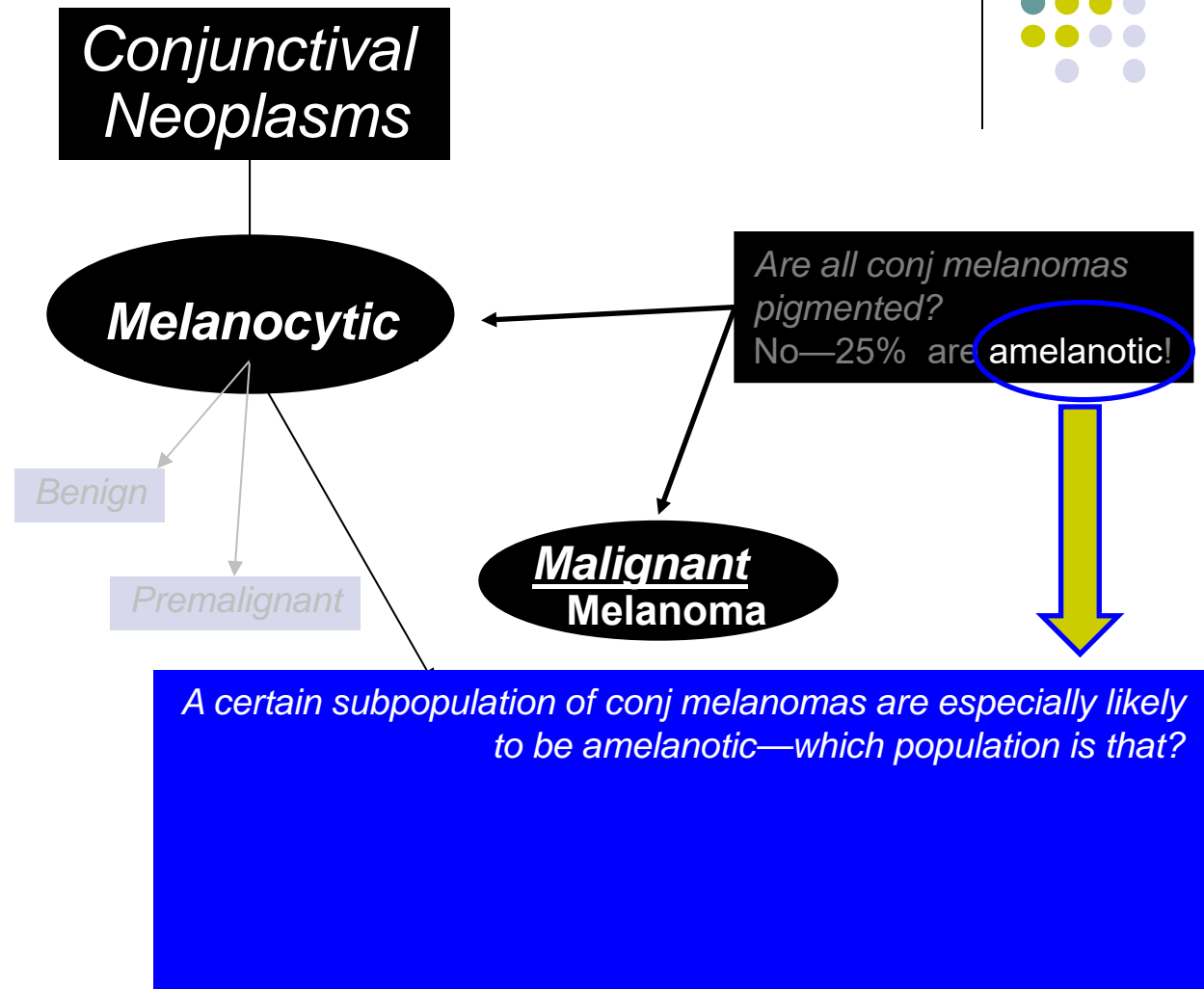
# Conjunctival Neoplasms



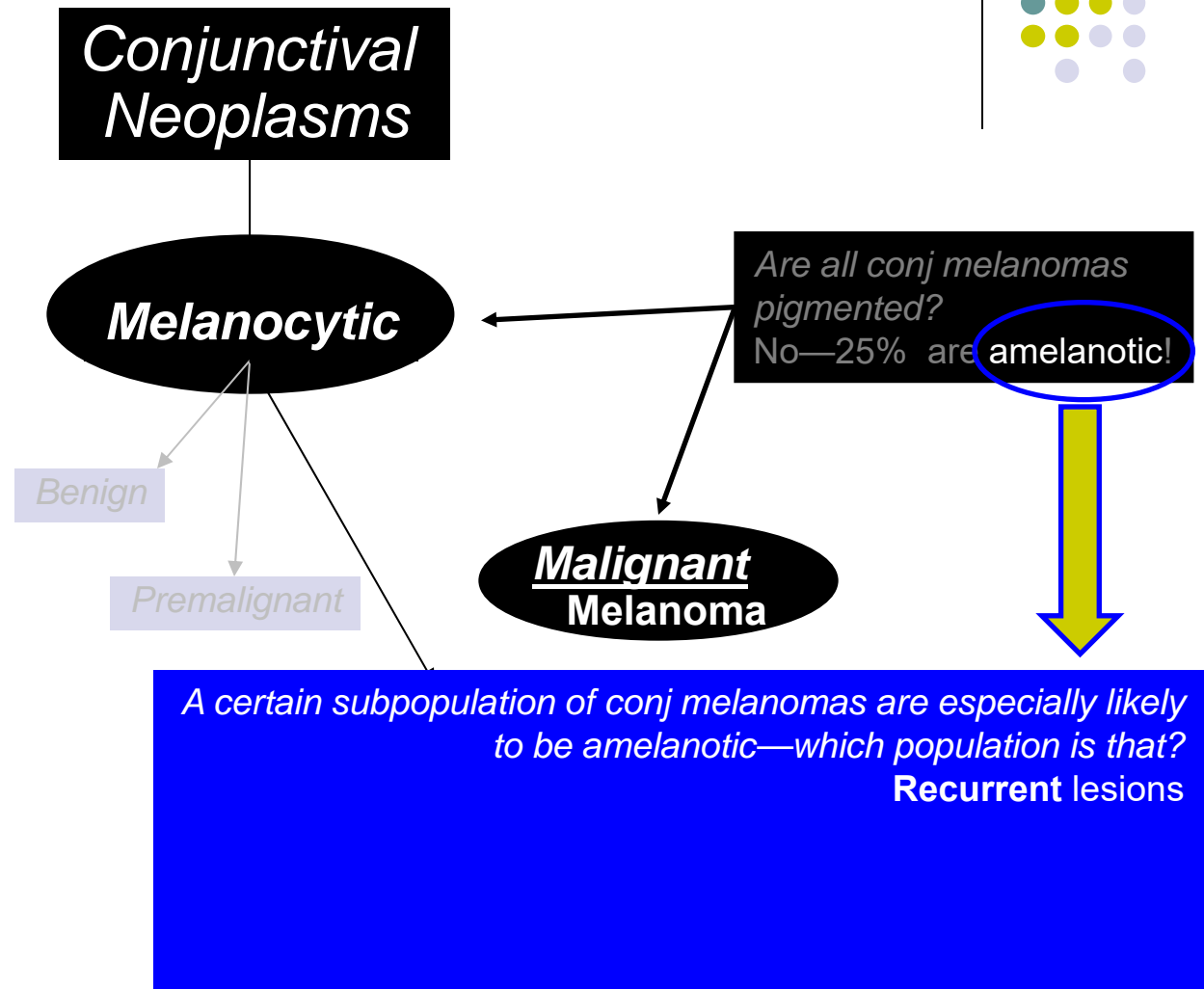
Seeing's how 25% are amelanotic, you'd think the Magic Google Box would have been able to come up with a pic of one

Amelanotic conj melanoma

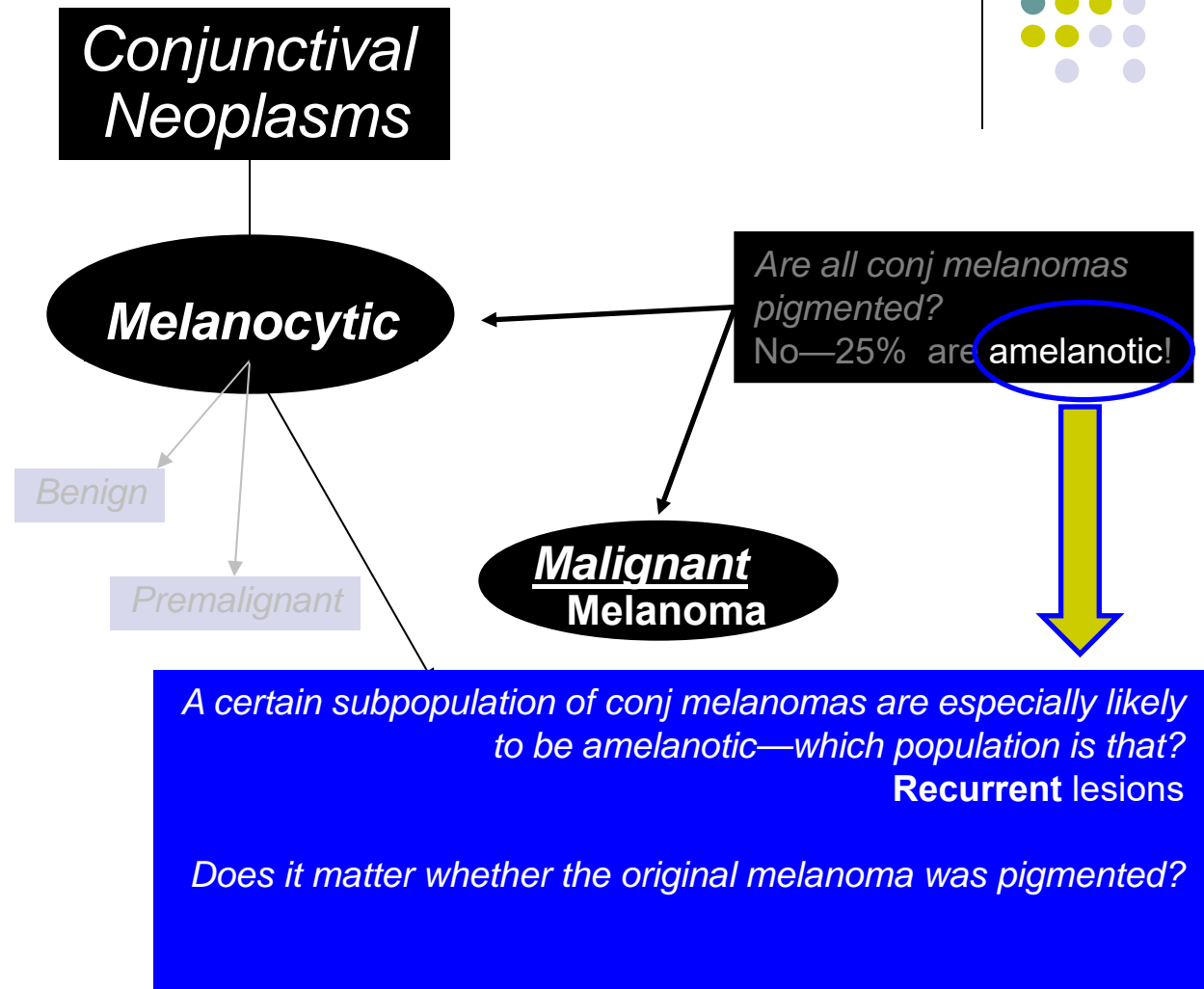
# Conjunctival Neoplasms



# Conjunctival Neoplasms

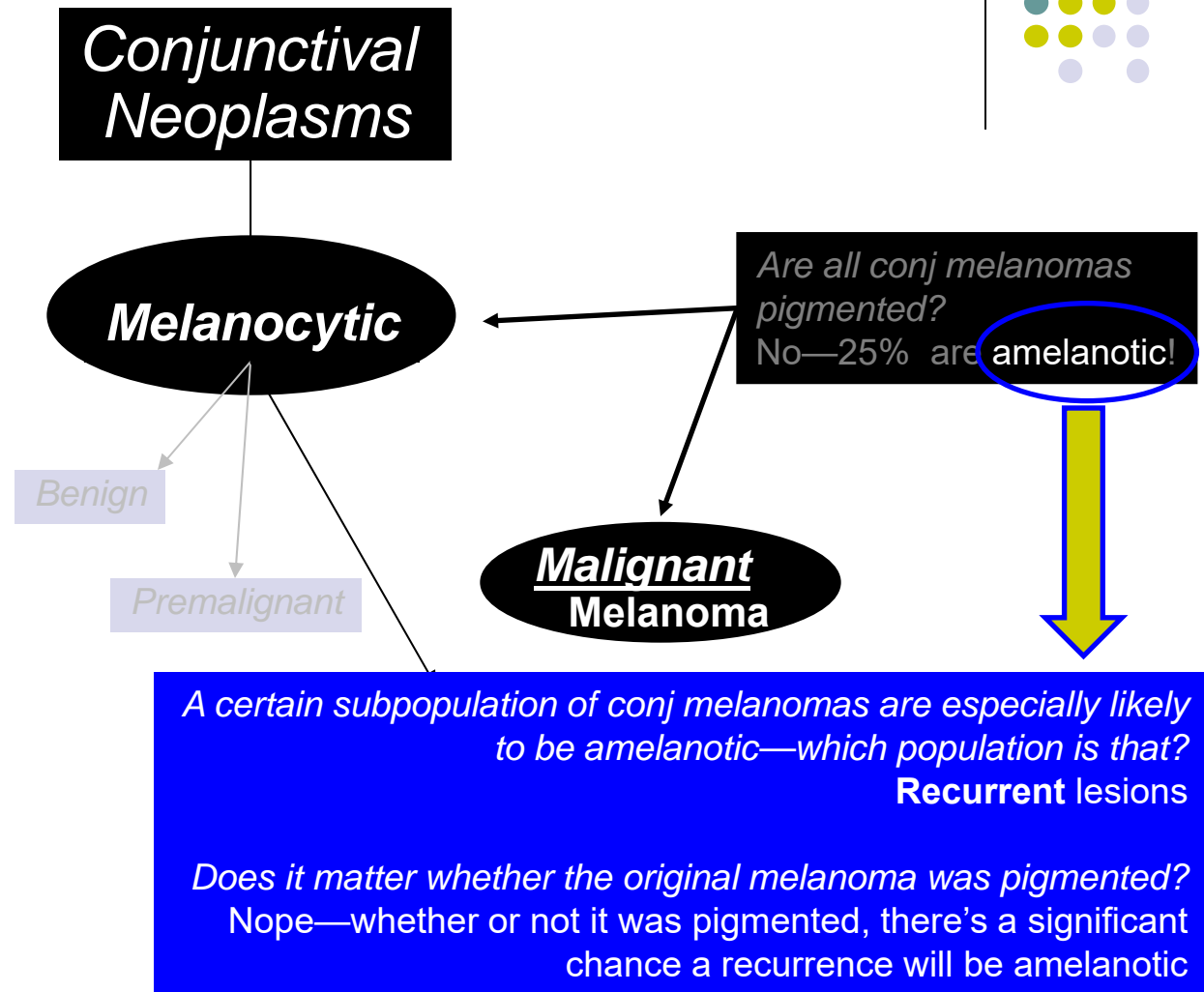


# Conjunctival Neoplasms

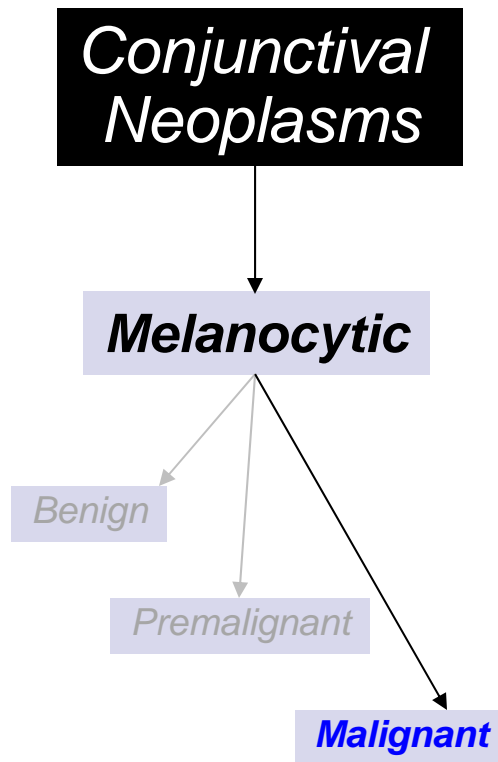




# Conjunctival Neoplasms



# Conjunctival Neoplasms

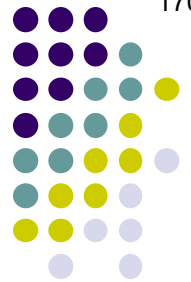


## Malignant Melanoma

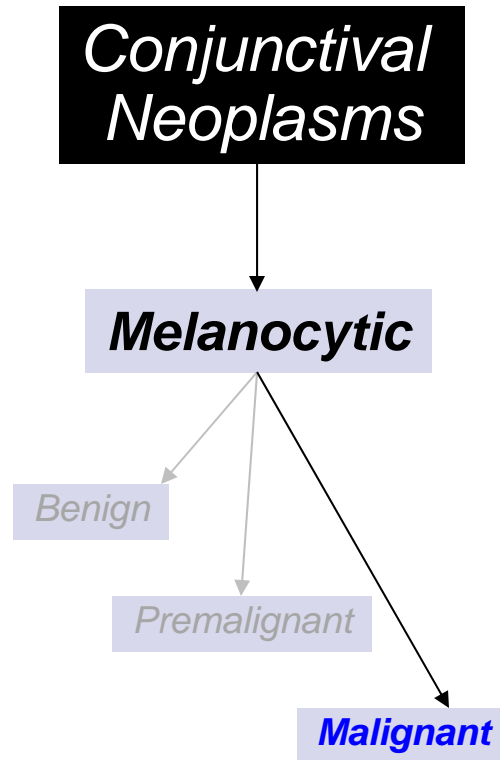
--Prevalence

small # per big #

whites



# Conjunctival Neoplasms

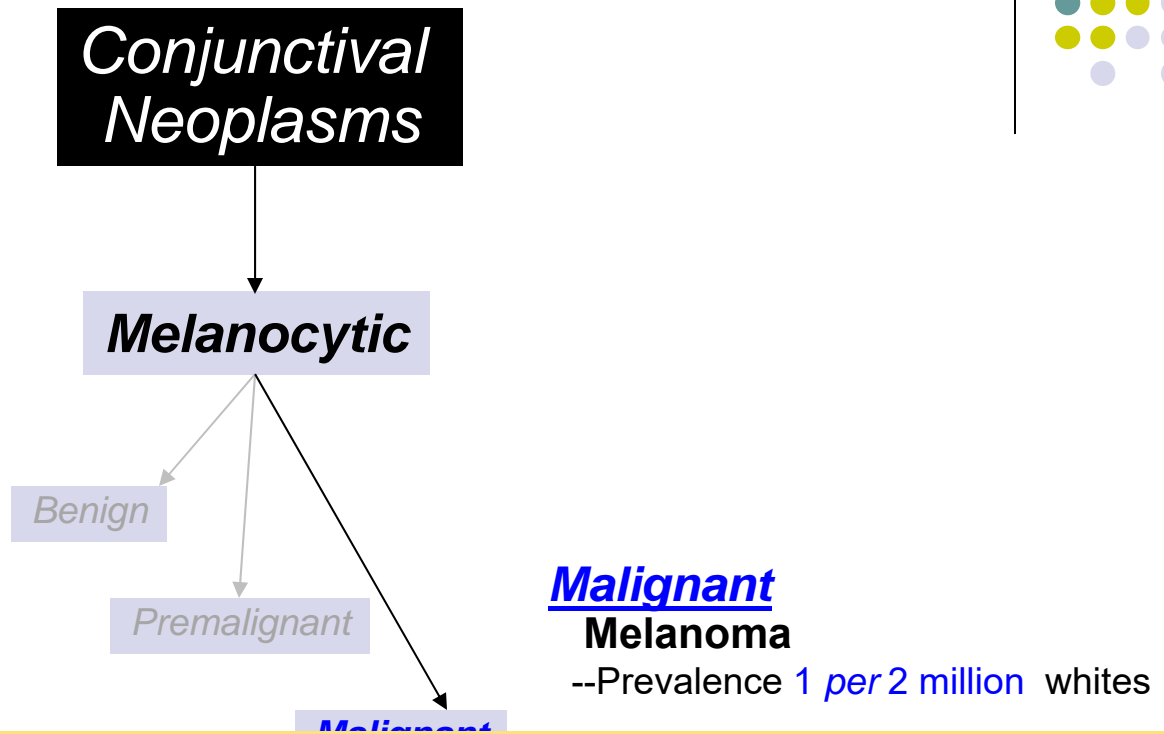


**Malignant**  
**Melanoma**

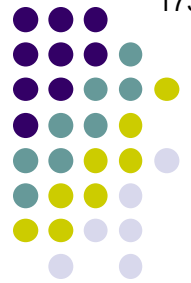
--Prevalence 1 *per 2 million* whites



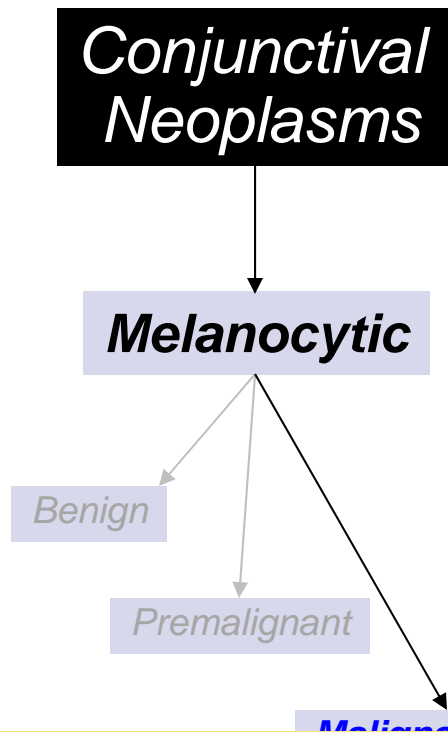
# Conjunctival Neoplasms



*Which is more common, choroidal melanoma or skin melanoma?*



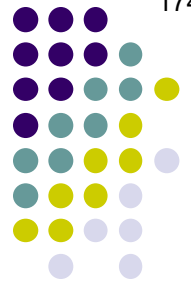
# Conjunctival Neoplasms



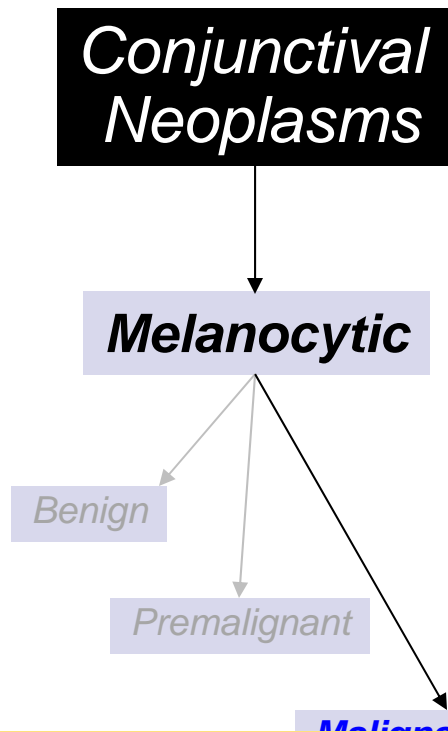
## Malignant Melanoma

--Prevalence 1 *per 2 million* whites

*Which is more common, choroidal melanoma or skin melanoma?*  
Skin, by well over an order of magnitude



# Conjunctival Neoplasms



## Malignant Melanoma

--Prevalence 1 *per 2 million* whites

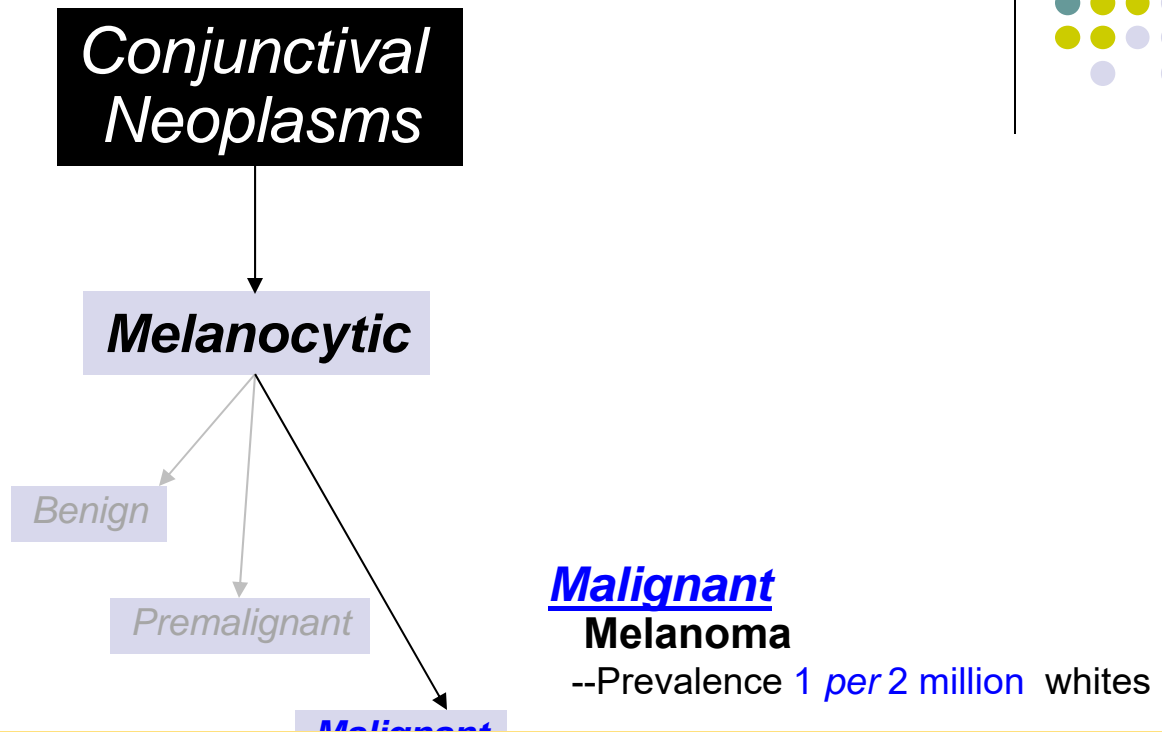
*Which is more common, choroidal melanoma or skin melanoma?*

Skin, by well over an order of magnitude

*Which is more common, conj melanoma or choroidal melanoma?*



# Conjunctival Neoplasms

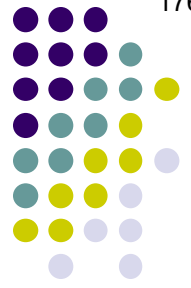


*Which is more common, choroidal melanoma or skin melanoma?*

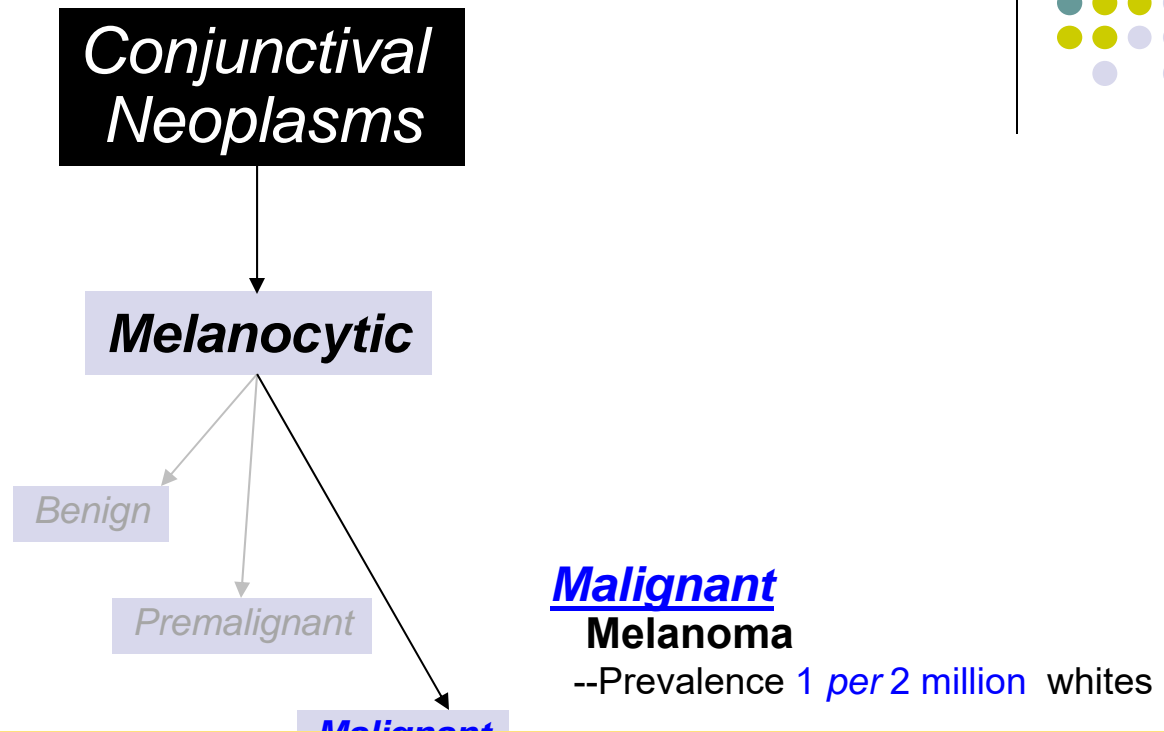
Skin, by well over an order of magnitude

*Which is more common, conj melanoma or choroidal melanoma?*

Choroidal, by well over an order of magnitude (somewhere between 20 and 40 times as common). So, it follows that melanoma of the skin is hundreds of times more common than conj melanoma.



# Conjunctival Neoplasms



*Which is more common, choroidal melanoma or skin melanoma?*

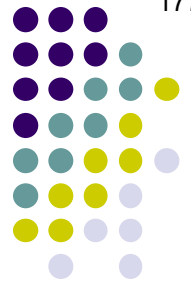
Skin, by well over an order of magnitude

*Which is more common, conj melanoma or choroidal melanoma?*

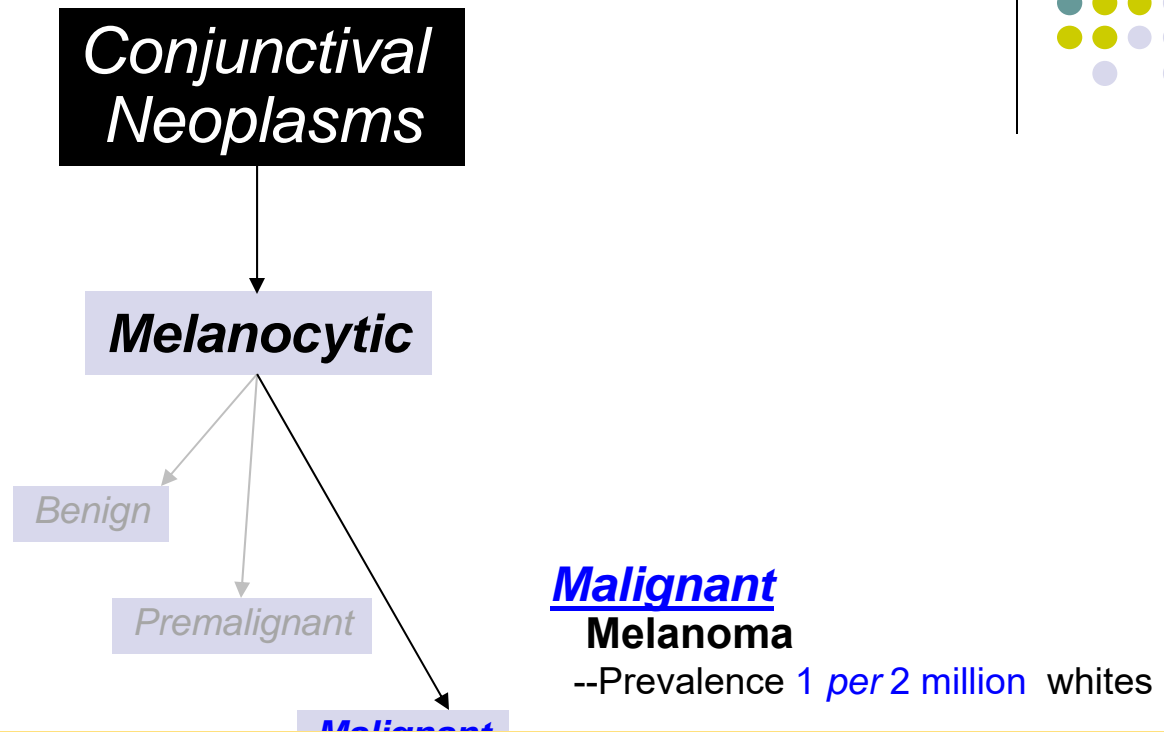
Choroidal, by well over an order of magnitude (somewhere between 20 and 40 times as common). So, it follows that melanoma of the skin is hundreds of times more common than conj melanoma.

*Conj melanoma must be quite rare. Roughly speaking, how many new cases/year are there in the US?*





# Conjunctival Neoplasms



*Which is more common, choroidal melanoma or skin melanoma?*

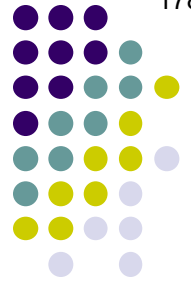
Skin, by well over an order of magnitude

*Which is more common, conj melanoma or choroidal melanoma?*

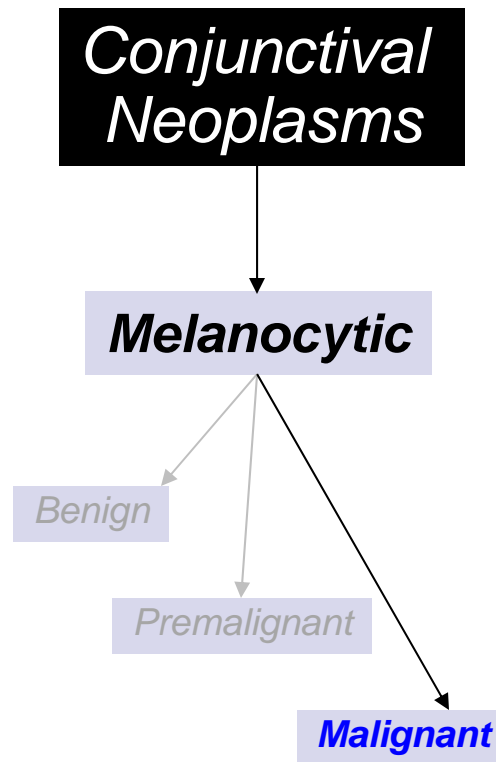
Choroidal, by well over an order of magnitude (somewhere between 20 and 40 times as common). So, it follows that melanoma of the skin is hundreds of times more common than conj melanoma.

