Conjunctival Neoplasms

- Broad category
- Broad category
- Broad category
Conjunctival Neoplasms

- Lymphatic
- Pigmented
- Epithelial
Conjunctival Neoplasms

- Lymphatic
- Pigmented
- Epithelial
Conjunctival Neoplasms

- Lymphatic
  - Lymphatic channel elements
  - Lymphoid cells
- Pigmented
- Epithelial
Conjunctival Neoplasms

1) Irregularly dilated lymphatic channels of bulbar conjunctiva
2) Proliferation of channel elements
   - Present at birth
   - Enlarge slowly
   - Intralesional hemorrhage → chocolate cyst

Lymphatic channel-element neoplasias

1) ?
2) ?
Conjunctival Neoplasms

Lymphatic channel-element neoplasias
1) Lymphangieectasia
2) Lymphangioma
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 \(\rightarrow\) chocolate cyst definition thereof

Lymphoid cells
Conjunctival Neoplasms

**Lymphatic channel-element neoplasias**

1) Lymphangiectasia
   - Irregularly dilated lymphatic channels of bulbar conjunctiva
2) Lymphangioma
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

\[ \text{chocolate cyst} \]

Conjunctival Neoplasms

- Lymphatic
  - Lymphatic channel elements
  - Lymphoid cells

- Lymphatic channel-element neoplasias
  - 1) Lymphangiectasia
  - 2) Lymphangioma

- definition thereof
Conjunctival Neoplasms

Lymphatic channel-element neoplasias
1) Lymphangiectasia
   -- Irregularly dilated lymphatic channels of bulbar conjunctiva
2) Lymphangioma
   -- Proliferation of channel elements
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

Another common ocular tumor

Similar in this regard to the capillary hemangioma.
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
   Similar in this regard to the capillary hemangioma
Conjunctival Neoplasms

**Lymphatic channel-element neoplasias**
1) Lymphangiectasia
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2) Lymphangioma
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   -- Present at birth
   -- Enlarge slowly
   -- Intralesional hemorrhage → chocolate cyst

*Similar in this regard to the capillary hemangioma*
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

*Similar in this regard to the capillary hemangioma*
Conjunctival Neoplasms

Lymphatic channel-element neoplasias
1) Lymphangiectasia
   -- Irregularly dilated lymphatic channels of bulbar conjunctiva
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   -- Proliferation of channel elements
   -- Present at birth
   -- Enlarge slowly
   -- Intrallesional hemorrhage → chocolate cyst

Lymphoid-cell neoplasias
1) ?
2) ?
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
   -- Intralocular hemorrhage → chocolate cyst

**Lymphoid-cell neoplasias**
1) Lymphoid hyperplasia
2) Lymphoma
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 $\rightarrow$ chocolate cyst

**Lymphoid-cell neoplasias**

1) Lymphoid hyperplasia
   --Minimally $\underline{\text{elevated}}$, $\underline{\text{salmon-colored}}$, $\underline{\text{pebbly surface}}$ (follicles)

2) Lymphoma
Conjunctival Neoplasms

**Lymphatic channel-element neoplasias**
1) Lymphangiectasia
   -- Irregularly dilated lymphatic channels of bulbar conjunctiva
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   -- Proliferation of channel elements
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**Lymphoid-cell neoplasias**
1) Lymphoid hyperplasia
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Conjunctival Neoplasms

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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 (Radiation therapy)
2) Lymphoma
Conjunctival Neoplasms

Lymphatic channel-element neoplasias
1) Lymphangiectasia
   -- Irregularly dilated lymphatic channels of bulbar conjunctiva
2) Lymphangioma
   -- Proliferation of channel elements
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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
Conjunctival Neoplasms

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2) Lymphoma
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   -- Most patients age > (if younger, check for HIV)
Conjunctival Neoplasms

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

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   --Proliferation of channel elements
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   --Consider excision, topical steroids, RT
2) Lymphoma
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   --Most patients age > 50 (if younger, check for HIV)
   --Treatment: Localized → systemic →
Conjunctival Neoplasms

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

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   --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

**Lymphatic channel elements**
Conjunctival Neoplasms

**Lymphatic channel-element neoplasias**
1) Lymphangiectasia
   -- Irregularly dilated lymphatic channels of bulbar conjunctiva
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   -- Present at birth
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**Conjunctival Neoplasms**

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   --Can be localized, or manifestation of systemic disease
   --Most patients age > 50 (if younger, check for HIV)
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---

*Cannot be differentiated clinically--only via biopsy*
--Both are usually B-cells
--Both can be mistaken for IPL diff dz
Conjunctival Neoplasms

**Lymphatic channel-element neoplasias**
1) Lymphangiectasia
   --Irregularly dilated lymphatic channels of bulbar conjunctiva
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Conjunctival Neoplasms

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   -- Present at birth
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   -- Intralesional hemorrhage → chocolate cyst
   Similar in this regard to the capillary hemangioma

**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

Lymphatic

Pigmented

Epithelial

? ? ? ?
Conjunctival Neoplasms

- Lymphatic
- Pigmented
  - Benign
  - Premalignant
  - Malignant
- Epithelial
Conjunctival Neoplasms

**Benign**

1) 
2) 
3) 

