Conjunctival Melanocytic Lesions: Pathological Aspects

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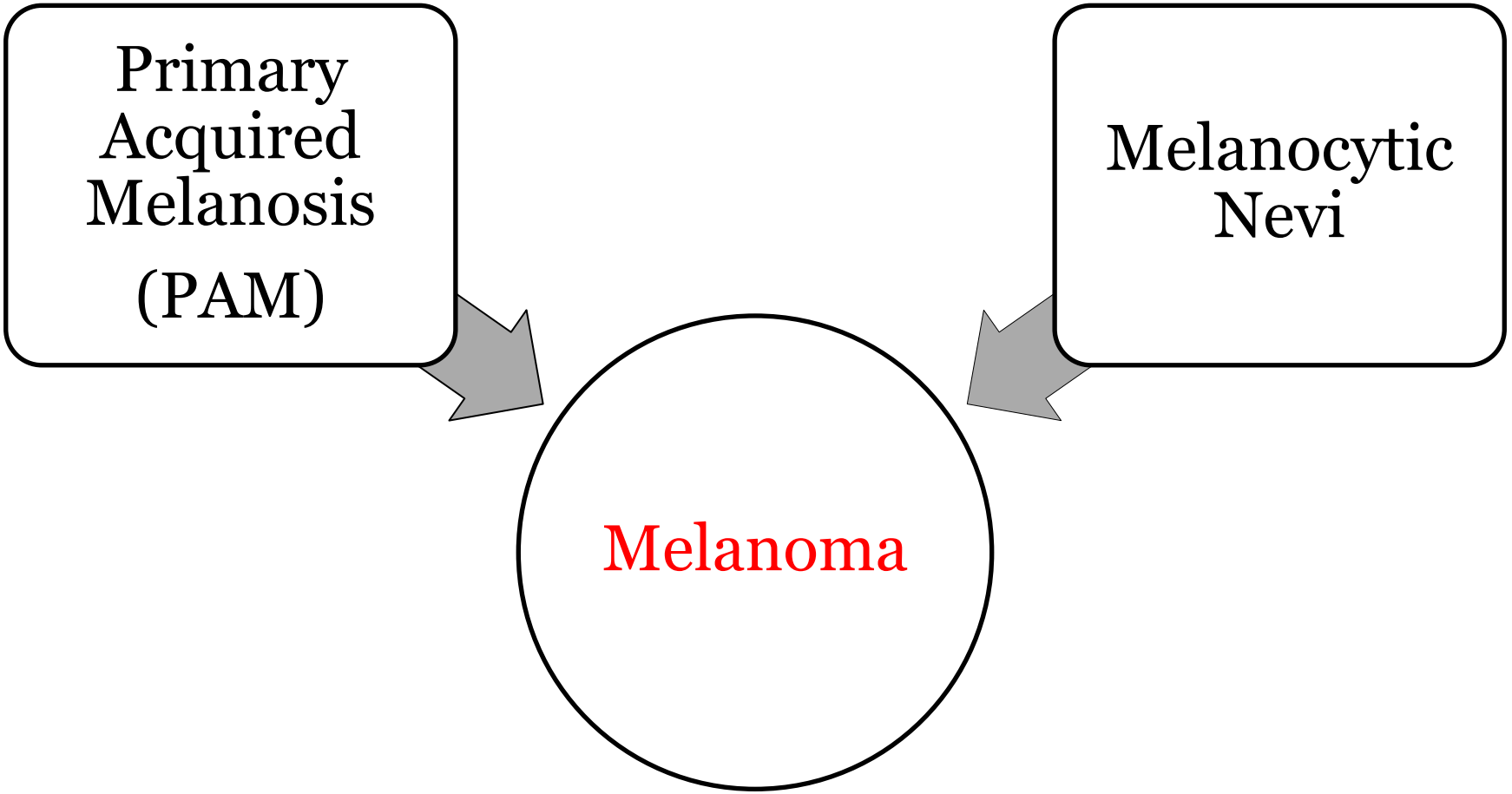
Mission of the Pathologist
Re: Conjunctival Melanocytic Lesions

- Accurate and understandable diagnostic reports for clinicians and patients
  - Prognosis
  - Management, vis-à-vis, surgery, other therapies
- Do no harm and due diligence
  - Do not miss melanoma!
  - Do not over-diagnose melanoma!

Conjunctival Melanocytic Lesions



Primary Acquired Melanosis (PAM) Melanocytic Nevi

- Clinical and histological mimics of melanoma (and PAM)
- Precursors of melanoma
- Risk factors for melanoma

PAM with Atypia
Atypical Melanocytic Nevi

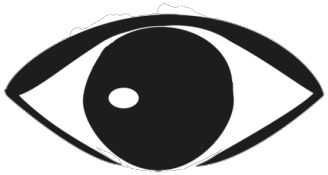
Benign lesion	Diagnostic gray zone Diagnostic discordance 	Melanoma

Approach to this Problem

- Assignment of risk for untoward behavior
  - Low risk category
  - High risk category
- Determination of appropriate management

I. Primary Acquired Melanosis

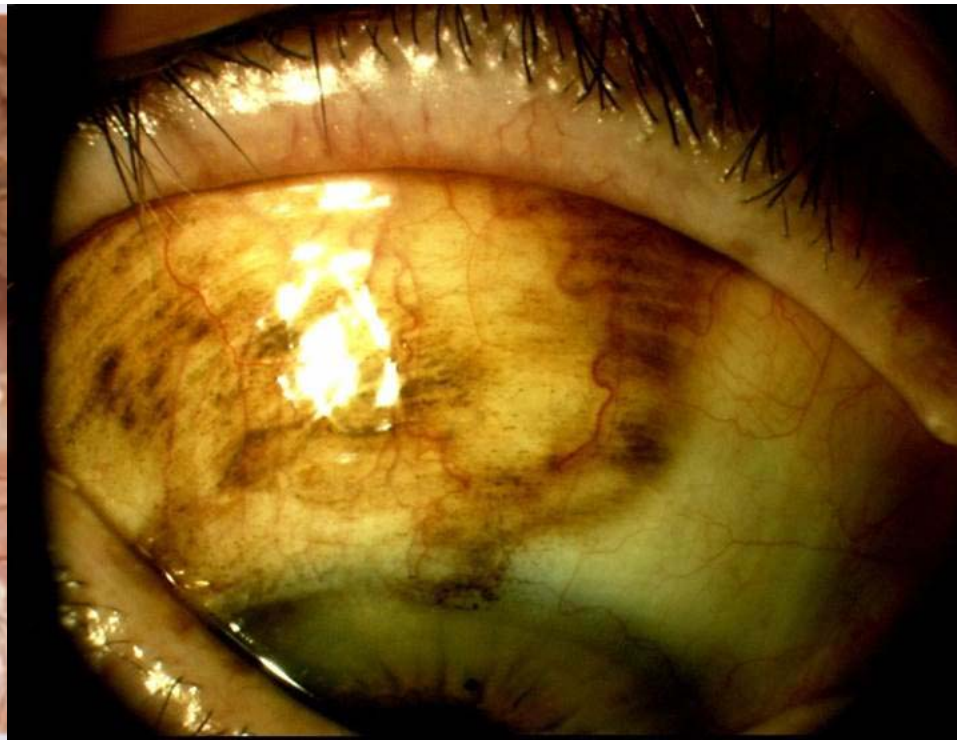
PAM



Significance of PAM

- Clinical mimic of melanoma
- Histological mimic of melanoma
- Precursor to invasive melanoma
  - 70 to 75% conjunctival melanomas arise from PAM (if not already melanoma in situ)
- Risk factor for melanoma