*Conj melanoma must be quite rare. Roughly speaking, how many new cases/year are there in the US?*

About 200



# Conjunctival Neoplasms



## Malignant

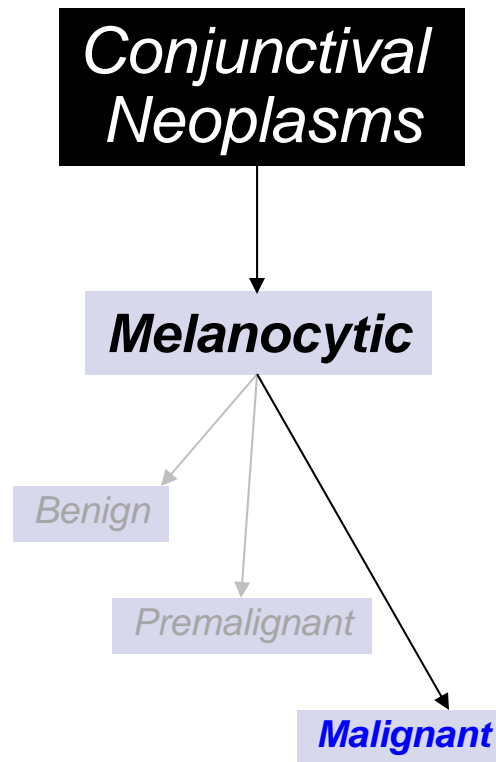
### Melanoma

--Prevalence 1 *per* 2 million whites

*Can black people get it?*



# Conjunctival Neoplasms



## Malignant

### **Melanoma**

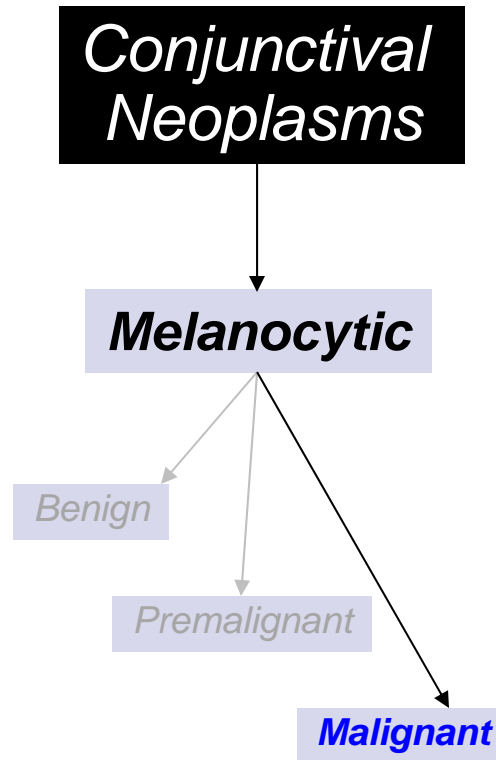
--Prevalence 1 *per* 2 million whites

*Can black people get it?*

Yes, but at rates that are an order of magnitude less than whites



# Conjunctival Neoplasms



## Malignant

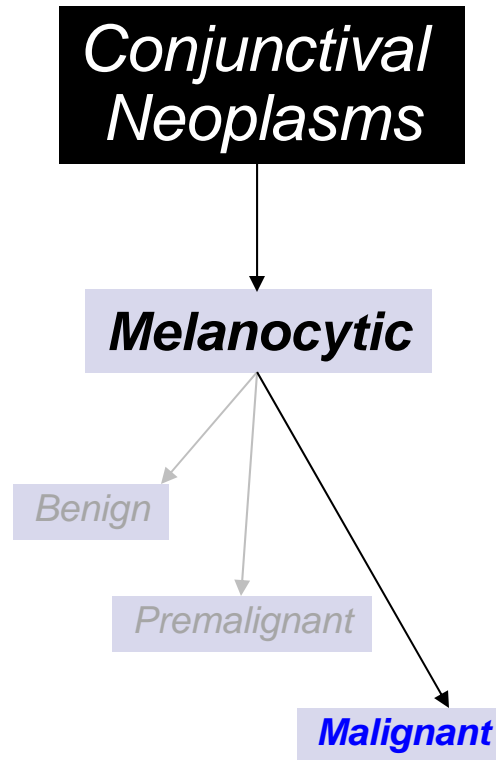
### Melanoma

--Prevalence 1 *per 2 million* whites

*Is there a gender predilection?*



# Conjunctival Neoplasms



## Malignant

### Melanoma

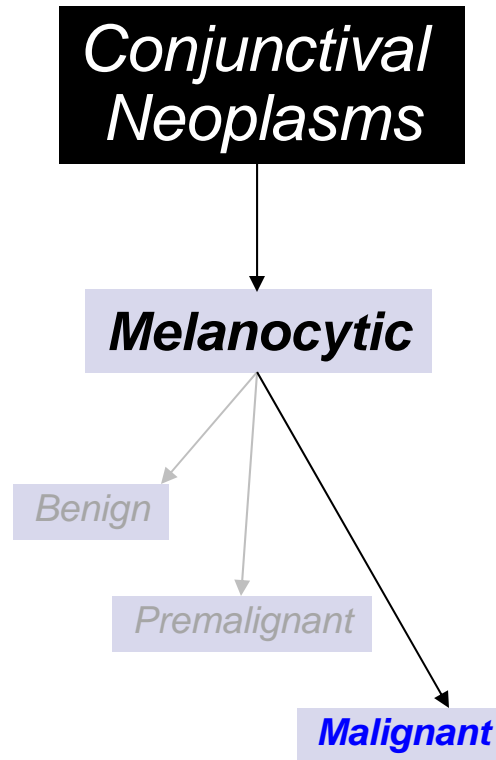
--Prevalence 1 *per 2 million* whites

*Is there a gender predilection?*

No



# Conjunctival Neoplasms



## **Malignant**

### **Melanoma**

--Prevalence 1 *per* 2 million whites

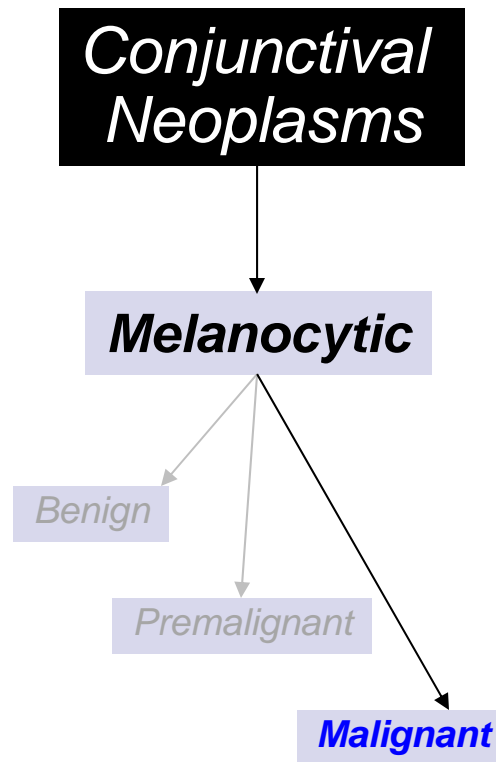
*Is there a gender predilection?*

No

*Is there an age predilection?*



# Conjunctival Neoplasms



## Malignant

### Melanoma

--Prevalence 1 *per* 2 million whites

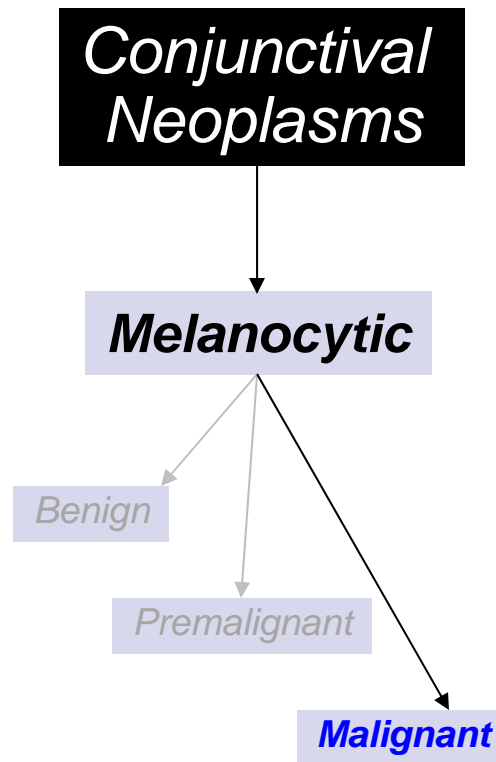
*Is there a gender predilection?*

No

*Is there an age predilection?*

Yes. Conj melanoma is a disease of the middle-aged and elderly—it is vanishingly rare in children and/or teens

# Conjunctival Neoplasms



## Malignant

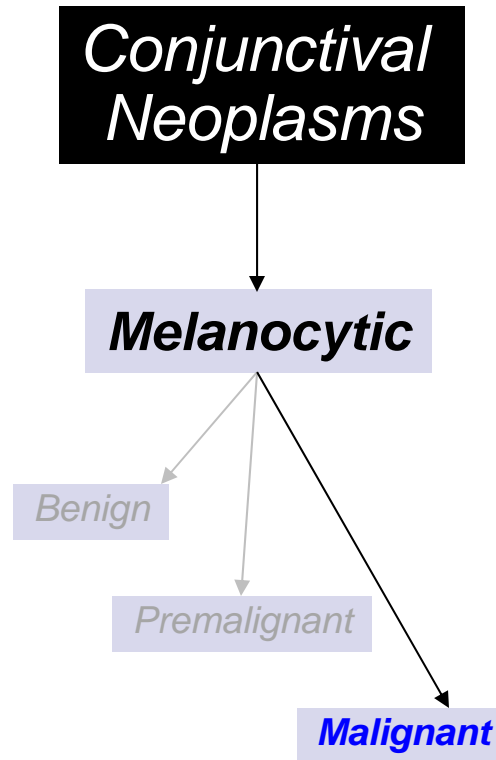
### Melanoma

- Prevalence 1 per 2 million whites
- Metastasize? (Y/N)





# Conjunctival Neoplasms

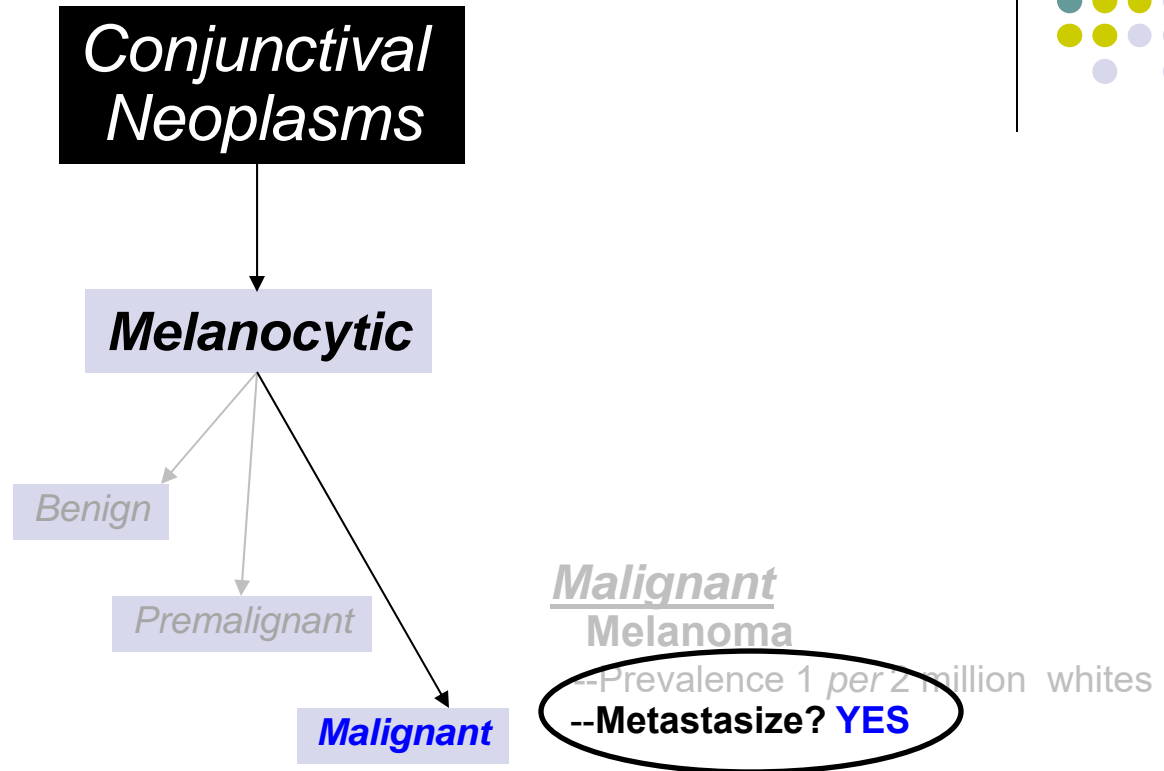


## Malignant

### **Melanoma**

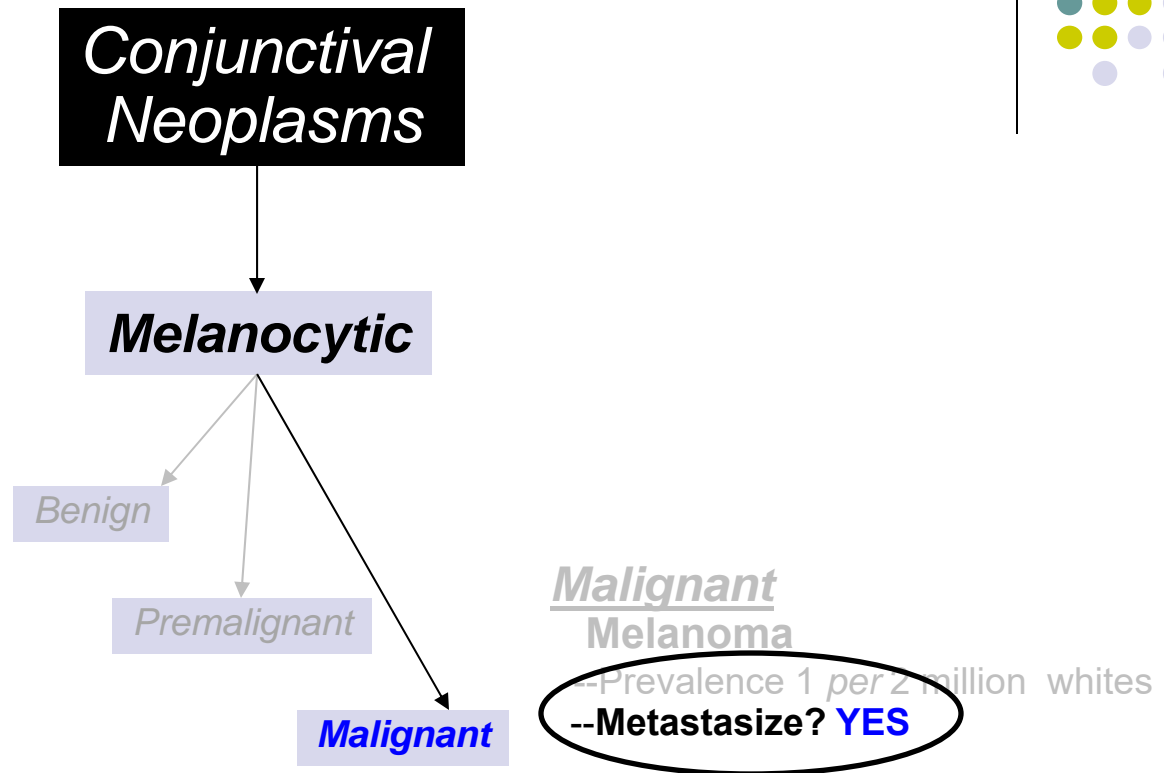
- Prevalence 1 *per 2 million* whites
- Metastasize? YES

# Conjunctival Neoplasms



*Does conj melanoma metastasize hematogenously, like choroidal melanoma?*

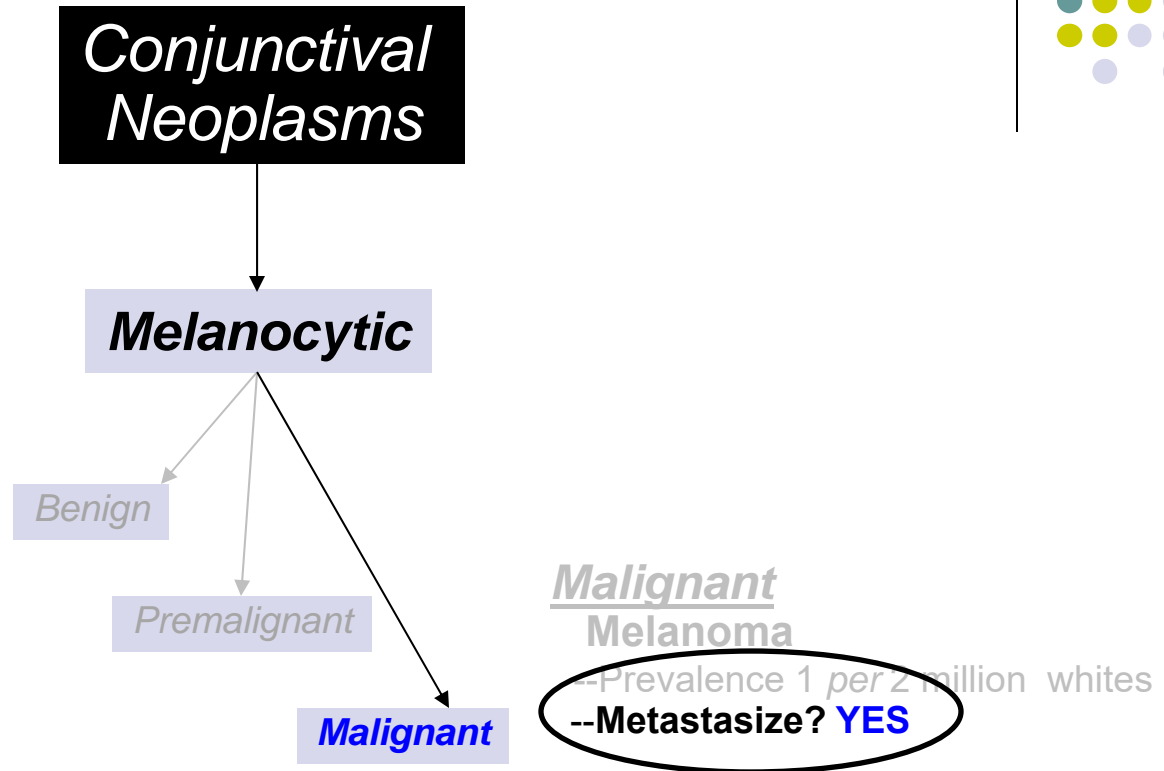
# Conjunctival Neoplasms



*Does conj melanoma metastasize hematogenously, like choroidal melanoma?*

No, it spreads via lymphatics to regional lymph nodes, and from there to the rest of the body

# Conjunctival Neoplasms

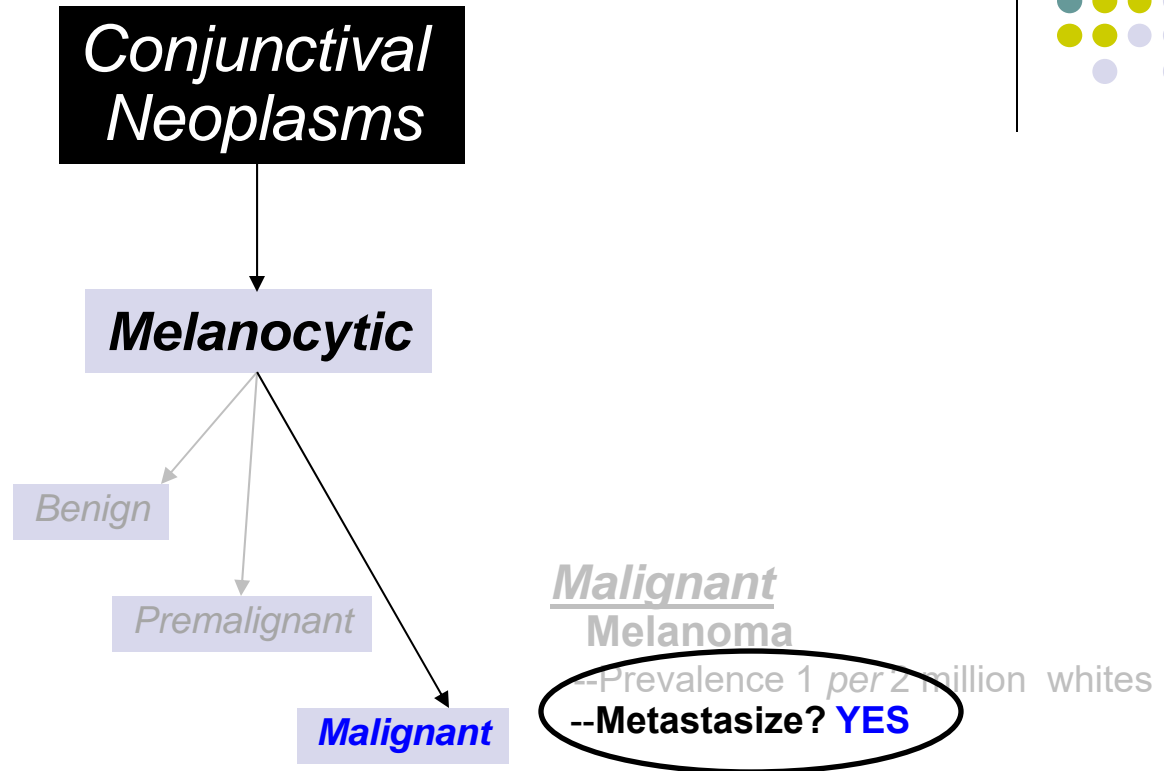


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*Does conj melanoma show a predilection for the liver, like choroidal melanoma?*

# Conjunctival Neoplasms



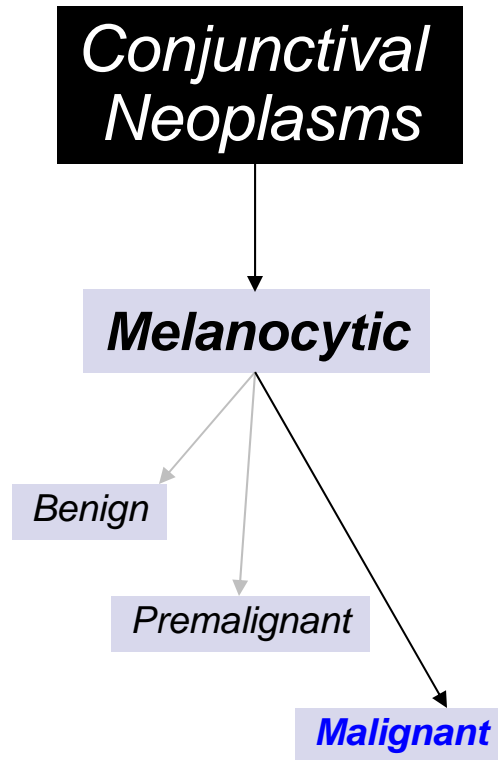
*Does conj melanoma metastasize hematogenously, like choroidal melanoma?*

No, it spreads via lymphatics to regional lymph nodes, and from there to the rest of the body

*Does conj melanoma show a predilection for the liver, like choroidal melanoma?*

No—it is far less selective, showing up everywhere

# Conjunctival Neoplasms



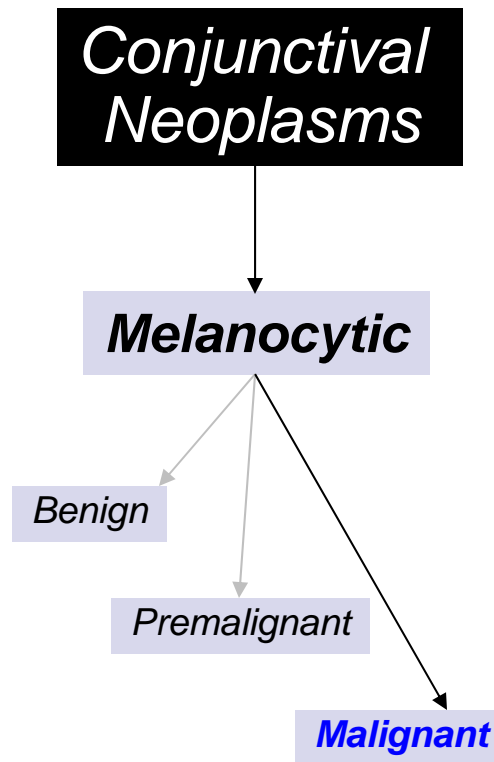
## Malignant

### Melanoma

- Prevalence 1 per 2 million whites
- Metastasize? YES
- 70% arise from [redacted], 5% from [redacted], 25% [redacted]



# Conjunctival Neoplasms

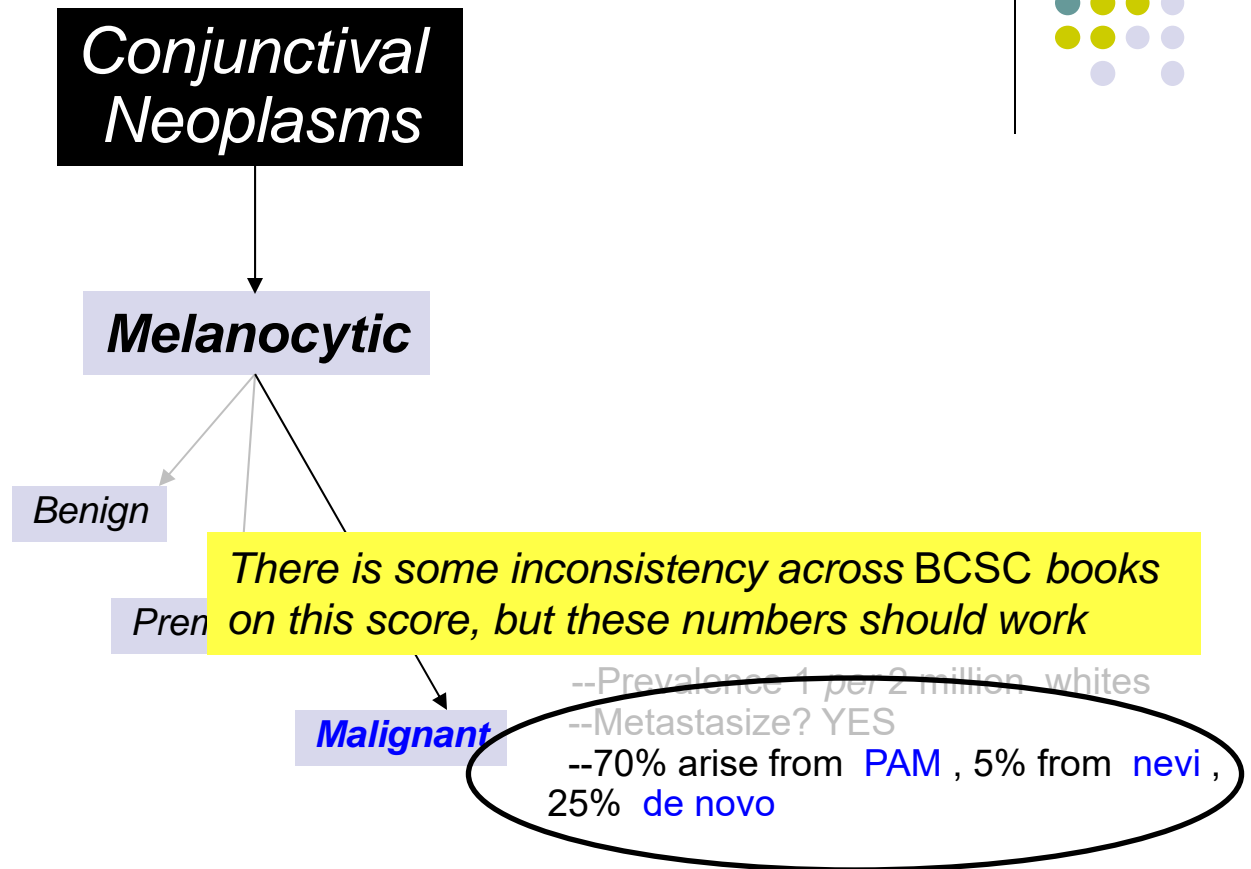


## Malignant

### Melanoma

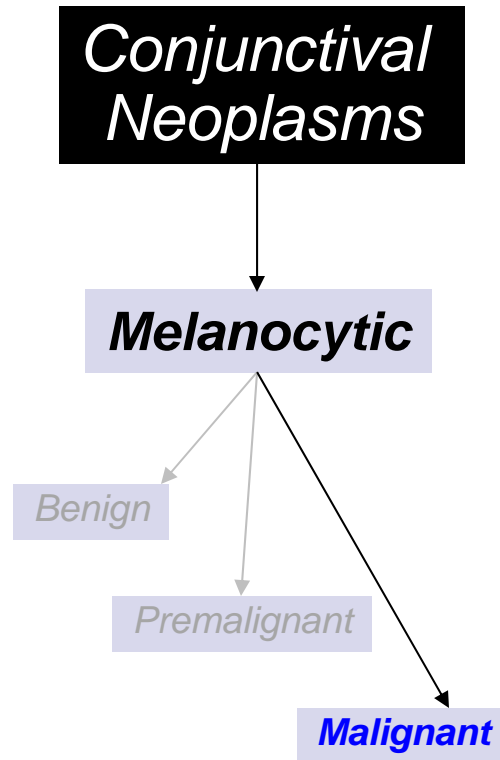
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# Conjunctival Neoplasms





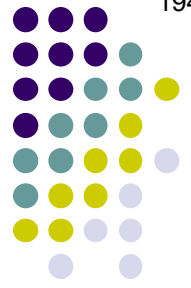
# Conjunctival Neoplasms



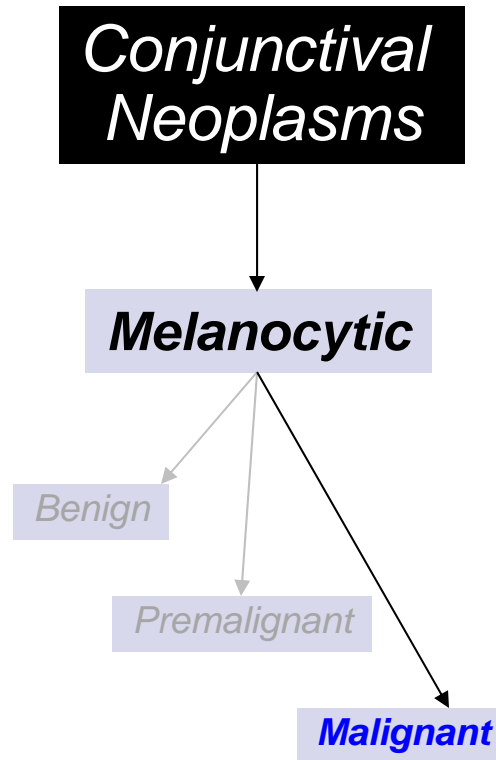
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### Melanoma

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- Metastasize? YES
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- Prognosis:
  - Better  
v worse than cutaneous



# Conjunctival Neoplasms

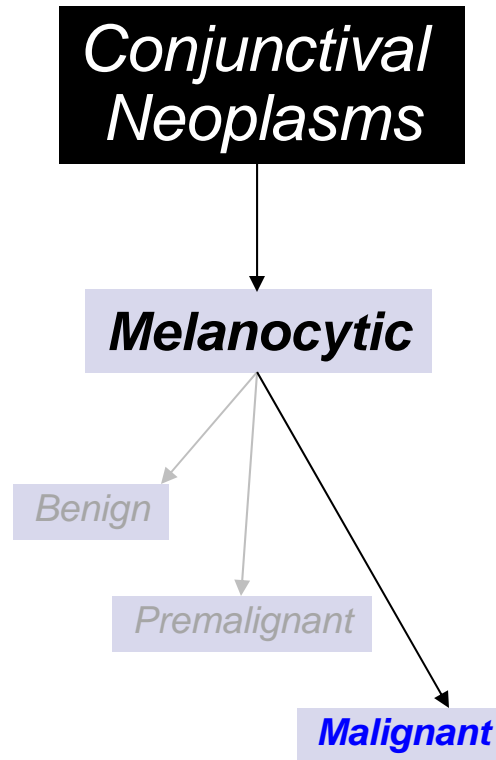


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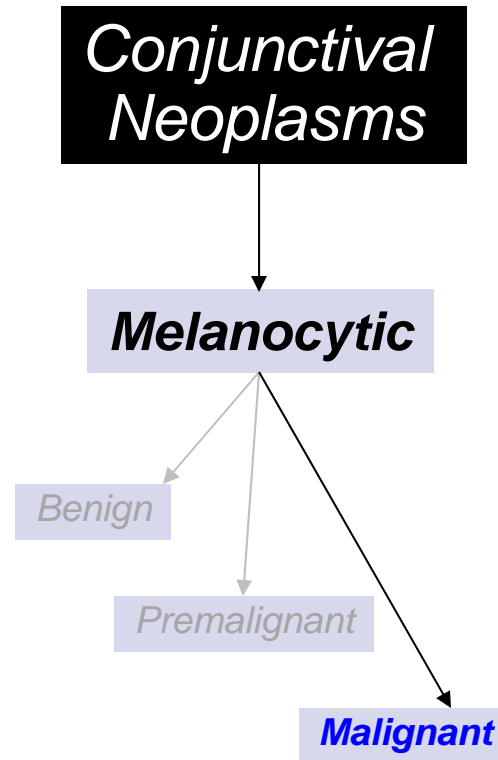


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# Conjunctival Neoplasms

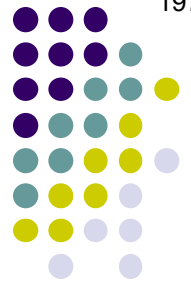


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# Conjunctival Neoplasms



*Conjunctival  
Neoplasms*



*Melanocytic*



*Benign*

*Premalignant*

*Malignant  
Melanoma*

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*What is the overall mortality rate for conj melanoma?*



# Conjunctival Neoplasms

*Conjunctival  
Neoplasms*



*Melanocytic*



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Melanoma*

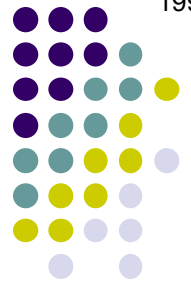
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*What is the overall mortality rate for conj melanoma?  
There's some disagreement among the BCSC books,  
but 25% is a reasonable compromise*



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*Conjunctival  
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*What is the recurrence rate?*

# Conjunctival Neoplasms

*Conjunctival  
Neoplasms*

*Melanocytic*

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*What is the recurrence rate?*  
A staggering 50%

## Malignant Melanoma

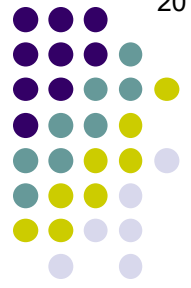
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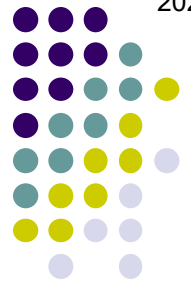
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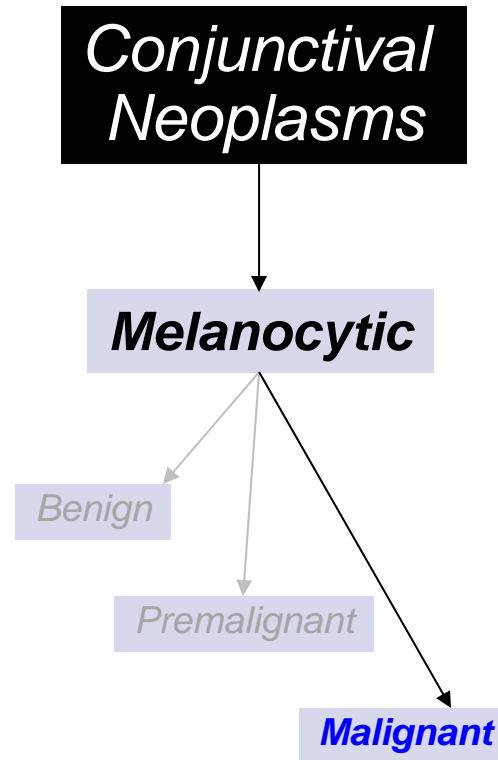
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There's some disagreement among the BCSC books,  
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*What is the recurrence rate?*  
A staggering 50%

*What implication does this appalling rate carry regarding  
managing these pts?*  
That they require close follow-up for the rest of their lives



# Conjunctival Neoplasms

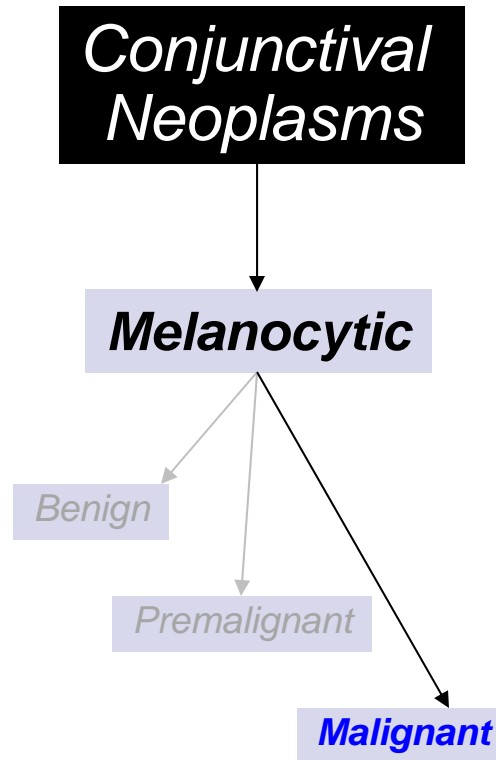


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# Conjunctival Neoplasms



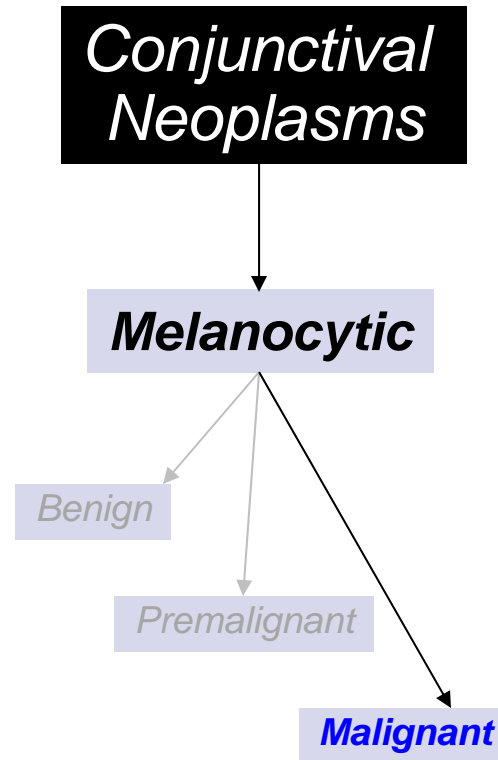
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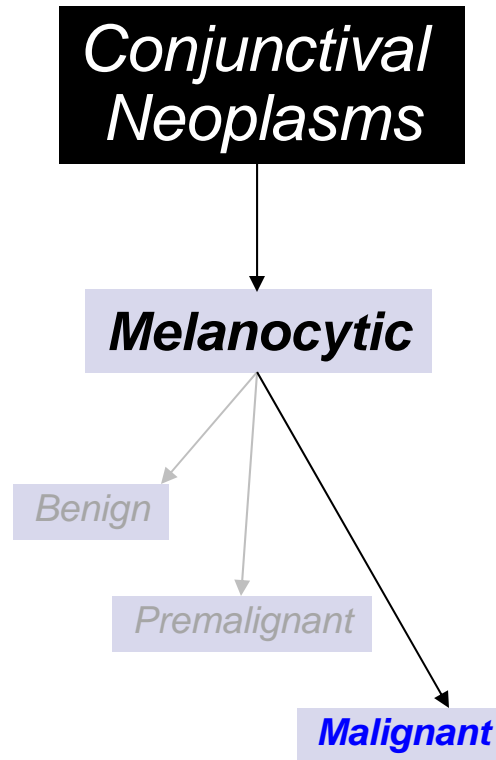
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- Management:
  - type of biopsy (no ↑ risk of mets)



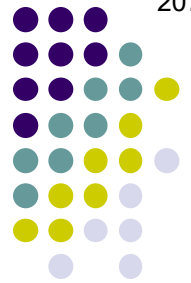
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# Conjunctival Neoplasms

*Conjunctival  
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*Melanocytic*



