

Pathology of the Conjunctiva and Eyelid

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AMERICAN ASSOCIATION
OF NEUROPATHOLOGISTS

Disclosures

- **I have no relevant financial relationships to disclose**



Learning objectives

- **Distinguish pathology diagnoses involving the conjunctiva.**
- **Distinguish pathology diagnoses involving the eyelid.**
- **Categorize a range of common and uncommon lesions involving the conjunctiva and eyelids**



Conjunctiva

- The conjunctiva is a mucous membrane (it is not skin), and lines the:
 - Posterior surface of the eyelids (palpebral conjunctiva);
 - Pericorneal surface of the anterior globe (epibulbar conjunctiva);
 - Fornices (forniceal conjunctiva)

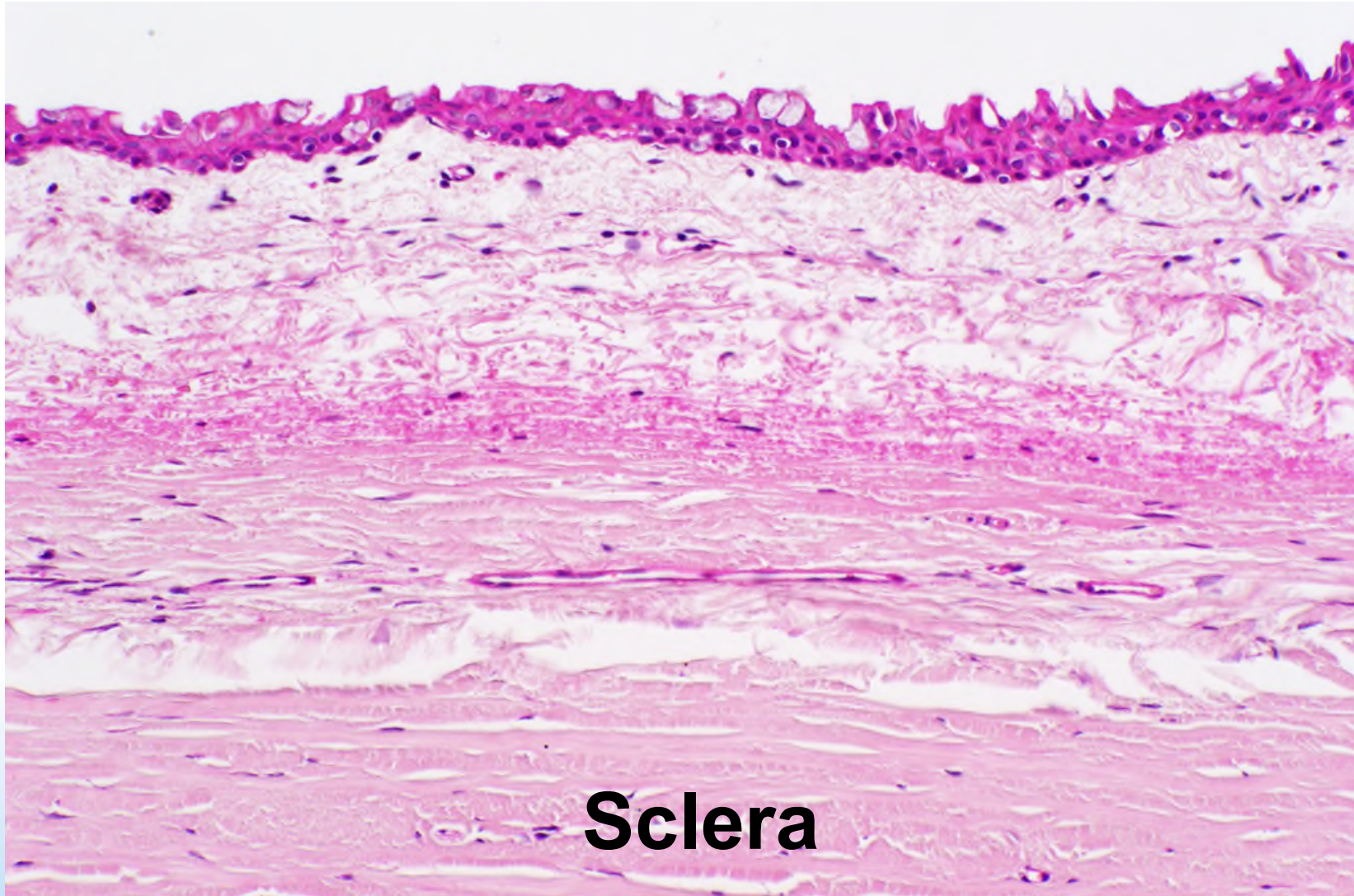


Conjunctiva

- **Stratified non-keratinizing squamous epithelium**
- **Goblet cells: tear film mucin layer**
- **Permits the eyelids to move over the surface of the cornea without damage to the cornea**