Primary Acquired Melanosis
Clinical Aspects



Melanoma on PAM

Primary Acquired Melanosis (PAM)

Histopathology	Terminology
I. Increased epithelial melanin	PAM without atypia
II. Increase in solitary basilar melanocytes	
III. Cytological atypia, minimal /mild	PAM with mild atypia
IV. Pagetoid scatter, nesting of melanocytes Cytological atypia, moderate to severe Epithelioid cells	PAM with atypia moderate to severe = Melanoma in situ

Primary Acquired Melanosis Simplified Classification System

Current terminologies	Simplifed Classification
• PAM without atypia • PAM with mild atypia • C-MIN 0, C-MIN 1, C-MIN 2	• Low-grade
• PAM with moderate to severe atypia • C-MIN scores ≥ 5 • **Melanoma in situ**	• High-grade = **Melanoma in situ**
• Melanoma invasive	• Melanoma invasive

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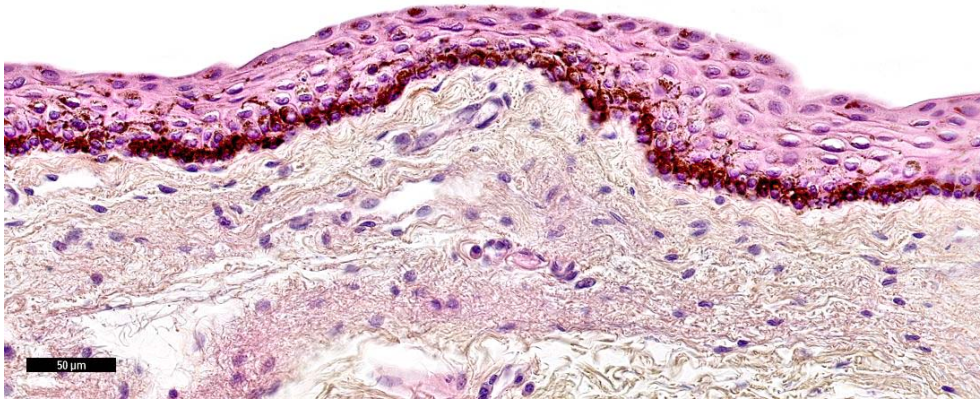
• Melanoma invasive	• Melanoma invasive

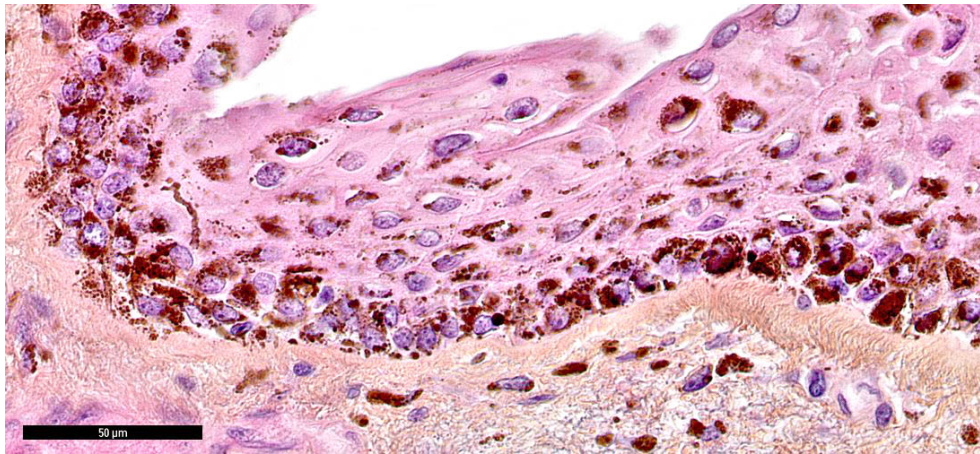
PAM: Low Grade Lesions

Almost no progression to melanoma

- PAM without atypia
  - ↑basilar melanocytes only

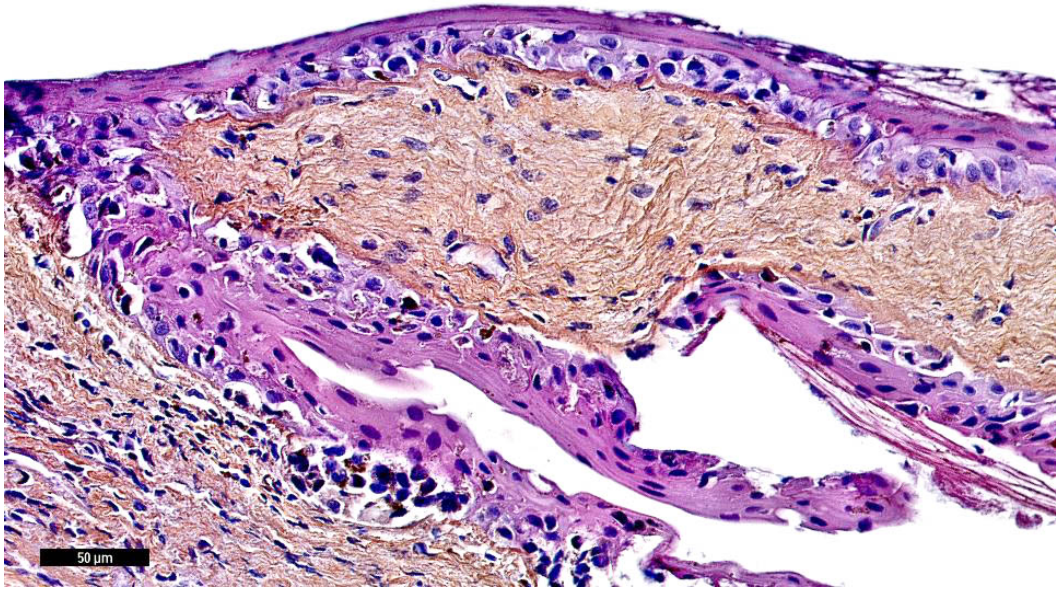


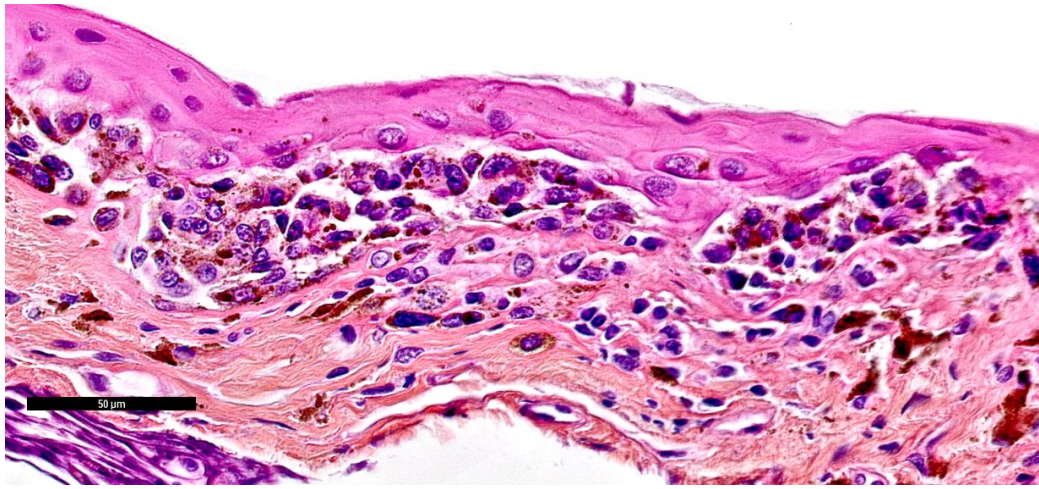
- PAM with mild atypia



PAM: High Grade Lesions

- PAM moderate to severe atypia
  - ✓ Pagetoid spread
  - ✓ Replacement of epidermis