**Pigmented**

**Premalignant**

**Malignant**
 Conjunctival Neoplasms

**Benign**
1) Freckle (ephelis)
2) Racial melanosis
3) Nevus

**Pigmented**

**Benign**

**Premalignant**

**Malignant**
Benign
1) Freckle (ephelis)
2) Racial melanosis
3) Nevus
   --Is a hamartoma vs choristoma

Conjunctival Neoplasms

Benign

Pigmented

Premalignant

Malignant
Conjunctival Neoplasms

**Benign**
1) Freckle (ephelis)
2) Racial melanosis
3) Nevus
   --Is a hamartoma

**Pigmented**

**Benign**

**Premalignant**

**Malignant**
Conjunctival Neoplasms

Benign
1) Freckle (ephelis)
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3) Nevus
   --Is a hamartoma
   --Progress from junctional nevus → compound nevus → subepithelial nevus
     --1/2 contain epithelial inclusion cysts
     --Goblet cells in cyst secrete mucin → lesion enlarges → false impression of malignant transformation
     --Rapid enlargement during teens common, not worrisome for malignant change

Conjunctival Neoplasms

Pigmented

Benign

Premalignant

Malignant
**Conjunctival Neoplasms**

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   --Is a hamartoma
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**Pigmented**

**Premalignant**

**Malignant**
Conjunctival Neoplasms

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Pigmented

Benign

Premalignant

Malignant
Conjunctival Neoplasms

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Pigmented

Premalignant

Malignant
Conjunctival Neoplasms

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---

**Pigmented**

**Benign**

**Premalignant**

**Malignant**
Conjunctival Neoplasms

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   --Goblet cells in cyst secrete mucin → lesion enlarges → false impression of malignant transformation

**Conjunctival Neoplasms**

**Pigmented**

**Benign**

**Premalignant**

**Malignant**
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   --Goblet cells in cyst secrete mucin → lesion enlarges → false impression of malignant transformation
   --Rapid enlargement during teens is/isn’t worrisome for malignant change
**Conjunctival Neoplasms**

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Conjunctival Neoplasms

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   --Rapid enlargement during teens common, not worrisome for malignant change

**During what period of life do conj nevi make their appearance?**

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

Can they be forniceal and/or palpebral?
Almost never; pigmented lesions in these locations should be considered melanomas until proven otherwise

Can they be nonpigmented?
Yes--about 1/3 are almost devoid of pigment

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

**Benign**
1) Freckle (ephelis)
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   -- Is a hamartoma
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**Conjunctival Neoplasms**

**Pigmented**

**During what period of life do conj nevi make their appearance?**
The first or second decade
Conjunctival Neoplasms

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**Pigmented**

- Premalignant
- Malignant

**During what period of life do conj nevi make their appearance?**
The first or second decade

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

Conjunctival Neoplasms
**Conjunctival Neoplasms**

**Benign**
- 1) Freckle (ephelis)
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**Pigmented**

**During what period of life do conj nevi make their appearance?**
The first or second decade

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

Benign
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During what period of life do conj nevi make their appearance?
The first or second decade

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

Can they be fornical and/or palpebral?

Conjunctival Neoplasms

Pigmented

Premalignant

Malignant
 Conjunctival Neoplasms

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During what period of life do conj nevi make their appearance?
The first or second decade

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

Can they be forniceal and/or palpebral?
Almost never; pigmented lesions in these locations should be considered melanomas until proven otherwise

Conjunctival Neoplasms

Pigmented

Pre malignant

Malignant
Conjunctival Neoplasms

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Can they be nonpigmented?
Conjunctival Neoplasms

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**Conjunctival Neoplasms**

**Pigmented**

**Benign**

*During what period of life do conj nevi make their appearance?*
The first or second decade

*In what three locations are they most commonly found?*
-- Juxtalimbal
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Almost never; pigmented lesions in these locations should be considered melanomas until proven otherwise

*Can they be nonpigmented?*
Yes—about 1/3 are almost devoid of pigment
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Conjunctival Neoplasms

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The first or second decade

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Almost never; pigmented lesions in these locations should be considered melanomas until proven otherwise

**Can they be nonpigmented?**
Yes--about 1/3 are almost devoid of pigment

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

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

During what period of life do conj nevi make their appearance?
The first or second decade

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Conjunctival Neoplasms

**Pre-malignant**

PAM (primary acquired melanosis)

NOTE: PAM comes in two fundamental forms:
--PAM *without* atypia, which is a benign condition, and
--PAM *with* atypia, the type that can give rise to conj melanoma.
This portion of the study guide will focus on PAM with atypia.
Conjunctival Neoplasms

**Pre-malignant**

PAM (primary acquired melanosis)

Note: PAM comes in two fundamental forms:
- PAM without atypia, which is a benign condition, and
- PAM with atypia, the type that can give rise to conj melanoma.

This portion of the study guide will focus on PAM with atypia.

**How can you tell at the slit-lamp whether a PAM lesion has atypia or not?**

**Benign**

**Premalignant**

**Malignant**
Conjunctival Neoplasms

Pigmented

Benign

Premalignant

Malignant

**Pre-malignant**
PAM (primary acquired melanosis)

NOTE: PAM comes in two fundamental forms:

-- **PAM without atypia**, which is a benign condition, and
-- **PAM with atypia**, the type that can give rise to conj melanoma.

This portion of the study guide will focus on PAM with atypia.