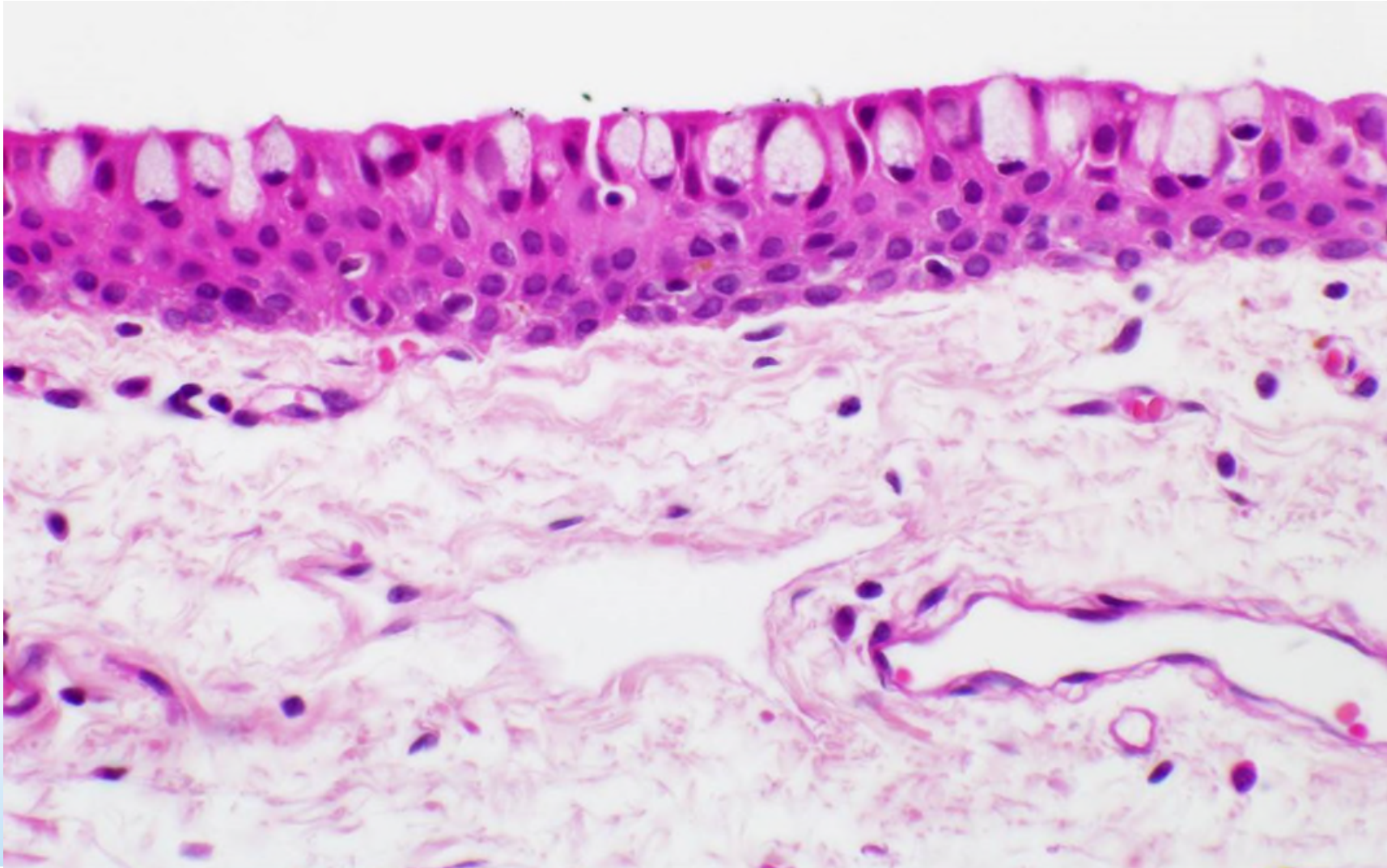
Conjunctiva



Sclera



Conjunctiva goblet cells

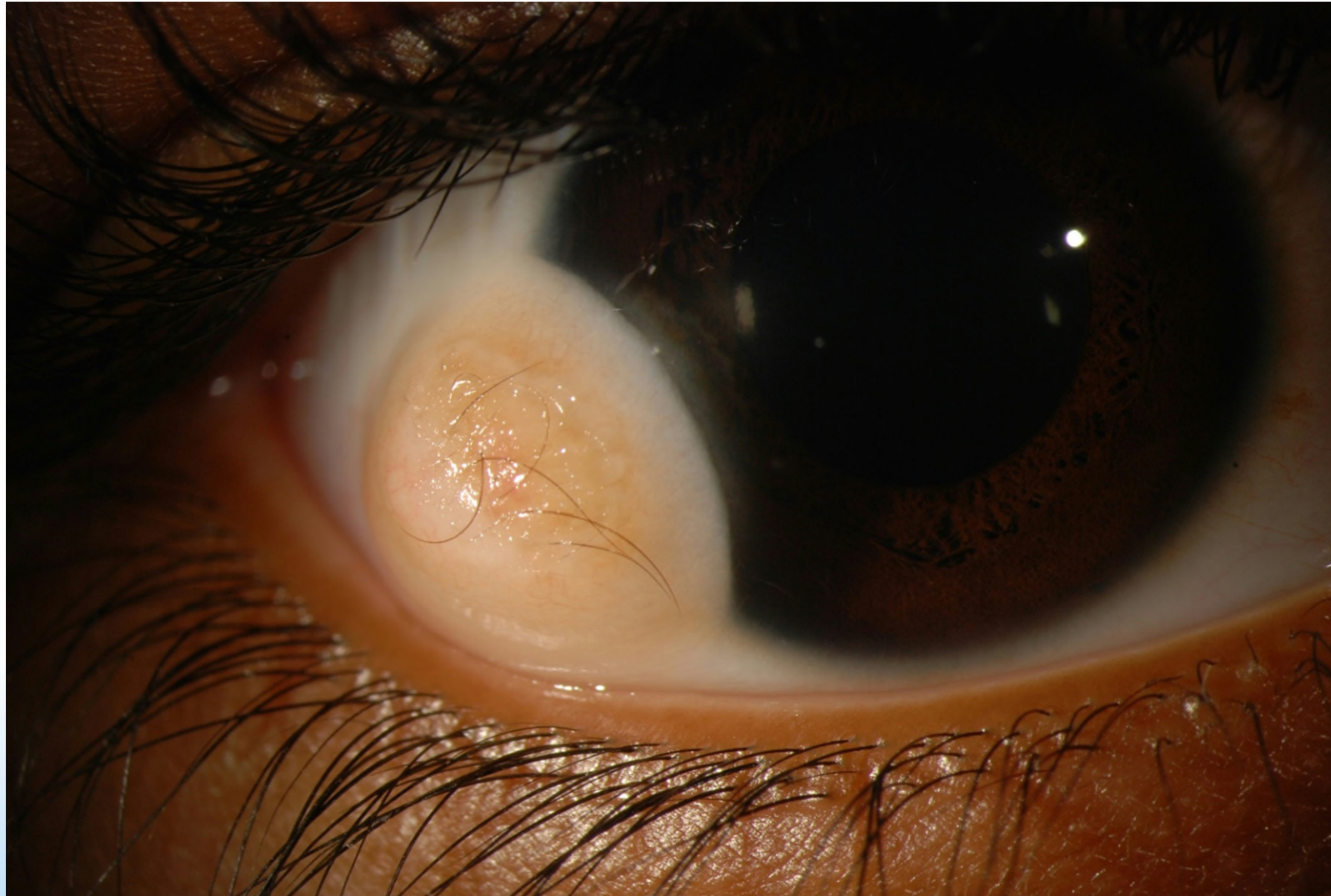


Conjunctiva

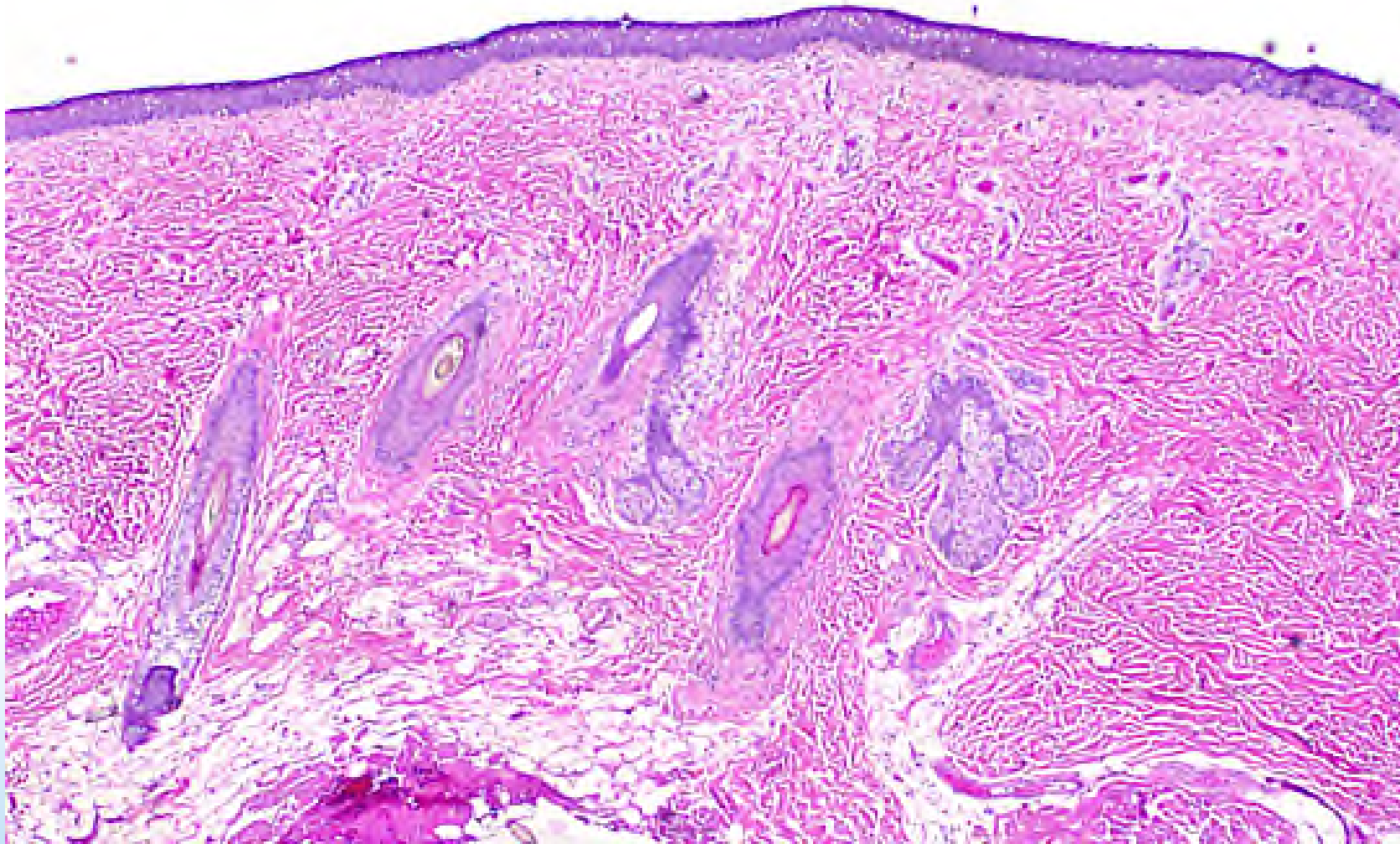
- **Congenital Anomalies**
 - Limbal dermoid
- **Degenerations**
 - Pterygium
- **Inflammatory/Infectious**
 - Herpes Simplex Virus
- **Neoplasia**
 - Epithelial lesions (squamous cell neoplasia)
 - Subepithelial lesions (lymphoid)
 - Melanocytic lesions
- **Others**
 - Hereditary Benign Intraepithelial Dyskeratosis