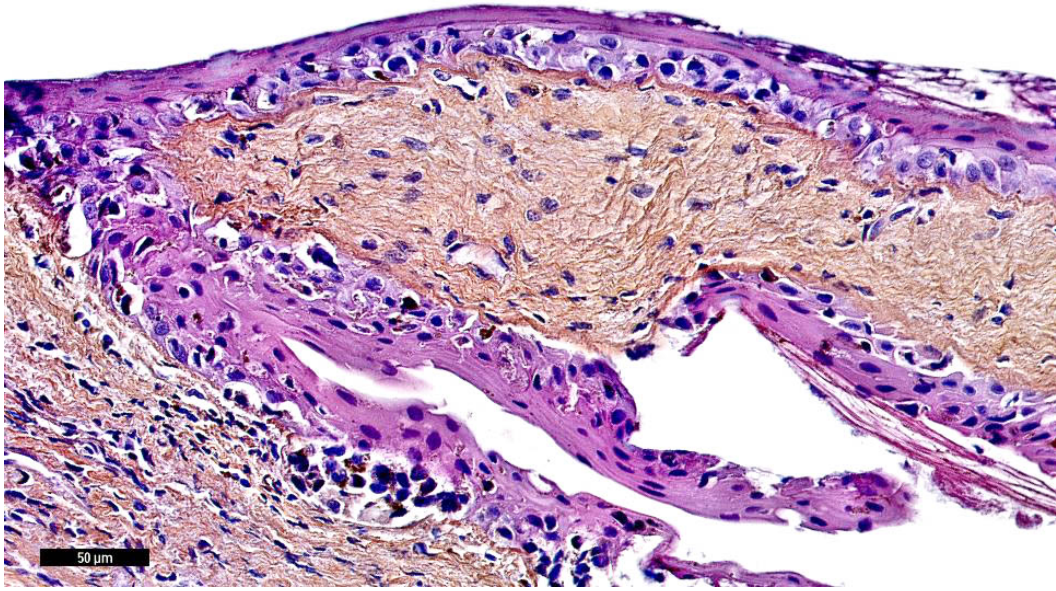


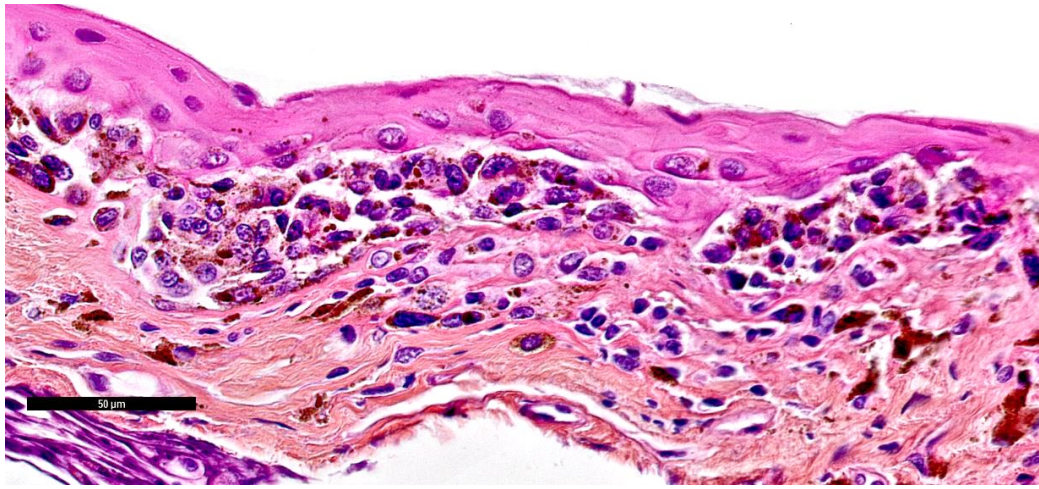
Progression to invasive melanoma

- ✓ 75 to 90% of cases

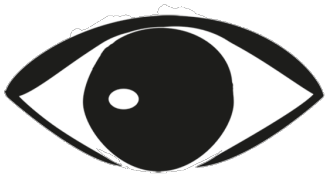
PAM: High Grade Lesions

PAM moderate to severe atypia
= Melanoma in situ





II. Melanocytic Nevus



Biological Significance

- Clinical mimic of melanoma
- Histological mimic of PAM and melanoma
- Precursor to melanoma
- Risk factor for melanoma

Melanocytic Nevi

Clinical and Histologic Mimics

- Juvenile nevi
- Inflamed nevi
- Combined/biphasic nevi – two or more distinct nevoid/melanocytic component
- Atypical nevi
- Spitz nevi
- Blue nevi

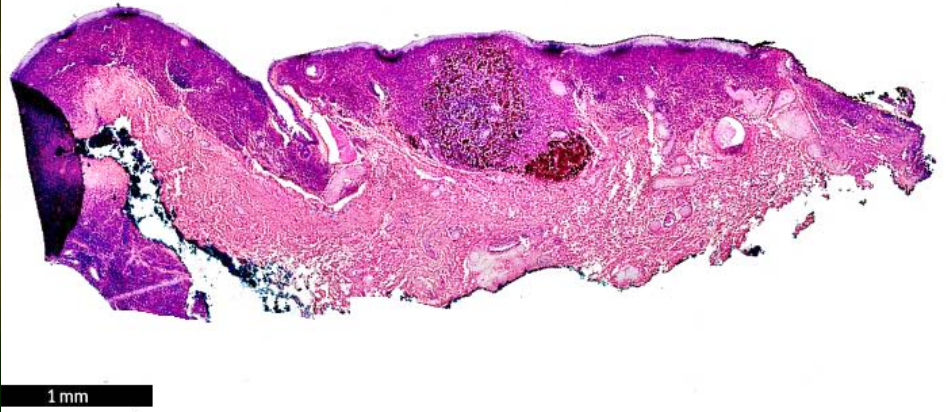
Features in Nevi Mimicking Melanoma (and PAM)

- Increased size > 5 mm
- Horizontal extension of junctional component
- Pagetoid spread
- Large and irregular junctional nests
- Confluence of melanocytes at the epithelial-subepithelial junction
- Absence of or reverse maturation
- Inflammation
- Cytological atypia