*How wide should the margins be around the lesion?*

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*Conjunctival  
Neoplasms*



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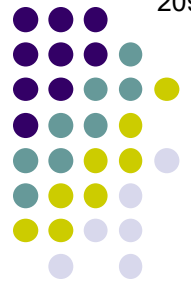


*How wide should the margins be around the lesion?*  
Quite wide—2 mm at least

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# Conjunctival Neoplasms

*Conjunctival  
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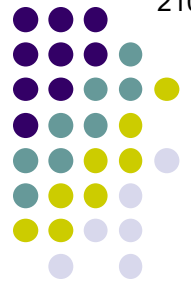
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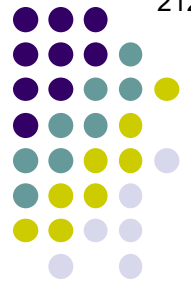
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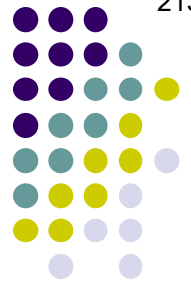
*How should the lesion be handled intraoperatively?*

It shouldn't; ie, a 'no touch' technique should be employed—that is, at no point during the case should the surgeon make contact with the lesion itself

*What is the concern motivating the 'no touch' technique?*

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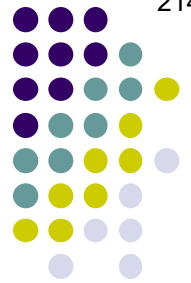
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# Conjunctival Neoplasms

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*In light of this concern, what alternative to excisional biopsy is obviously unacceptable in managing a lesion thought to be a conj melanoma?*

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# Conjunctival Neoplasms

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**Incisional** biopsy

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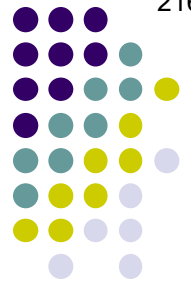
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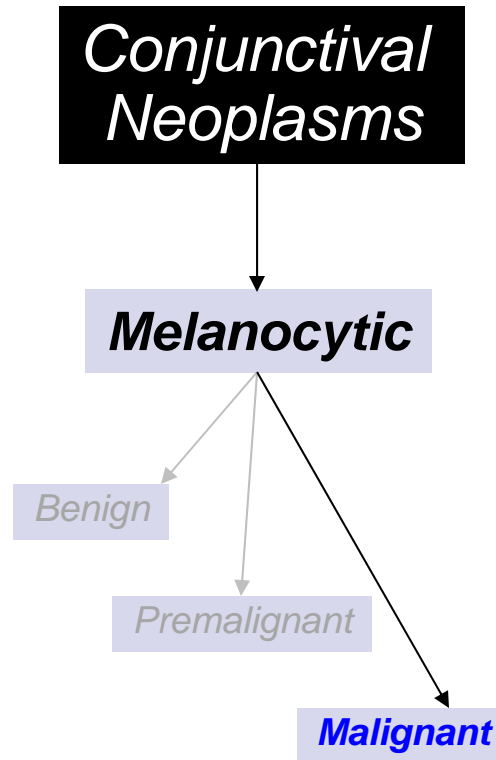
--de novo < not de novo

--Management:

--**Excisional** biopsy (no ↑ risk of mets)



# Conjunctival Neoplasms



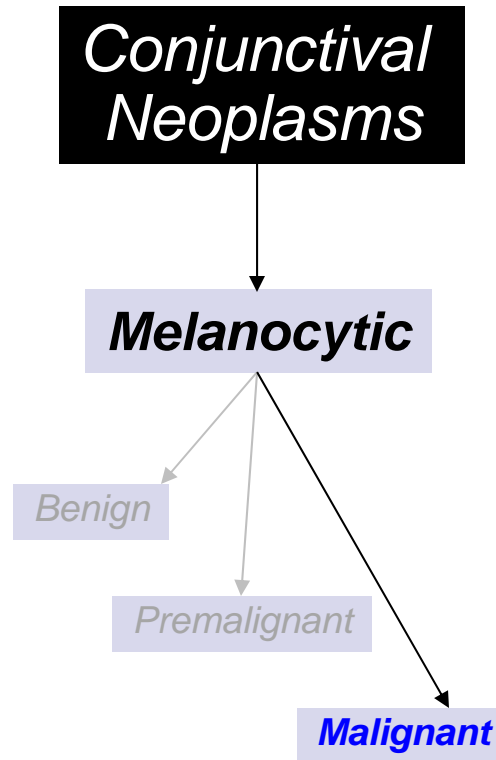
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- Management:
  - Excisional biopsy (no ↑ risk of mets)
  - surgery if orbital



# Conjunctival Neoplasms



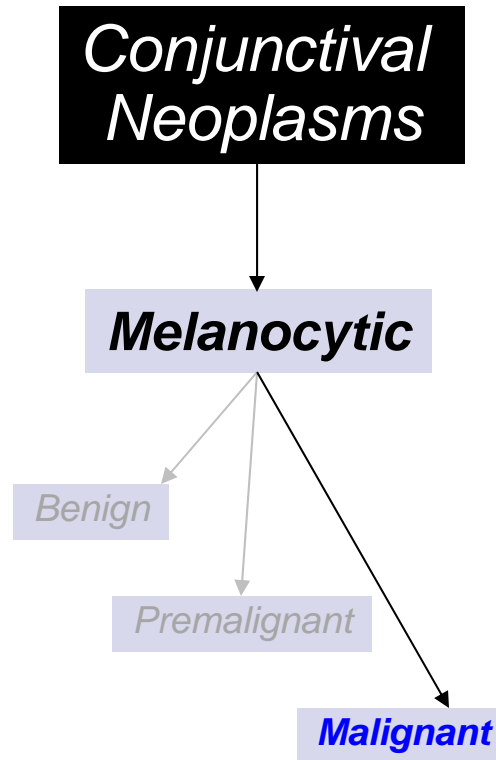
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# Conjunctival Neoplasms

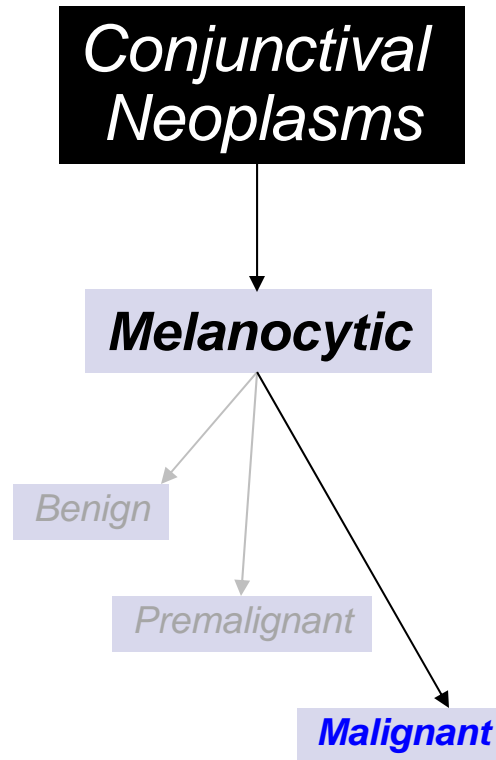


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  - Exenterate if orbital
  - Check for uh-oh

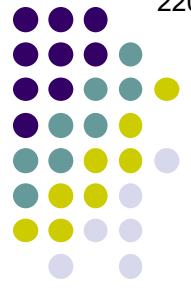
# Conjunctival Neoplasms



## Malignant

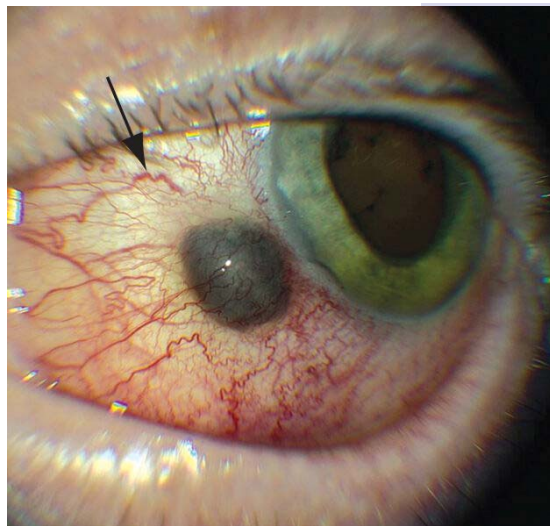
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- Management:*
  - Excisional** biopsy (no ↑ risk of mets)
  - Exenterate** if orbital
  - Check for **lymphadenopathy**



# Conjunctival Neoplasms

## Conjunctival Neoplasms



Amniocytic

alignant

**Malignant**

*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?*

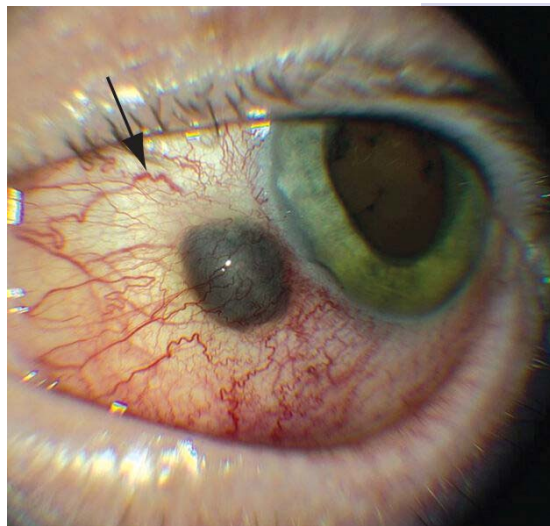
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# Conjunctival Neoplasms

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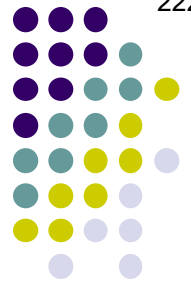
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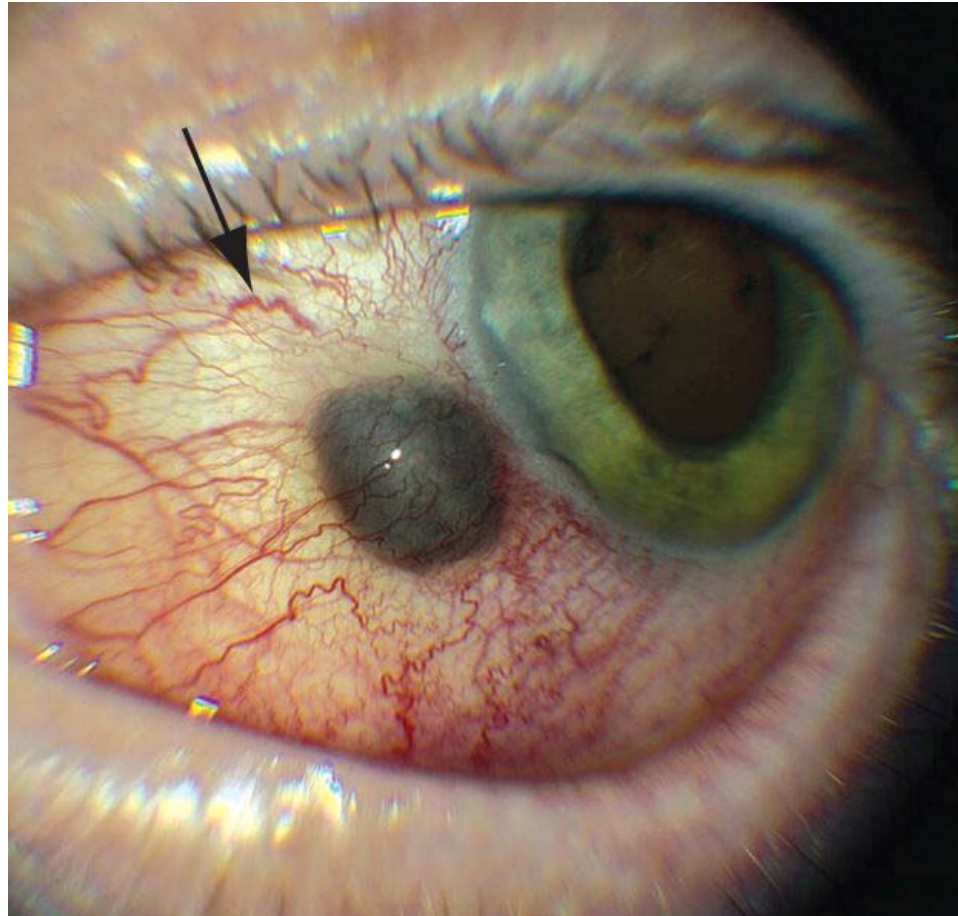
A melanoma of the ciliary body extending through the sclera. Don't be fooled by this lesion!

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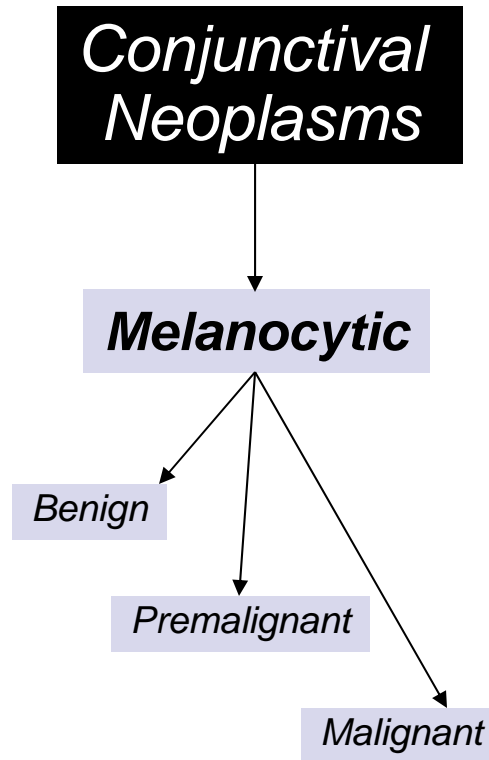
# Conjunctival Neoplasms



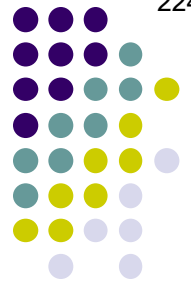
Melanoma of the ciliary body with extrascleral extension, presenting as an ocular surface mass. Note that there is no PAM surrounding the nodule, a clue that the lesion might have an intraocular origin. Also note that the lesion is associated with deep episcleral/scleral vessels (sentinel vessels, *arrow*) and does not obscure the overlying conjunctival vessels. This indicates that the lesion is deep to the conjunctiva.



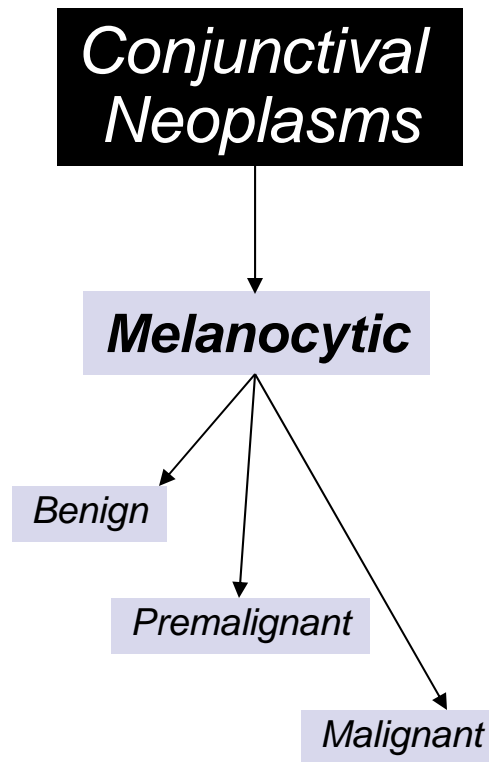
# Conjunctival Neoplasms



*You see a patient with an apparent nevus of the palpebral conjunctiva. How should it be managed?*

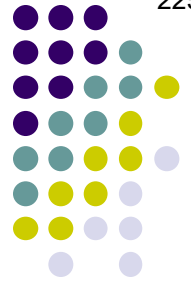


# Conjunctival Neoplasms

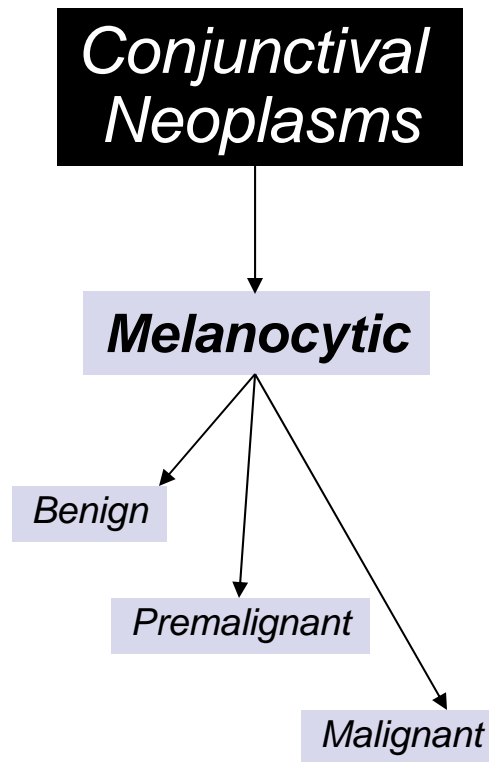


*You see a patient with an apparent nevus of the palpebral conjunctiva. How should it be managed?*  
**Excise it.** 'Nevi' of the palpebral conjunctiva are exceedingly rare. In general, all pigmented palpebral-conj lesions should be excised at once and sent for pathologic examination.





# Conjunctival Neoplasms

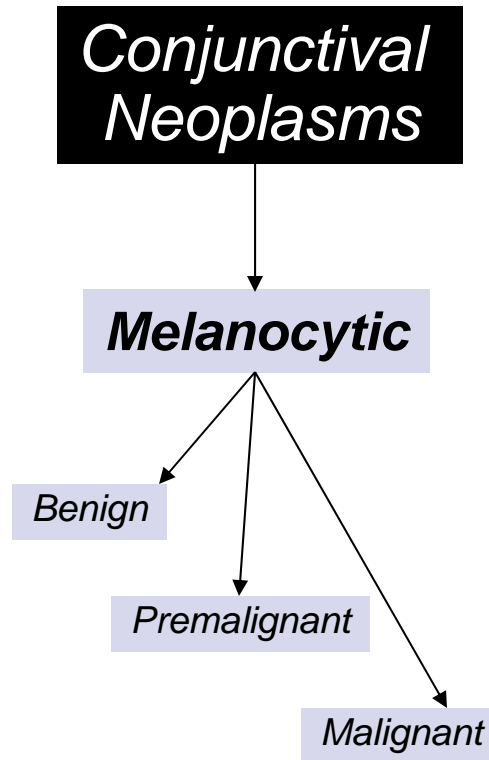


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*What about a forniceal 'nevus'?*



# Conjunctival Neoplasms



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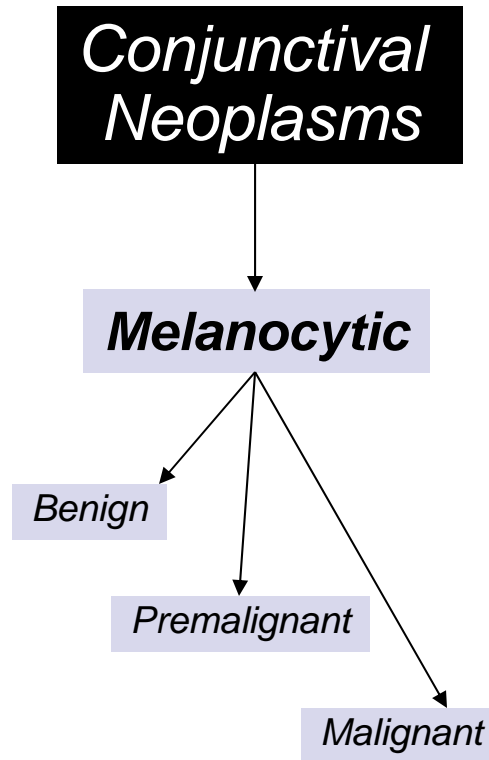
**Excise it.** 'Nevi' of the palpebral conjunctiva are exceedingly rare. In general, all pigmented palpebral-conj lesions should be excised at once and sent for pathologic examination.

*What about a forniceal 'nevus'?*

Same rule applies



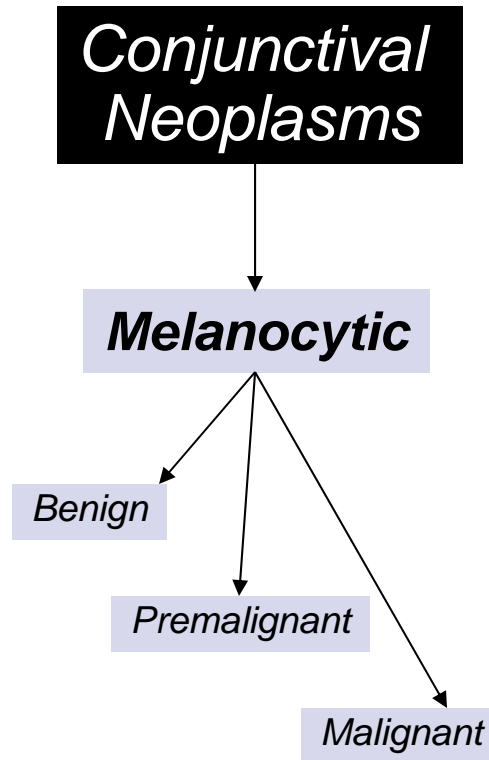
# Conjunctival Neoplasms



*You see an elderly white patient with a pigmented lesion of the inferior palpebral/forniceal conjunctiva. Recalling Dr. Flynn's admonition that all such lesions should be treated as malignant, you sign the patient up for excision and present her to your staff. After glancing at the lesion, he asks her one question, which she answers in the affirmative. He then tells you to cancel the procedure, and proceeds to mock you mercilessly in public on a daily basis. What did he ask the patient?*



# Conjunctival Neoplasms



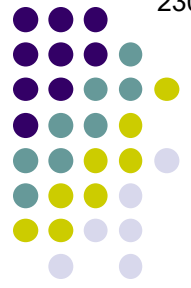
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**He asked if she had ever used an epinephrine drop for glaucoma.** Chronic epinephrine use gives rise to *adrenochrome deposits*, darkly pigmented lesions of the inferior forniceal/palpebral conj. They are of no clinical significance and do not need excision.

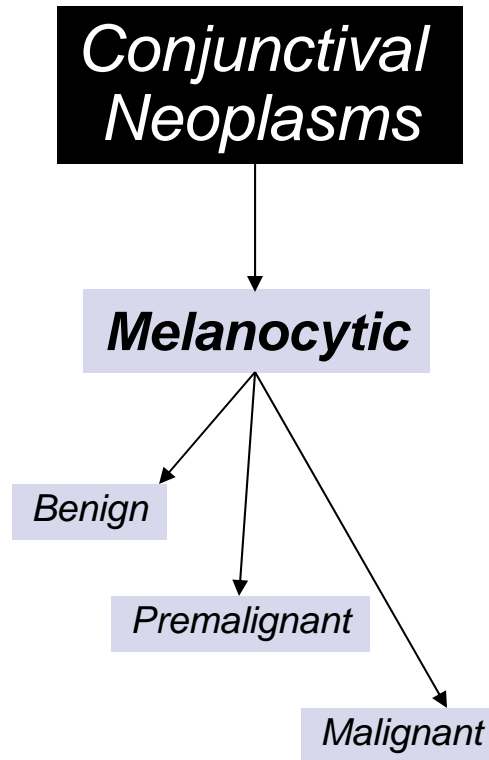
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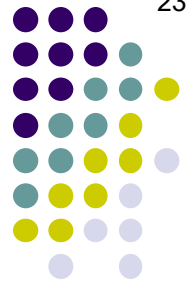
Adrenochrome deposits



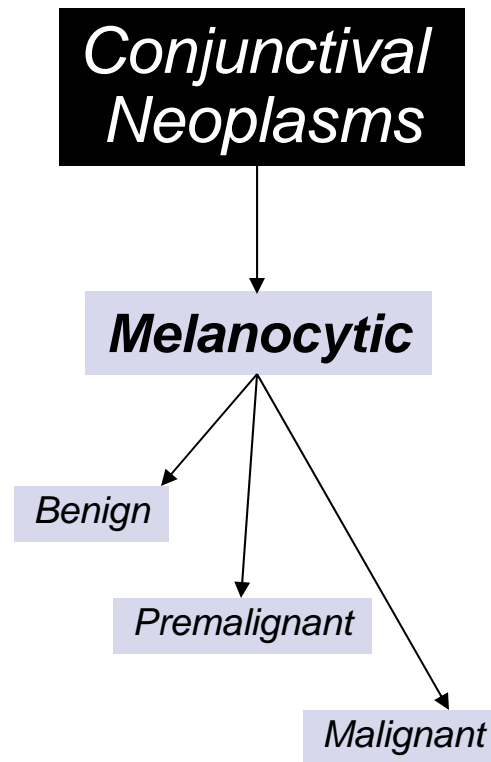
# Conjunctival Neoplasms



*You see a young patient with a pigmented lesion of the inferior palpebral/forniceal conjunctiva. Your staff's stinging rebuke of your plan to excise adrenochrome deposits still ringing in your ears, you ask the patient about a glaucoma/epinephrine use history, which she denies. Recalling Dr. Flynn's admonition that all such lesions should be treated as malignant, you sign the patient up for excision and, tremulously, present her to your staff. After glancing at the lesion, he asks her one question, which she answers in the affirmative. He then tells you to cancel the procedure, and proceeds to mock you with such ferocity that you quit ophthalmology and work as an optometrist. What did he ask the patient?*



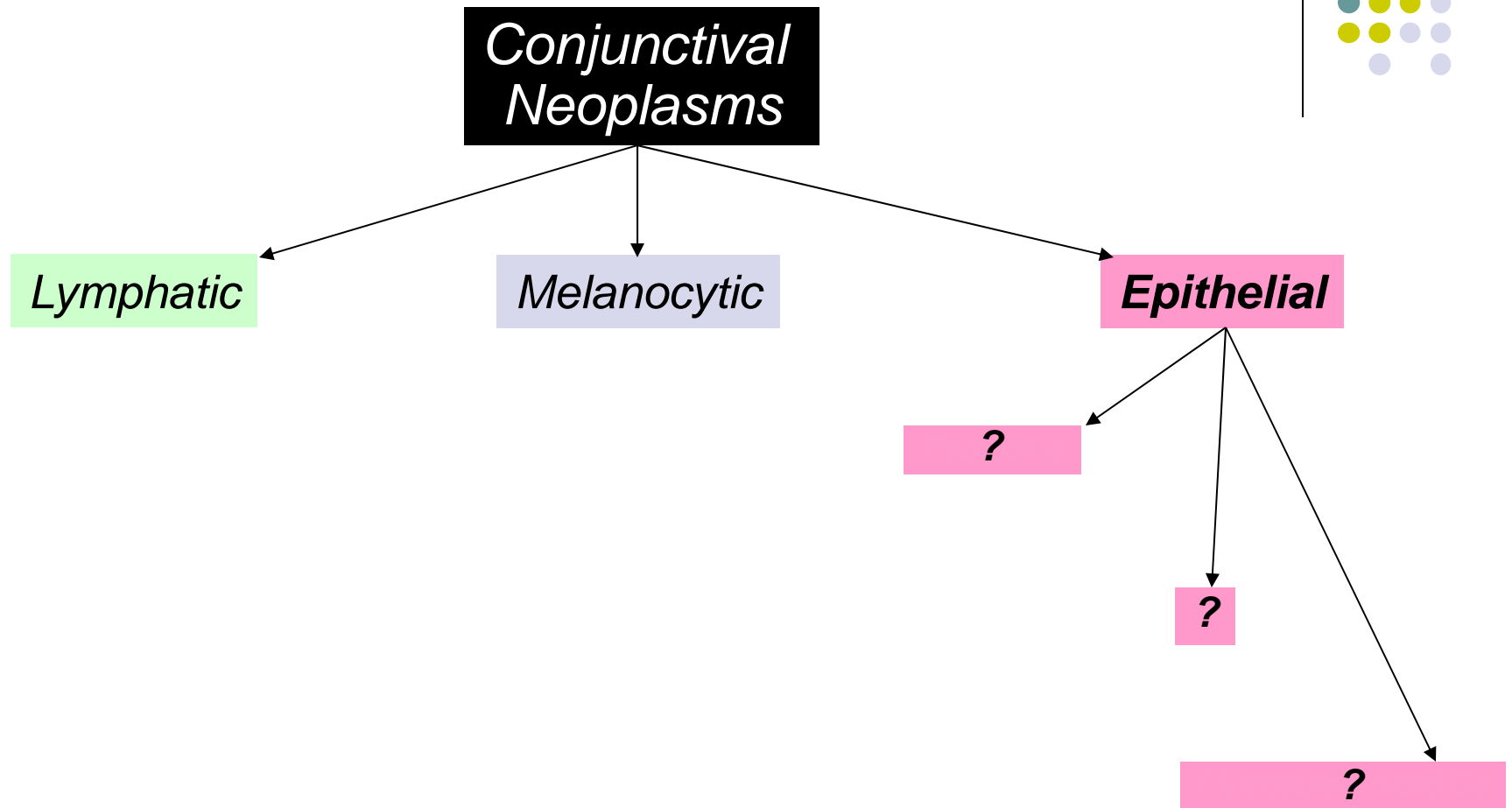
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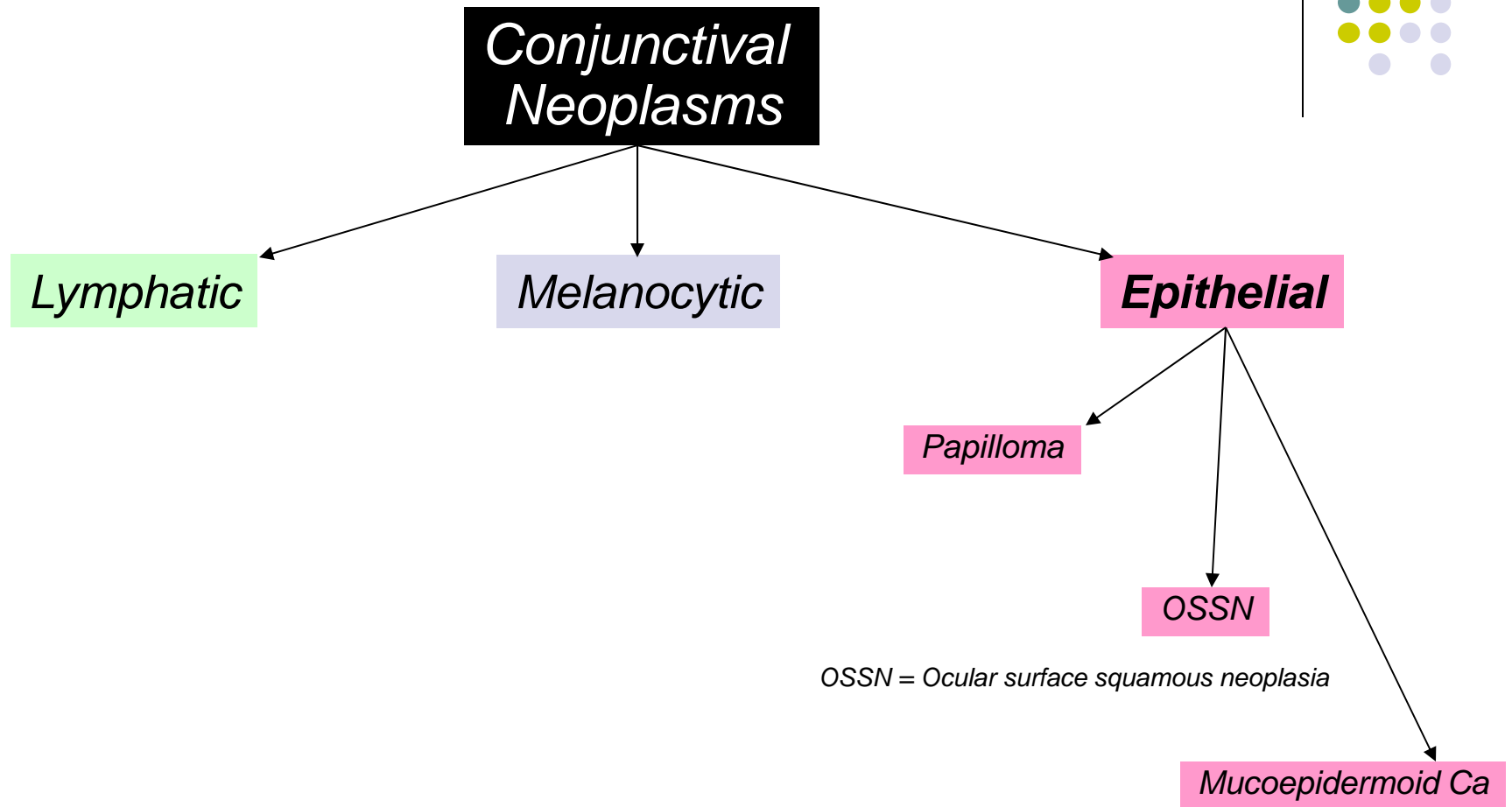
**He asked if she wore dark mascara frequently.** It's not uncommon for mascara to end up in the fornix.