How can you tell at the slit-lamp whether a PAM lesion has atypia or not?
You can’t. They can only be differentiated histologically.
Conjunctival Neoplasms

- Pigmented
  - Benign
  - Premalignant
    - Pre-malignant
      - PAM (primary acquired melanosis)
      -- Skin analog: two words
  - Malignant

Risk factors:
- White
- Middle-aged
- Fair complexion

Malignant transformation indicated by:
- Increase in size
- Nodularity
- Increase in vascularity

Management:
- Bulbar: Observe. If suspect malignant change, excise.
- Palpebral: Don’t observe—excise!
Conjunctival Neoplasms

Pigmented

Benign

Premalignant

Malignant

Pre-malignant
PAM (primary acquired melanosis)
--Skin analog: Lentigo maligna
Conjunctival Neoplasms

**Pigmented**
- **Pre-malignant**
  - PAM (primary acquired melanosis)
  - Skin analog: Lentigo maligna
  - Cystic? (Y/N)

**Premalignant**
- Benign
- Malignant

**Malignant**
- 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**

- **Pigmented**
  - **Benign**
  - **Premalignant**
  - **Malignant**

**Pre-malignant**
- PAM (primary acquired melanosis)
  - Skin analog: Lentigo maligna
  - Cystic? 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

**Pigmented**

**Premalignant**

*Pre-malignant*

PAM (primary acquired melanosis)

- Skin analog: Lentigo maligna

--Cystic? NO

(This is a key feature differentiating between PAM and conj nevi, which are often cystic)

Benign

Malignant

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

**Pre-malignant**
- PAM (primary acquired melanosis)
  - Skin analog: Lentigo maligna
  - Cystic? NO
  - Bilateral? (Y/N)

**Pigmented**
- Benign
- Premalignant
- Malignant

**Management:**
- Bulbar: Observe. If suspect malignant change, excise.
- Palpebral: Don’t observe—excise!
Conjunctival Neoplasms

Pigmented

Benign

Premalignant

Malignant

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

- **Pigmented**
  - Benign
  - Premalignant
  - Malignant

**Pre-malignant**
- PAM (primary acquired melanosis)
- Skin analog: Lentigo maligna
- Cystic? NO
- Bilateral? NO
- Risk factors: Race; age; complexion

**Management**:
- **Bulbar**: Observe. If suspect malignant change, excise
- **Palpebral**: Don’t observe—excise!
Conjunctival Neoplasms

**Pigmented**

- **Benign**
- **Premalignant**
- **Malignant**

**Pre-malignant**
- PAM (primary acquired melanosis)
  - Skin analog: Lentigo maligna
  - Cystic? NO
  - Bilateral? NO
  - Risk factors: White; middle-aged; fair complexion

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**Management:**
- **Bulbar**: Observe. If suspect malignant change, excise.
- **Palpebral**: Don’t observe—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: Don’t observe—excise!
Conjunctival Neoplasms

Pigmented

Benign

Premalignant

Malignant

Pre-malignant
PAM (primary acquired melanosis)
--Skin analog: Lentigo maligna
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--Bilateral? NO
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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

**Conjunctival Neoplasms**

- **Pigmented**
  - **Benign**
  - **Premalignant**
    - **Malignant**

Management:
- **Bulbar**: Observe. If suspect malignant change, excise
- **Palpebral**: Don’t observe—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

**Benign**
- Observe. If suspect malignant change, excise

**Premalignant**
- Excise!

**Malignant**
- (ie, the presence of ‘feeder vessels’)

---

**Conjunctival Neoplasms**
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

Pigmented

Benign
Premalignant
Malignant

(i.e., the presence of ‘feeder vessels’)
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, 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**
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

- Pigmented
  - Benign
  - Premalignant
  - Malignant
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

- **Pigmented**
  - Benign
  - Premalignant
  - Malignant

**Malignant**
- Melanoma
  - Prevalence: 1-2/million whites
  - Metastasize: Yes
  - 1/3 arise from PAM, 1/3 from acquired (not congenital) nevi, 1/3 de novo
  - Prognosis:
    - Better than cutaneous
    - By location: Bulbar > nonbulbar
      Limbal > nonlimbal
deo novo < not de novo
  - Management:
    - Excisional biopsy (no ↑ risk of mets)
    - Exenterate if orbital
    - Check for lymphadenopathy

**Are all conj melanomas pigmented?**
Conjunctival Neoplasms

Conjunctival Neoplasms

Pigmented

Benign

Premalignant

Malignant

Malignant Melanoma

Are all conj melanomas pigmented? No--some are completely amelanotic
Conjunctival Neoplasms

Conjunctival Neoplasms

Pigmented

Benign

Premalignant

Malignant

Malignant Melanoma

--Prevalence x/x whites

--Metastasize? Yes

--1/3 arise from PAM, 1/3 from acquired (not congenital) nevi, 1/3 de novo

--Prognosis:
--Better than cutaneous

--By location: Bulbar > nonbulbar
Limbal > nonlimbal
de novo < not de novo

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

- **Pigmented**
  - *Benign*
  - *Premalignant*
  - **Malignant**

**Malignant**
- Melanoma
  - Prevalence 1-2/million whites

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

**Malignant**
Melanoma
--Prevalence 1-2/million whites

Which is more common, choroidal melanoma or skin melanoma?

Skin, by well over an order of magnitude

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

- Pigmented
  - Benign
  - Premalignant
    - Malignant

**Malignant**
- Melanoma
  -- Prevalence 1-2/million whites

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

**Conjunctival Neoplasms**

- Pigmented
  - Benign
  - Premalignant
  - Malignant

**Malignant Melanoma**
--Prevalence 1-2/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?*
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**

- **Pigmented**
  - **Benign**
  - **Premalignant**
  - **Malignant**

**Malignant**

- **Melanoma**
  --Prevalence 1-2/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?**
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.

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Conjunctival Neoplasms

Conjunctival Neoplasms

Pigmented

Benign

Premalignant

Malignant

Malignant

Melanoma

--Prevalence 1-2/million whites

Which is more common, choroidal melanoma or skin melanoma?
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Conjunctival Neoplasms

Pigmented

Benign

Premalignant

Malignant

Malignant

Melanoma

--Prevalence 1-2/million whites

Can black people get it?