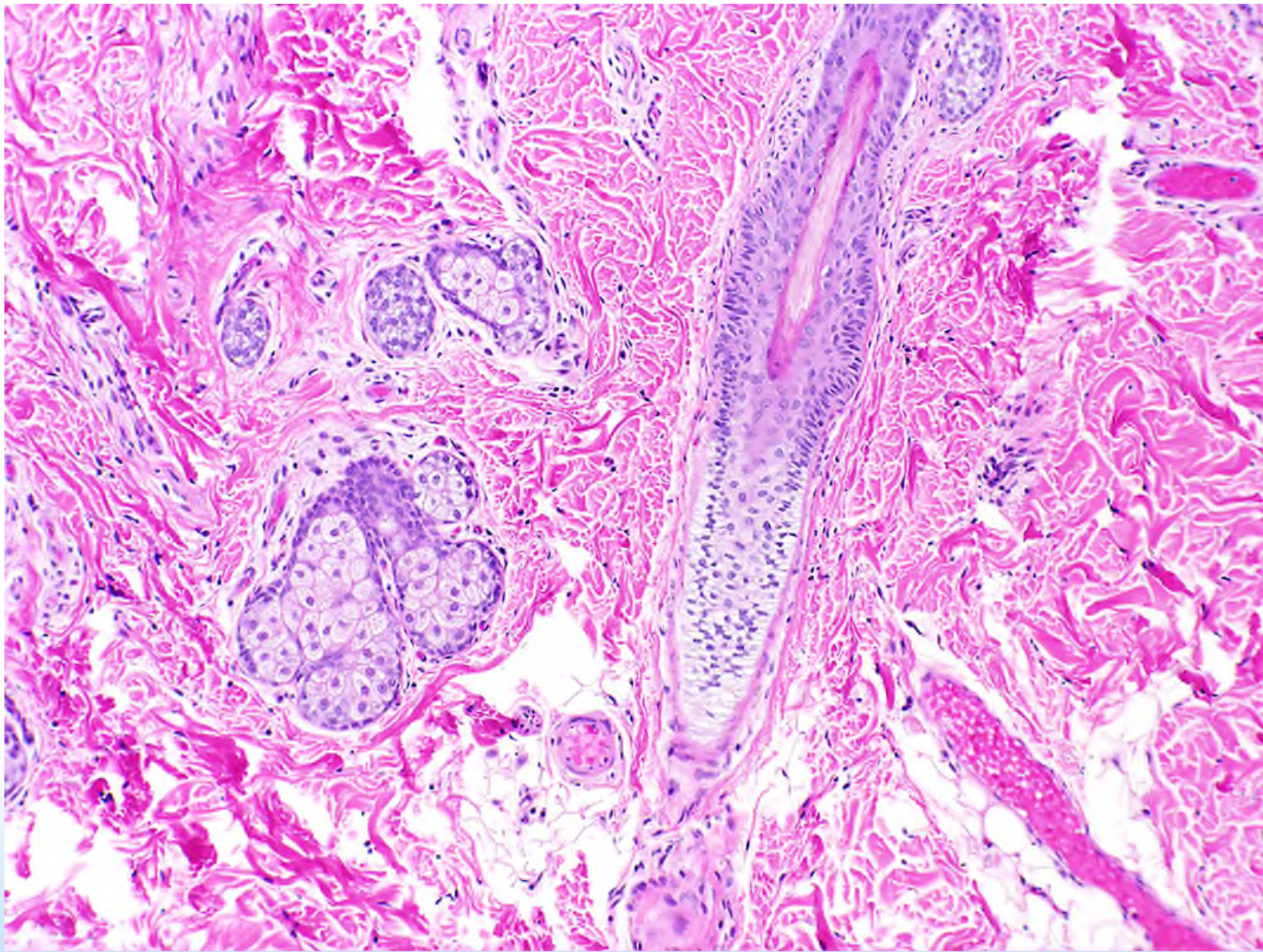


Congenital: Limbal Dermoid