# Conjunctival Neoplasms

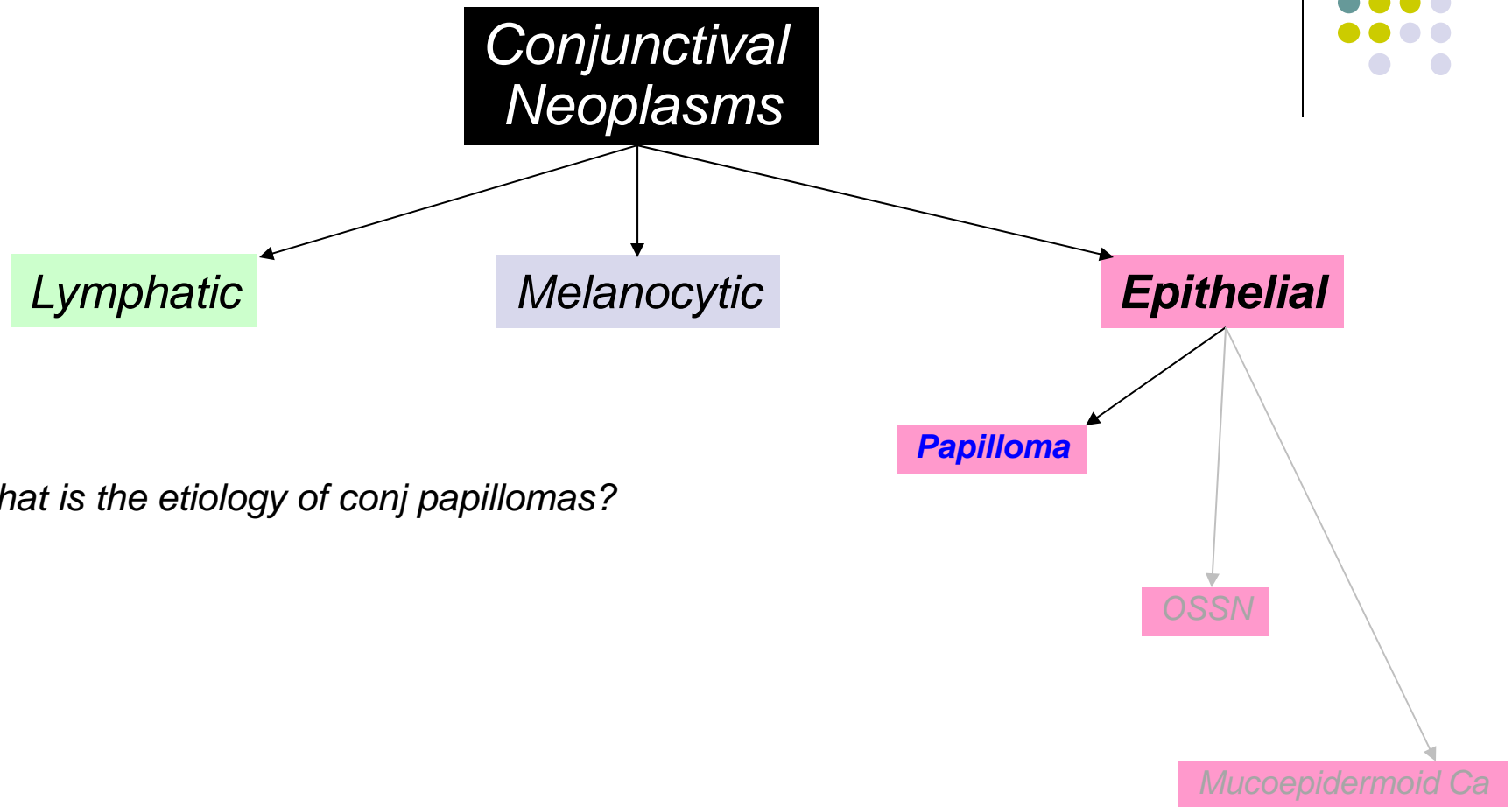




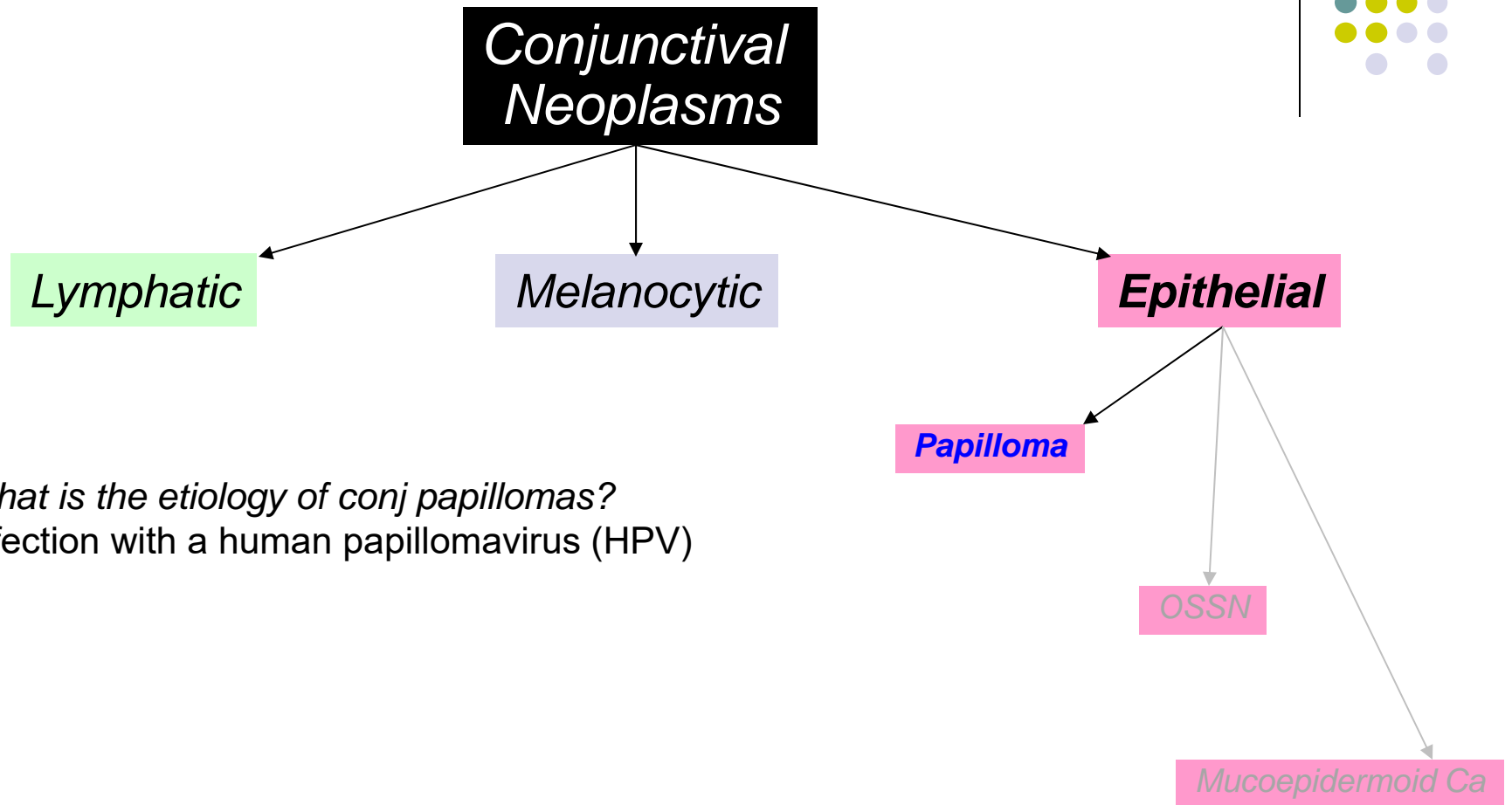
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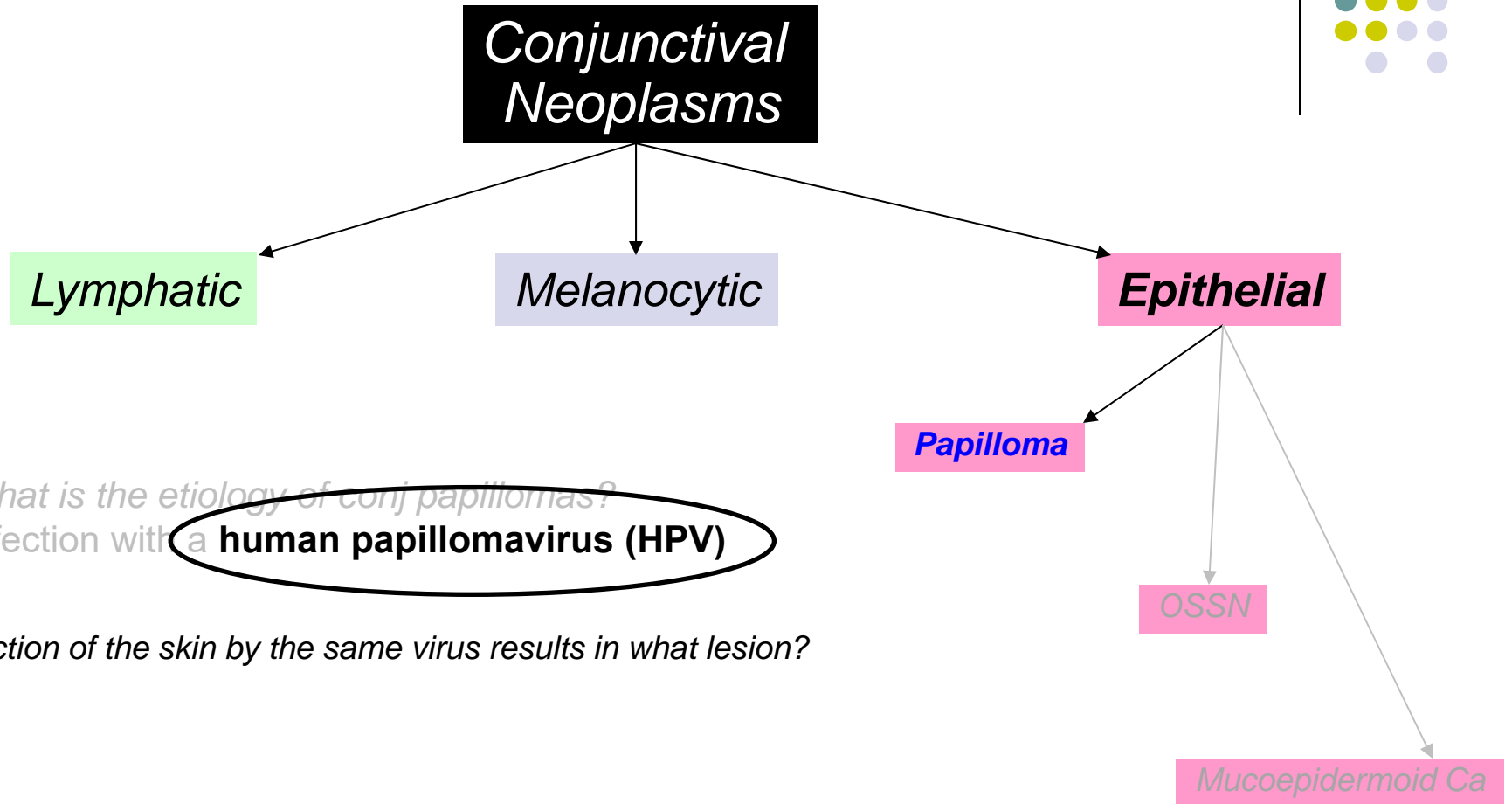
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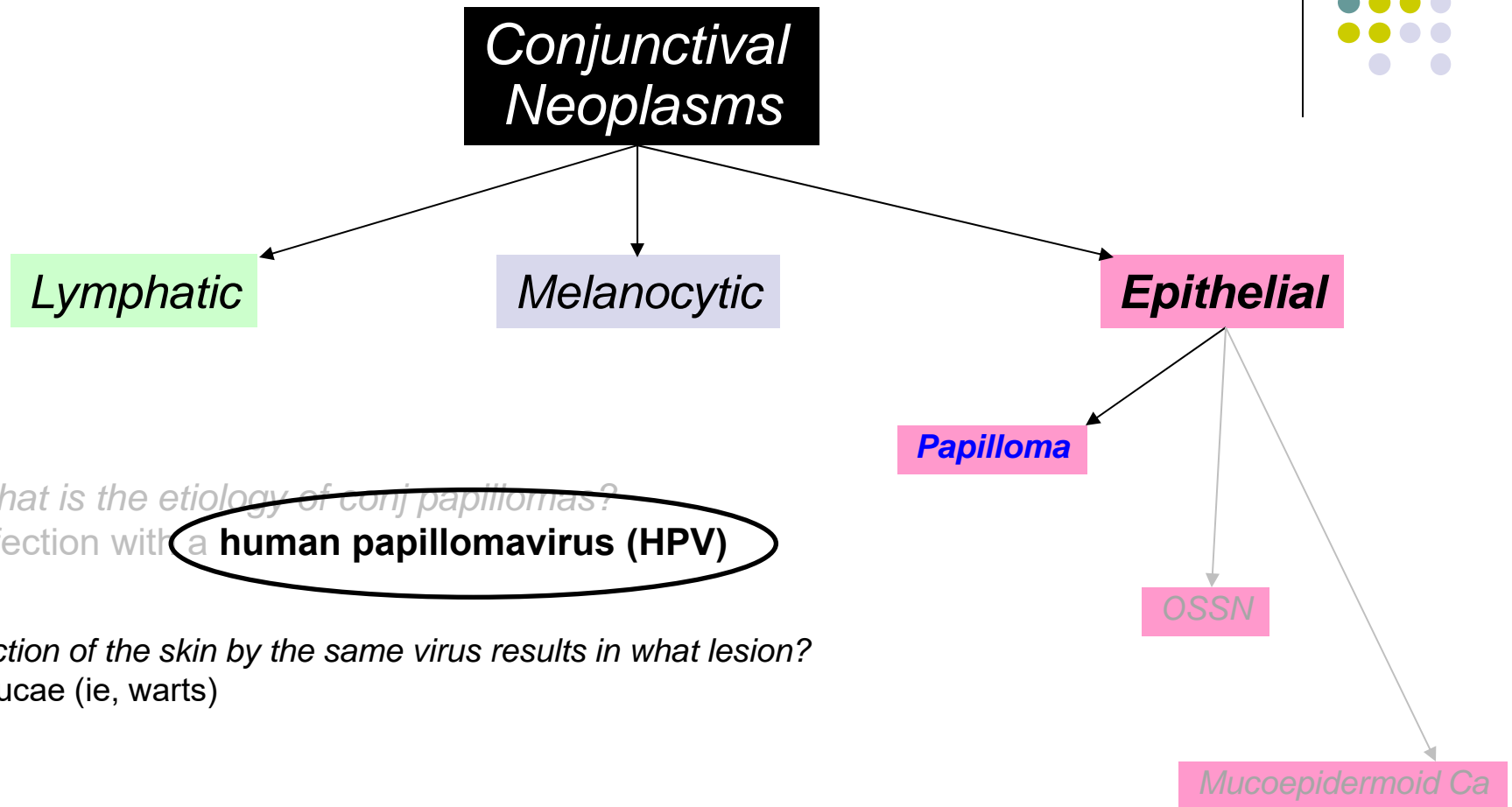
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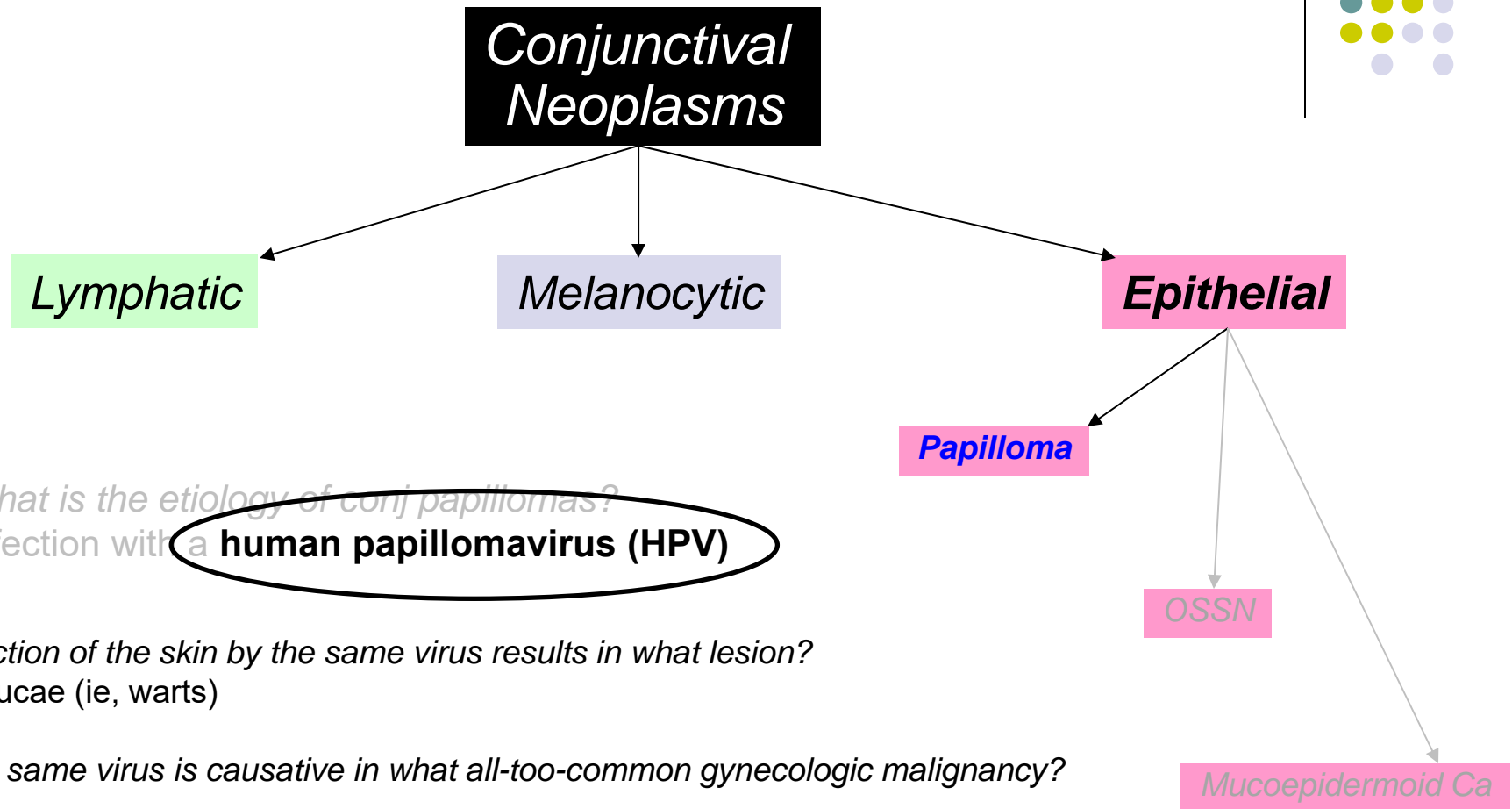
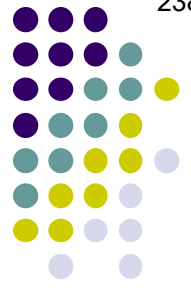
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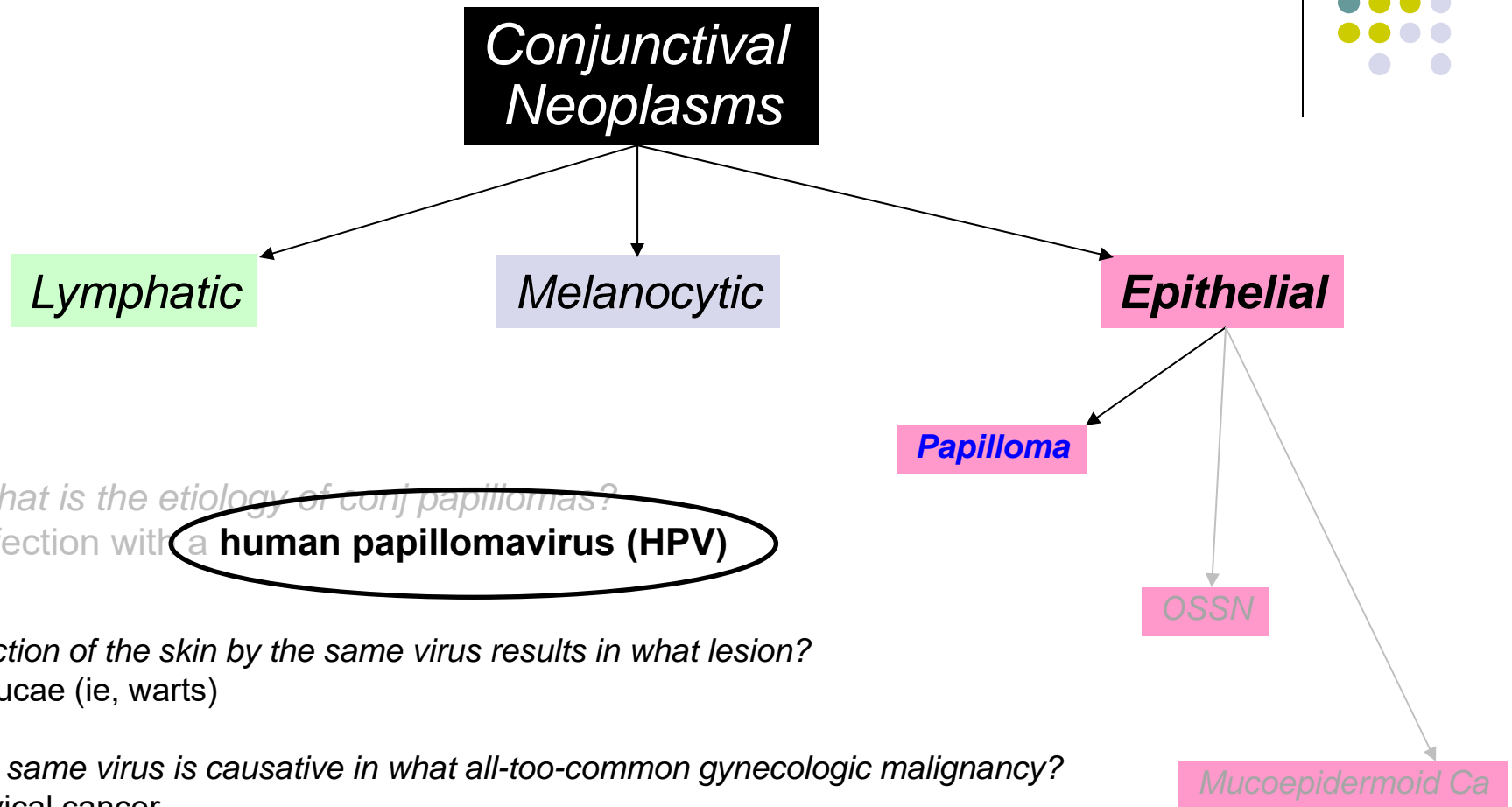
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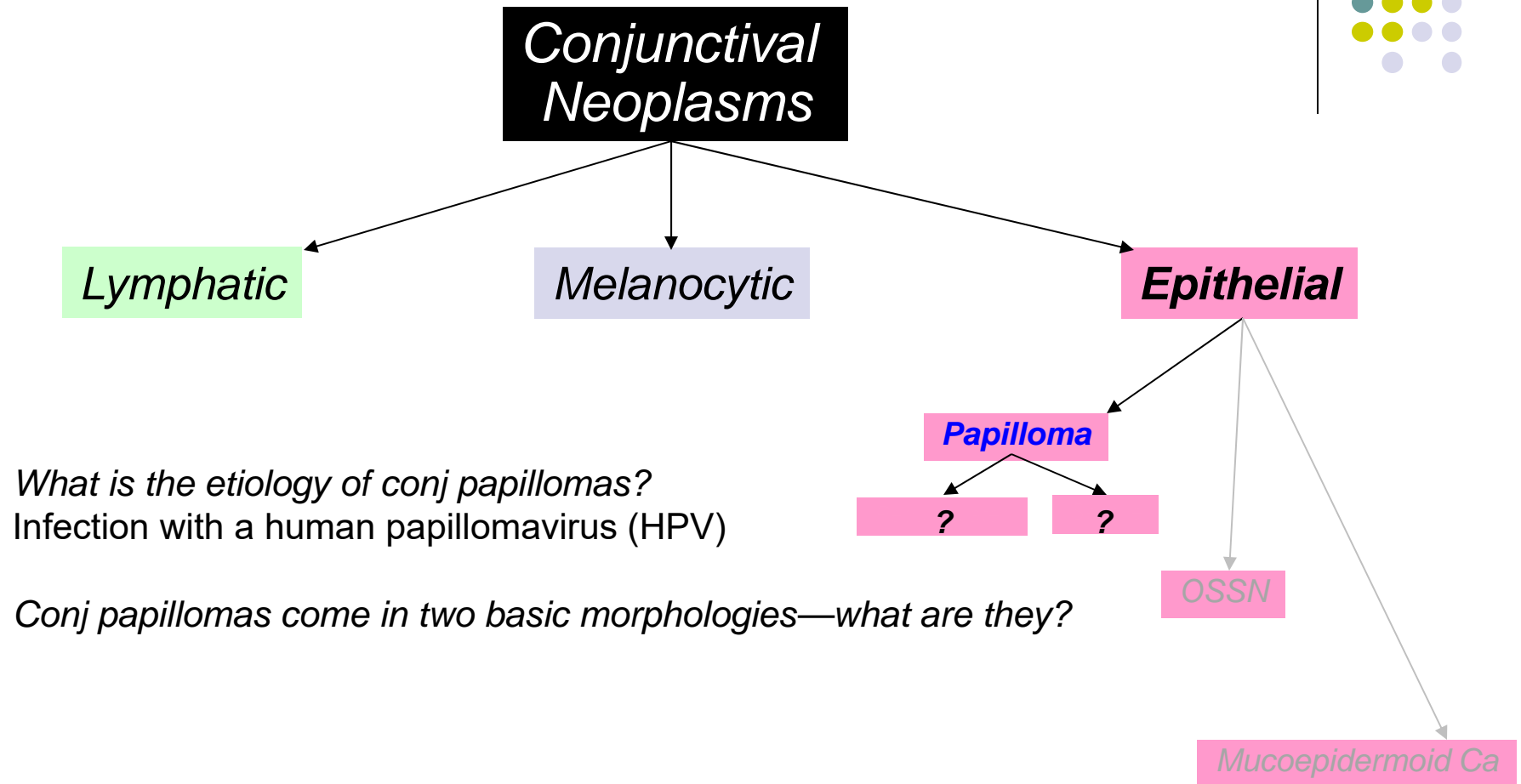
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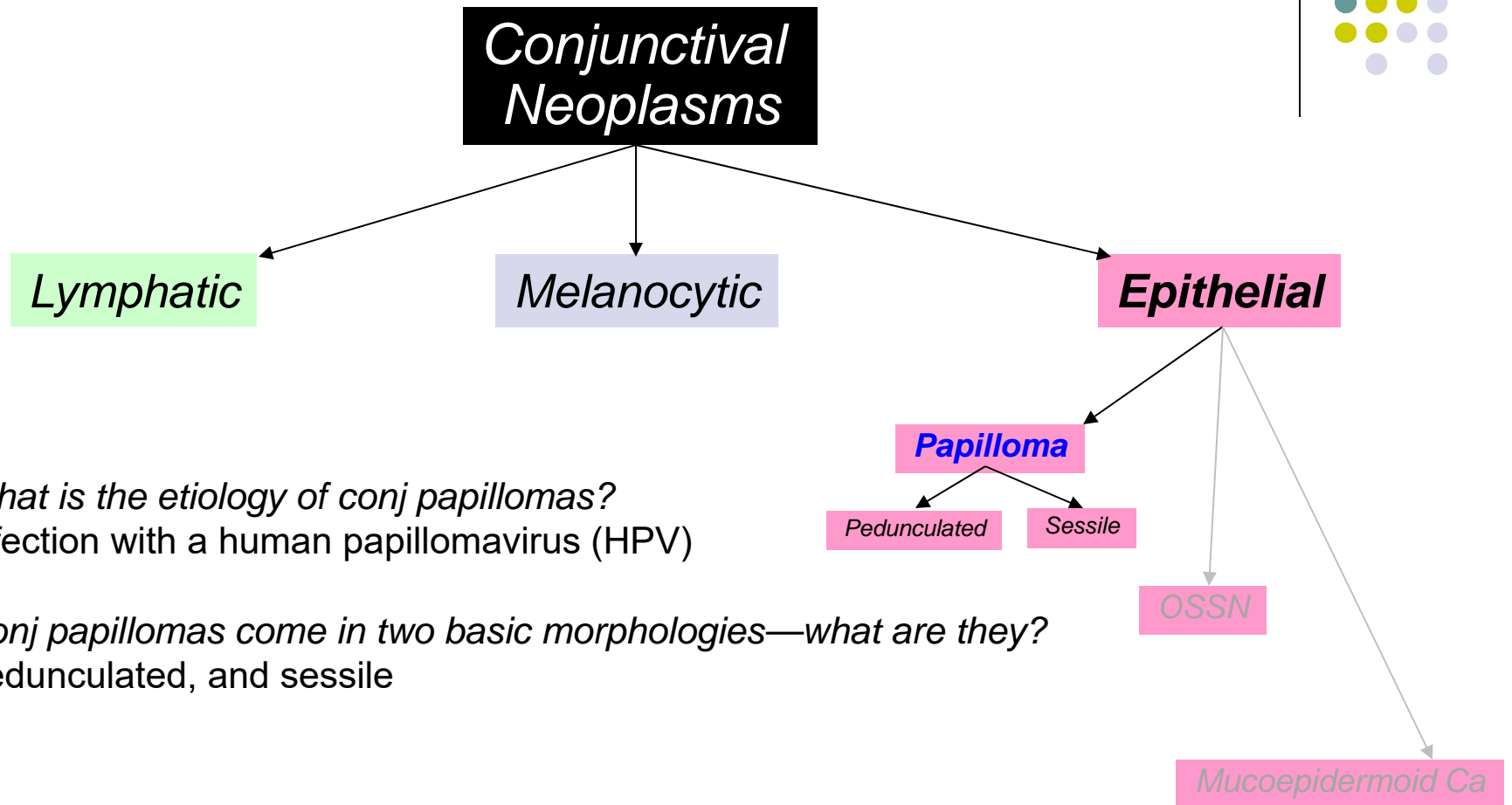


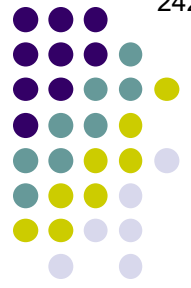
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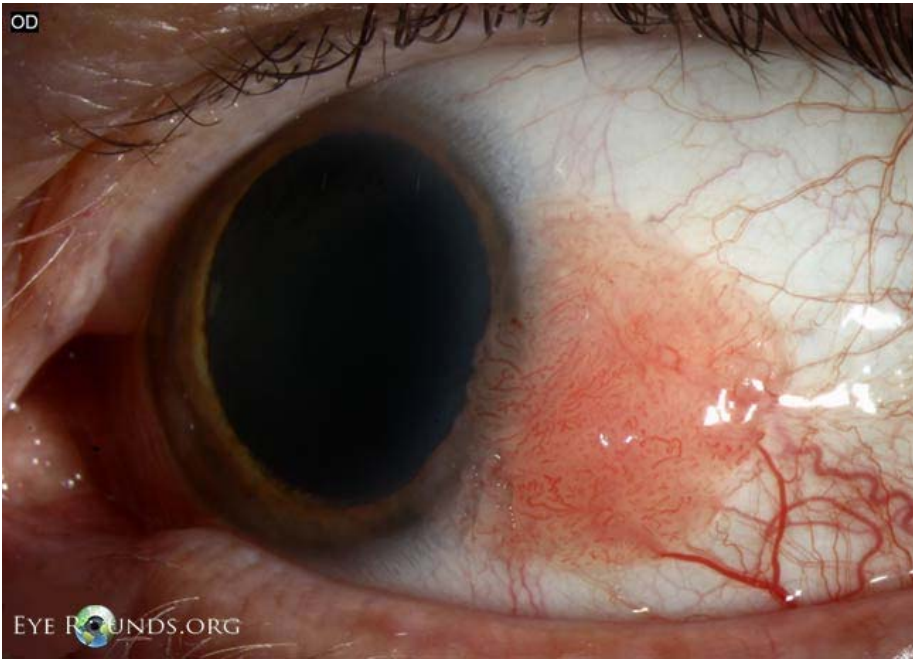


# Conjunctival Neoplasms





# Conjunctival Neoplasms



**Sessile papilloma.** Note the glistening surface with red dots or "corkscrew" blood vessels, creating the classic strawberry-like appearance



**Pedunculated papilloma.** Note the inferior fornix location and a multilobulated appearance

Papillomas

# Conjunctival Neoplasms

*Conjunctival  
Neoplasms*

**Epithelial**

**Papilloma**

**Pedunculated**

**Sessile**

<b>Papilloma</b>	<b>HPV subtype</b>				
<b>Pedunculated</b>					
<b>Sessile</b>					

**oid Ca**

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*Conjunctival  
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<b>Papilloma</b>	<b>HPV subtype</b>				
<b>Pedunculated</b>	6, 11				
<b>Sessile</b>	16, 18				

**oid Ca**

# Conjunctival Neoplasms

*Conjunctival  
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Papilloma	HPV subtype				
Pedunculated	6, 11				
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**oid Ca**

Which (if any) of these subtypes is/are associated with **cervical** cancer?

# Conjunctival Neoplasms

*Conjunctival  
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**Papilloma**

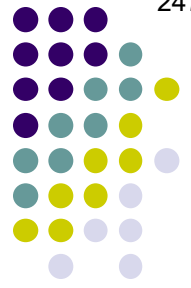
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**oid Ca**

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*Conjunctival  
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**oid Ca**

# Conjunctival Neoplasms

*Conjunctival  
Neoplasms*

**Epithelial**

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<b>Papilloma</b>	<b>HPV subtype</b>	<b>Location</b>			
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**oid Ca**





# Conjunctival Neoplasms

*Conjunctival  
Neoplasms*

**Epithelial**

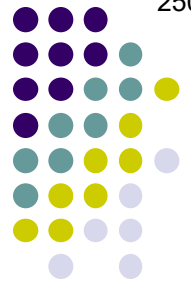
**Papilloma**

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<b>Papilloma</b>	<b>HPV subtype</b>	<b>Location</b>	<b>Appearance</b>		
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**oid Ca**



# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Epithelial

#### Papilloma

Pedunculated

Sessile

Papilloma	HPV subtype	Location	Appearance		
Pedunculated	6, 11	Inferior fornix	On a stalk		
Sessile	16, 18	Limbus	Flat, 'strawberry'		

oid Ca

# Conjunctival Neoplasms

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Papilloma	HPV subtype	Location	Appearance	Malignant potential?	
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oid Ca



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Papilloma	HPV subtype	Location	Appearance	Malignant potential?	
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oid Ca

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Papilloma	HPV subtype	Location	Appearance	Malignant potential?	
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oid Ca

Which (if any) of these subtypes is/are associated with cervical cancer?  
16 and 18



# Conjunctival Neoplasms

## Conjunctival Neoplasms

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Papilloma	HPV subtype	Location	Appearance	Malignant potential?	Age at presentation
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oid Ca

# Conjunctival Neoplasms

## Conjunctival Neoplasms

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##### Pedunculated

##### Sessile

Papilloma	HPV subtype	Location	Appearance	Malignant potential?	Age at presentation
Pedunculated	6, 11	Inferior fornix	On a stalk	None	Childhood
Sessile	16, 18	Limbus	Flat, 'strawberry'	Yes	Adulthood

oid Ca

# Conjunctival Neoplasms

*Conjunctival  
Neoplasms*

**Epithelial**

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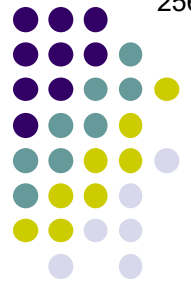
**Pedunculated**

**Sessile**

OSSN

Mucoepidermoid Ca

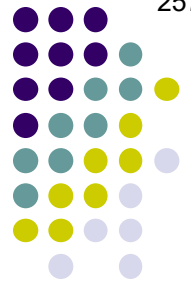
*How are conj papillomas treated?*





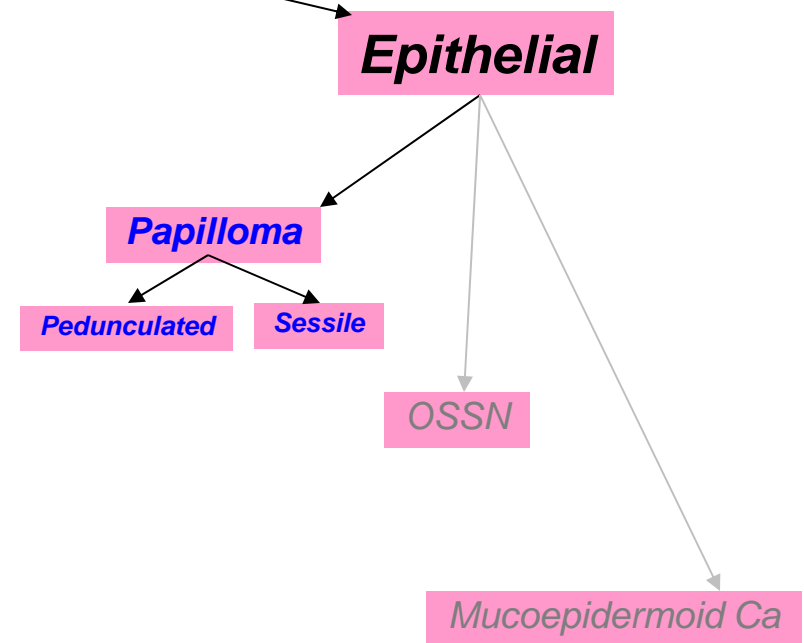
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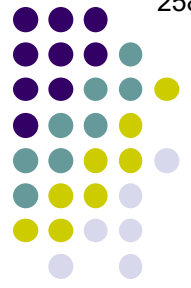
## Conjunctival Neoplasms



*How are conj papillomas treated?*  
Medical treatment can be considered, either:

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--PO

drug

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Medical treatment can be considered, either:

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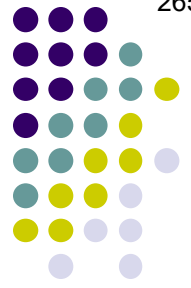
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Sessile

OSSN

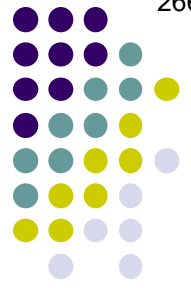
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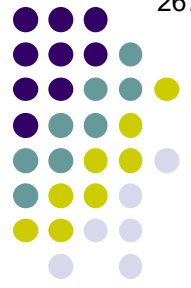
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Surgical treatment consists of technique excision with



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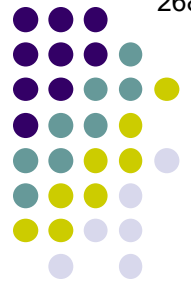
*How are conj papillomas treated?*

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Surgical treatment consists of 'no touch' excision with cryo



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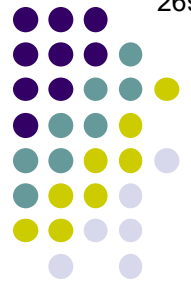
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Surgical treatment consists of 'no touch' excision with cryo followed by adjunct



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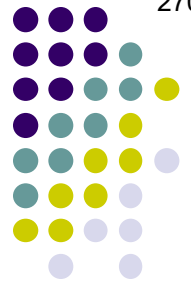
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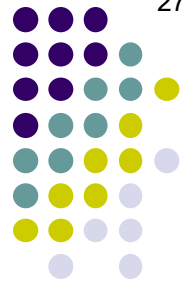
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*Why the 'no touch' surgical approach?*



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*Why the 'no touch' surgical approach?*

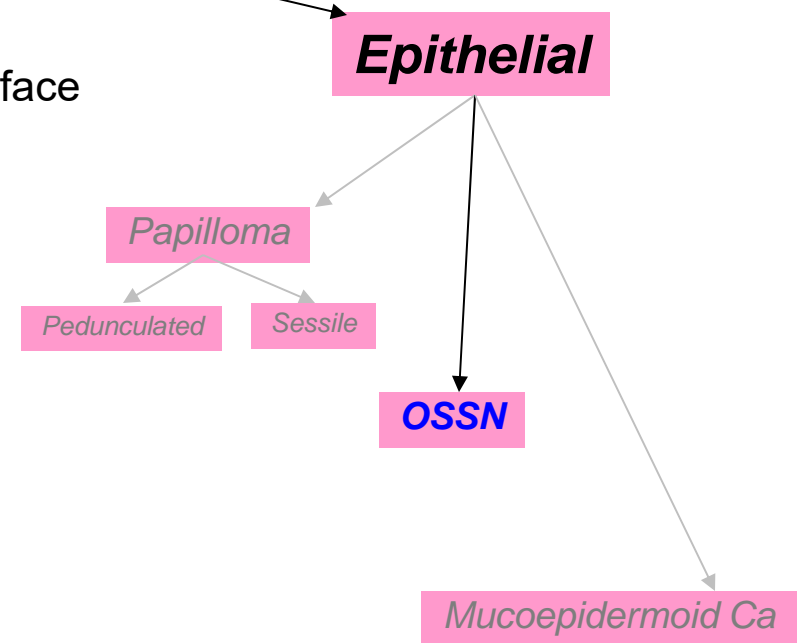
For the same reason no-touch is used in excising conj melanomas—in hopes of avoiding seeding the cells across the uninvolved conj



# Conjunctival Neoplasms

## Conjunctival Neoplasms

Generally speaking, to what does the term ocular surface squamous neoplasia refer?