--Better than cutaneous
--By location: Bulbar > nonbulbar
Limbal > nonlimbal
de novo < not de novo

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

Can black people get it?

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

- **Pigmented**
  - **Benign**
  - **Premalignant**
  - **Malignant**

**Malignant**
- **Melanoma**
  -- Prevalence 1-2/million whites
  
*Can black people get it?*
Yes, but at rates that are an order of magnitude less than whites
Conjunctival Neoplasms

**Pigmented**

- Benign
- Premalignant
- **Malignant**

**Malignant**

- Melanoma
  -- Prevalence: 1-2/million whites

---

**Is there a gender predilection?**

No.
Conjunctival Neoplasms

- Pigmented
  - Benign
  - Premalignant
  - Malignant

**Malignant**
Melanoma
--Prevalence 1-2/million whites

*Is there a gender predilection?*
*No*
Conjunctival Neoplasms

Conjunctival Neoplasms

- Pigmented
  - Benign
  - Premalignant
  - Malignant

Malignant Melanoma
--Prevalence 1-2/million whites

Is there a gender predilection?
No

Is there an age predilection?
Conjunctival Neoplasms

Conjunctival Neoplasms

Pigmented

Benign

Premalignant

Malignant

Malignant

Melanoma

--Prevalence 1-2/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

**Conjunctival Neoplasms**

**Pigmented**

- **Benign**
- **Premalignant**
- **Malignant**

**Malignant**

**Melanoma**

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

---

Better than cutaneous

By location:
- Bulbar > nonbulbar
- Limbal > nonlimbal
- \( \text{de novo} < \text{not de novo} \)

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

- Pigmented
  - Benign
  - Premalignant
- Malignant
  - Melanoma
    - Prevalence 1-2/million whites
    - Metastasize? YES

- Prognosis:
  - Better than cutaneous
  - By location: Bulbar > nonbulbar
    Limbal > nonlimbal
deo novo < not de novo

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

Conjunctival Neoplasms

Pigmented

Benign

Premalignant

Malignant

Malignant Melanoma

- Prevalence 1-2/million whites
- Metastasize? YES

Does conj melanoma metastasize hematogenously, like choroidal melanoma?
Conjunctival Neoplasms

Pigmented

Benign

Premalignant

Malignant

Malignant Melanoma
- Prevalence 1-2/million whites
- Metastasize? YES

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

Conjunctival Neoplasms

Pigmented

Benign

Premalignant

Malignant

Malignant Melanoma

- Prevalence 1-2/million whites
- Metastasize? YES

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?
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

Conjunctival Neoplasms

Pigmented

Benign

Premalignant

Malignant

Malignant Melanoma

-Prevalence 1-2/million whites

---Metastasize? YES

---Better than cutaneous

---By location: Bulbar > nonbulbar Limbal > nonlimbal
de novo < not de novo

---Management:

Excisional biopsy (no ↑ risk of mets)

Exenterate if orbital

Check for lymphadenopathy
Conjunctival Neoplasms

**Pigmented**

**Premalignant**

**Benign**

**Malignant**

**Malignant Melanoma**

--Prevalence 1-2/million whites
--Metastasize? YES
--2/3 arise from **PAM**, 1/4 from acquired (not congenital) nevi, 1/10 **de novo**

--Prognosis: Better than cutaneous
--By location: Bulbar > nonbulbar
Limbal > nonlimbal
**de novo** < not **de novo**

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

- Pigmented
  - Benign
  - Premalignant
  - **Malignant**
    - **Malignant Melanoma**
      - Prevalence 1-2/million whites
      - Metastasize? YES
      - 2/3 arise from PAM, 1/4 from acquired (not congenital) nevi, 1/10 de novo
Conjunctival Neoplasms

**Malignant Melanoma**
- Prevalence 1-2/million whites
- Metastasize? YES
- 2/3 arise from **PAM**, 1/4 from acquired (not congenital) nevi, 1/10 **de novo**

---

I know, the numbers don’t sum to 100%. Just know that the majority of conj melanomas arise from PAM, a much smaller number arise from acquired nevi, and only a few arise **de novo**.
Conjunctival Neoplasms

Conjunctival Neoplasms

Pigmented

Benign

Premalignant

Malignant

**Malignant**
Melanoma

--Prevalence 1-2/million whites
--Metastasize? YES
--2/3 arise from PAM, 1/4 from acquired (not congenital) nevi, 1/10 de novo
--Prognosis:
---Better than cutaneous

**Better v worse**
Conjunctival Neoplasms

Conjunctival Neoplasms

Pigmented

Benign

Premalignant

Malignant

Malignant

Melanoma

--Prevalence 1-2/million whites
--Metastasize? YES
--2/3 arise from PAM, 1/4 from acquired (not congenital) nevi, 1/10 de novo
--Prognosis:
---Better than cutaneous
Conjunctival Neoplasms

Conjunctival Neoplasms

Pigmented

Benign

Premalignant

Malignant

**Malignant**

Melanoma

--Prevalence 1-2/million whites
--Metastasize? YES
--2/3 arise from PAM, 1/4 from acquired (not congenital) nevi, 1/10 de novo
--Prognosis:
  --Better than cutaneous
  --By location: Bulbar > nonbulbar
  Limbal > nonlimbal
Conjunctival Neoplasms