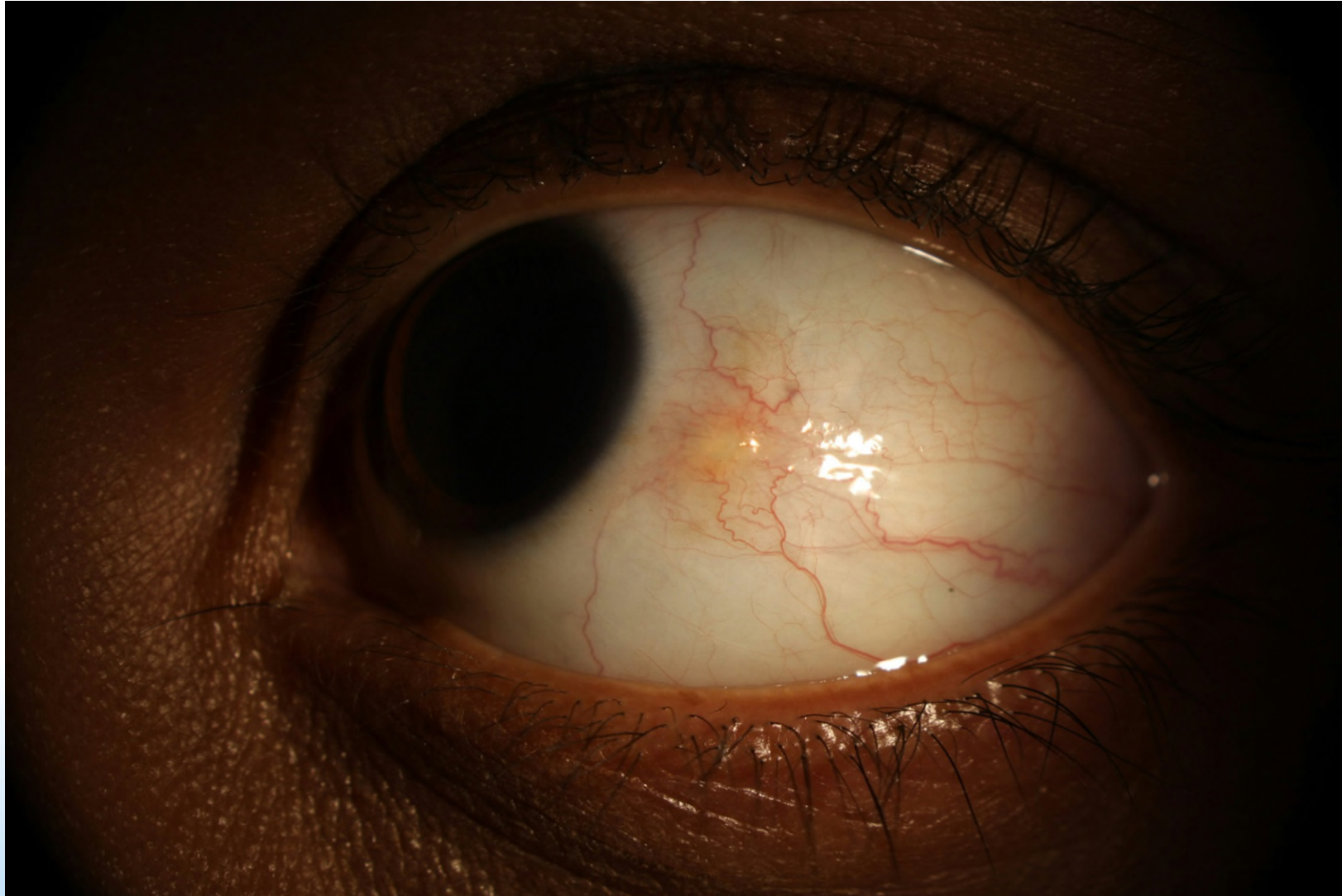


Limbal Dermoid (vs. dermolipoma, complex choristoma)