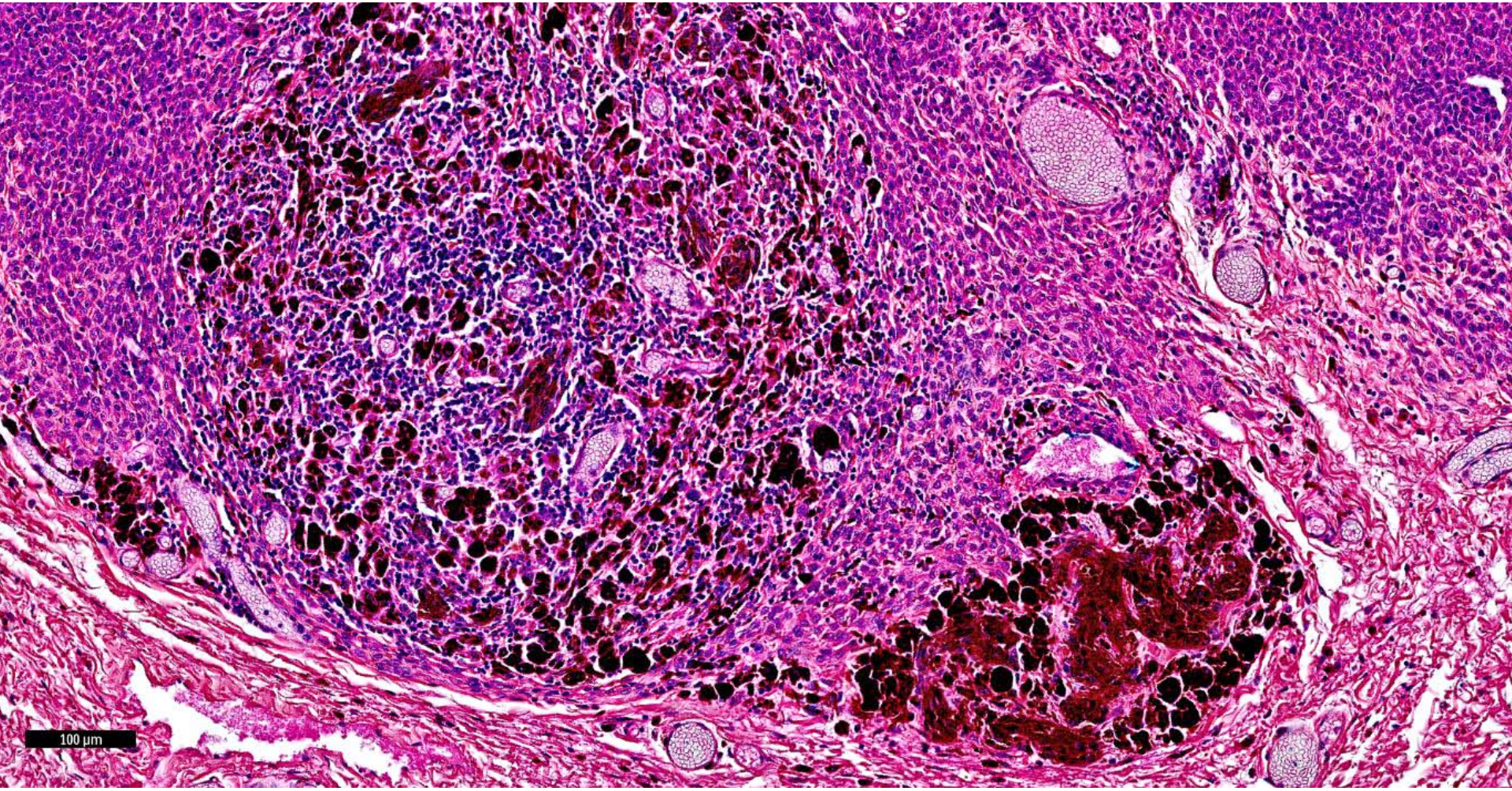
Melanocytic Nevus

Clinical and Histologic Mimic

- Biphasic/Combined nevus

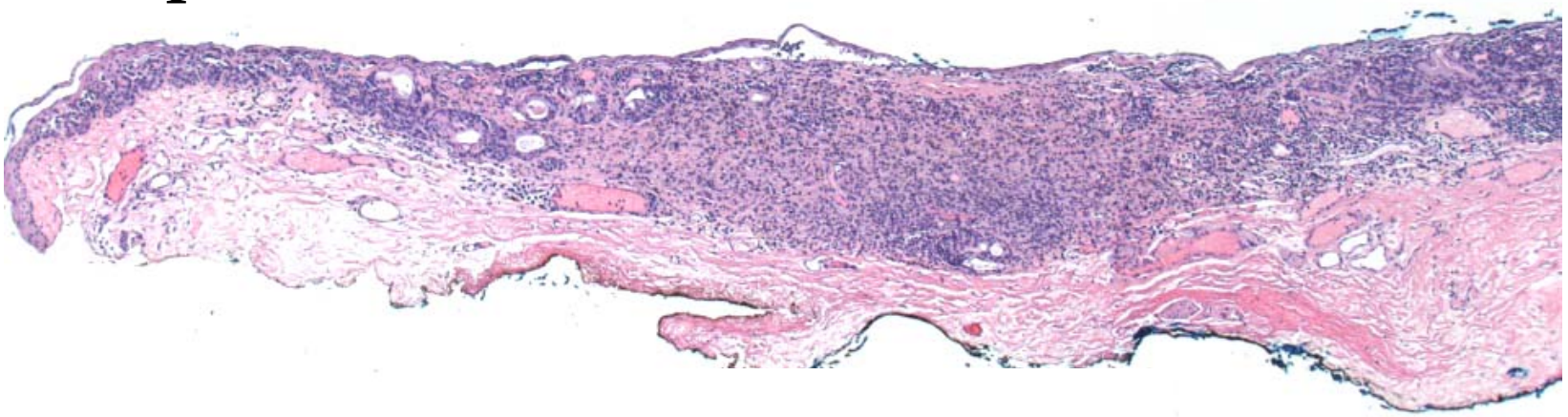


Biphasic/Combined Nevus

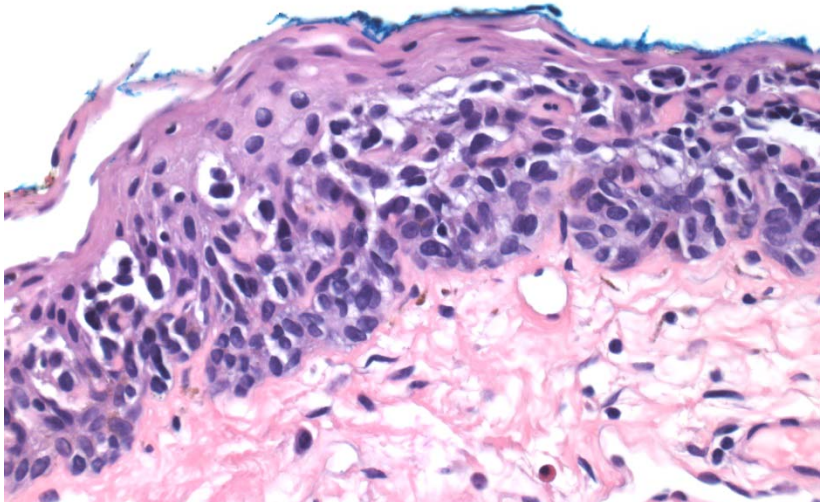


Compound Nevus

- Peripheral extension