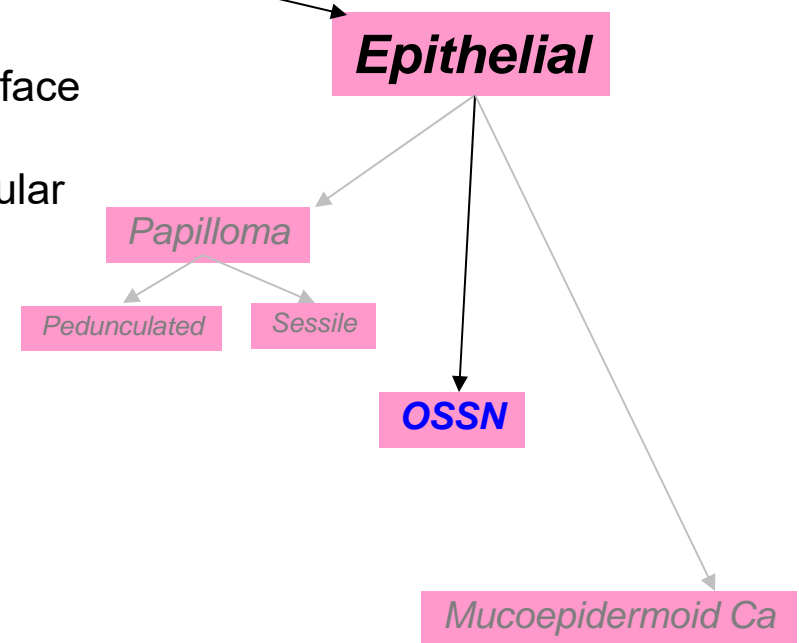




# Conjunctival Neoplasms

## Conjunctival Neoplasms

Generally speaking, to what does the term ocular surface squamous neoplasia refer?  
OSSN are a spectrum of squamous tumors of the ocular surface (both conj and cornea)



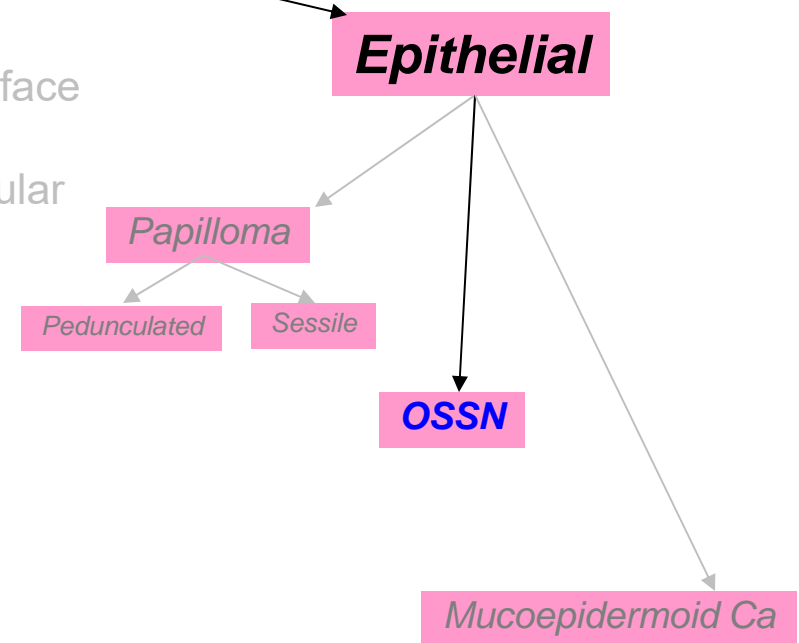
# Conjunctival Neoplasms

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Generally speaking, to what does the term ocular surface squamous neoplasia refer?

OSSN are a spectrum of squamous tumors of the ocular surface (both conj and **cornea**)

*Hol up—the cornea can have a surface neoplasia?*



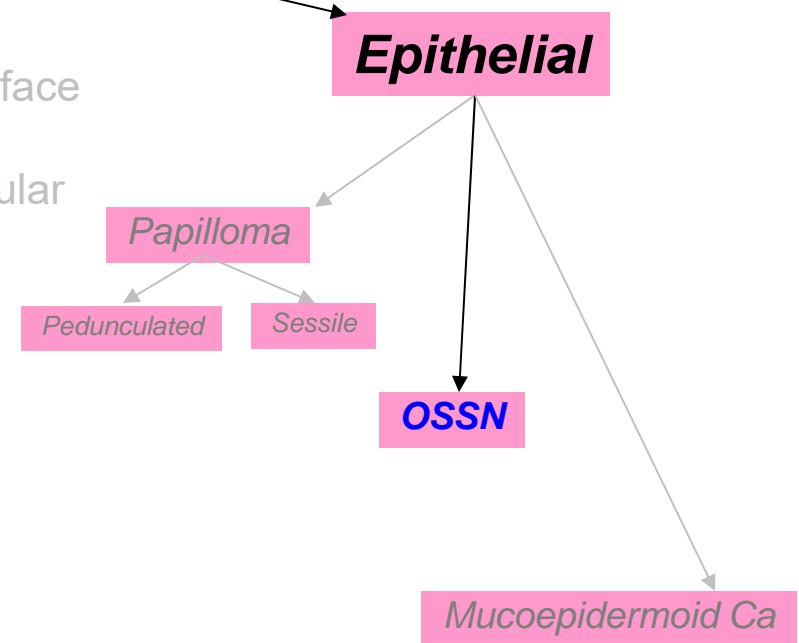
# Conjunctival Neoplasms

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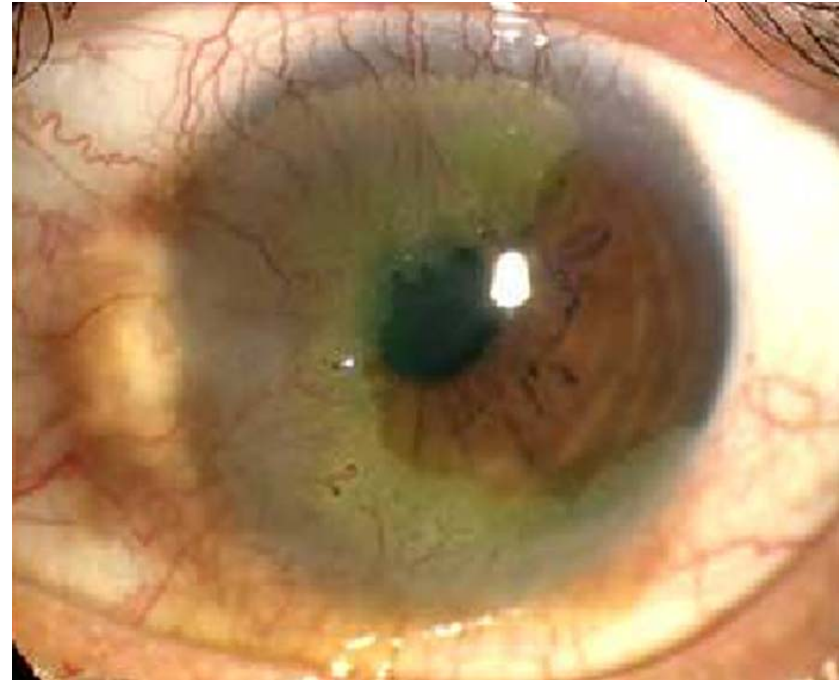
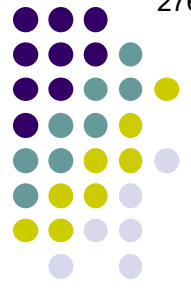
Generally speaking, to what does the term ocular surface squamous neoplasia refer?

OSSN are a spectrum of squamous tumors of the ocular surface (both conj and **cornea**)

*Hol up—the cornea can have a surface neoplasia?*  
Absolutely



# Conjunctival Neoplasms



OSSN: Corneal involvement



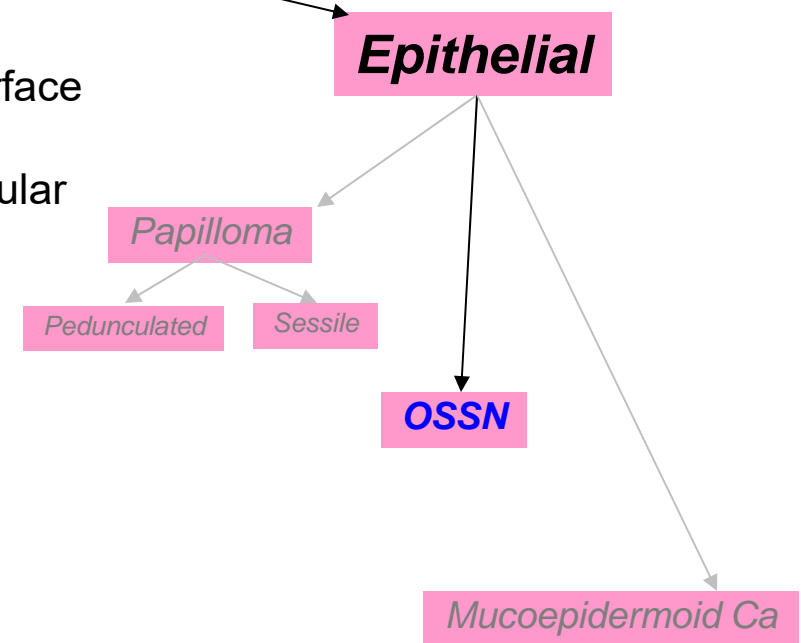
# Conjunctival Neoplasms

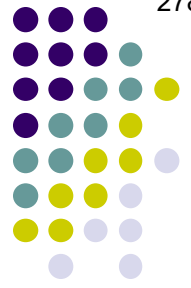
## Conjunctival Neoplasms

*Generally speaking, to what does the term ocular surface squamous neoplasia refer?*

OSSN are a spectrum of squamous tumors of the ocular surface (both conj and cornea)

*Do they all have malignant potential?*





# Conjunctival Neoplasms

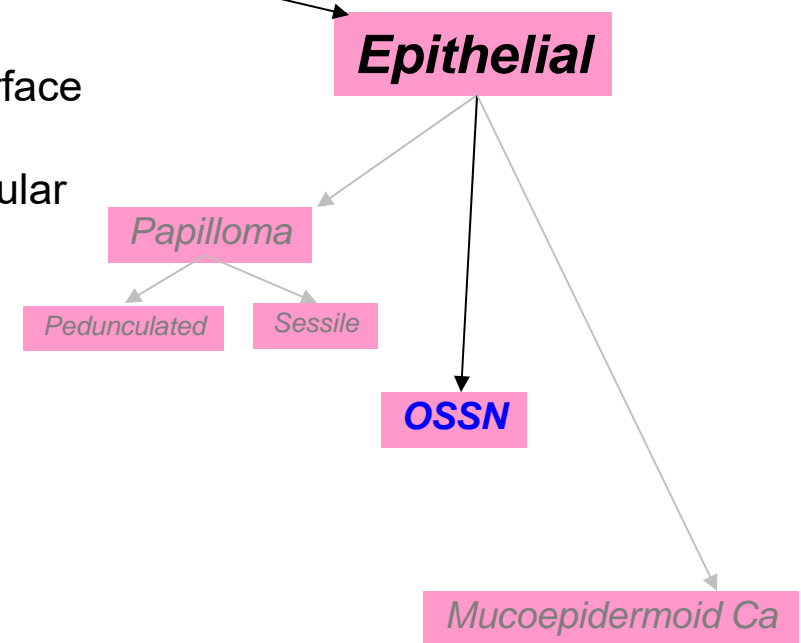
## Conjunctival Neoplasms

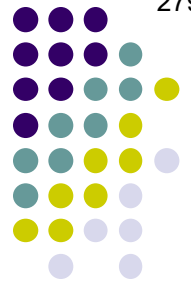
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Yes (although some are low-grade in this regard)





# Conjunctival Neoplasms

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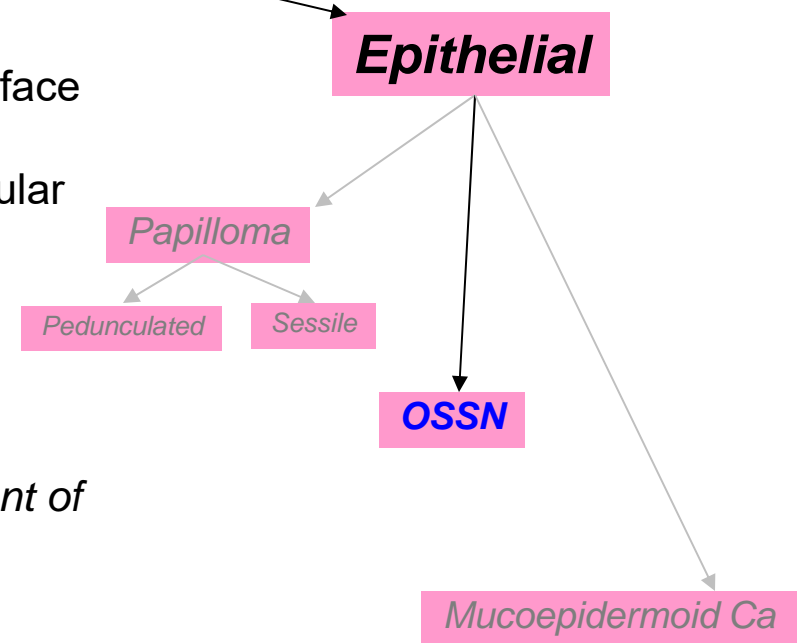
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# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Epithelial

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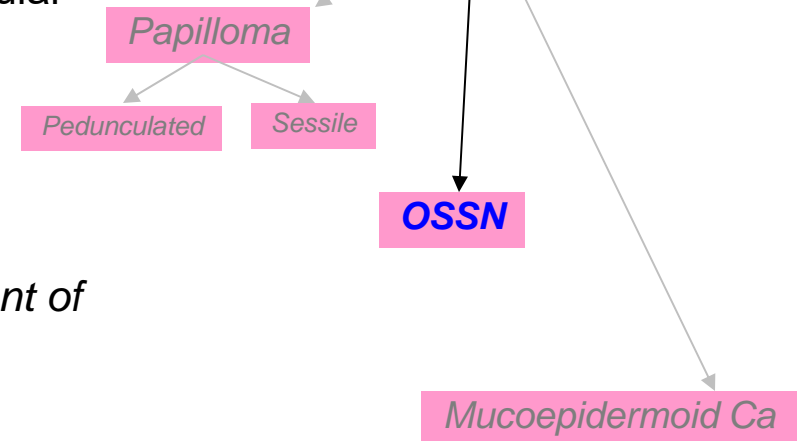
--  light exposure

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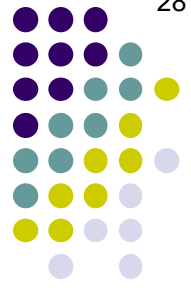
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# Conjunctival Neoplasms

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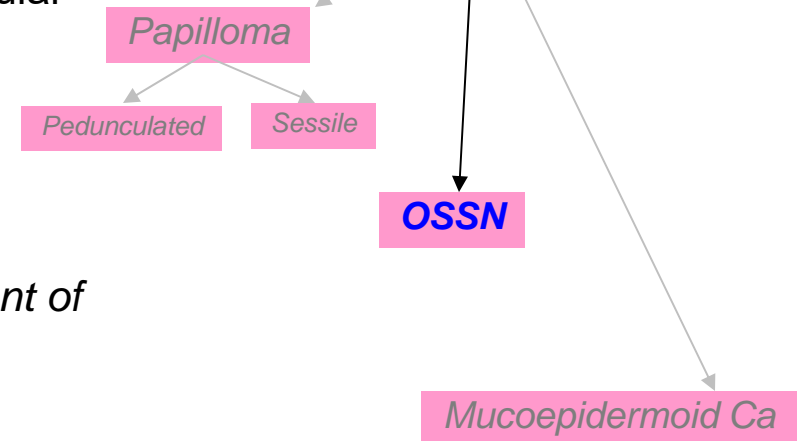
--UV light exposure

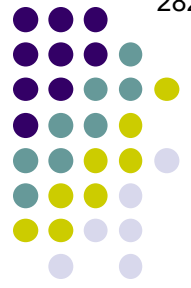
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# Conjunctival Neoplasms

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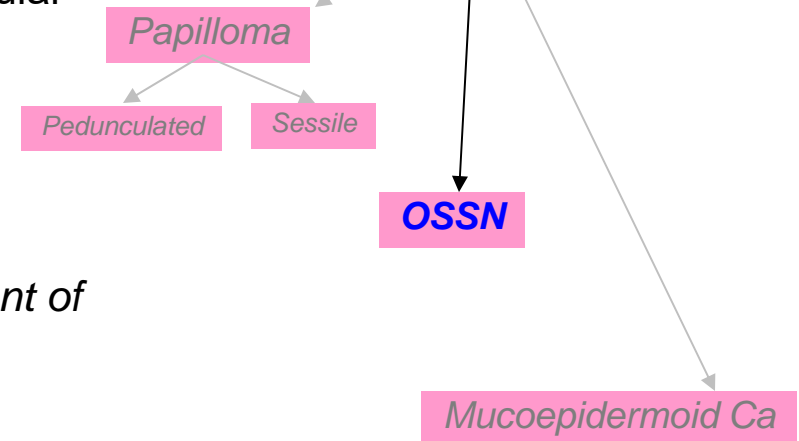
--UV light exposure

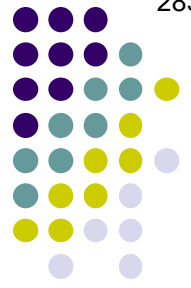
- Fair vs Dark complexion

--?

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# Conjunctival Neoplasms

## Conjunctival Neoplasms

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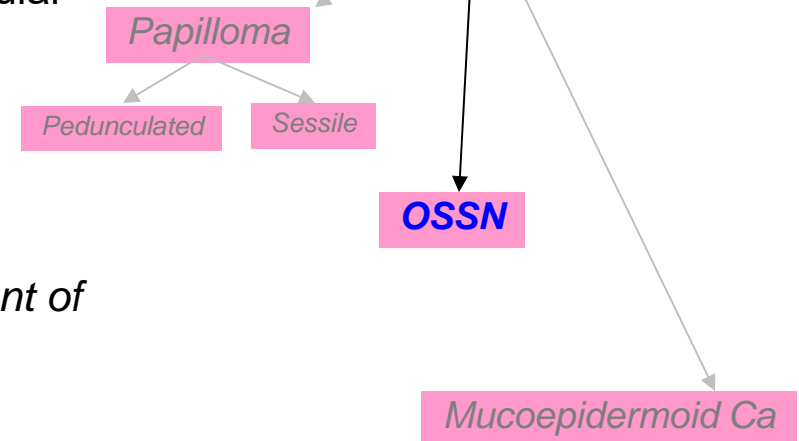
--UV light exposure

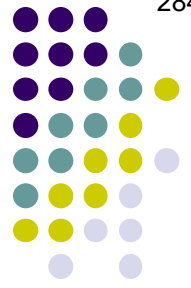
--Fair complexion

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# Conjunctival Neoplasms

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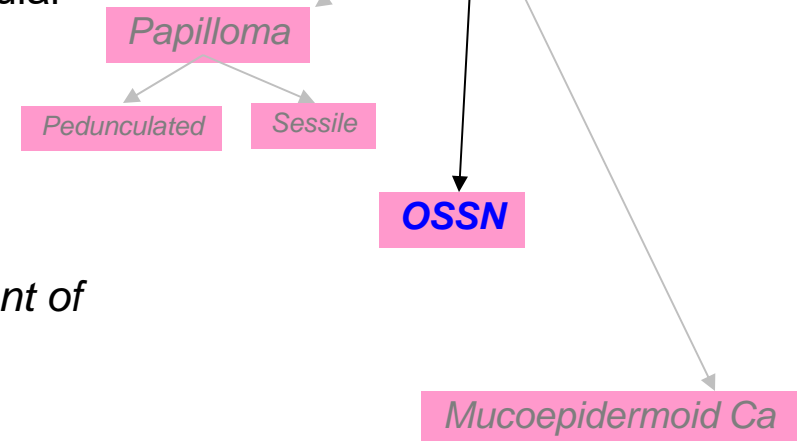
--UV light exposure

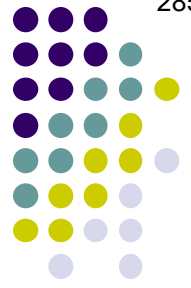
--Fair complexion

-- Younger vs advancing age

--?

--?





# Conjunctival Neoplasms

## Conjunctival Neoplasms

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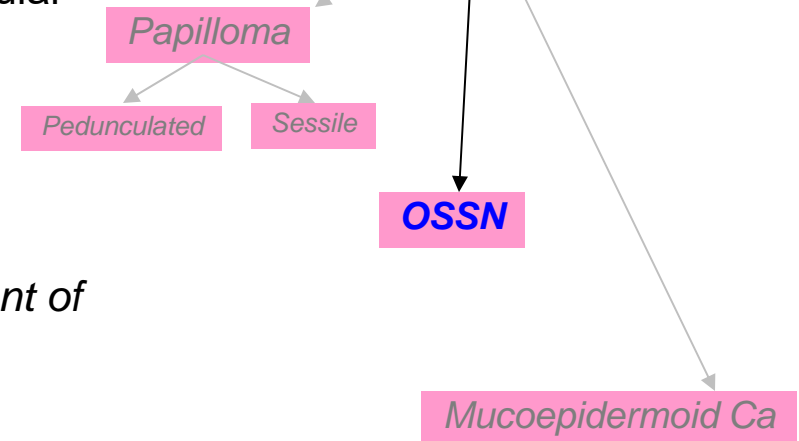
--UV light exposure

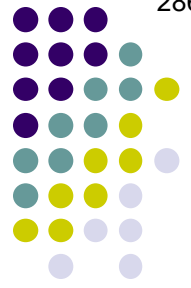
--Fair complexion

--Advancing age

--?

--?





# Conjunctival Neoplasms

## Conjunctival Neoplasms

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--UV light exposure

--Fair complexion

--Advancing age

-- systemic condition

--?

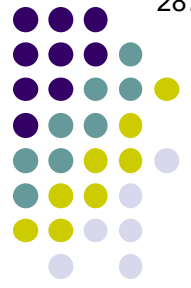
Papilloma

Pedunculated

Sessile

OSSN

Mucoepidermoid Ca



# Conjunctival Neoplasms

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*There are a number of risk factors for the development of OSSN—what are they?*

- UV light exposure
- Fair complexion
- Advancing age
- HIV+
- ?

### Papilloma

Pedunculated

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- Fair complexion
- Advancing age
- HIV+

-- bad habit

### Epithelial

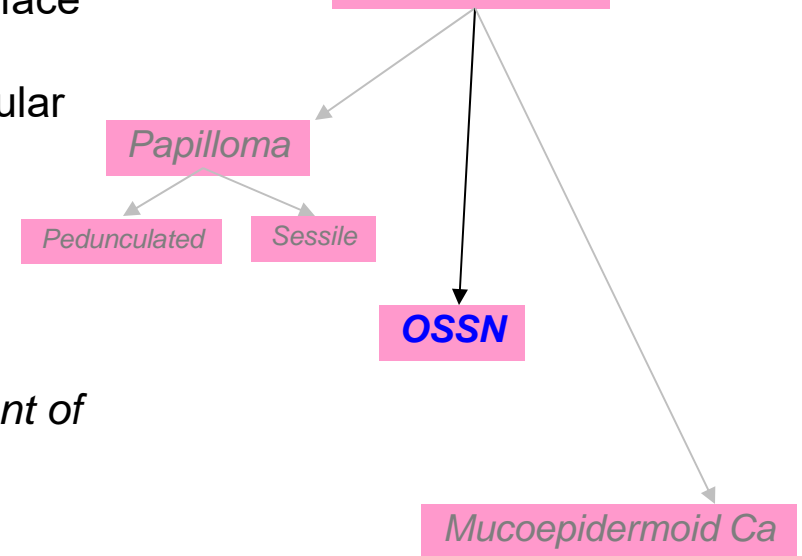
#### Papilloma

Pedunculated

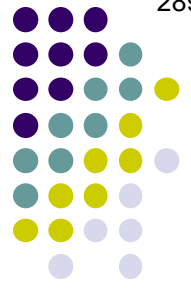
Sessile

OSSN

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*There are a number of risk factors for the development of OSSN—what are they?*

- UV light exposure
- Fair complexion
- Advancing age
- HIV+
- Smoking

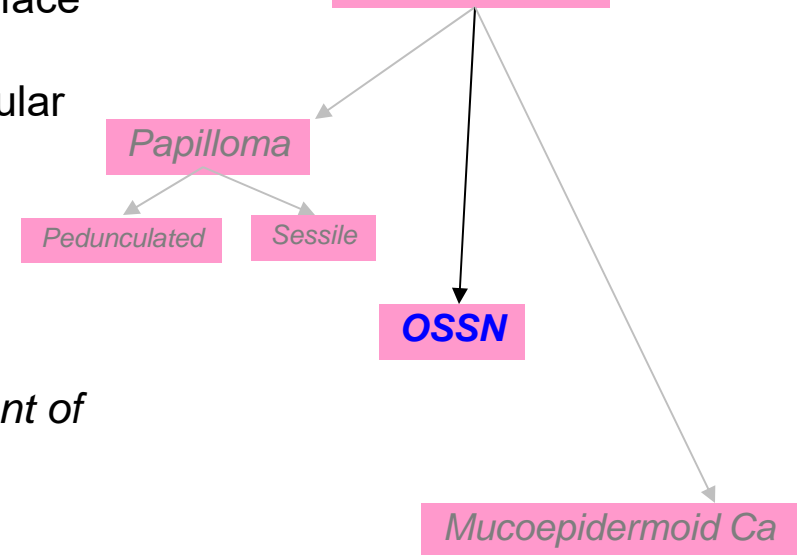
### Papilloma

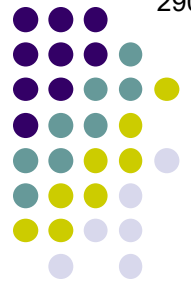
Pedunculated

Sessile

OSSN

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## Conjunctival Neoplasms

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*There are a number of risk factors for the development of OSSN—what are they?*

--UV light exposure

--Fair complexion

*Younger age*

--HIV+

--Smoking

*If an individual younger than 50 has OSSN, what should you do?*

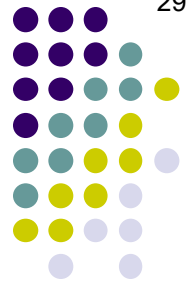
Papilloma

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Sessile

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--UV light exposure

--Fair complexion

Younger age

--**HIV+**?

--Smoking

*If an individual younger than 50 has OSSN,  
what should you do?*

Check them for HIV

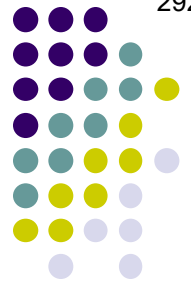
Papilloma

Pedunculated

Sessile

OSSN

Mucoepidermoid Ca



# Conjunctival Neoplasms

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Yes (although some are low-grade in this regard)

*There are a number of risk factors for the development of OSSN—what are they?*

--UV light exposure

**Dark complexion**

--Advancing age

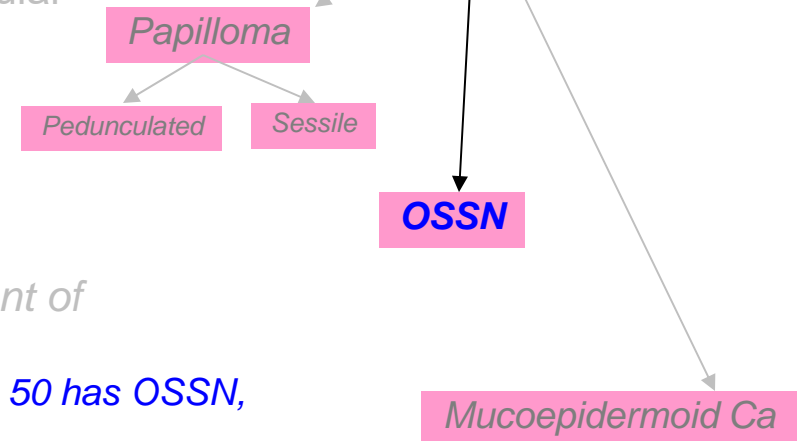
--HIV+

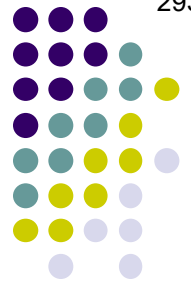
--Smoking

*If an individual younger than 50 has OSSN, what should you do?*

Check them for HIV

*If a dark-skinned individual has OSSN, what should you do?*





# Conjunctival Neoplasms

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There are a number of risk factors for the development of OSSN—what are they?

--UV light exposure

Dark complexion

--Advancing age

--**HIV+**?

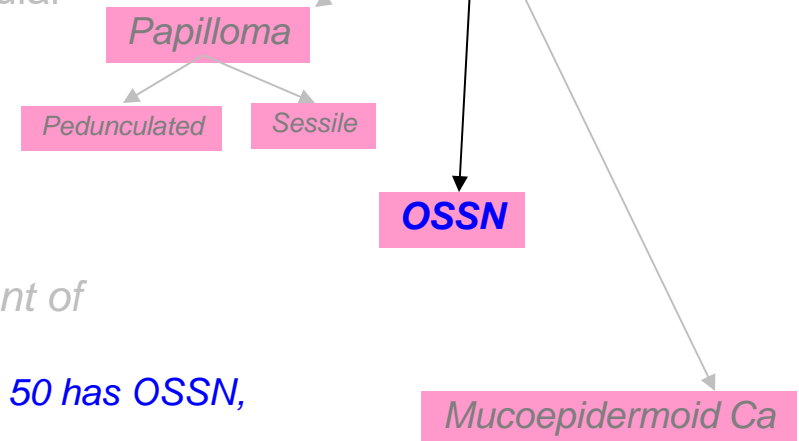
--Smoking

*If an individual younger than 50 has OSSN,  
what should you do?*

Check them for HIV

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what should you do?*

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# Conjunctival Neoplasms

## Conjunctival Neoplasms

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There are a number of risk factors for the development of OSSN—what are they?

--UV light exposure

Dark complexion

Younger age

--**HIV negative**

--Smoking

If an individual younger than 50 has OSSN,

If a young and/or dark-complexioned individual is HIV(-), what predisposing condition should be considered?

what should you do?

Check them for HIV

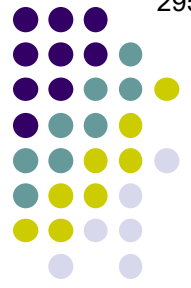
Papilloma

Pedunculated

Sessile

OSSN

Mucoepidermoid Ca



# Conjunctival Neoplasms

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Dark complexion

Younger age

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If an individual younger than 50 has OSSN,

If a young and/or dark-complected individual is HIV(-), what predisposing condition should be considered?  
**Xeroderma pigmentosum**

what should you do?

Check them for HIV

Papilloma

Pedunculated

Sessile

**OSSN**

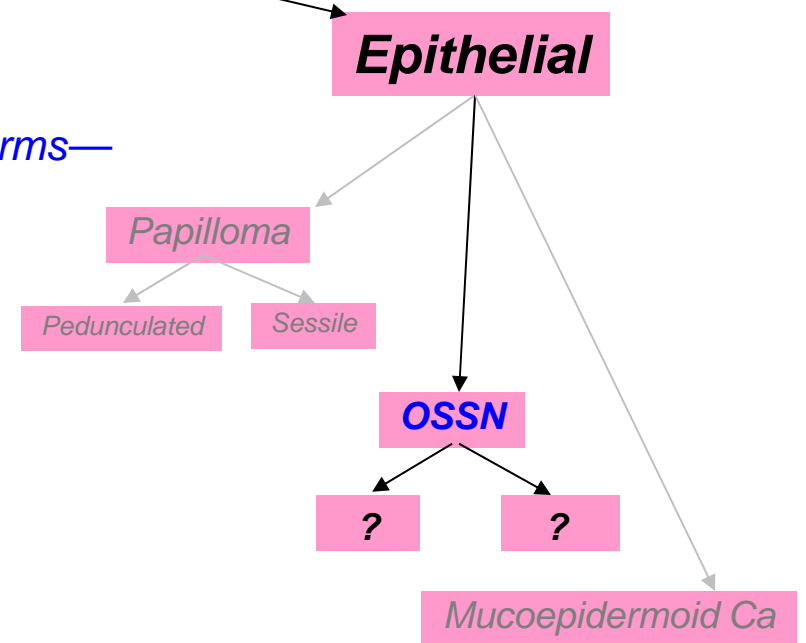
Mucoepidermoid Ca



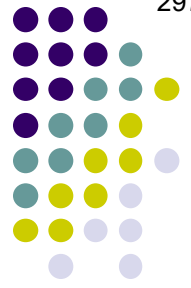
# Conjunctival Neoplasms

## Conjunctival Neoplasms

*Traditionally, OSSN is thought of as coming in two forms—  
what are they?*



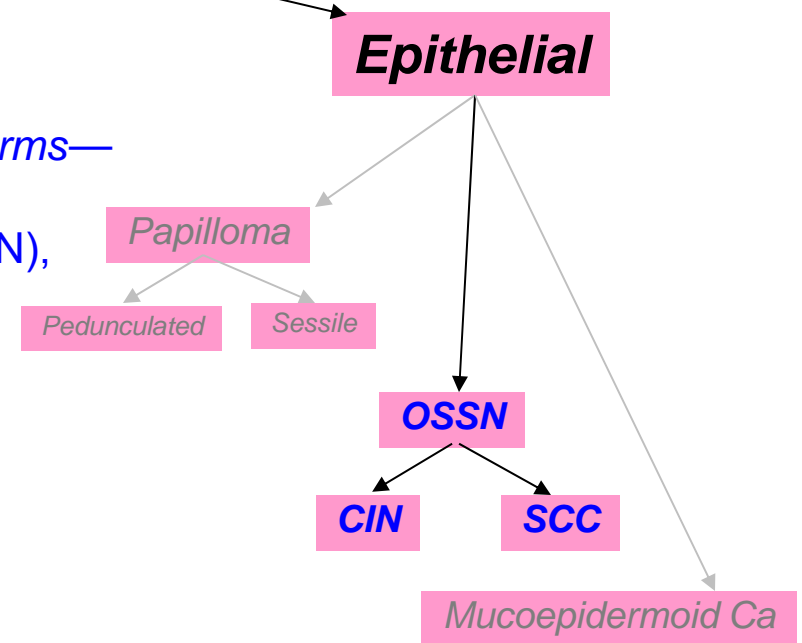




# Conjunctival Neoplasms

## Conjunctival Neoplasms

*Traditionally, OSSN is thought of as coming in two forms—  
what are they?*  
Conjunctival (or corneal) intraepithelial neoplasia (CIN),  
and squamous cell carcinoma (SCC)





# Conjunctival Neoplasms

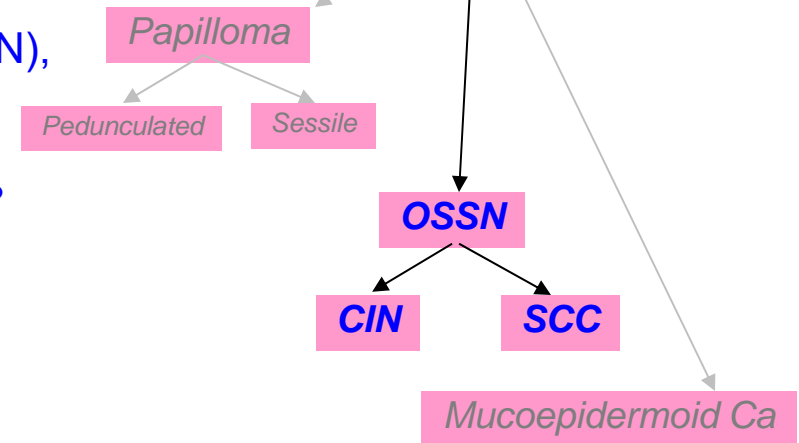
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*Can CIN be differentiated from SCC at the slit-lamp?*



# Conjunctival Neoplasms

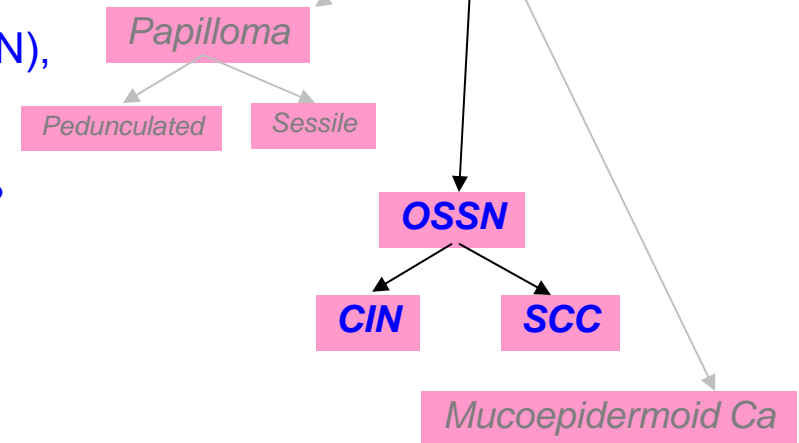
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*Can CIN be differentiated from SCC at the slit-lamp?*  
No, only via histology (which is why the CNN/SCC  
classification is not terribly useful clinically)



# Conjunctival Neoplasms

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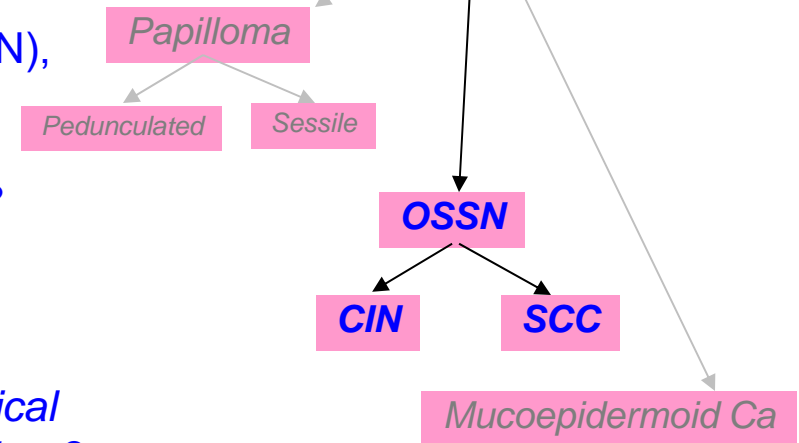
No, only via histology (which is why the CNN/SCC classification is not terribly useful clinically)

*OSSN lesions typically present with one of three clinical variants with regard to their appearance—what are they?*

--?