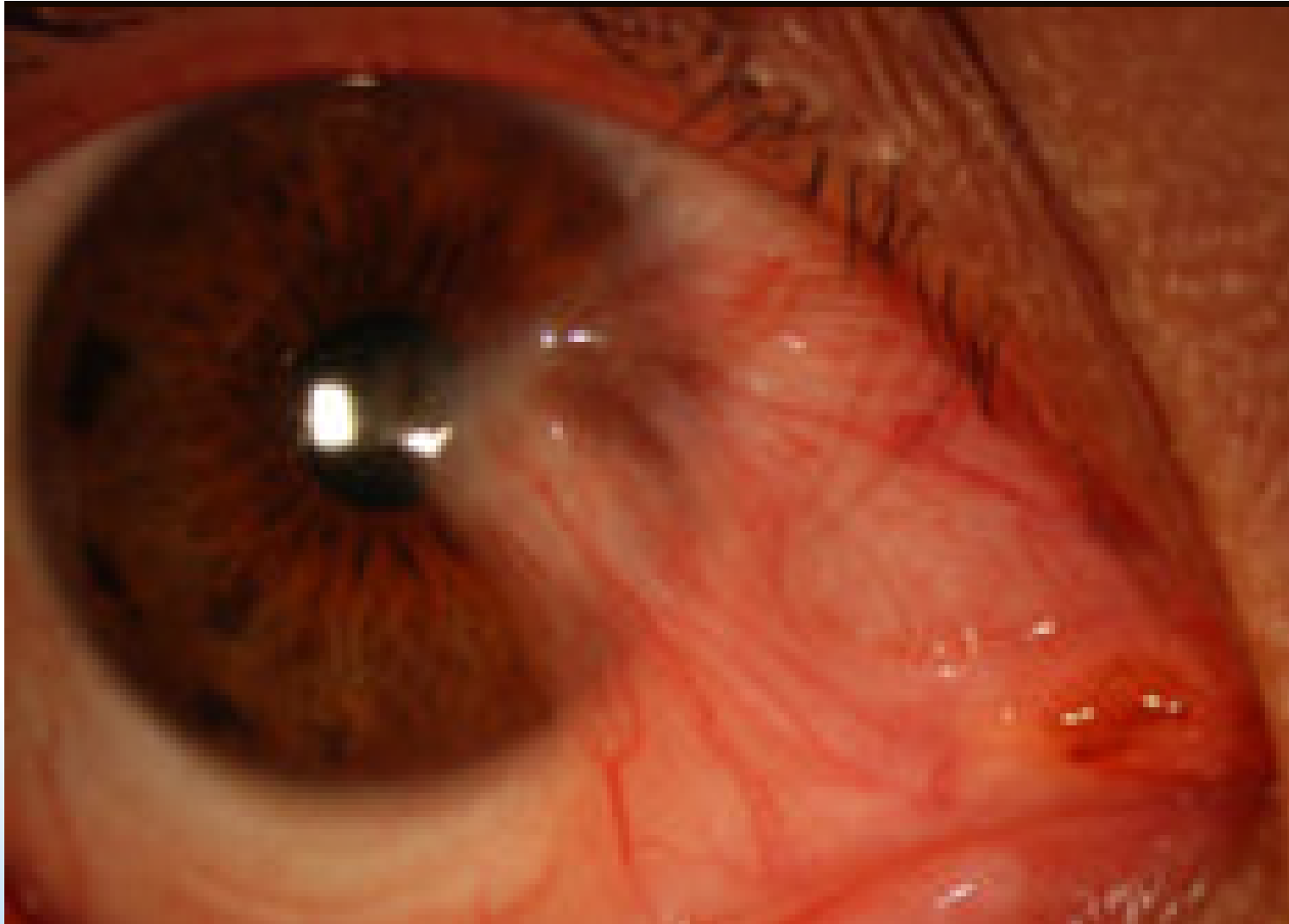




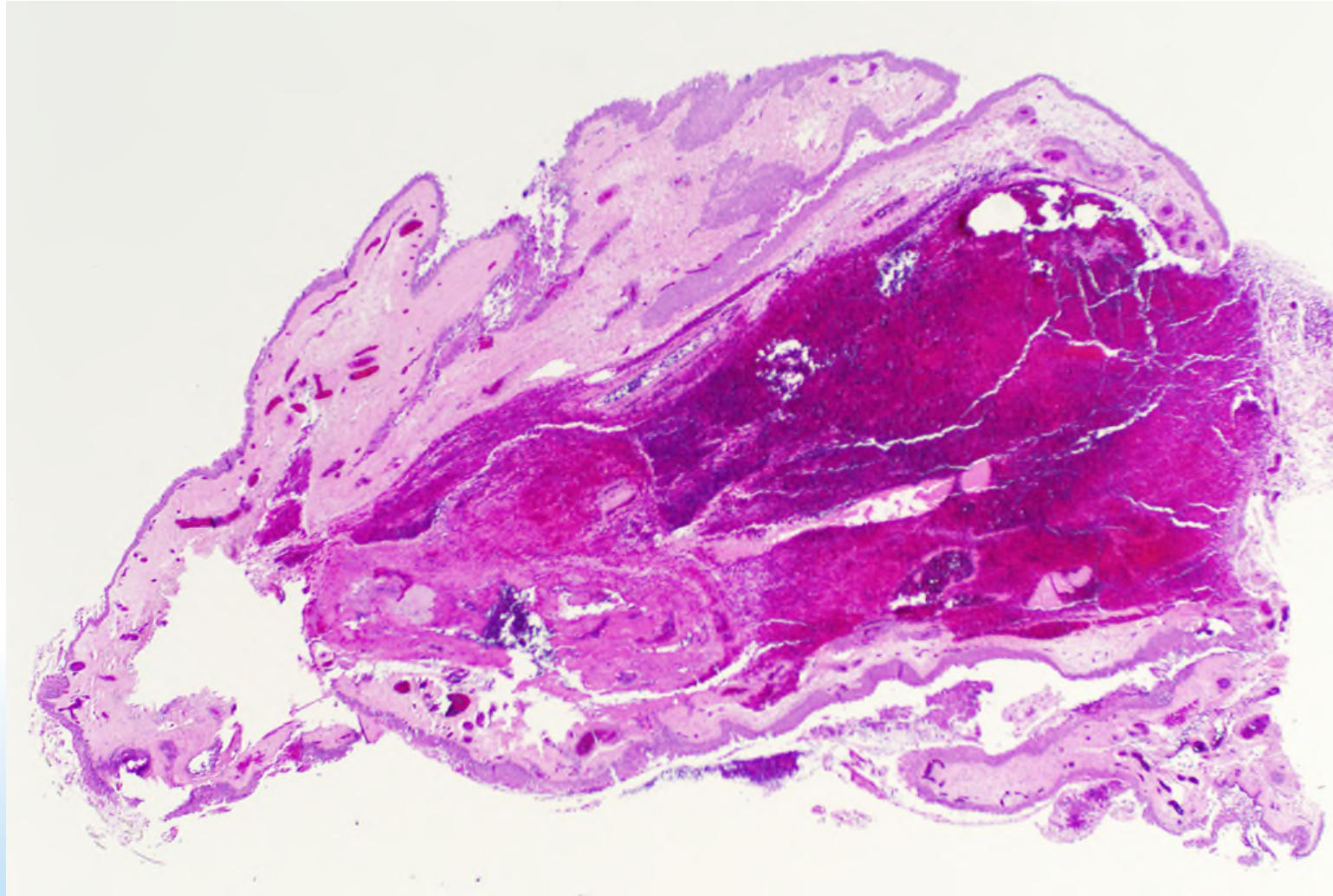