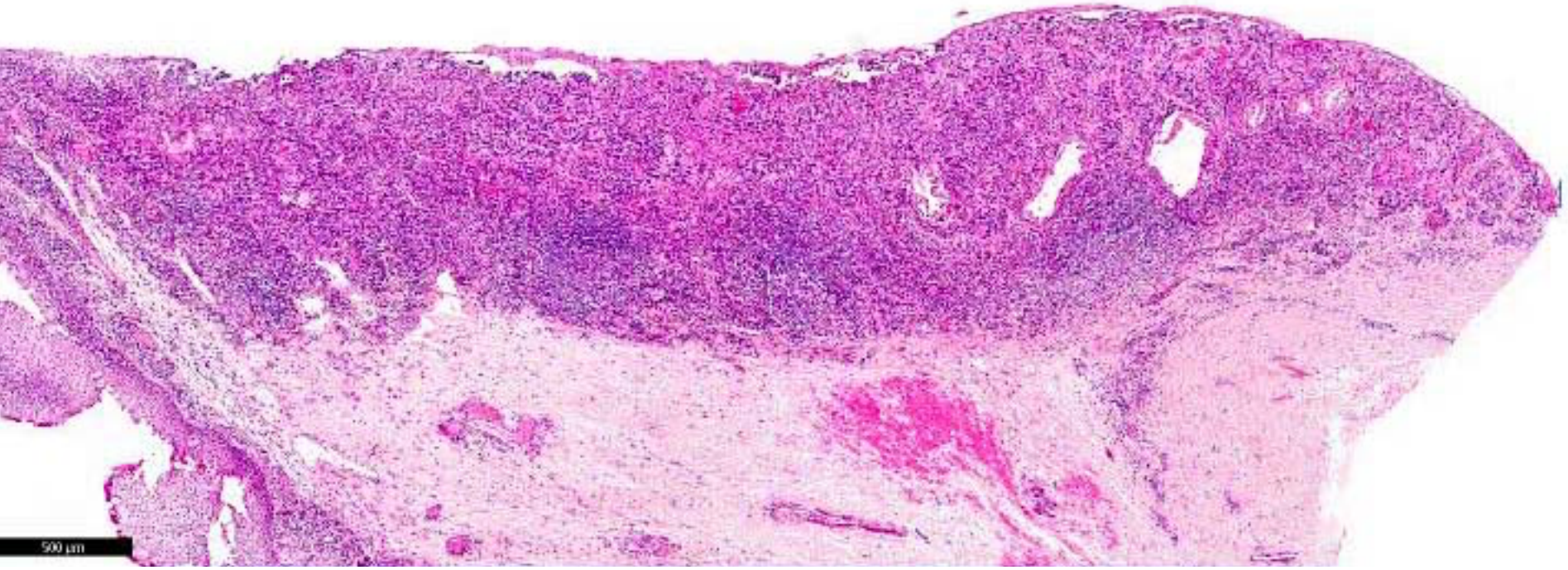
- Pagetoid Spread



Compound Nevus

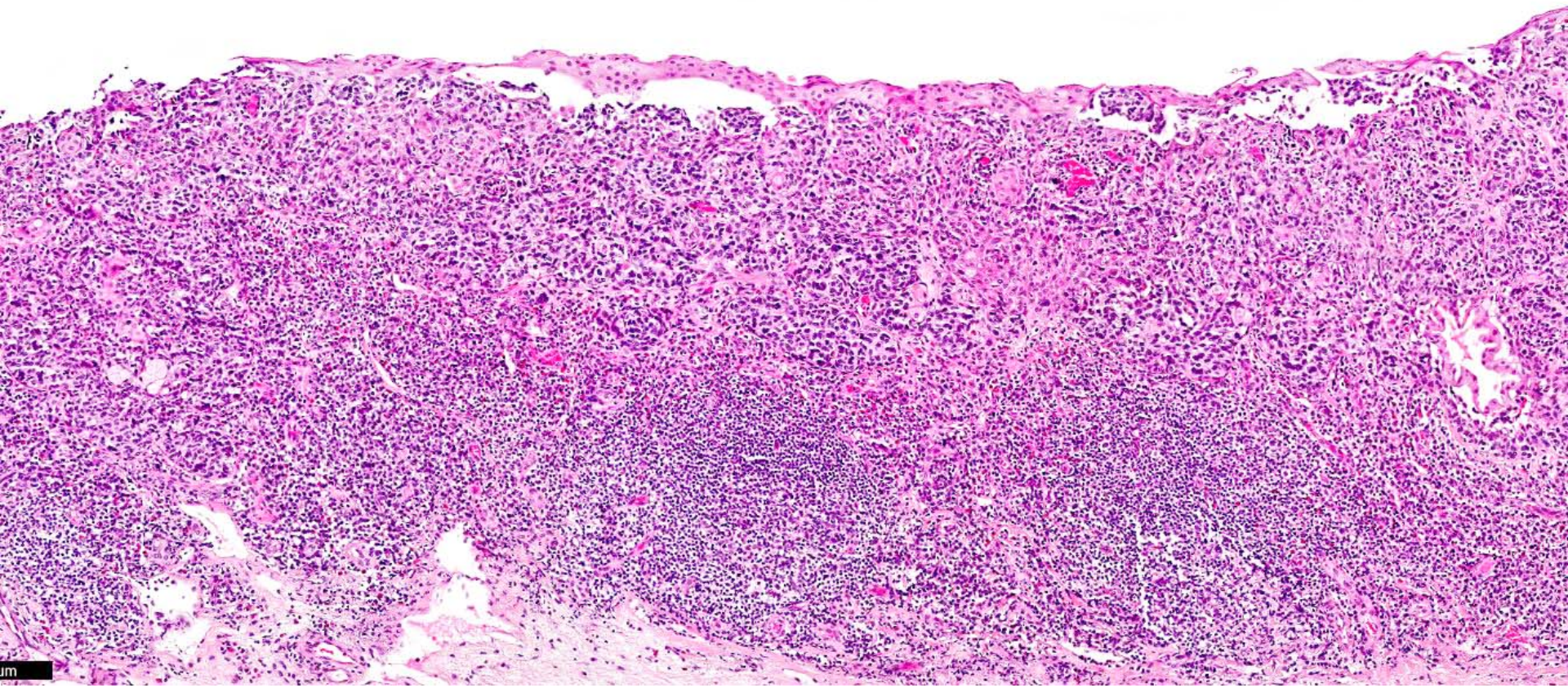
Juvenile Inflamed

- Size > 5 mm



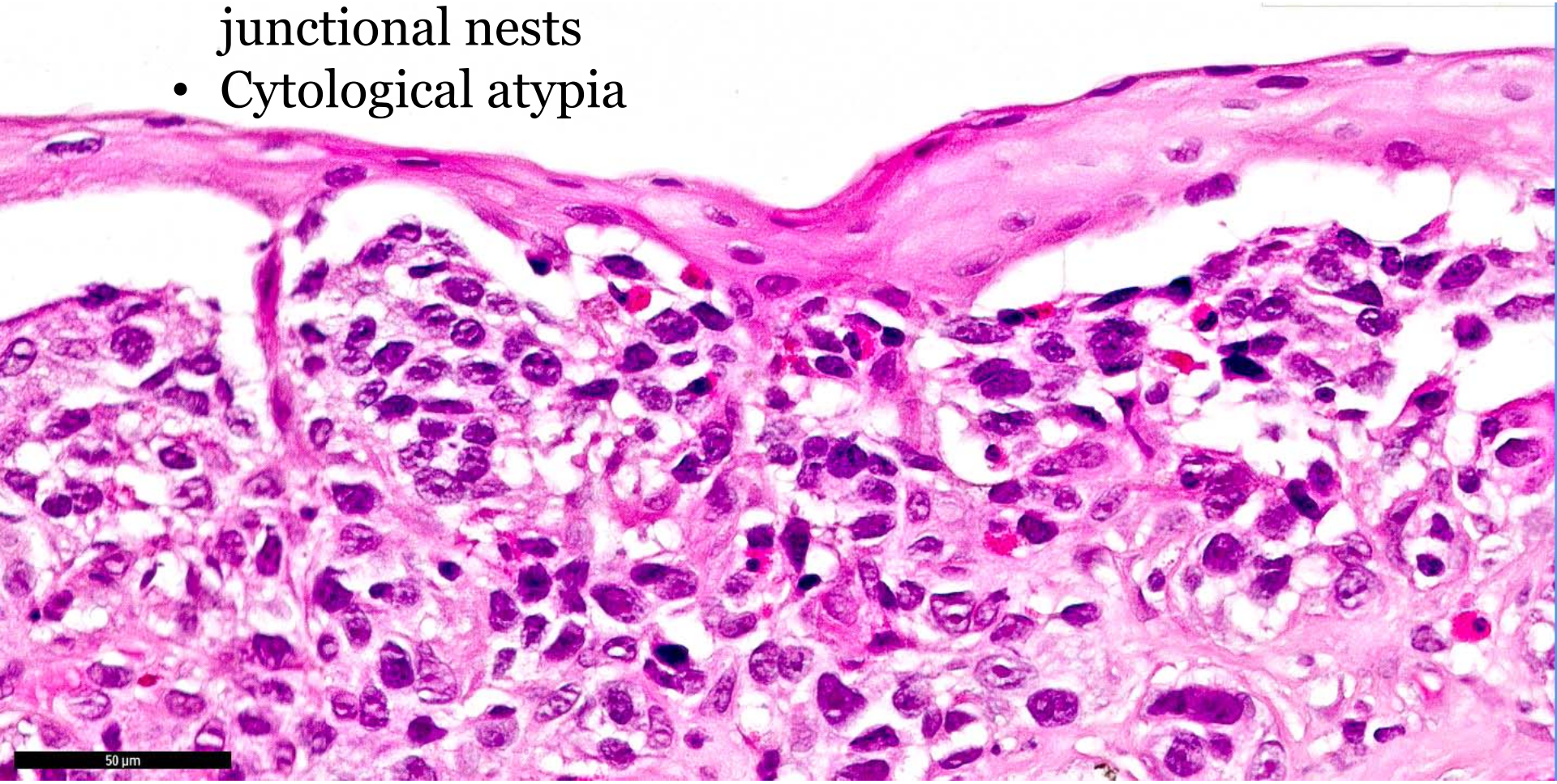
Compound Nevus

- Large irregular nests
- Confluence of nests