**Pigmented**

- Benign
- Premalignant
- Malignant

**Malignant**

*Melanoma*
- Prevalence 1-2/million whites
- Metastasize? YES
- 2/3 arise from PAM, 1/4 from acquired (not congenital) nevi, 1/10 de novo
- Prognosis:
  - Better than cutaneous
  - By location: Bulbar > nonbulbar Limbal > nonlimbal
Conjunctival Neoplasms

Pigmented

Premalignant

Benign

Malignant

**Malignant**

Melanoma

--Prevalence 1-2/million whites
--Metastasize? YES
--2/3 arise from PAM, 1/4 from acquired (not congenital) nevi, 1/10 de novo
--Prognosis:
  --Better than cutaneous
  --By location: Bulbar > nonbulbar Limbal > nonlimbal
  --de novo not de novo

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

Conjunctival Neoplasms

Pigmented

Benign

Premalignant

Malignant

Malignant Melanoma
--Prevalence 1-2/million whites
--Metastasize? YES
--2/3 arise from PAM, 1/4 from acquired (not congenital) nevi, 1/10 de novo
--Prognosis:
  --Better than cutaneous
  --By location: Bulbar > nonbulbar Limbal > nonlimbal
  --de novo < not de novo
Conjunctival Neoplasms

Conjunctival Neoplasms

Pigmented

Benign

Premalignant

Malignant

Malignant

Conjunctival Neoplasms

Pigmented

Benign

Premalignant

Malignant

Malignant

Melanoma

Prevalence 1-2/million whites
Metastasize? YES
2/3 arise from PAM, 1/4 from acquired (not congenital) nevi, 1/10 de novo
Prognosis:
Better than cutaneous
By location: Bulbar > nonbulbar
Limbal > nonlimbal
de novo < not de novo
Management:
- type of biopsy (no ↑ risk of mets)
Conjunctival Neoplasms

- **Pigmented**
  - Benign
  - Premalignant

- **Malignant**
  - Melanoma
    - Prevalence 1-2/million whites
    - Metastasize? YES
    - 2/3 arise from PAM, 1/4 from acquired (not congenital) nevi, 1/10 de novo
    - Prognosis:
      - Better than cutaneous
      - By location: Bulbar > nonbulbar, Limbal > nonlimbal
      - de novo < not de novo
    - Management:
      - Excisional biopsy (no ↑ risk of mets)
Conjunctival Neoplasms

**Conjunctival Neoplasms**

**Pigmented**

- **Benign**
- **Premalignant**
- **Malignant**

**Malignant Melanoma**

- Prevalence 1-2/million whites
- Metastasize? YES
- 2/3 arise from PAM, 1/4 from acquired (not congenital) nevi, 1/10 de novo
- Prognosis:
  - Better than cutaneous
  - By location: Bulbar > nonbulbar, Limbal > nonlimbal
  - de novo < not de novo

---

**Management:**

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

How wide should the margins be around the lesion?

Quite wide—3-5 mm is the goal

How are the remaining margins treated?

Most surgeons will apply cryo using a double freeze/thaw technique.
Conjunctival Neoplasms

Conjunctival Neoplasms

Pigmented

Benign

Premalignant

Malignant

Malignant Melanoma

--Prevalence 1-2/million whites
--Metastasize? YES
--2/3 arise from PAM, 1/4 from acquired (not congenital) nevi, 1/10 de novo
--Prognosis:
  --Better than cutaneous
  --By location: Bulbar > nonbulbar
    Limbal > nonlimbal
  --de novo < not de novo

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

How wide should the margins be around the lesion?
Quite wide--3-5 mm is the goal
Conjunctival Neoplasms

**Pigmented**

- **Benign**
- **Premalignant**
- **Malignant**

**Malignant**

**Melanoma**
- Prevalence 1-2/million whites
- Metastasize? YES
- 2/3 arise from PAM, 1/4 from acquired (not congenital) nevi, 1/10 de novo
- Prognosis:
  - Better than cutaneous
  - By location: Bulbar > nonbulbar Limbal > nonlimbal
  - De novo < not de novo

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

**How wide should the margins be around the lesion?**
Quite wide--3-5 mm is the goal

**How are the remaining margins treated?**
Conjunctival Neoplasms

Conjunctival Neoplasms

Pigmented

Benign

Premalignant

Malignant

**Malignant**

Melanoma

--Prevalence 1-2/million whites
--Metastasize? YES
--2/3 arise from PAM, 1/4 from acquired (not congenital) nevi, 1/10 de novo
--Prognosis:
  --Better than cutaneous
  --By location: Bulbar > nonbulbar
  --Limbal > nonlimbal
  --de novo < not de novo

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

---

**How wide should the margins be around the lesion?**
Quite wide--3-5 mm is the goal

**How are the remaining margins treated?**
Most surgeons will apply cryo using a double freeze/thaw technique
Conjunctival Neoplasms

- Pigmented
  - Benign
  - Premalignant
    - Malignant

**Malignant Melanoma**
- Prevalence 1-2/million whites
- Metastasize? YES
- 2/3 arise from PAM, 1/4 from acquired (not congenital) nevi, 1/10 de novo
- Prognosis:
  - Better than cutaneous
  - By location: Bulbar > nonbulbar Limbal > nonlimbal
- de novo < not de novo
- Management:
  - Excisional biopsy (no ↑ risk of mets)
  - surgery if orbital

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

**Pigmented**

- **Benign**
- **Premalignant**
- **Malignant**

**Malignant**

**Melanoma**

- Prevalence 1-2/million whites
- Metastasize? YES
- 2/3 arise from PAM, 1/4 from acquired (not congenital) nevi, 1/10 de novo
- Prognosis:
  - Better than cutaneous
  - By location: Bulbar > nonbulbar
    - Limbal > nonlimbal
- de novo < not de novo
- Management:
  - Excisional biopsy (no ↑ risk of mets)
  - Exenterate if orbital
Conjunctival Neoplasms