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# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Epithelial

*Traditionally, OSSN is thought of as coming in two forms—what are they?*

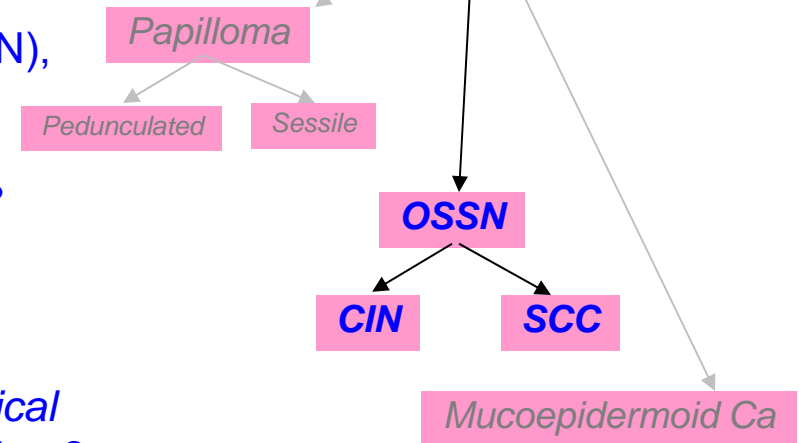
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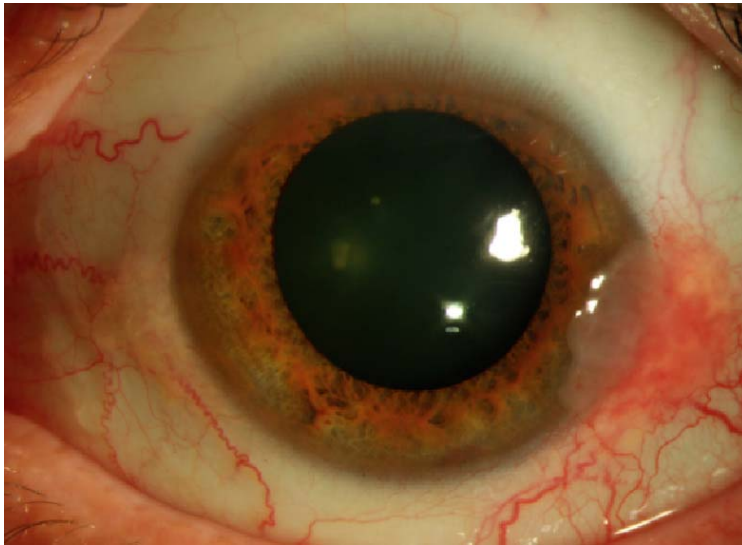
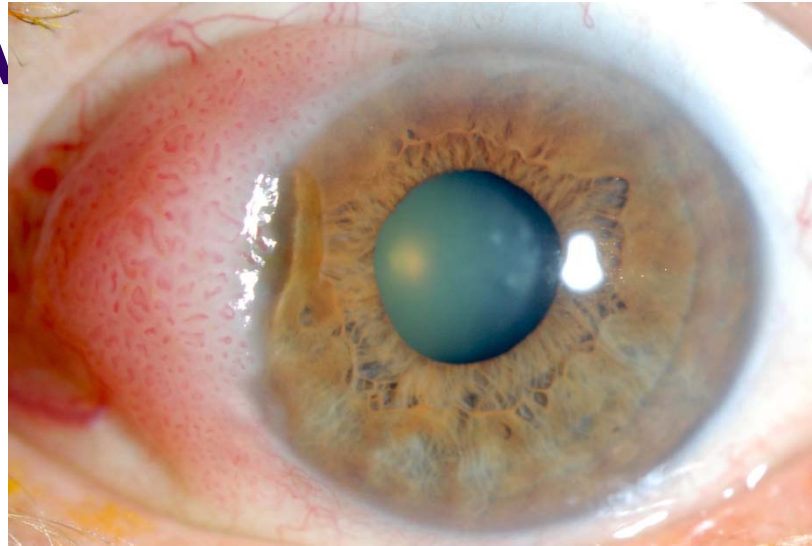
*OSSN lesions typically present with one of three clinical variants with regard to their appearance—what are they?*

- Gelatinous
- Papilliform
- Leukoplakic

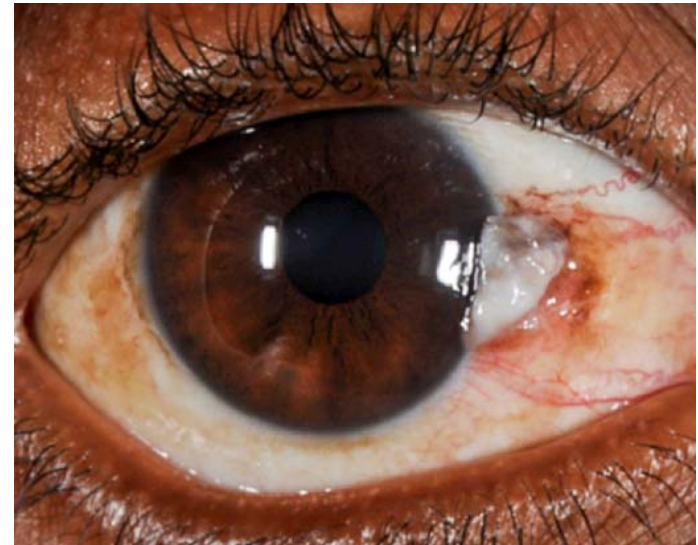


# Conjunctiv

Papilliform



Gelatinous



Leukoplakic

OSSN: Clinical variants

# Conjunctival Neoplasms

## Conjunctival Neoplasms

### Epithelial

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Conjunctival (or corneal) intraepithelial neoplasia (CIN), and squamous cell carcinoma (SCC)

#### Papilloma

Pedunculated

Sessile

#### OSSN

CIN

SCC

Mucoepidermoid Ca

*What does OSSN look like on AS-OCT?*

Can  
No, c  
class

*OSSN lesions typically present with one of three clinical variants with regard to their appearance—what are they?*

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# Conjunctival Neoplasms

## Conjunctival Neoplasms

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Sessile

OSSN

CIN

SCC

Mucoepidermoid Ca

*Can* What does OSSN look like on AS-OCT?

*No, c* A segment of dramatically thickened epithelium, the edge of which changes abruptly to normal-appearing epithelium  
*class*

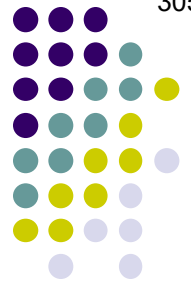
*OSSN lesions typically present with one of three clinical variants with regard to their appearance—what are they?*

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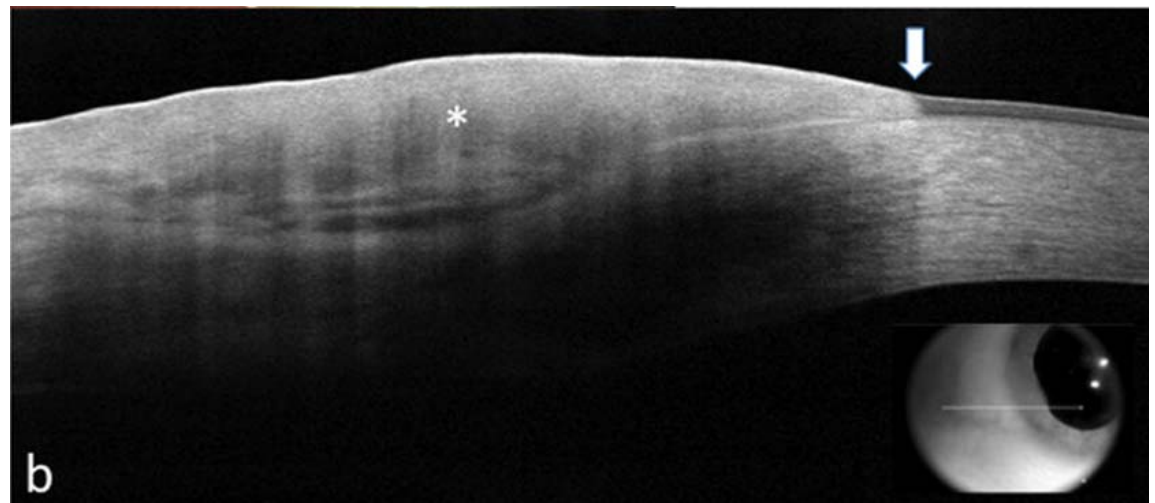
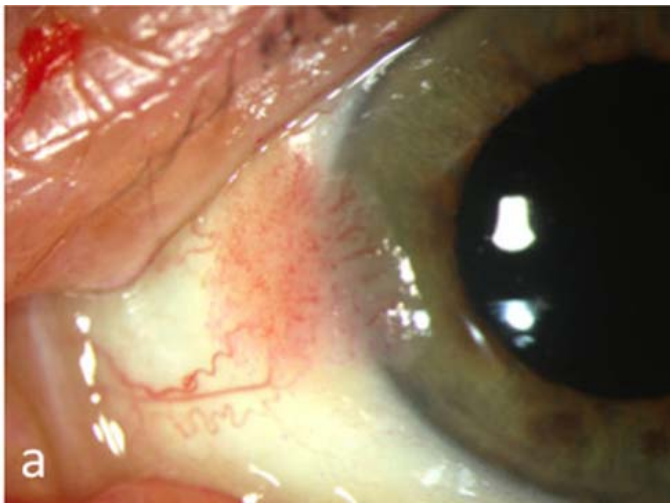
--Papilliform

--Leukoplakic





# Conjunctival Neoplasms



A 63 year old male with OSSN.

a) Slit lamp photograph of a sessile conjunctival lesion extending to the limbus.

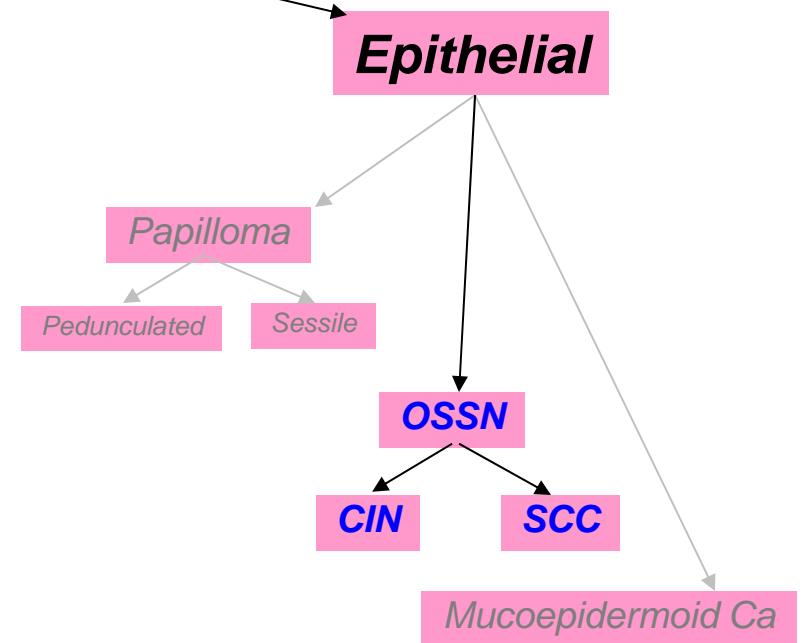
b) AS-OCT reveals dramatically thickened epithelium (asterisk) associated with an abrupt transition to normal epithelium (arrow)



# Conjunctival Neoplasms

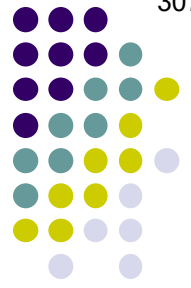
## Conjunctival Neoplasms

*Which OSSN lesions should be treated as benign, and which as (potentially) malignant?*



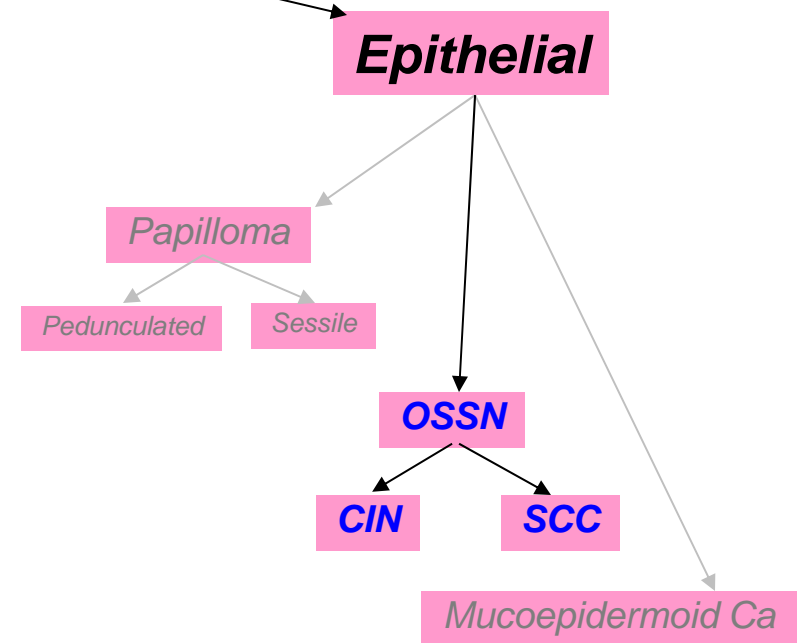
# Conjunctival Neoplasms

## Conjunctival Neoplasms



*Which OSSN lesions should be treated as benign, and which as (potentially) malignant?*

**All OSSN lesions should be treated as malignant!**





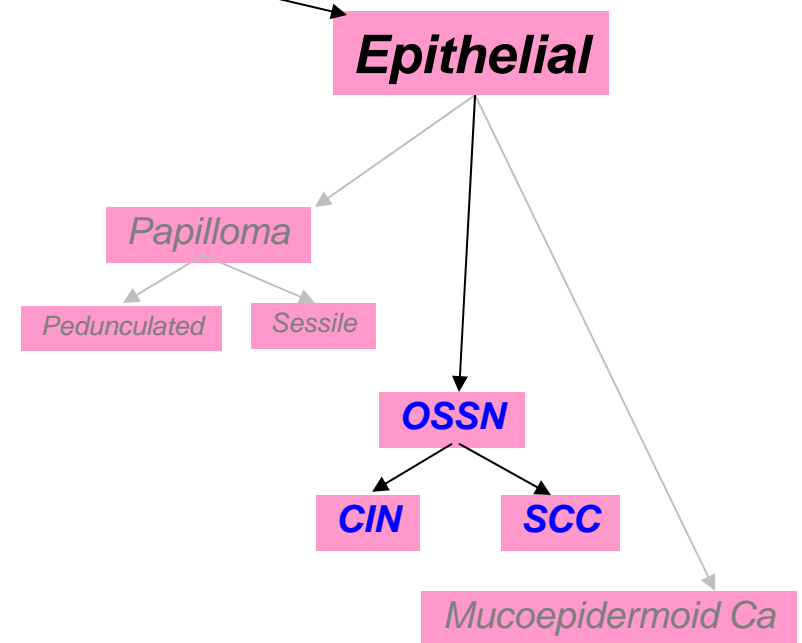
# Conjunctival Neoplasms

## Conjunctival Neoplasms

*Which OSSN lesions should be treated as benign, and which as (potentially) malignant?*

**All OSSN lesions should be treated as malignant!**

*Two general categories of treatment are used. What are they?*





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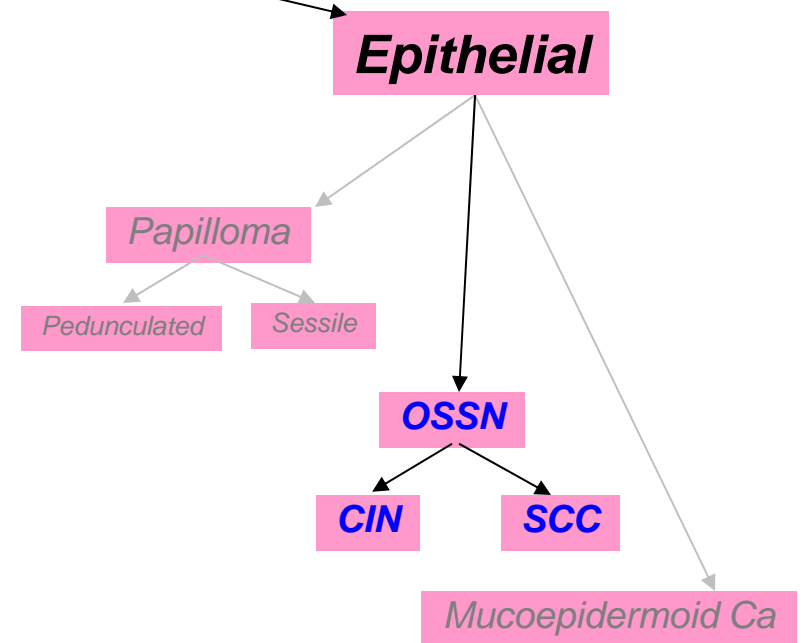
*Which OSSN lesions should be treated as benign, and which as (potentially) malignant?*

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Surgical, and topical





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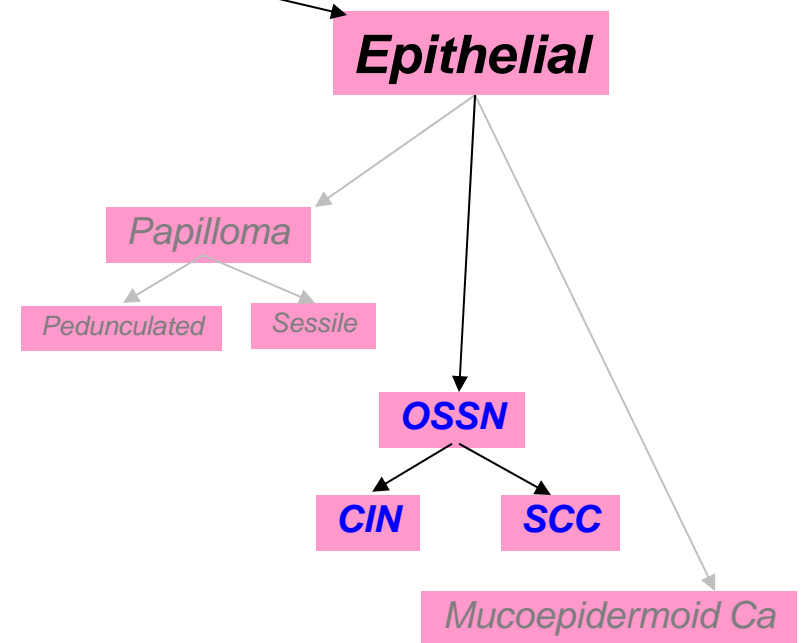
*What are the highlights of surgical excision?*

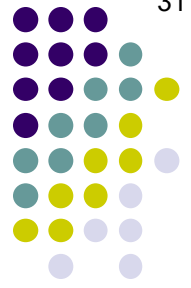
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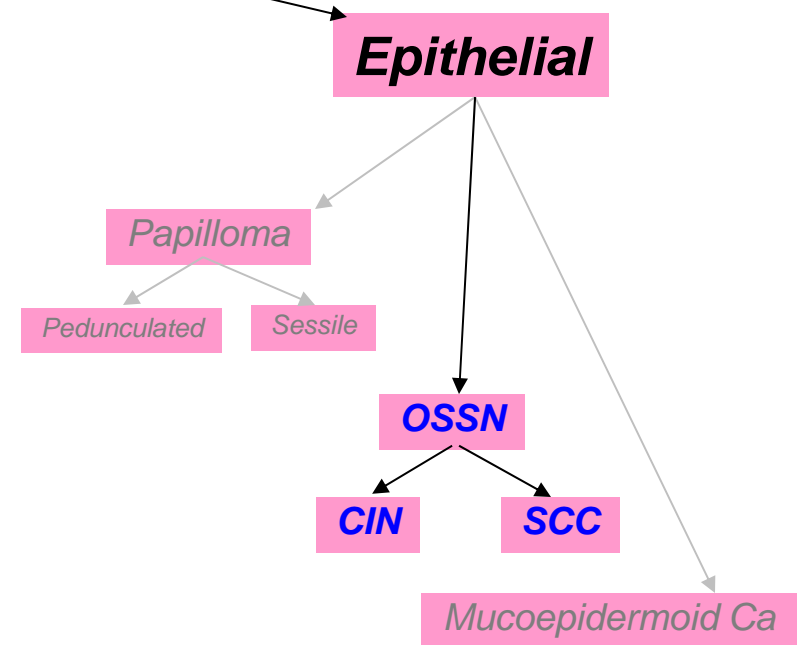
--Margins should be at least

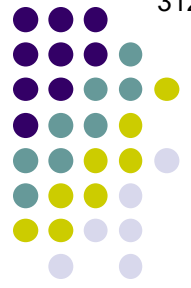


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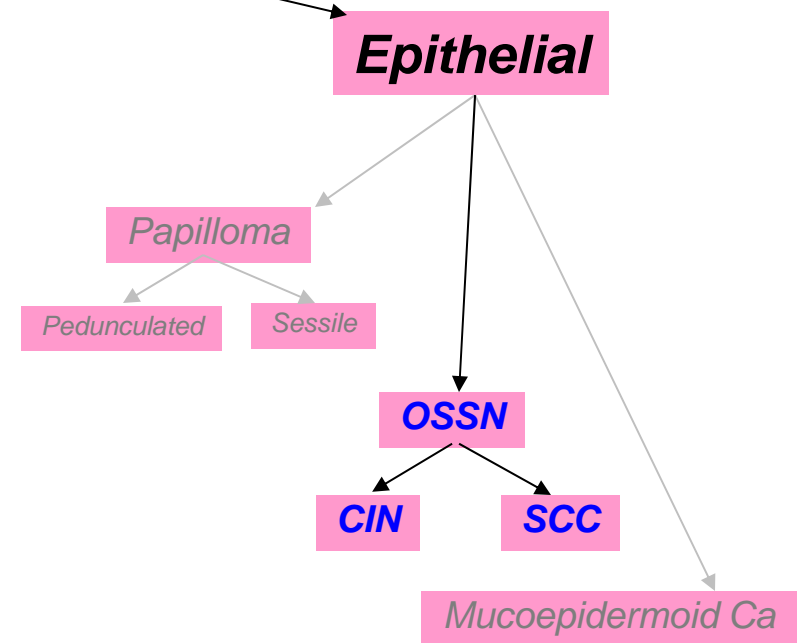
*What are the highlights of surgical excision?*

--Margins should be at least 2 mm

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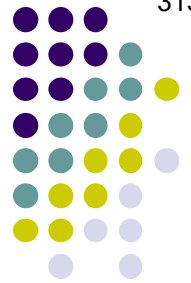
--?





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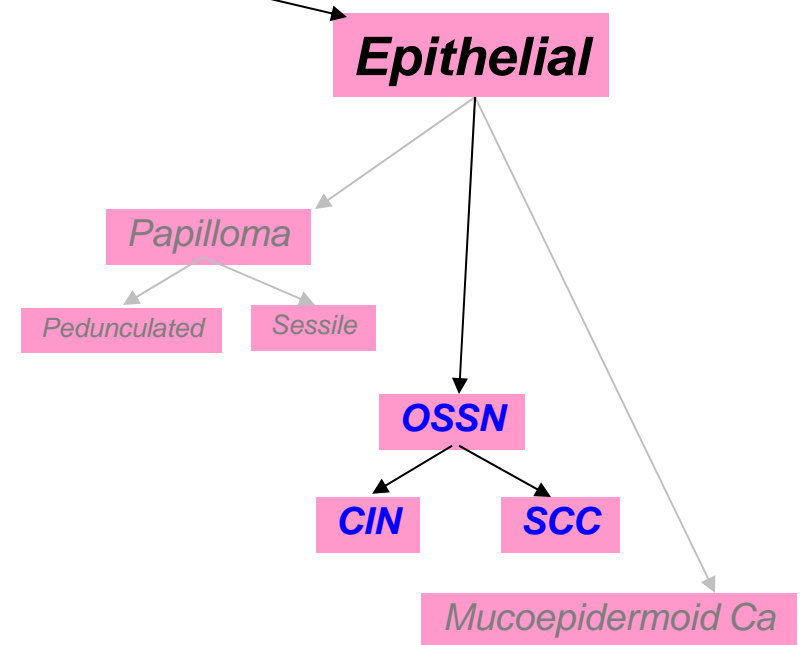
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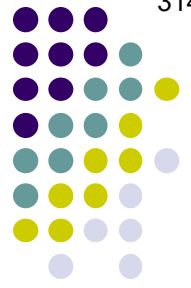
--Margins should be at least 2 mm

--Margins should be  

--?

--?





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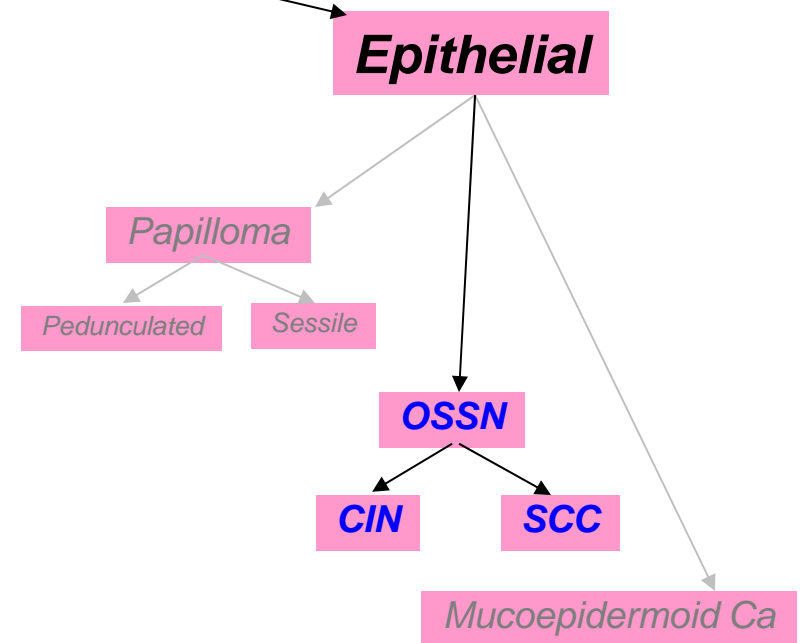
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--Margins should be at least 2 mm

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--?

--?





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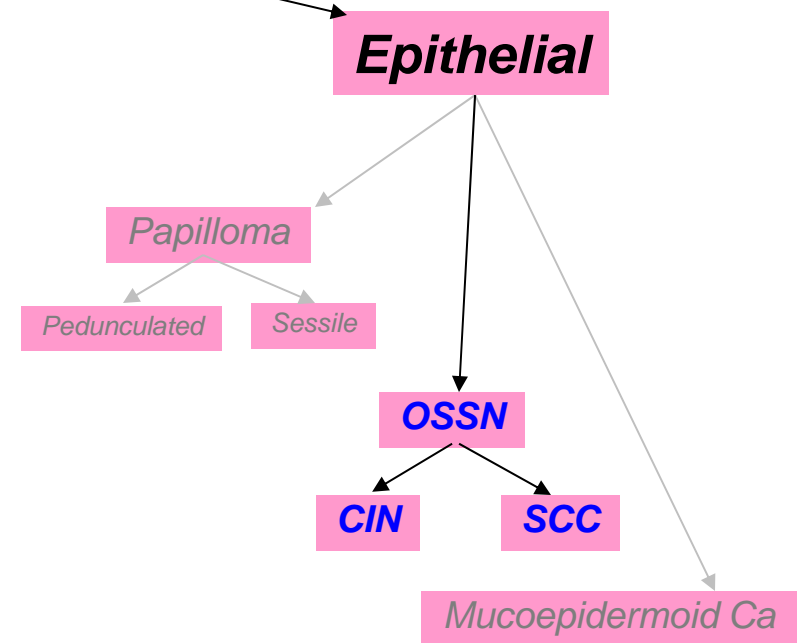
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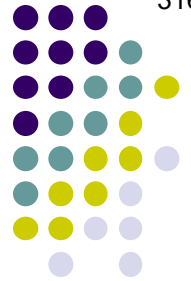
--If the lesion involves the cornea, scrape it

--?



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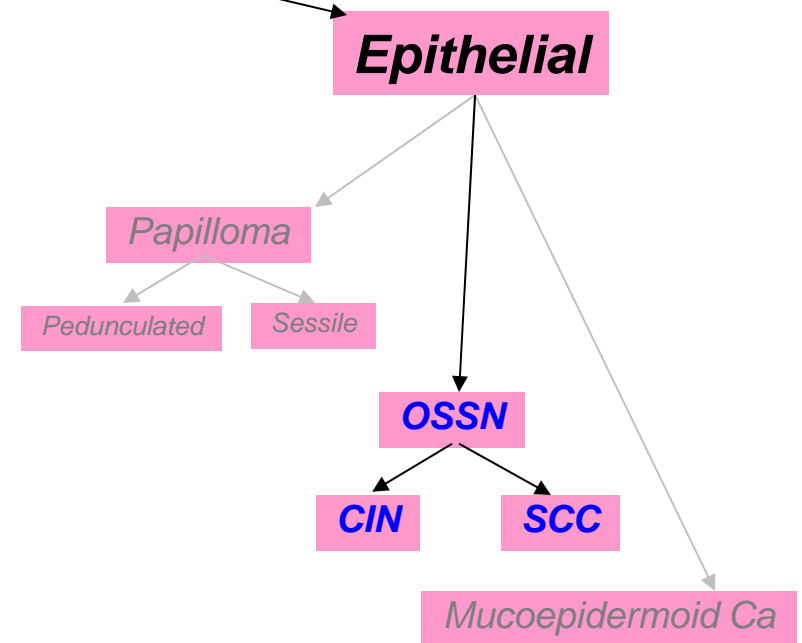
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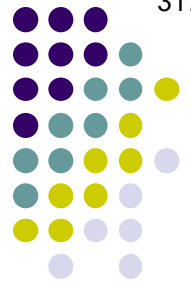
*What are they?*

**Surgical**, and topical

*What are the highlights of surgical excision?*

- Margins should be at least 2 mm
- Margins should be cryo'd
- If the lesion involves the cornea, scrape it
- Consider two words of the scleral bed





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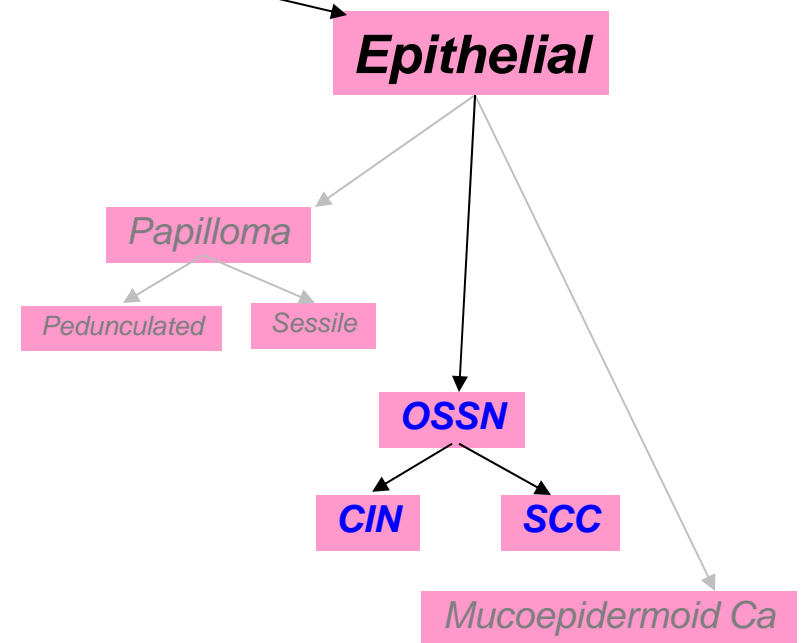
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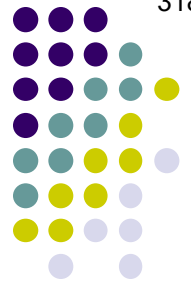
*What are they?*

**Surgical**, and topical

*What are the highlights of surgical excision?*

- Margins should be at least 2 mm
- Margins should be cryo'd
- If the lesion involves the cornea, scrape it
- Consider lamellar sclerectomy of the scleral bed





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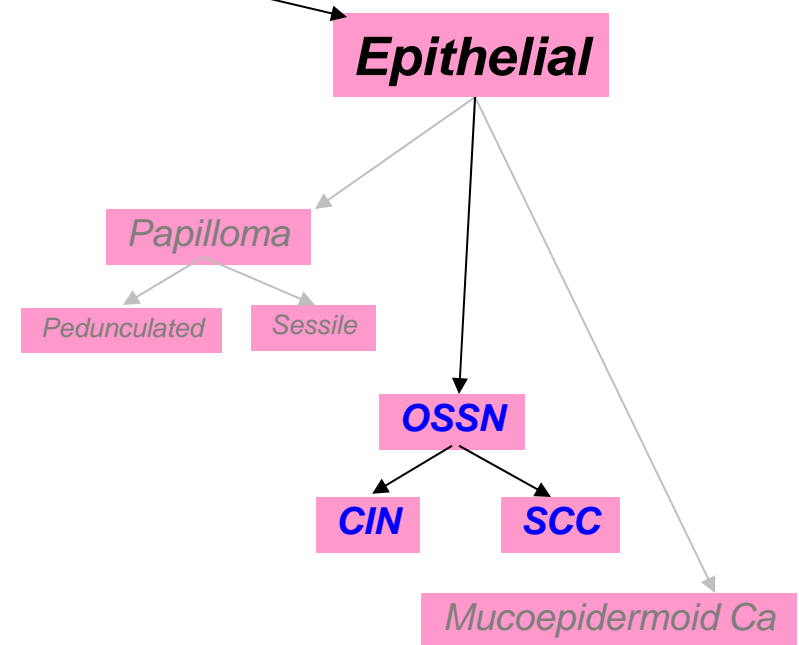
Surgical, and **topical**

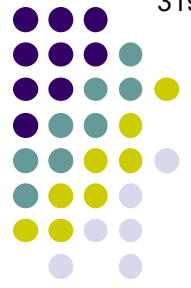
*What are the three topical meds?*

--?

--?

--?