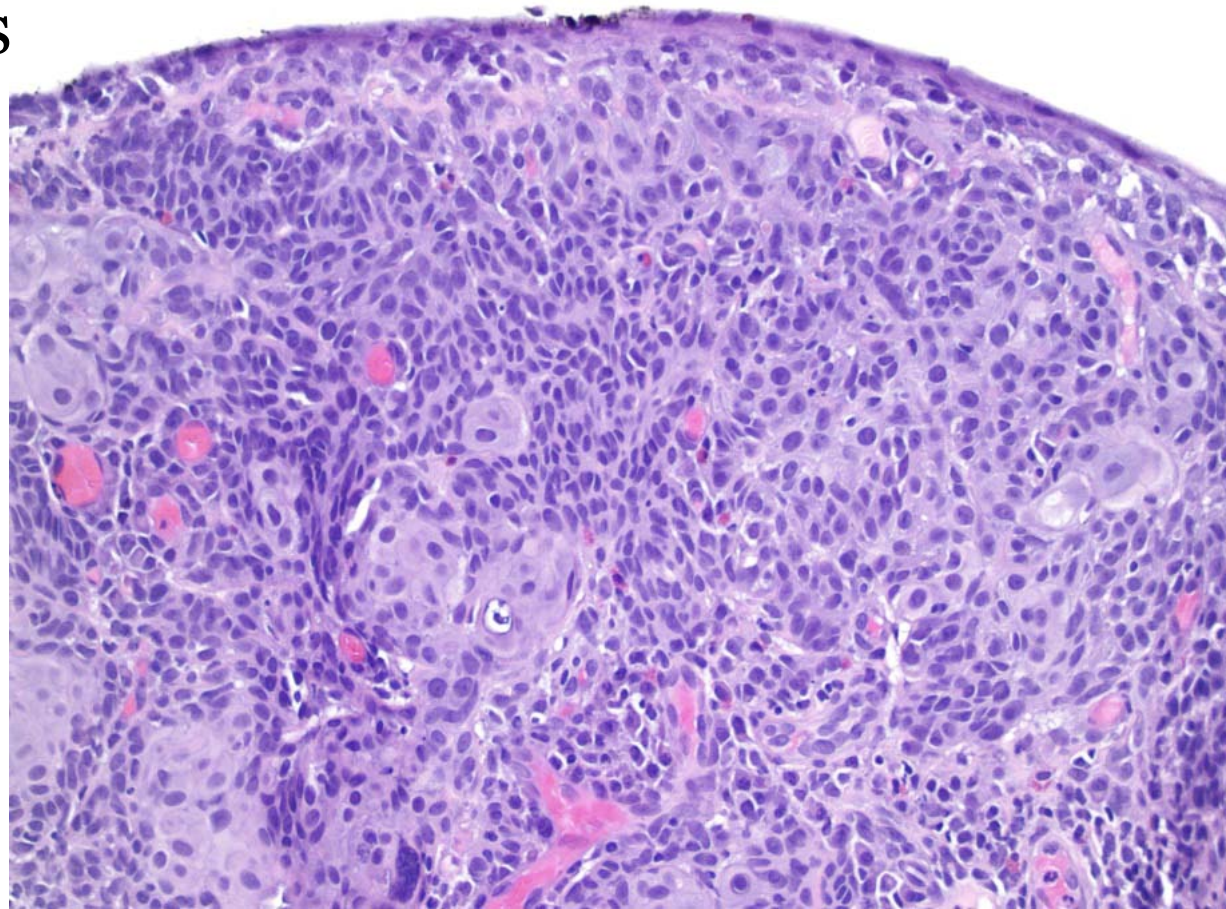
Compound Nevus

- Irregular and confluent junctional nests
- Cytological atypia



Compound Nevus

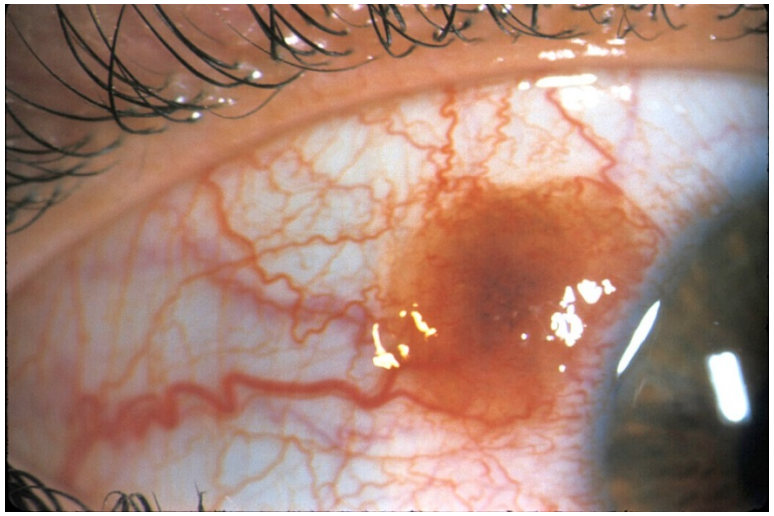
- Absence of maturation
- Prominent cellularity
- Large melanocytes