**Pigmented**
- Benign
- Premalignant
- Malignant

**Malignant**
- Melanoma
  - Prevalence 1-2/million whites
  - Metastasize? YES
  - 2/3 arise from PAM, 1/4 from acquired (not congenital) nevi, 1/10 de novo
  - Prognosis:
    - Better than cutaneous
    - By location: Bulbar > nonbulbar
    - Limbal > nonlimbal
    - de novo < not de novo
  - Management:
    - Excisional biopsy (no ↑ risk of mets)
    - Exenterate if orbital
    - Check for uh-oh
Conjunctival Neoplasms

Pigmented

Benign

Premalignant

Malignant

**Malignant**

**Melanoma**

--Prevalence 1-2/million whites
--Metastasize? YES
--2/3 arise from PAM, 1/4 from acquired (not congenital) nevi, 1/10 de novo
--Prognosis:
  --Better than cutaneous
  --By location: Bulbar > nonbulbar
  --Limbal > nonlimbal
  --de novo < not de novo
--Management:
  --Excisional biopsy (no ↑ risk of mets)
  --Exenterate if orbital
  --Check for lymphadenopathy
You see a patient with an apparent nevus of the palpebral conjunctiva. How should it be managed?
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.
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.

What about a fornical ‘nevus’?
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.

**What about a fornical ‘nevus’?**
Same rule applies
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?
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?

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.
You see a young white 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?

He asked if she wore dark mascara frequently.
You see a young white 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? **He asked if she wore dark mascara frequently.** Young female patients often end up with mascara in their fornices.
Conjunctival Neoplasms

- Lymphatic
- Pigmented
- Epithelial
Conjunctival Neoplasms

- Lymphatic
- Pigmented
- Epithelial
  - Papilloma
  - OSSN
  - Mucoepidermoid Ca

(Ocular Surface Squamous Neoplasia)
Conjunctival Neoplasms

- Lymphatic
- Pigmented
- Epithelial
  - Papilloma
    - OSSN
    - Mucoepidermoid Ca
Conjunctival Neoplasms

Lymphatic

Pigmented

Epithelial

Papilloma
  - Pedunculated
  - Sessile

OSSN

Mucoepidermoid Ca
Conjunctival Neoplasms

- **Lymphatic**
- **Pigmented**
- **Epithelial**
  - Papilloma
    - Pedunculated
    - Sessile
  - OSSN
  - CIN
  - SCC
  - Mucoepidermoid Ca
## Conjunctival Neoplasms

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**Epithelial**

- **Papilloma**
  - Pedunculated
  - Sessile

- **OSSN**
- **CIN**
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### Conjunctival Neoplasms

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Conjunctival Neoplasms

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Conjunctival Neoplasms

Conjunctival Neoplasms

Epithelial

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Pedunculated

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OSSN

CIN

SCC

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Conjunctival Neoplasms

**Epithelial**

**Papilloma**
- **Pedunculated**
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**Prognosis**
- Benign
- Premalignant

**Treatment**
- Excise for cosmesis (but can stimulate growth)
- +/- cryo/MMC
Conjunctival Neoplasms

### Conjunctival Neoplasms

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**OSSN**

**CIN**

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Conjunctival Neoplasms

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SCC

Mucoepidermoid Ca
## Conjunctival Neoplasms

### Papilloma

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### Epithelial Neoplasms

- **Pedunculated**
- **Sessile**
- **OSSN**
- **CIN**
- **SCC**
- **Mucoepidermoid Ca**
Conjunctival Neoplasms

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Epithelial

Papilloma

Pedunculated

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Mucoepidermoid Ca
Conjunctival Neoplasms

Conjunctival Neoplasms

Epithelial

Papilloma

Pedunculated

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OSSN

CIN

SCC

Mucoepidermoid Ca

Epithelial CIN and SCC are much more common in older individuals. Besides HIV, what diagnosis should be considered if a young person presents with these conditions?
Epithelial CIN and SCC are much more common in older individuals. Besides HIV, what diagnosis should be considered if a young person presents with these conditions? **Xeroderma pigmentosum**
Conjunctival Neoplasms

It is impossible to differentiate between CIN and SCC at the slit lamp—they are **histological** distinctions that can be made only via a pathologist’s microscope. For this reason, a clinical term has gain popularity when referring to such lesions. What is it?
It is impossible to differentiate between CIN and SCC at the slit lamp—they are histological distinctions that can be made only via a pathologist’s microscope. For this reason, a clinical term has gained popularity when referring to such lesions. What is it?

Ocular surface squamous neoplasia (OSSN)
Conjunctival Neoplasms

Conjunctival Neoplasms

Epithelial

Papilloma

Pedunculated Sessile

Conj Intraepithelial Neoplasia

-- Conj analog of skin CIN

OSSN

CIN SCC

Mucoepidermoid Ca
Conjunctival Neoplasms

**Conjunctival Neoplasms**

**Epithelial**

- Papilloma
  - Pedunculated
  - Sessile

**Conj Intraepithelial Neoplasia**

-- Conj analog of actinic keratosis

- OSSN
- CIN
- SCC
- Mucoepidermoid Ca
Conjunctival Neoplasms

Conjunctival Neoplasms

Epithelial

Papilloma

Pedunculated

Sessile

OSSN

CIN

SCC

Mucoepidermoid Ca

Conj Intraepithelial Neoplasia
--Conj analog of actinic keratosis
--↑ risk: M v F
Conjunctival Neoplasms