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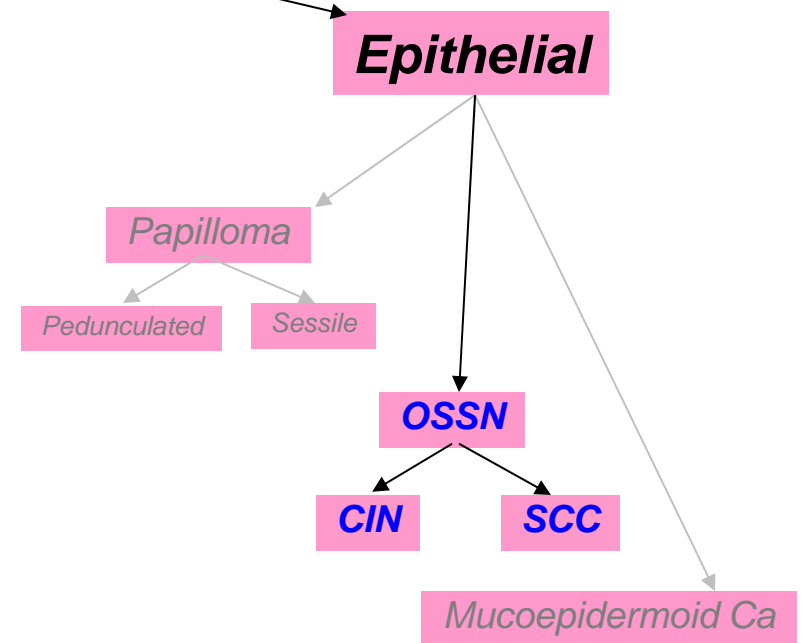
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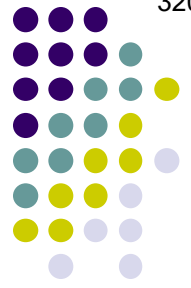
*What are the three topical meds?*

--Interferon

--MMC

--5-FU





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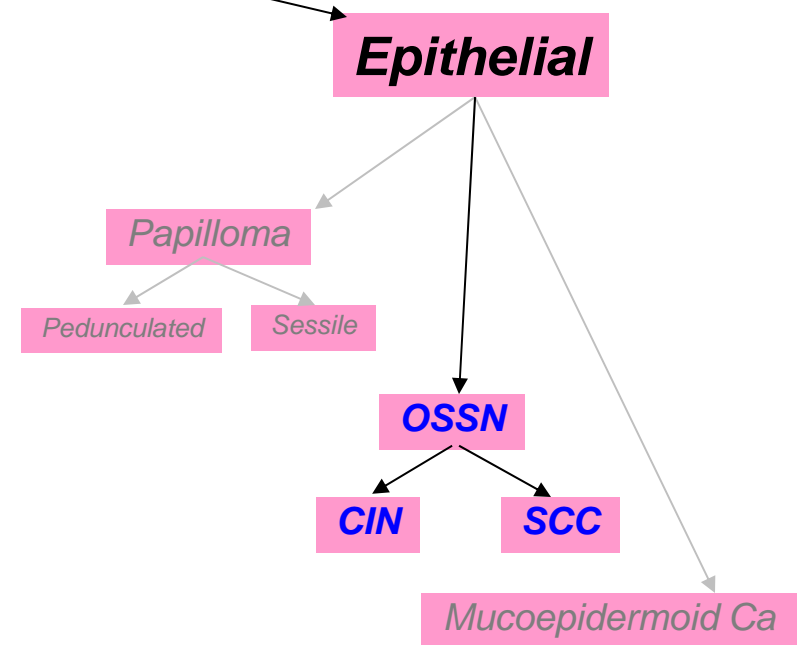
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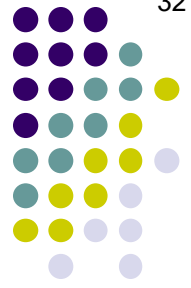
--MMC

--5-FU

*Which is considered first-line, and why?*







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Surgical, and **topical**

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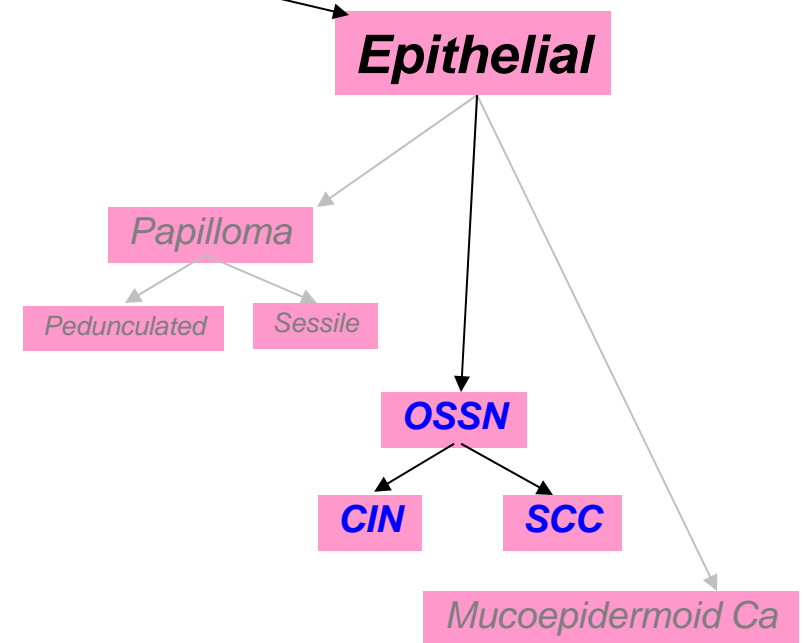
--Interferon

--MMC

--5-FU

*Which is considered first-line, and why?*

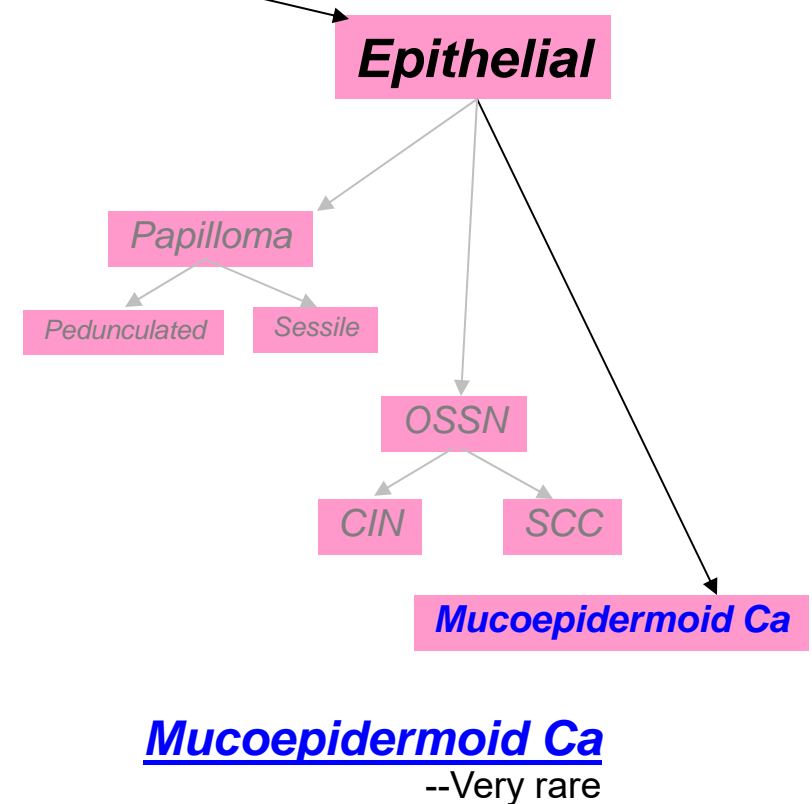
Interferon—it has the fewest adverse effects





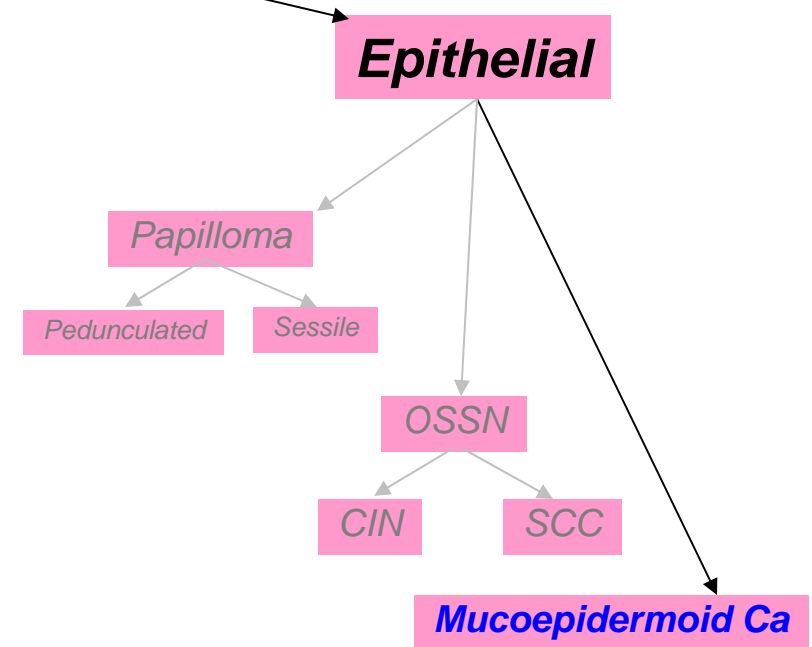
# Conjunctival Neoplasms

*Conjunctival  
Neoplasms*



# Conjunctival Neoplasms

*Conjunctival  
Neoplasms*



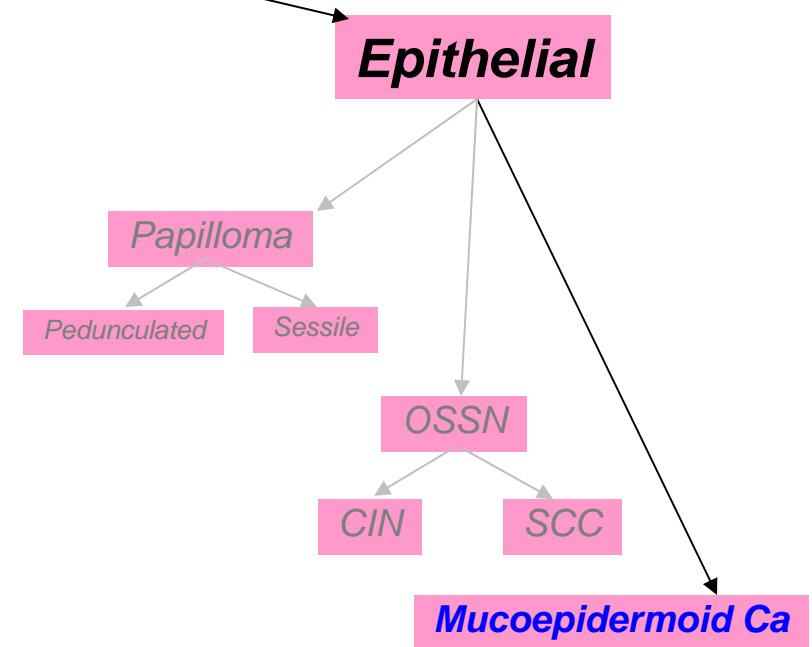
**Mucoepidermoid Ca**

--Very rare

--Looks like hyper-aggressive SCC

# Conjunctival Neoplasms

*Conjunctival  
Neoplasms*



## Mucoepidermoid Ca

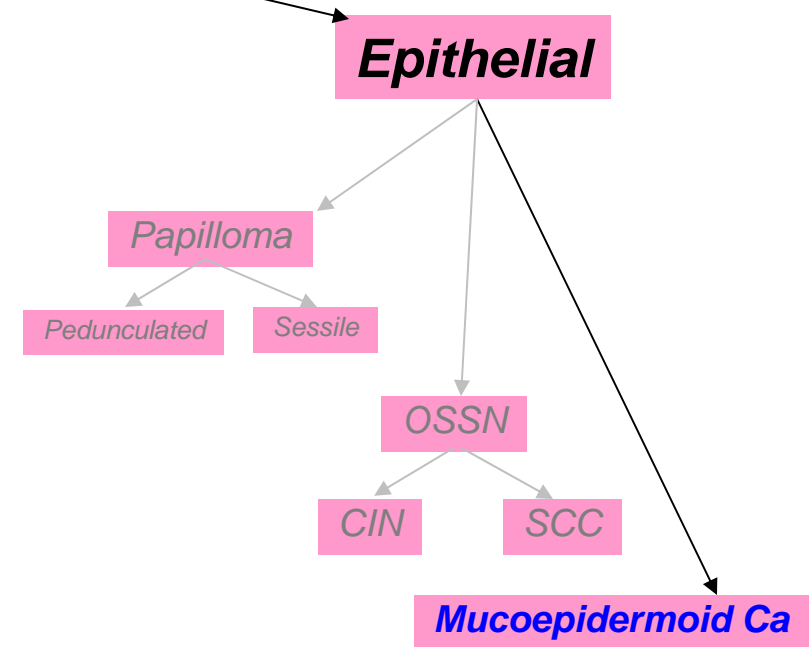
--Very rare

--Looks like hyper-aggressive SCC  
in addition to malignant squames

--Contains malignant cell type

# Conjunctival Neoplasms

*Conjunctival  
Neoplasms*



## Mucoepidermoid Ca

--Very rare

--Looks like hyper-aggressive SCC

--Contains malignant goblet cells in addition to malignant squames



# Conjunctival Neoplasms

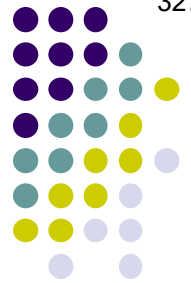
*Conjunctival  
Neoplasms*

*Melanocytic*

*Epithelial*

	<i>Melanocytic</i>	<i>Epithelial</i>
<i>Limbal Conj</i>	?	
<i>Palpebral Conj</i>	?	

*Fill in the blanks re whether the lesion  
tends to be **benign** vs **malignant***



# Conjunctival Neoplasms

*Conjunctival  
Neoplasms*

*Melanocytic*

*Epithelial*

	<i>Melanocytic</i>	<i>Epithelial</i>
<i>Limbal Conj</i>	<b>Benign</b>	
<i>Palpebral Conj</i>	<b>Malignant</b>	

*Fill in the blanks re whether the lesion  
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# Conjunctival Neoplasms

*Conjunctival  
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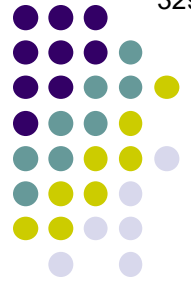
*Melanocytic*

*Epithelial*

	<i>Melanocytic</i>	<i>Epithelial</i>
<i>Limbal Conj</i>	Benign	?
<i>Palpebral Conj</i>	Malignant	?

*Fill in the blanks re whether the lesion  
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*Conjunctival  
Neoplasms*

*Melanocytic*

*Epithelial*

	<i>Melanocytic</i>	<i>Epithelial</i>
<i>Limbal Conj</i>	Benign	Malignant
<i>Palpebral Conj</i>	Malignant	Benign

*Fill in the blanks re whether the lesion  
tends to be **benign** vs **malignant***

# Conjunctival Neoplasms

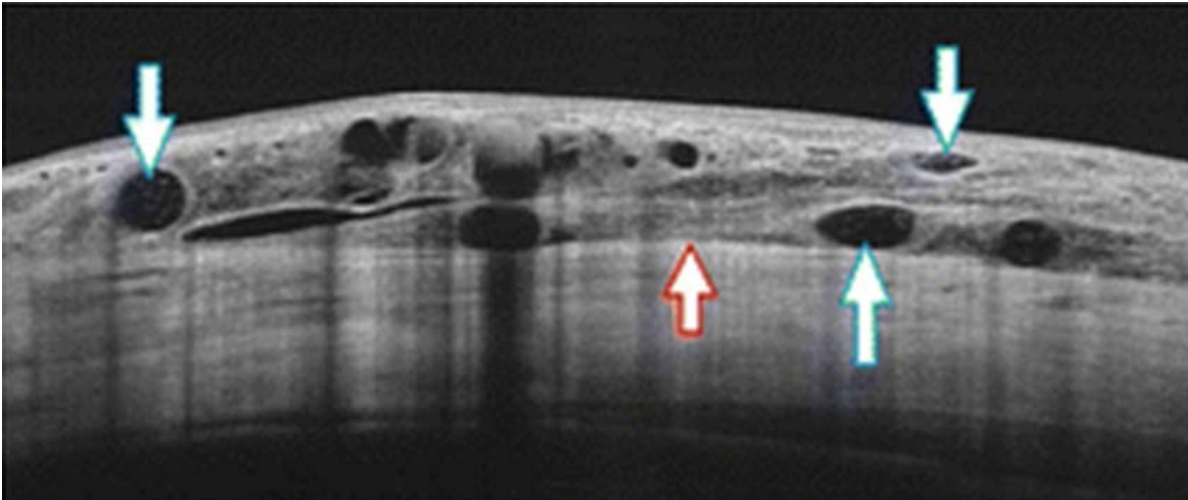


330

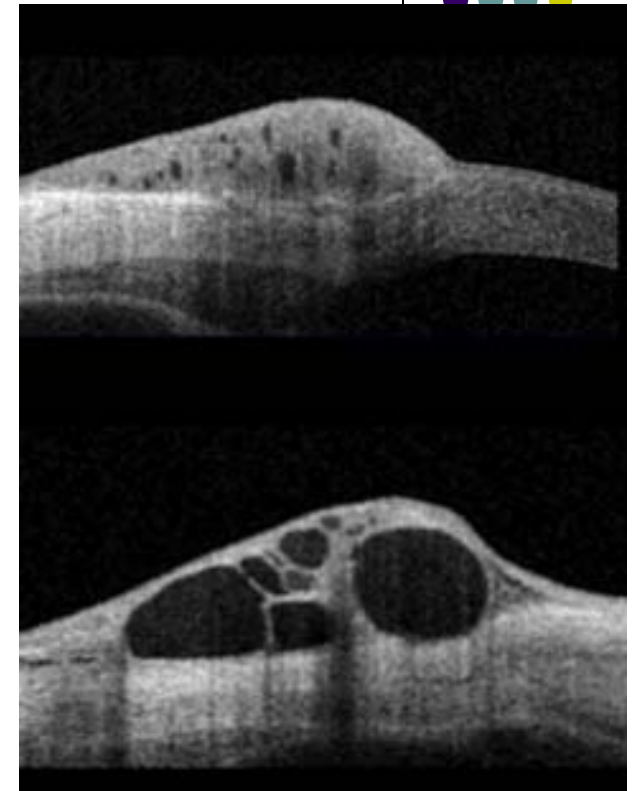
*In anticipation of having to interpret them on the OKAP,  
let's compare and contrast the AS-OCT findings for some  
of the conditions covered in this slide-set*



# Conjunctival Neoplasms



?



?

If the AS-OCT features *cystic spaces*, think

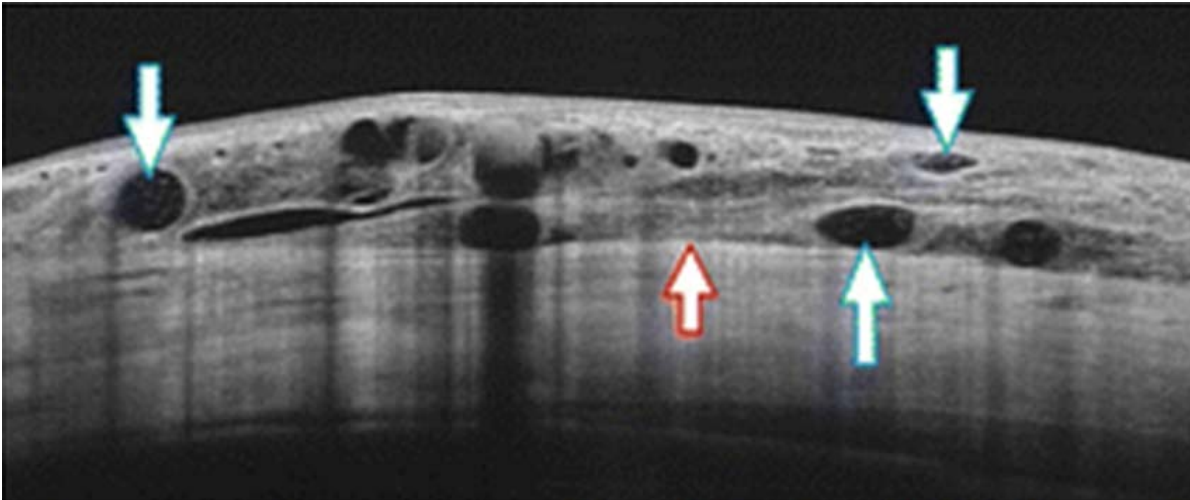


vs

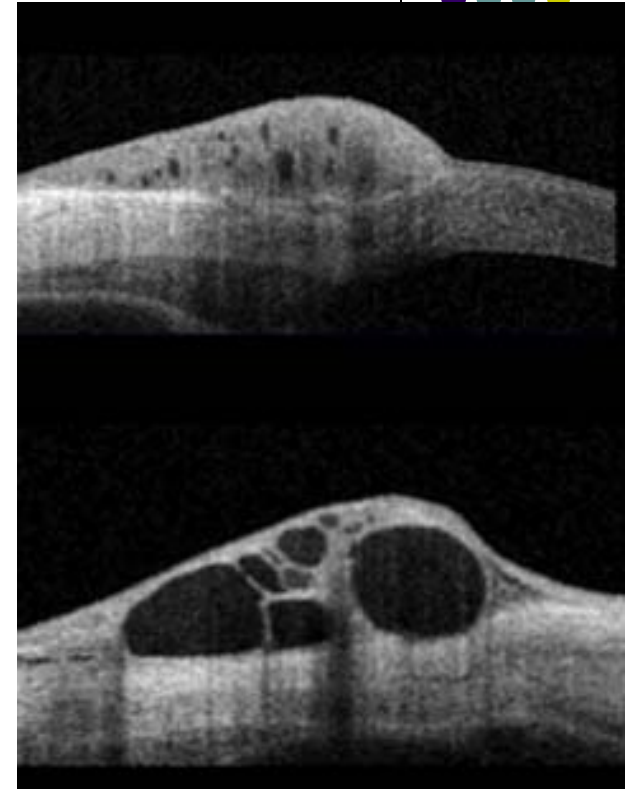




# Conjunctival Neoplasms



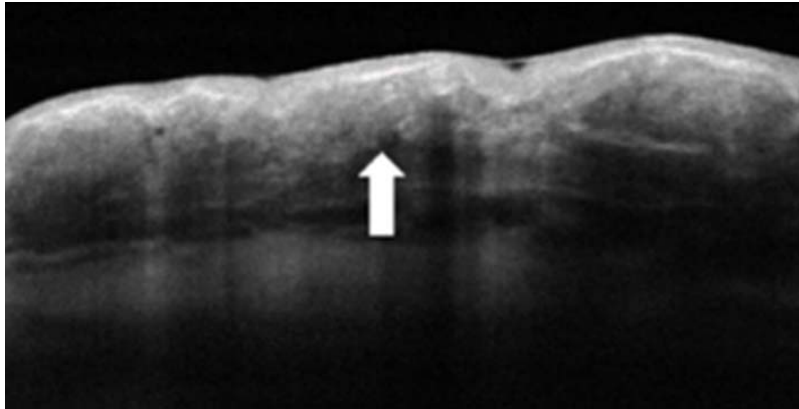
Lymphangiectasia



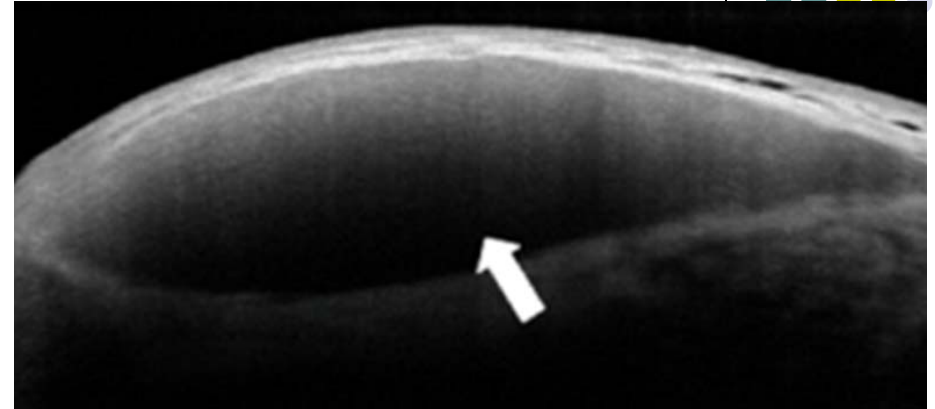
Conj nevus

If the AS-OCT features *cystic spaces*, think **lymphangiectasia** vs **nevus**.

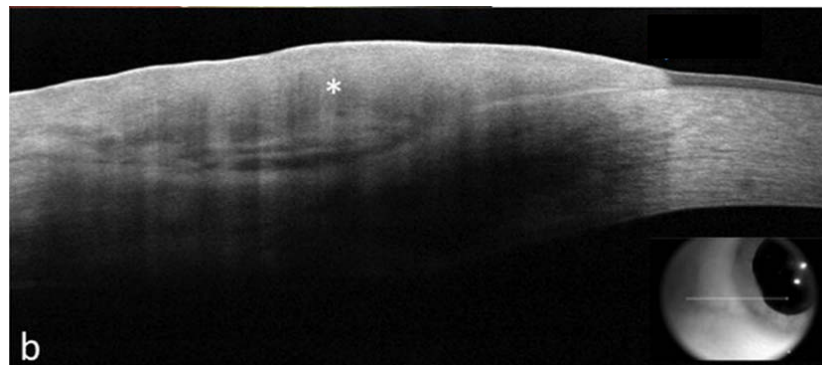
# Conjunctival Neoplasms



Lesion is...?



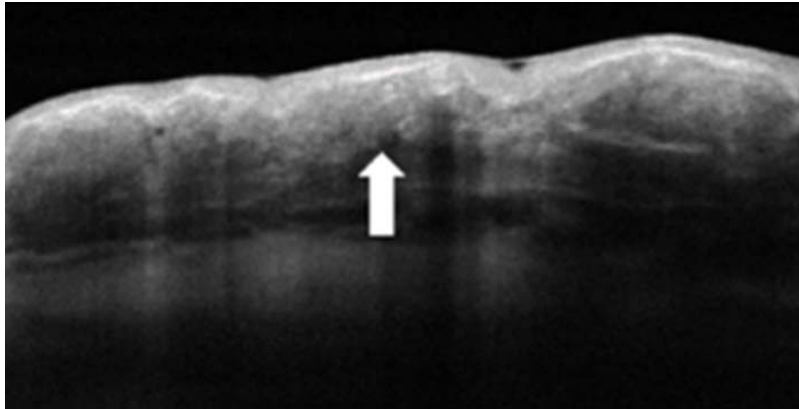
Lesion is...?



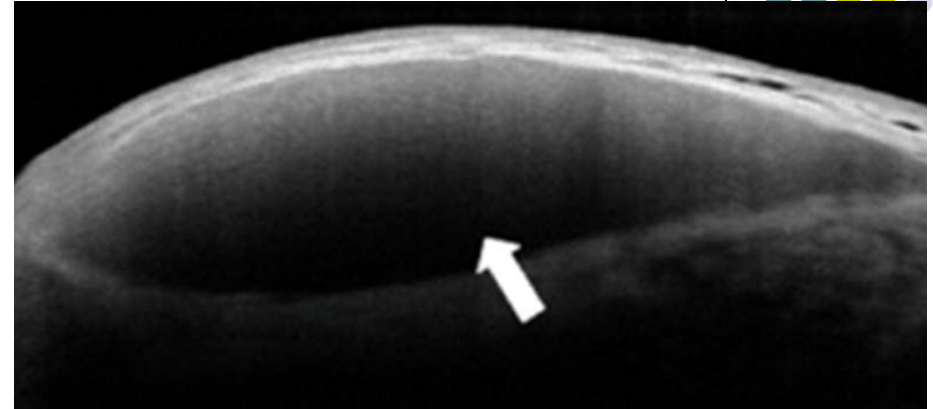
Lesion is...?

If the lesion appears solid, determine whether the mass is  vs .

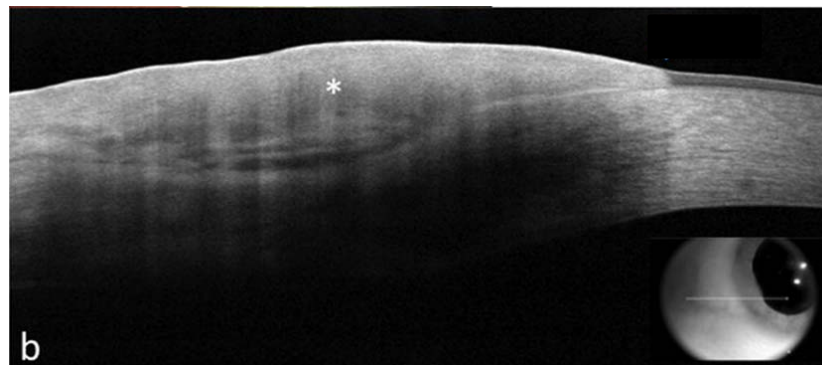
# Conjunctival Neoplasms



Lesion is...subepithelial



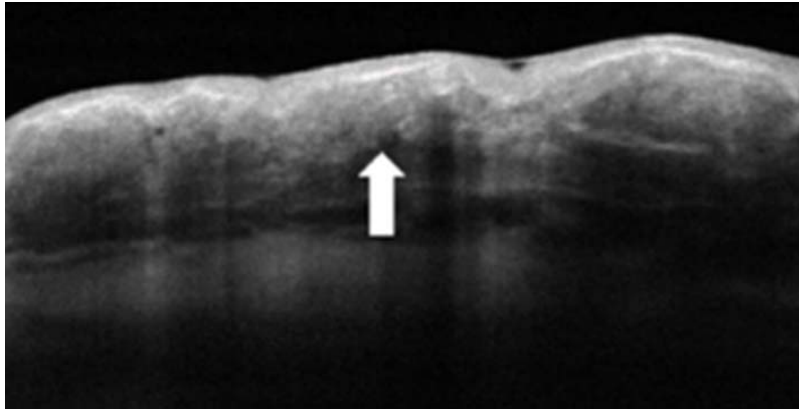
Lesion is...subepithelial



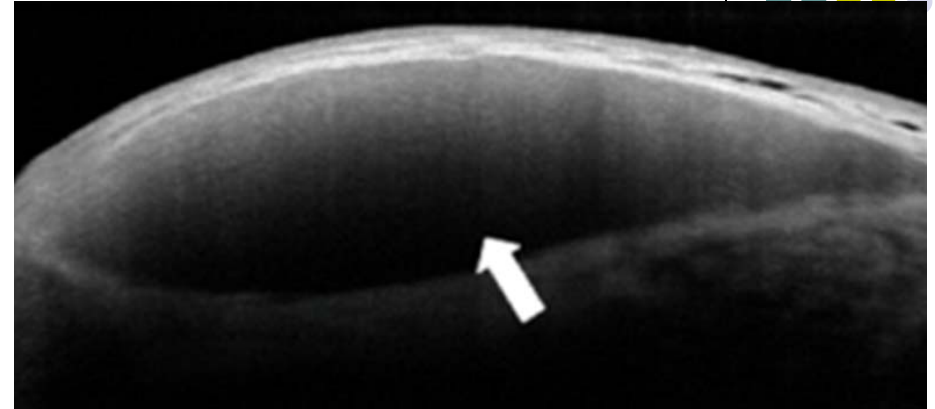
Lesion is...epithelial

If the lesion appears solid, determine whether the mass is **epithelial** vs **subepithelial** .

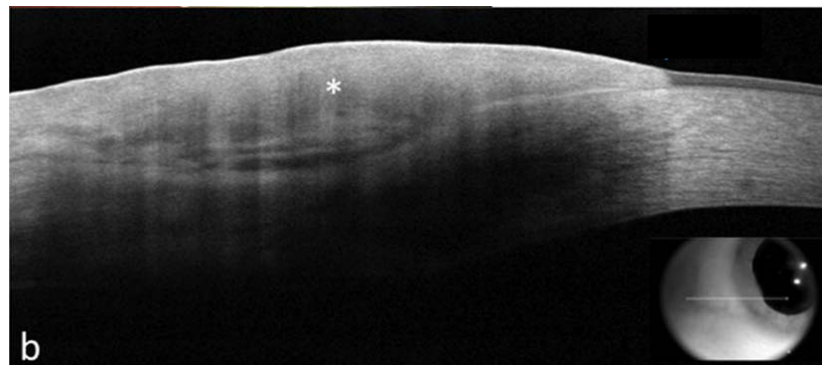
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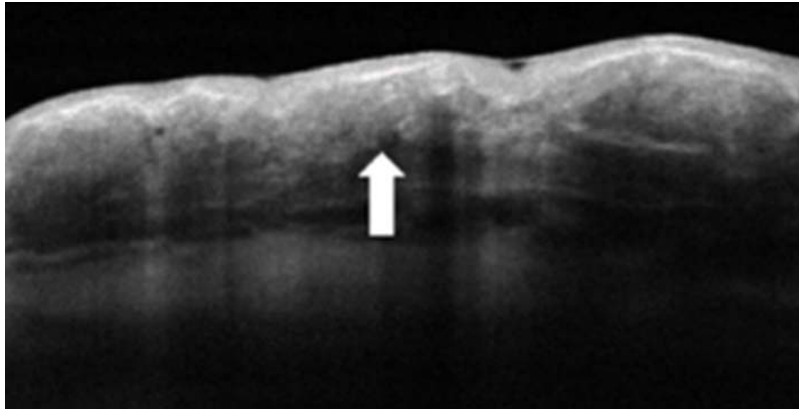
Lesion is...subepithelial



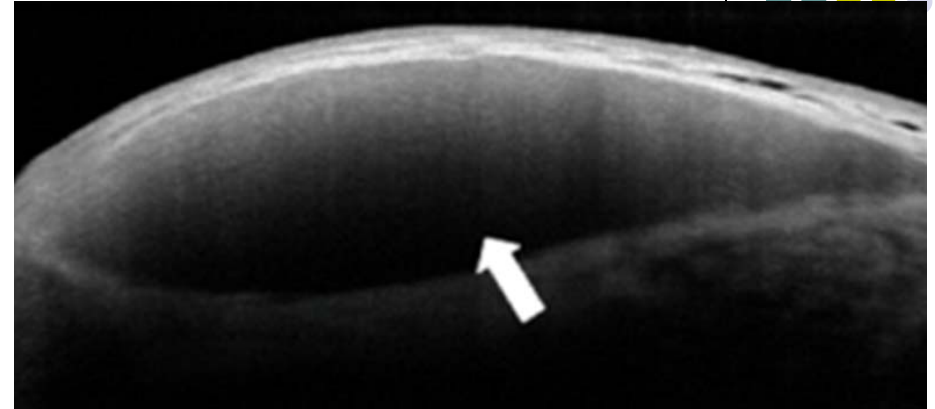
?

If the lesion appears solid, determine whether the mass is **epithelial** vs **subepithelial** .  
 If its epithelial, think        .

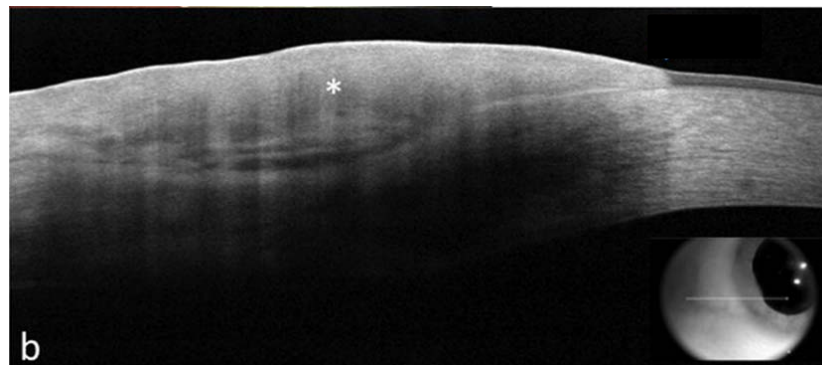
# Conjunctival Neoplasms



Lesion is...subepithelial



Lesion is...subepithelial

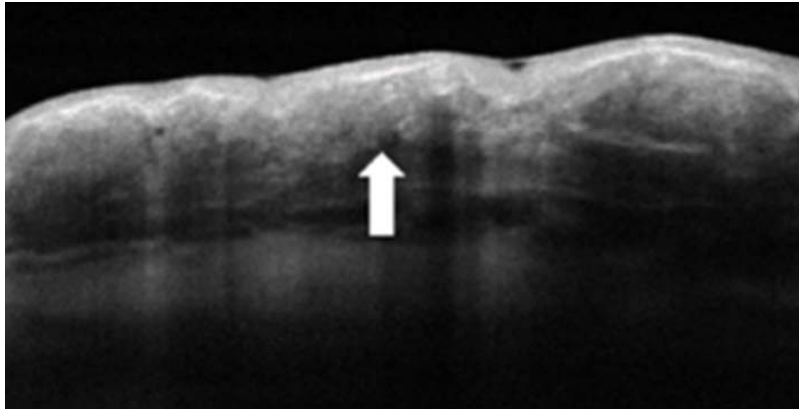


OSSN

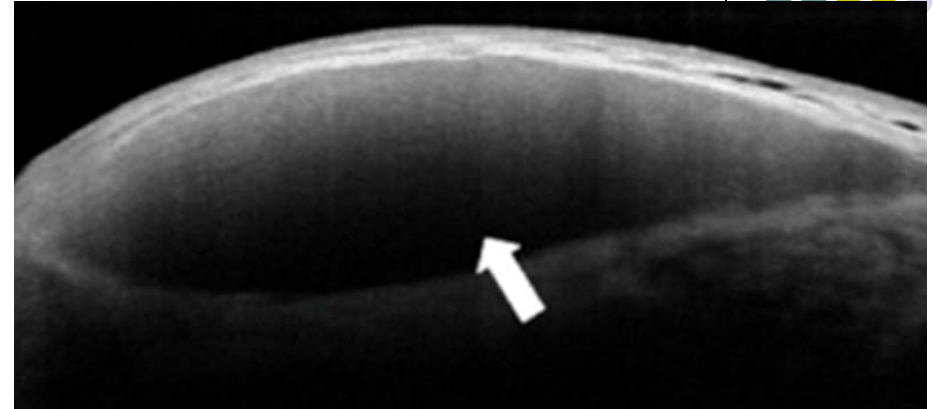
If the lesion appears solid, determine whether the mass is **epithelial** vs **subepithelial** .  
If its epithelial, think **OSSN** .



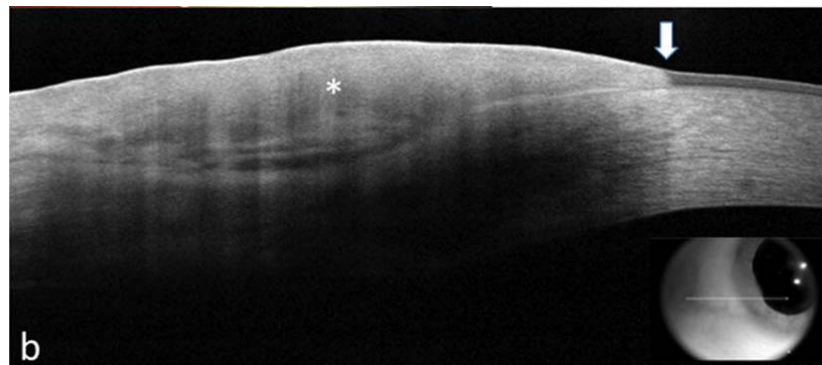
# Conjunctival Neoplasms



Lesion is...subepithelial



Lesion is...subepithelial



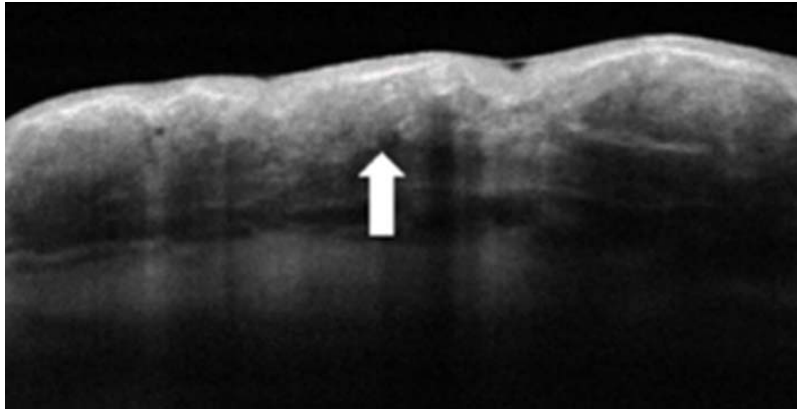
OSSN

*The white arrow is pointing out a classic AS-OCT finding in OSSN:*

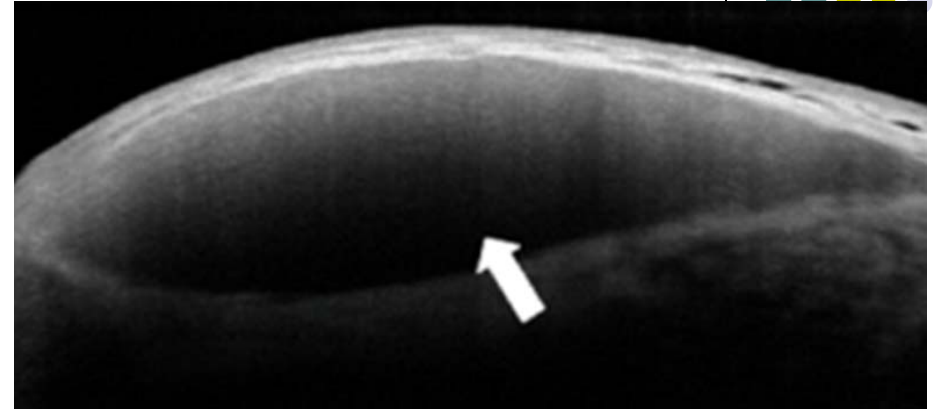
*(Which is...)*

If the lesion appears solid, determine whether the mass is **epithelial** vs **subepithelial** .  
If its epithelial, think **OSSN** .