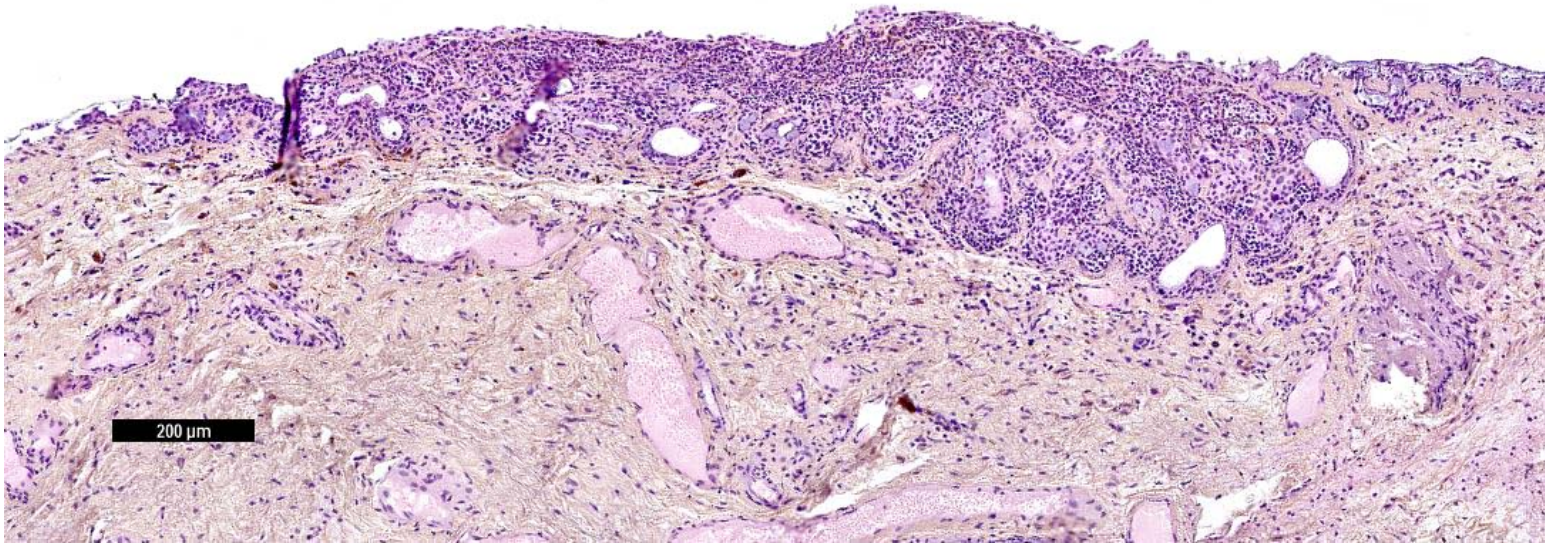


Reassuring Features

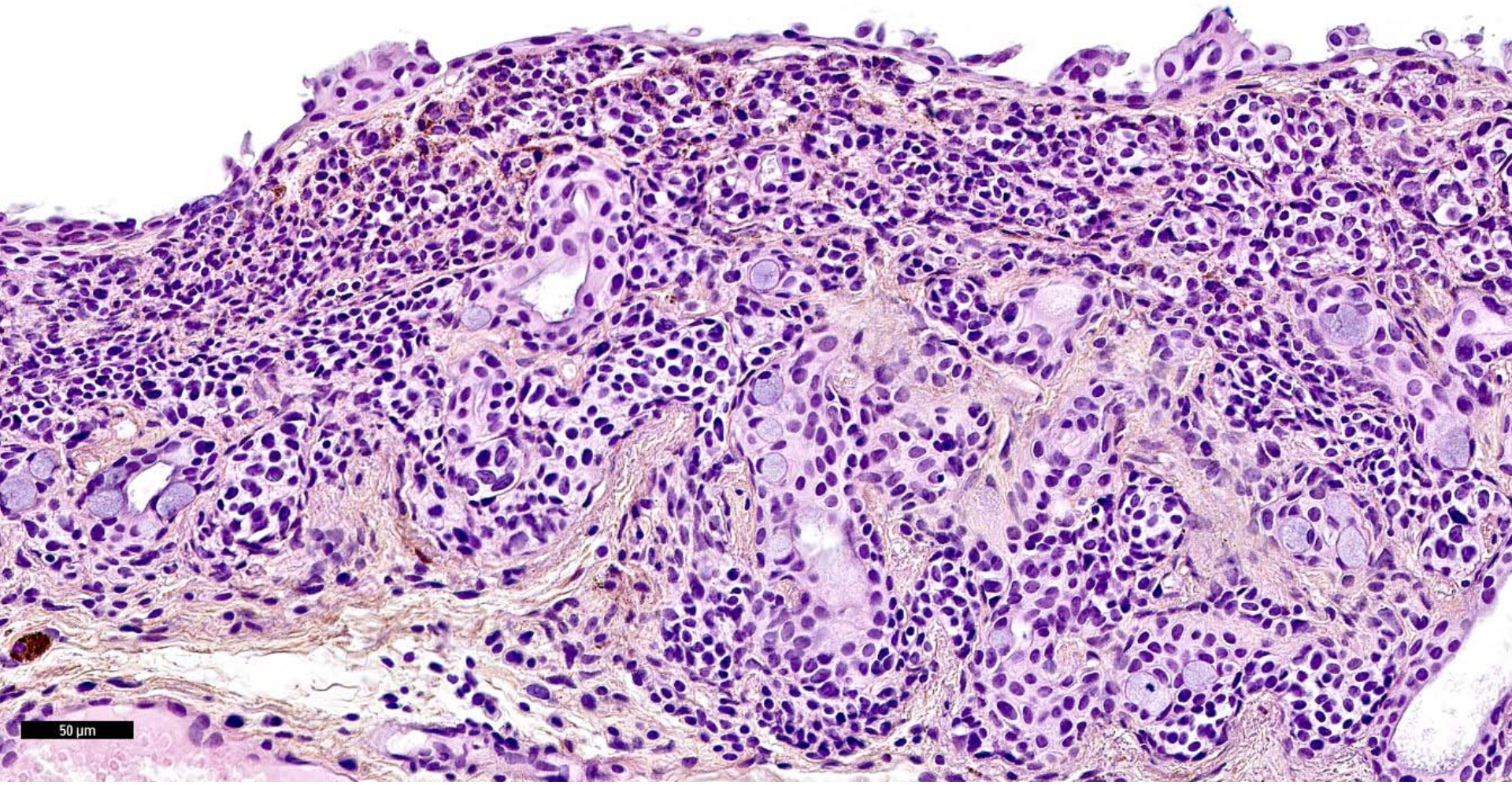
- Young age of the patient
- Diameter < 5 mm
- Symmetry
- Well-circumscribed
- **Presence of epithelial cysts**
- General uniformity of cell type
- Absence of high-grade atypia
- Little or no subepithelial mitotic activity