Conjunctival Neoplasms

Epithelial

Papilloma

Pedunculated

Sessile

OSSN

CIN

SCC

Mucoepidermoid Ca

Conj Intraepithelial Neoplasia

-- Conj analog of actinic keratosis
-- ↑ risk: Male, bad habit

Bad habit: Smoking, UV exposure.
Conjunctival Neoplasms

**Conjunctival Neoplasms**

- Epithelial
  - Papilloma
    - Pedunculated
    - Sessile
  - OSSN
  - CIN
  - SCC
  - Mucoepidermoid Ca

**Conj Intraepithelial Neoplasia**
-- Conj analog of actinic keratosis
-- ↑ risk: Male, smoker

Age group
Conjunctival Neoplasms

- Conjunctival Neoplasms
  - Conjunctival Neoplasia
    -- Conj analog of actinic keratosis
    -- ↑ risk: Male, smoker, older, complexion
  - OSSN
  - CIN
  - SCC
  - Mucoepidermoid Ca
Conjunctival Neoplasms

Conjunctival Neoplasms

Epithelial

Papilloma

- Pedunculated
- Sessile

OSSN

CIN

SCC

Mucoepidermoid Ca

Conj Intraepithelial Neoplasia

-- Conj analog of actinic keratosis
-- ↑ risk: Male, smoker, older, fair skin, history of industry exposure
Conjunctival Neoplasms

**Conjunctival Neoplasms**

**Epithelial**

- Papilloma
  - Pedunculated
  - Sessile

**Conj Intraepithelial Neoplasia**
- Conj analog of actinic keratosis
- ↑ risk: Male, smoker, older, fair skin, history of petroleum exposure

- OSSN
- CIN
- SCC
- Mucoepidermoid Ca
Conjunctival Neoplasms

**Conjunctival Neoplasms**

**Epithelial**

- **Papilloma**
  - Pedunculated
  - Sessile

**Conj Intraepithelial Neoplasia**
-- Conj analog of actinic keratosis
-- ↑ risk: Male, smoker, older, fair skin, history of petroleum exposure
-- Three forms:
  --
  --
  --

**OSSN**

**CIN**

**SCC**

**Mucoepidermoid Ca**
Conjunctival Neoplasms

Conjunctival Neoplasms

Epithelial

Papilloma

Pedunculated

Sessile

Conj Intraepithelial Neoplasia
-- Conj analog of actinic keratosis
-- ↑ risk: Male, smoker, older, fair skin, history of petroleum exposure
-- Three forms:
  -- Papilliform (in sessile papilloma)
  -- Gelatinous
  -- Leukoplakic

OSSN

CIN

SCC

Mucoepidermoid Ca
Conjunctival Neoplasms

**Epithelial**

- [Conjunctival Neoplasms](#)
- Papilloma
  - Pedunculated
  - Sessile
- OSSN
- [Squamous Cell Carcinoma](#)
  - Breaks through basement membrane
- [CIN](#)
- SCC
- Mucoepidermoid Ca
Conjunctival Neoplasms

- **Epithelial**
  - **Papilloma**
    - Pedunculated
    - Sessile
  - **OSSN**
    - CIN
    - SCC
  - **Squamous Cell Carcinoma**
    - Breaks through basement membrane
    - ↑ risk: Same as CIN (male, smoker, etc)
  - **Mucoepidermoid Ca**
Conjunctival Neoplasms

**Conjunctival Neoplasms**

- **Epithelial**
  - **Papilloma**
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  - **OSSN**
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    - **Squamous Cell Carcinoma**
      - Breaks through basement membrane
      - ↑ risk: Same as CIN (male, smoker, etc)
      - Same three forms as CIN
Conjunctival Neoplasms

Conjunctival Neoplasms

Epithelial

Papilloma

Pedunculated

Sessile

OSSN

CIN

SCC

Squamous Cell Carcinoma

-- Breaks through basement membrane
-- ↑ risk: Same as CIN (male, smoker, etc)
-- Same three forms as CIN
-- SL exam finding (3 words) → think SCC, not CIN
Conjunctival Neoplasms

Conjunctival Neoplasms

Epithelial

Papilloma

Pedunculated
Sessile

OSSN

CIN
SCC

Squamous Cell Carcinoma
--Breaks through basement membrane
--↑ risk: Same as CIN (male, smoker, etc)
--Same three forms as CIN
--Large feeder vessels → think SCC, not CIN
Conjunctival Neoplasms

Conjunctival Neoplasms

Epithelial

OSSN

CIN

SCC

Mucoepidermoid Ca

CIN/SCC management: **Nonsurgical**

--Radiation

Papilloma

Pedunculated

Sessile
Conjunctival Neoplasms

**Epithelial**
- Papilloma
  - Pedunculated
  - Sessile

**CIN/SCC management:** *Nonsurgical*
- Radiation
- Intralesional injection with:
  - MMC
  - 5-FU
  - IFNα2b

**OSSN**
- CIN
- SCC

**Mucoepidermoid Ca**
Conjunctival Neoplasms

**Conjunctival Neoplasms**

Epithelial

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OSSN

CIN

SCC

Mucoepidermoid Ca
Conjunctival Neoplasms

**Conjunctival Neoplasms**

**Epithelial**

- **OSSN**
  - **CIN**
  - **SCC**

**CIN/SCC management: Surgical**
- Excise entire lesion with 4mm margin

**CIN/SCC management: Nonsurgical**
- Radiation
- Intraläsional injection with:
  - MMC
  - 5-FU
  - IFN-α2β

**Conjunctival Neoplasms**

- Epithelial
  - Papilloma
    - Pedunculated
    - Sessile
  - OSSN

**OSSN**

- **CIN**
- **SCC**

**Mucoepidermoid Ca**
**Conjunctival Neoplasms**

**Conjunctival Neoplasms**

**Epithelial**

**CIN/SCC management: Surgical**
-- Excise entire lesion with 4mm margin
-- Treat the lesion margins with surg.

**CIN/SCC management: Nonsurgical**
-- Radiation
-- Intralesional injection with:
  -- MMC
  -- 5-FU
  -- IFN-α2β

**OSSN**
- Papilloma
  - Pedunculated
  - Sessile

**Mucoepidermoid Ca**
Conjunctival Neoplasms

CIN/SCC management: **Surgical**
-- Excise entire lesion with 4mm margin
-- Treat the lesion margins with **cryo**