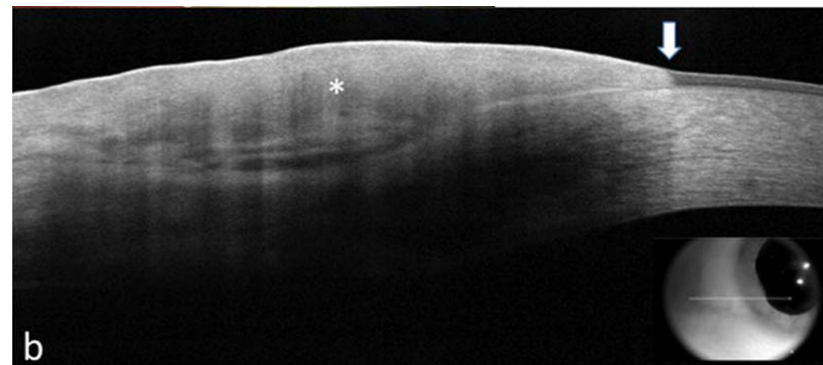
# Conjunctival Neoplasms



Lesion is...subepithelial



Lesion is...subepithelial

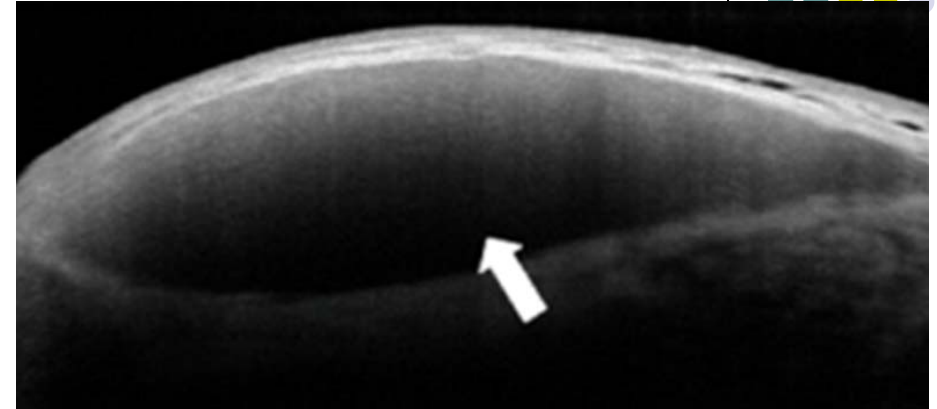
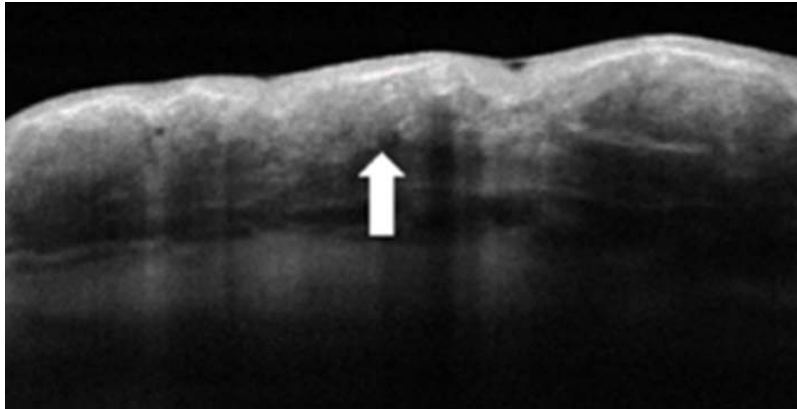


OSSN

*The white arrow is pointing out a classic AS-OCT finding in OSSN:  
The sudden transition from abnormal to normal epithelium*

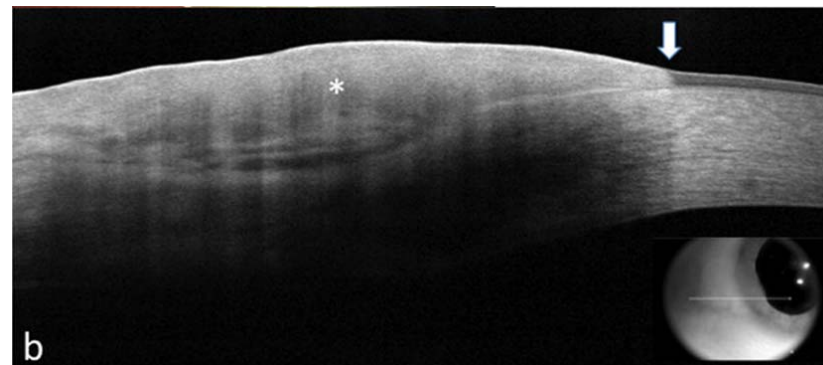
If the lesion appears solid, determine whether the mass is **epithelial** vs **subepithelial** .  
If its epithelial, think **OSSN** .

# Conjunctival Neoplasms



? or ?

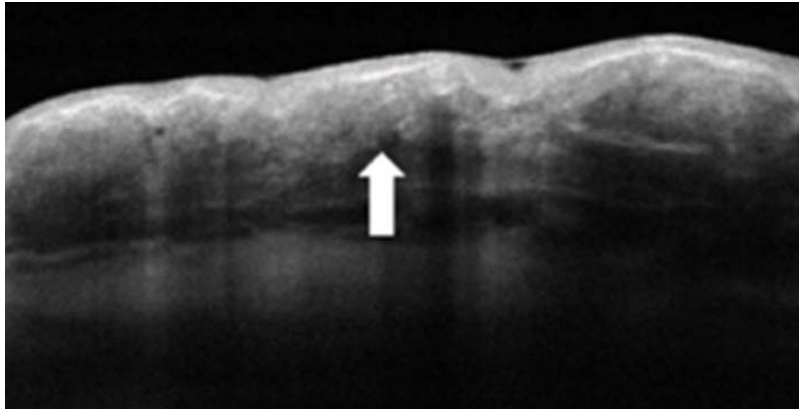
? or ?



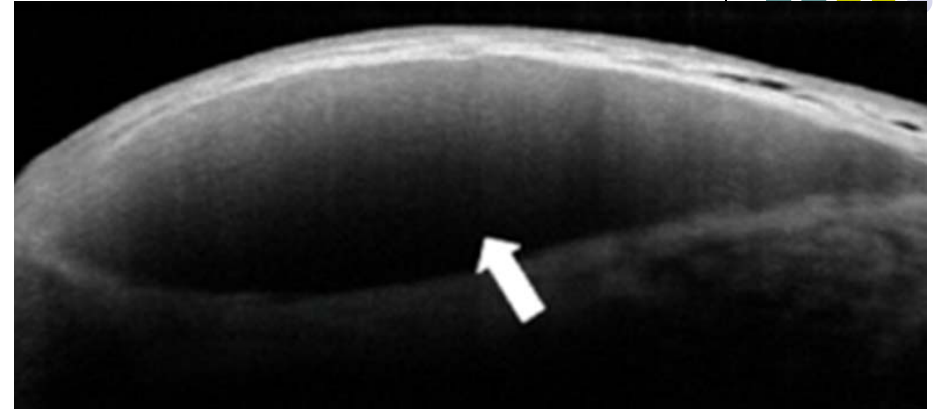
OSSN

If the lesion appears solid, determine whether the mass is **epithelial** vs **subepithelial** .  
If its epithelial, think **OSSN** . If it's subepithelial, think either  or  .

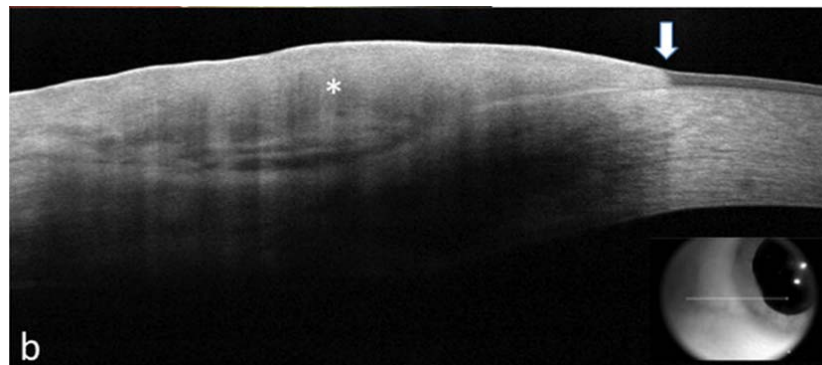
# Conjunctival Neoplasms



Lymphoma or Amyloid



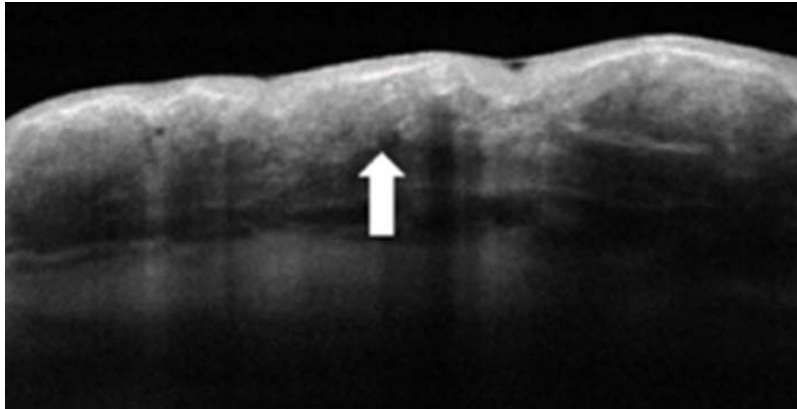
Lymphoma or Amyloid



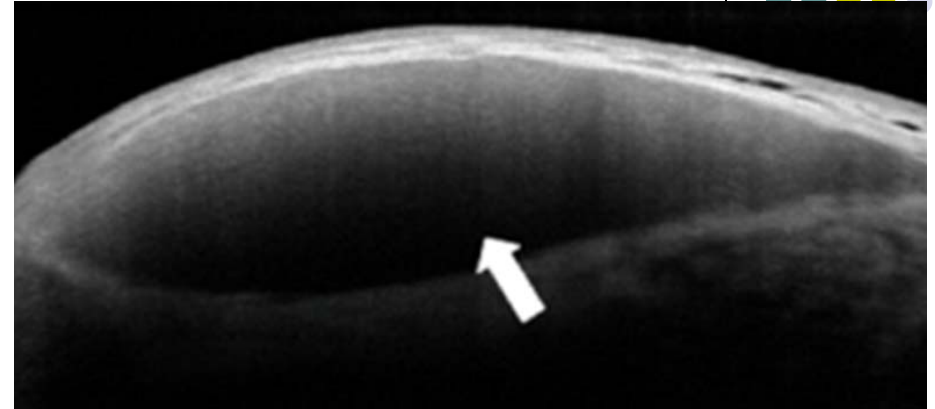
OSSN

If the lesion appears solid, determine whether the mass is **epithelial** vs **subepithelial** .  
If its epithelial, think **OSSN** . If it's subepithelial, think either **lymphoma** or **amyloid** .

# Conjunctival Neoplasms



*Lymphoma?      Amyloid?*



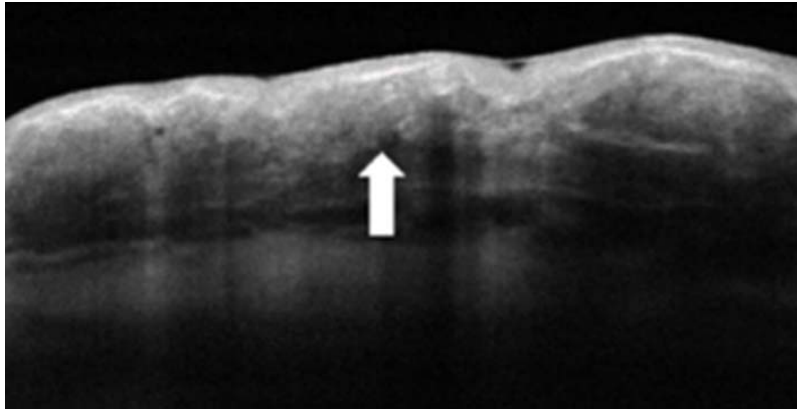
*Lymphoma?      Amyloid?*

*To determine whether a subepi lesion is lymphoma vs amyloid, evaluate the lesion's:*

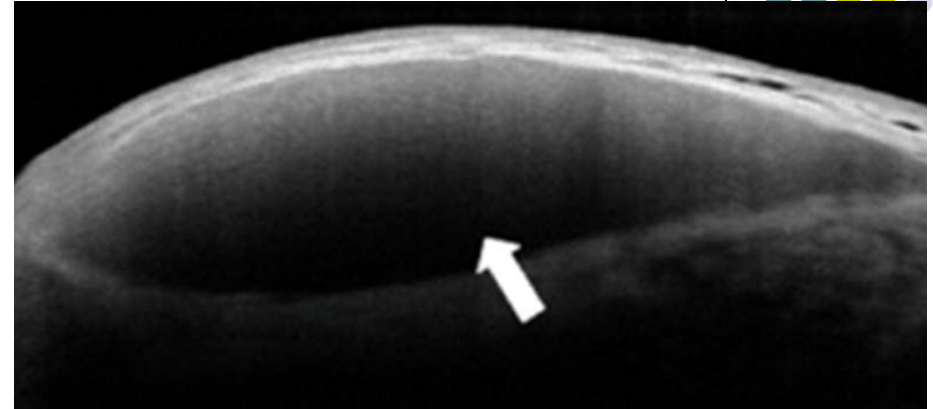
**and**

If the lesion appears solid, determine whether the mass is **epithelial** vs **subepithelial** .  
If its epithelial, think **OSSN** . If it's subepithelial, think either **lymphoma** or **amyloid** .

# Conjunctival Neoplasms



*Lymphoma?      Amyloid?*

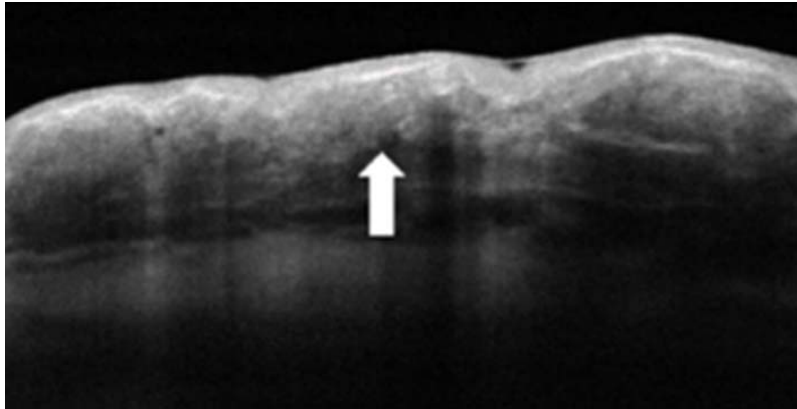


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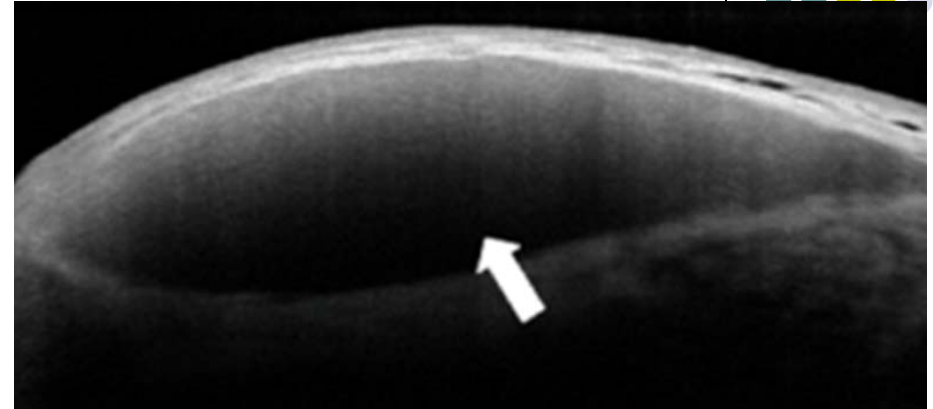
*To determine whether a subepi lesion is lymphoma vs amyloid, evaluate the lesion's:*  
*Borders*  
**and**  
*Homogeneity*

If the lesion appears solid, determine whether the mass is **epithelial** vs **subepithelial** .  
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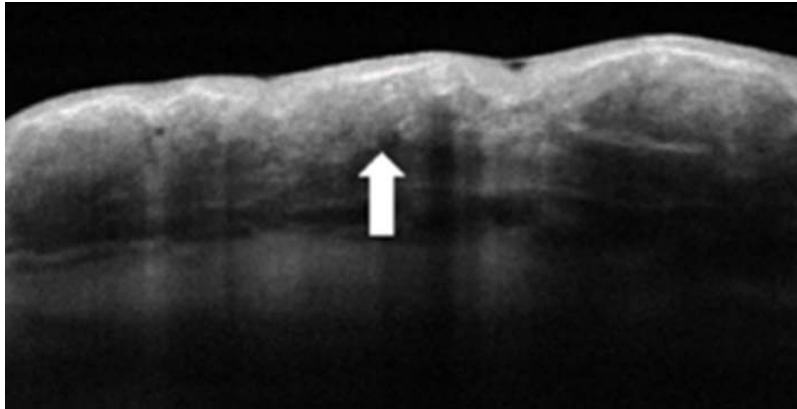
*and*

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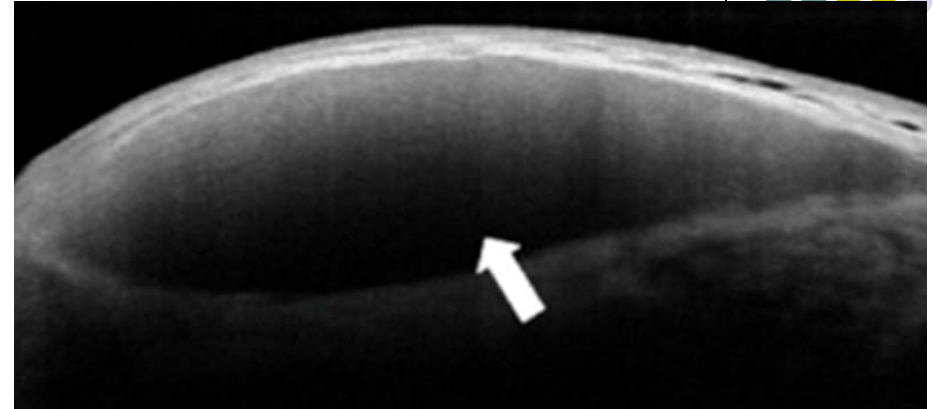
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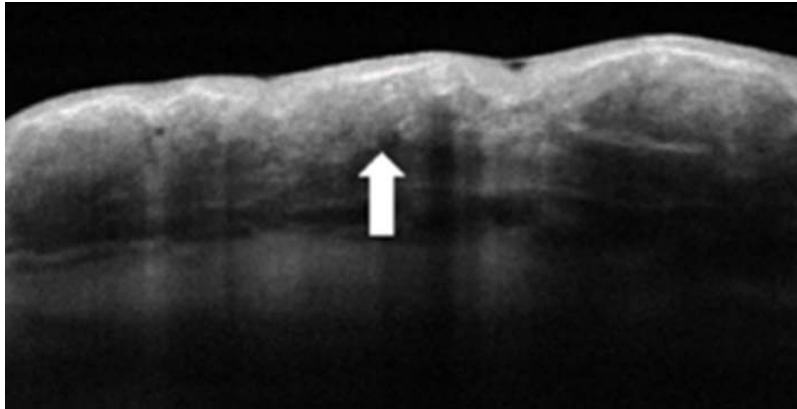
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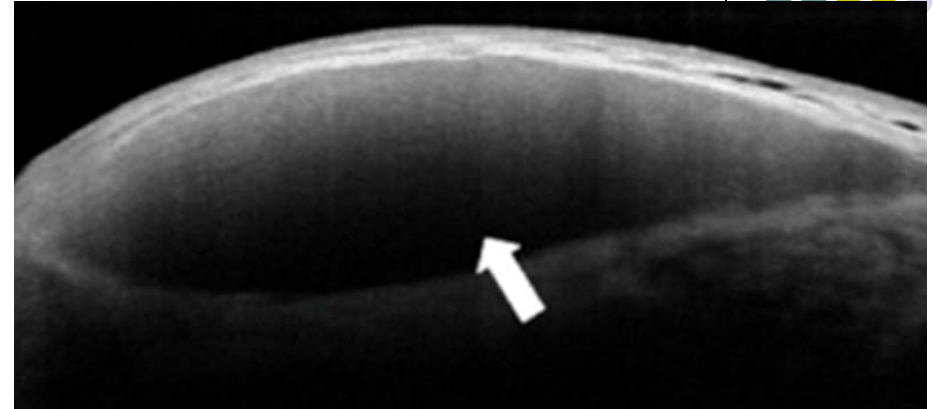
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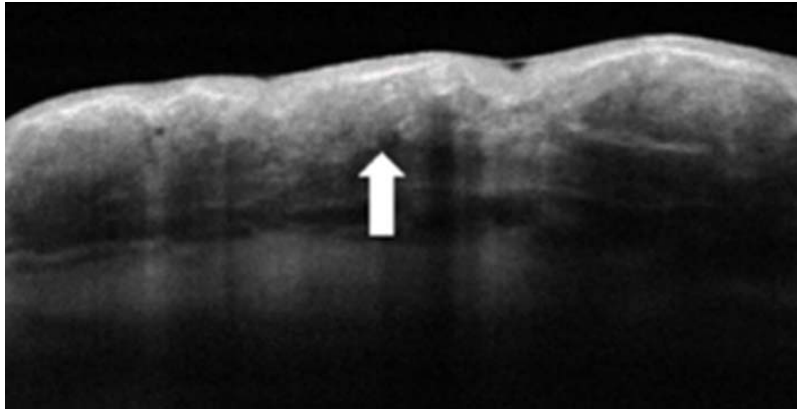
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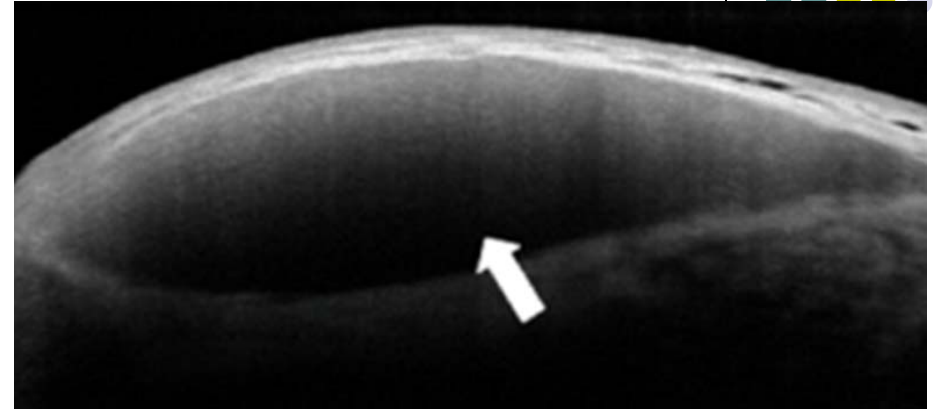
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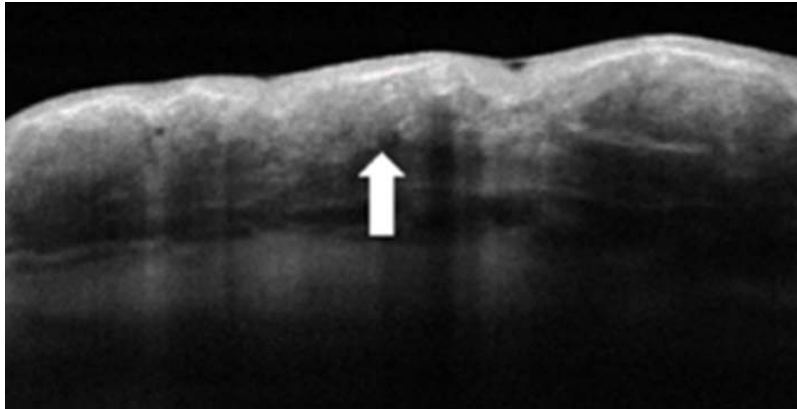
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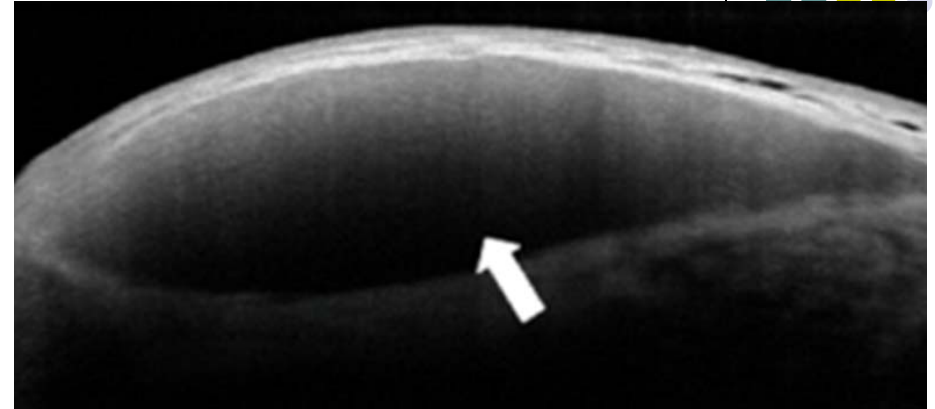
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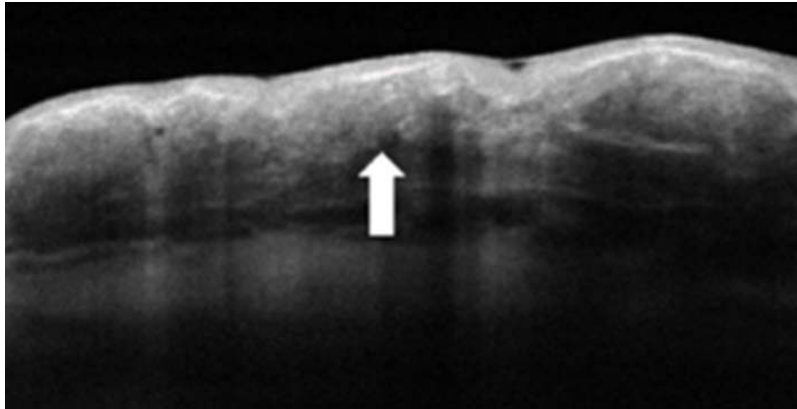
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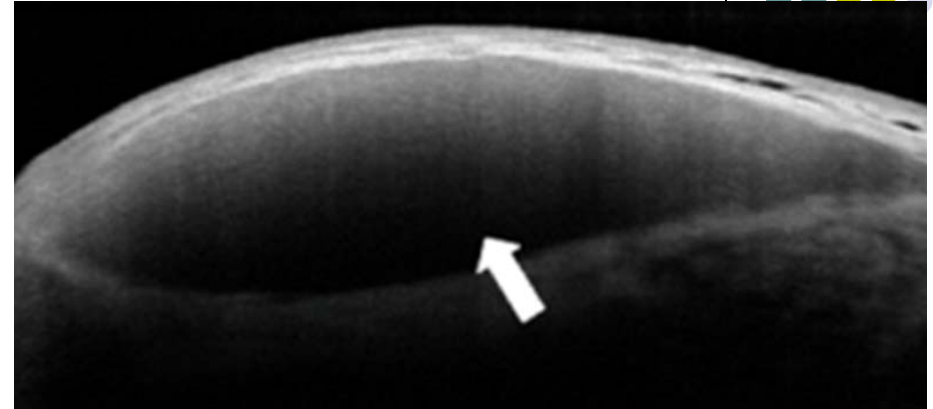
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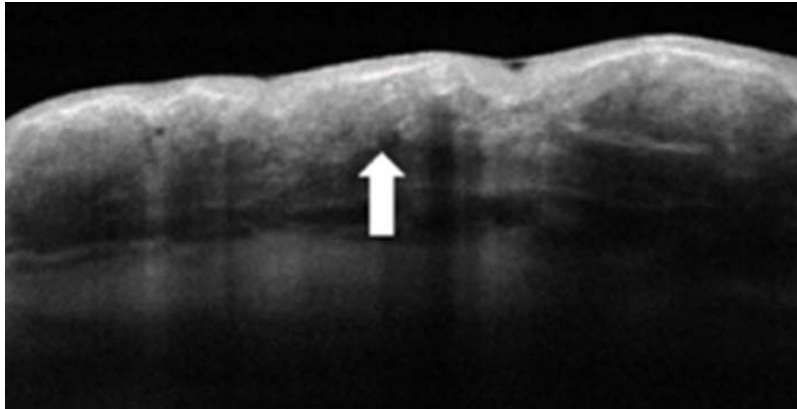
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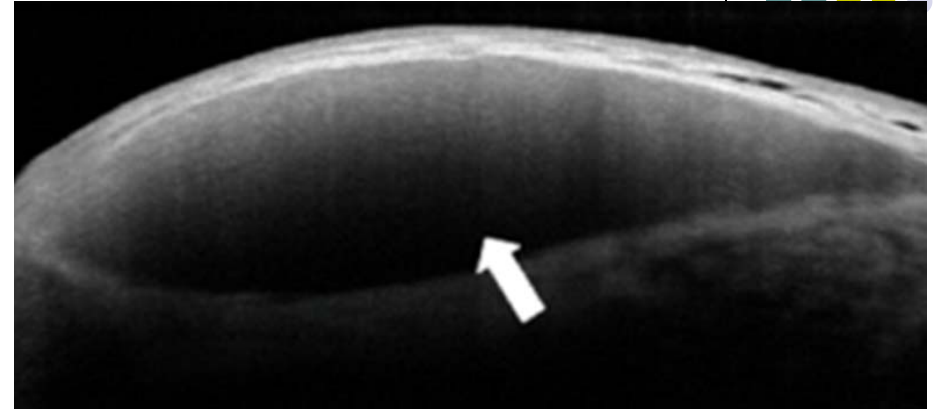
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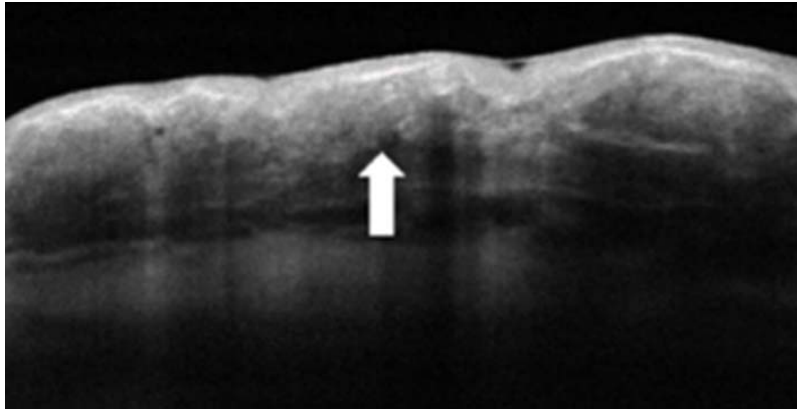
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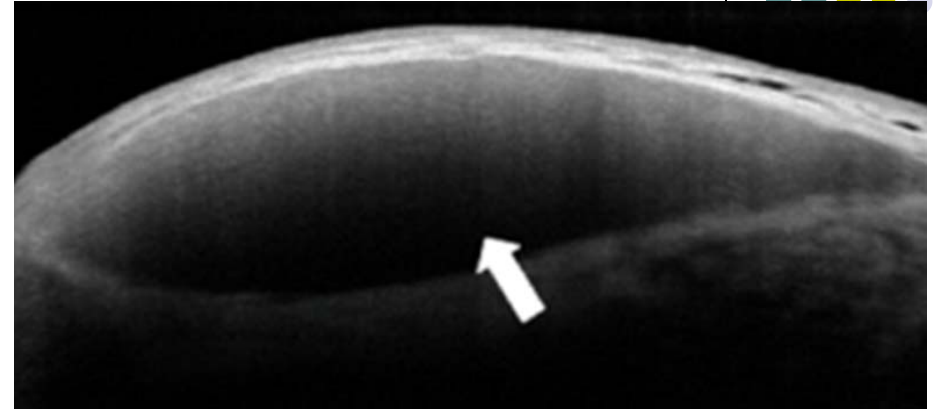
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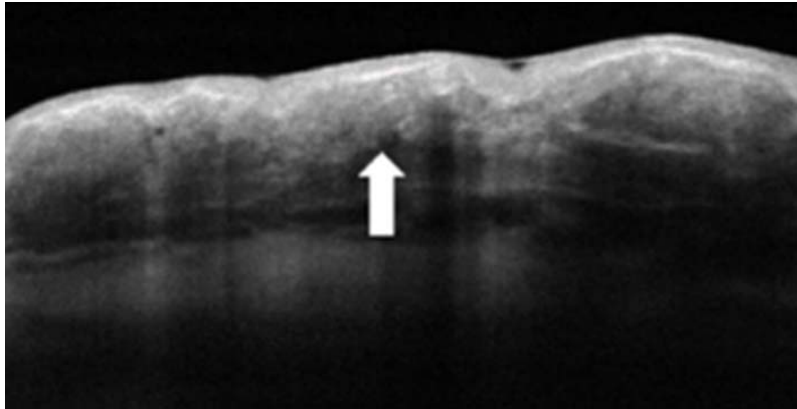
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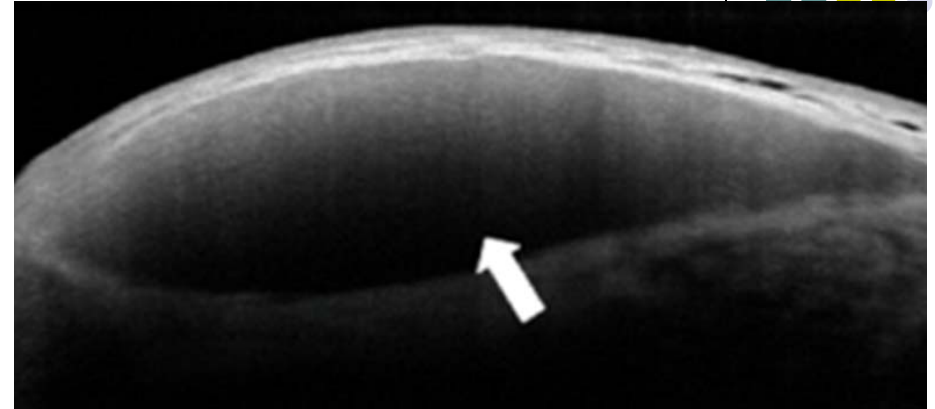
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# Conjunctival Neoplasms



*Lymphoma? Amyloid?*



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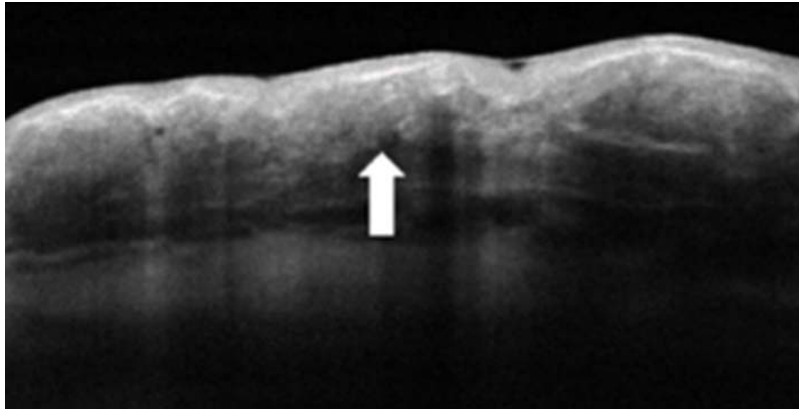
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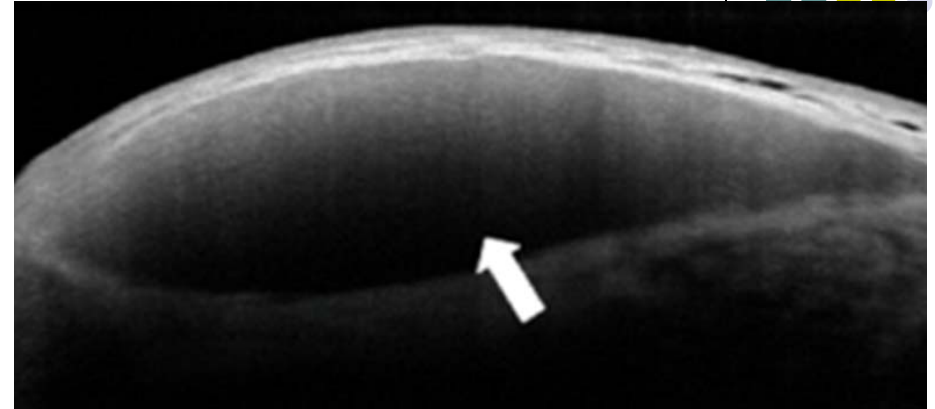
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# Conjunctival Neoplasms



**Amyloid!**



**Lymphoma!**

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