Compound Nevus

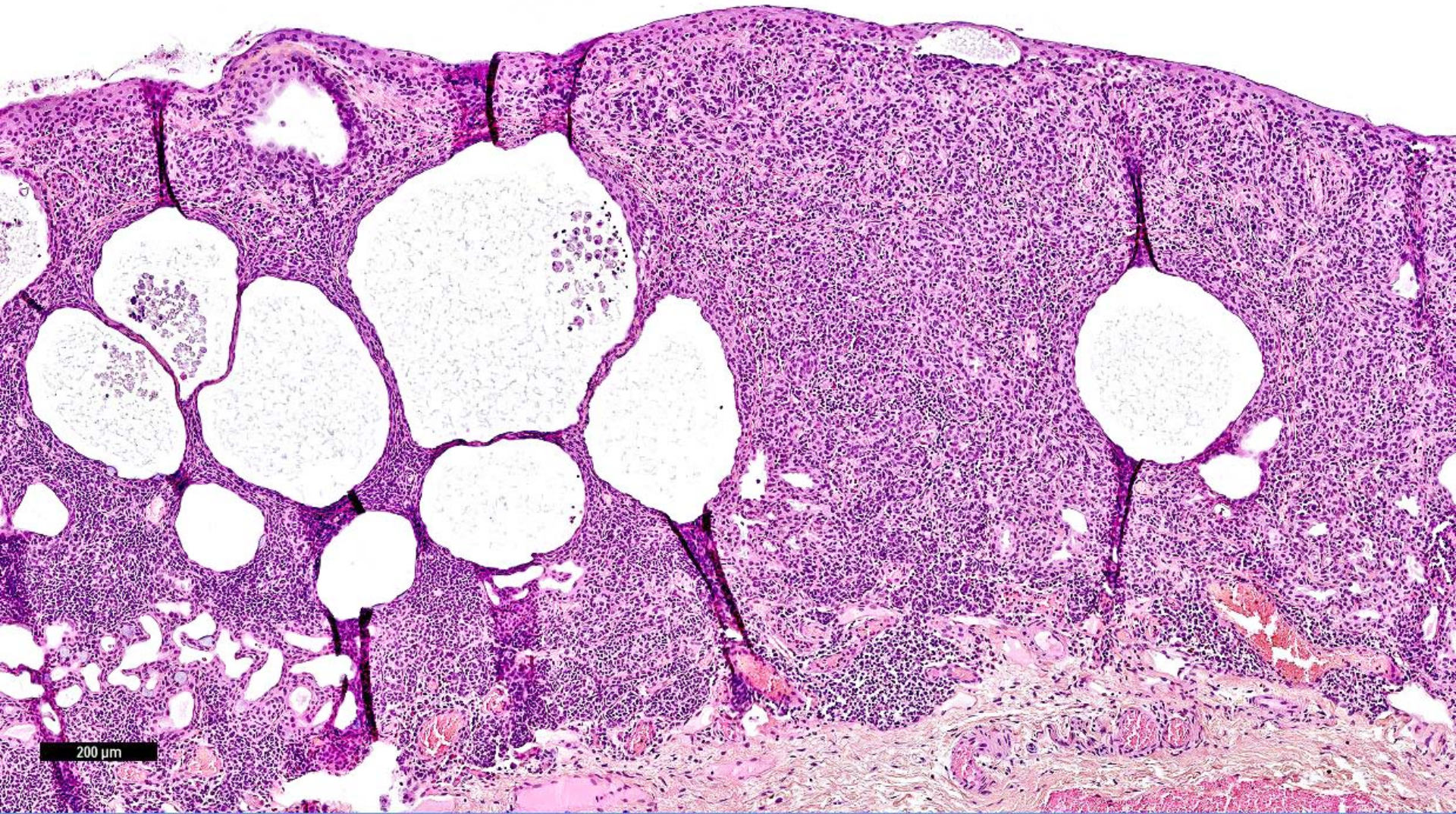




Compound Nevus

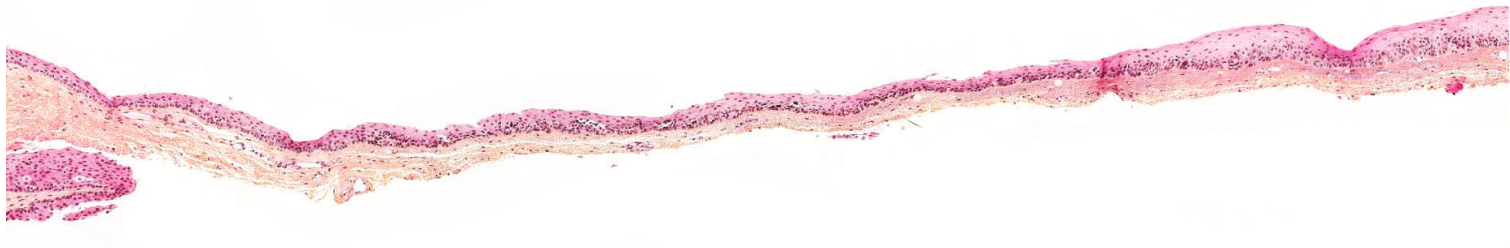


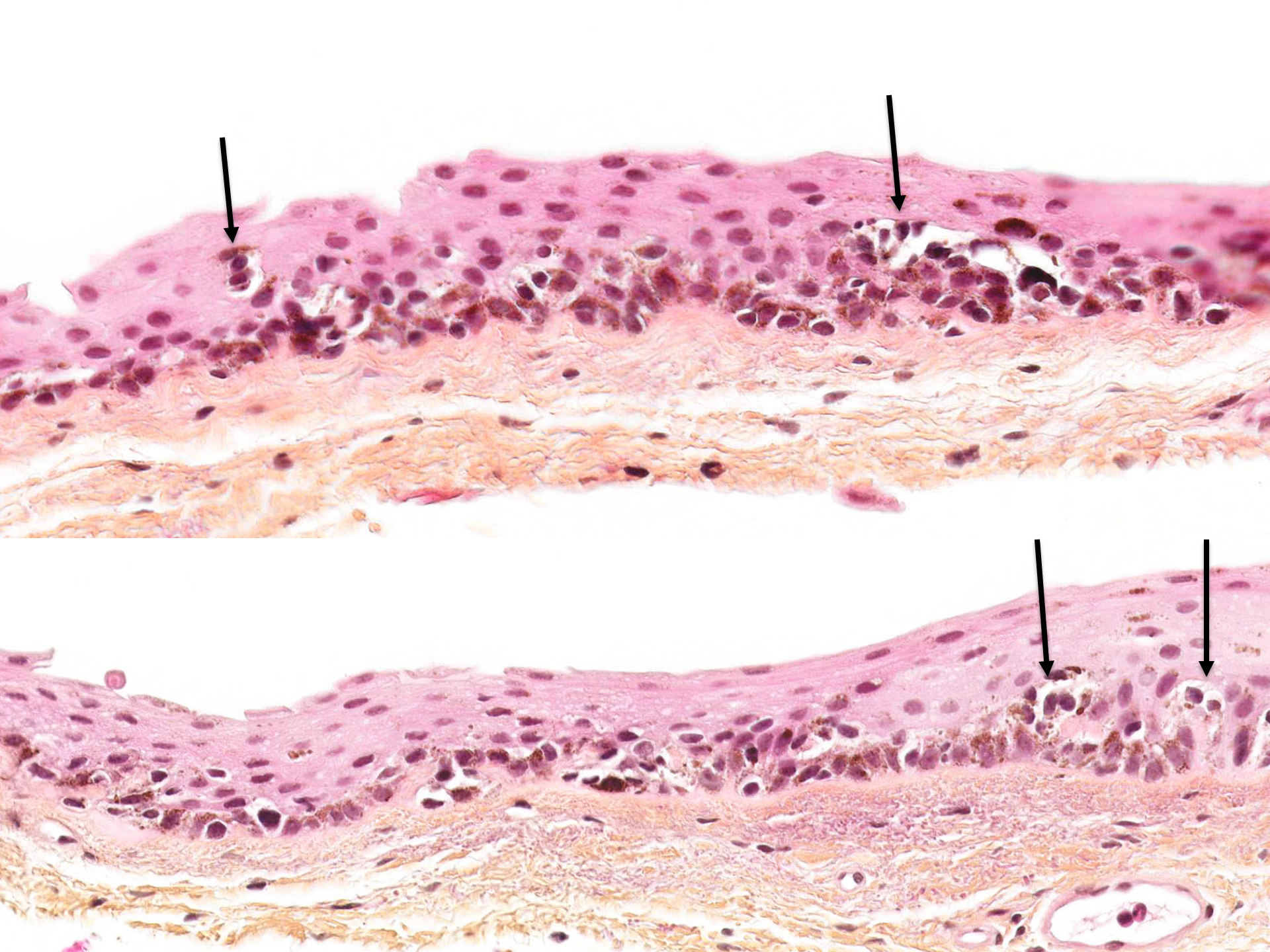
Cystic Compound Nevus



Junctional Nevus as Mimic of PAM and Melanoma in Situ

- 21 year-old female
- 5 mm pigmented macule right eye
- Clinical diagnosis: Nevus favored
- Pauci-cellular lentiginous and junctional nested melanocytic proliferation
- Mild atypia





Junctional Nevus as Mimic of PAM and Melanoma in Situ

- Absence of subepithelial component
- Pagetoid spread of melanocytes
- Thin conjunctional epithelium (2 to 3 layers)

Take Home Messages
PAM and Nevi

- Simplified classification for diagnosis and risk stratification is needed to optimize management of patients
- Particular nevi are clinical and histological mimics of melanoma and PAM.