CIN/SCC management: **Nonsurgical**
-- Radiation
-- Intralesional injection with:
  -- MMC
  -- 5-FU
  -- IFN-α 2β

Epithelial

Papilloma

Pedunculated
Sessile

OSSN

CIN
SCC

Mucoepidermoid Ca
Conjunctival Neoplasms

CIN/SCC management: **Surgical**
-- Excise entire lesion with 4mm margin
-- Treat the lesion margins with **cryo**
-- Treat the lesion base with three drugs

CIN/SCC management: **Nonsurgical**
-- Radiation
-- Intrallesional injection with:
  -- MMC
  -- 5-FU
  -- IFN-α2β

Epithelial

- OSSN
  - CIN
  - SCC
  - Mucoepidermoid Ca

- Papilloma
  - Pedunculated
  - Sessile
Conjunctival Neoplasms

**Conjunctival Neoplasms**

**CIN/SCC management: Surgical**
--Excise entire lesion with 4mm margin
--Treat the lesion margins with cryo
--Treat the lesion base with MMC, 5-FU, absolute EtOH

**CIN/SCC management: Nonsurgical**
--Radiation
--Intralesional injection with:
  --MMC
  --5-FU
  --IFN-α2β

**Epithelial**

- Papilloma
  - Pedunculated
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- OSSN

- CIN
- SCC

- Mucoepidermoid Ca
Conjunctival Neoplasms

**Conjunctival Neoplasms**

**Epithelial**

- **Papilloma**
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- **OSSN**

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  - **SCC**

**CIN/SCC management: Surgical**
- Excise entire lesion with 4mm margin
- Treat the lesion margins with cryo
- Treat the lesion base with MMC, 5-FU, absolute EtOH OR via thin lamellar sclerectomy surgery

**CIN/SCC management: Nonsurgical**
- Radiation
- Intralvesional injection with:
  - MMC
  - 5-FU
  - IFN-α2β
Conjunctival Neoplasms

CIN/SCC management: **Surgical**
--Excise entire lesion with 4mm margin
--Treat the lesion margins with cryo
--Treat the lesion base with MMC, 5-FU, absolute EtOH OR,
--via thin lamellar sclerectomy

CIN/SCC management: **Nonsurgical**
--Radiation
--Intralesional injection with:
  --MMC
  --5-FU
  --IFN-α2β

Epithelial

Conjunctival Neoplasms

OSSN

CIN

SCC

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Papilloma

Pedunculated

Sessile
Conjunctival Neoplasms

CIN/SCC management: **Surgical**
--Excise entire lesion with 4mm margin
--Treat the lesion margins with cryo
--Treat the lesion base with MMC, 5-FU, absolute EtOH OR,
--via thin lamellar sclerectomy

CIN/SCC management: **Nonsurgical**
--Radiation
--Intralesional injection with:
   --MMC
   --5-FU
   --IFN-α2β

Which treatment modality is more likely to result in recurrence—nonsurgical or surgical?
Conjunctival Neoplasms

CIN/SCC management: **Surgical**
--Excise entire lesion with 4mm margin
--Treat the lesion margins with cryo
--Treat the lesion base with MMC, 5-FU, absolute EtOH OR,
--via thin lamellar sclerectomy

CIN/SCC management: **Nonsurgical**
--Radiation
--Intralesional injection with:
  --MMC
  --5-FU
  --IFN-α2β

Which treatment modality is more likely to result in recurrence—nonsurgical or surgical?
**Surgical**
Conjunctival Neoplasms

**Epithelial**
- Papilloma
  - Pedunculated
  - Sessile
- OSSN
  - CIN
  - SCC
- Mucoepidermoid Ca
  --Very rare
Conjunctival Neoplasms

- Epithelial
  - Papilloma
    - Pedunculated
    - Sessile
  - OSSN
  - CIN
  - SCC
- Mucoepidermoid Ca
  -- Very rare
  -- Looks like hyper-aggressive SCC
Conjunctival Neoplasms

**Mucoepidermoid Ca**
--Very rare
--Looks like hyper-aggressive SCC
--Contains malignant cell type in addition to malignant squames
Conjunctival Neoplasms

Conjunctival Neoplasms

Epithelial

Pedunculated
Sessile

Papilloma

OSSN

CIN
SCC

Mucoepidermoid Ca

--Very rare
--Looks like hyper-aggressive SCC
--Contains malignant goblet cells in addition to malignant squames
# Conjunctival Neoplasms

## Pigmented Conjunctival Neoplasms

<table>
<thead>
<tr>
<th>Pigmented</th>
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<tbody>
<tr>
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*Fill in the blanks re whether the lesion tends to be benign vs malignant*
# Conjunctival Neoplasms

Conjunctival Neoplasms

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Conjunctival Neoplasms

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

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