Degenerations: Pingueculum



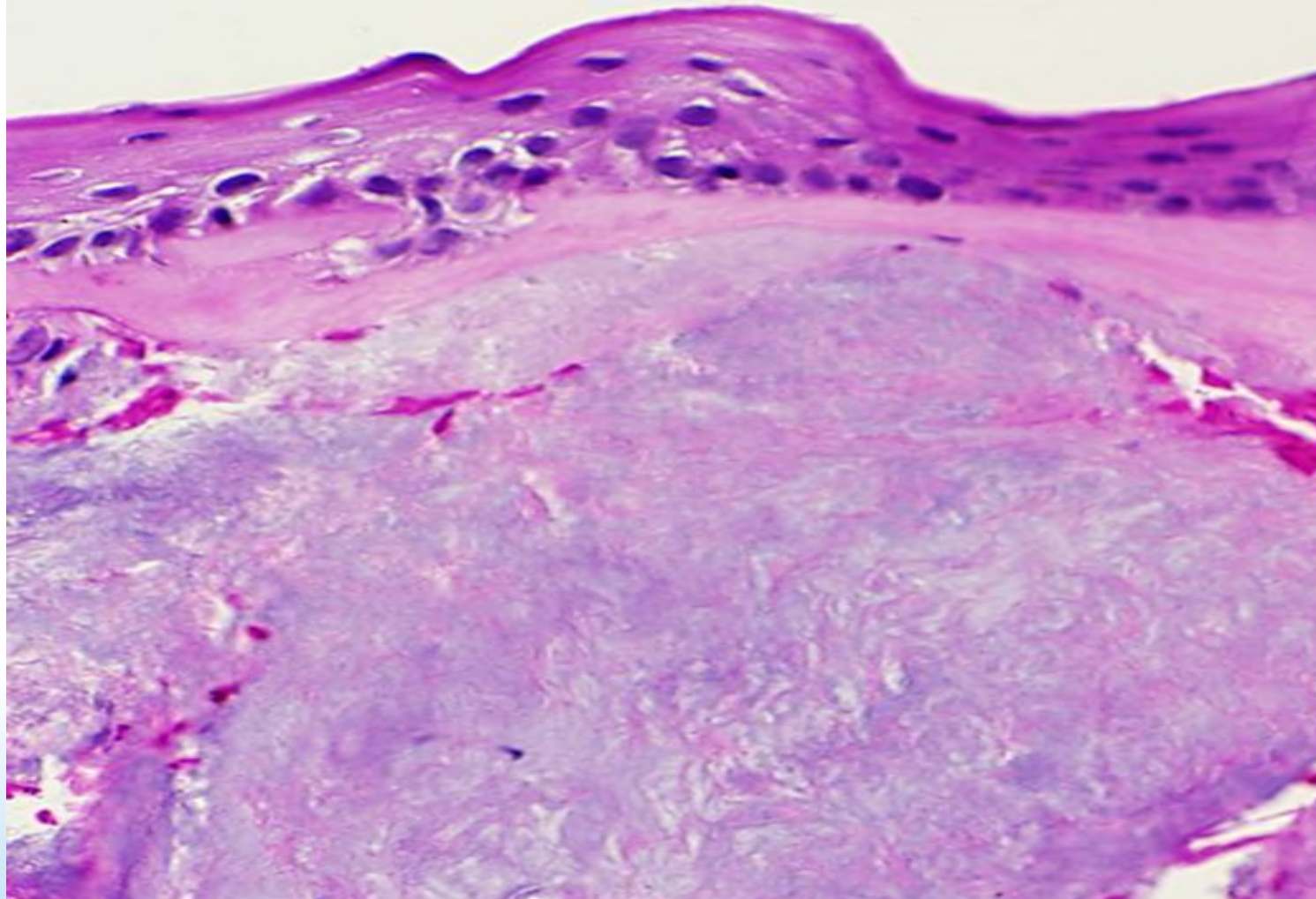
Degenerations: Pterygium



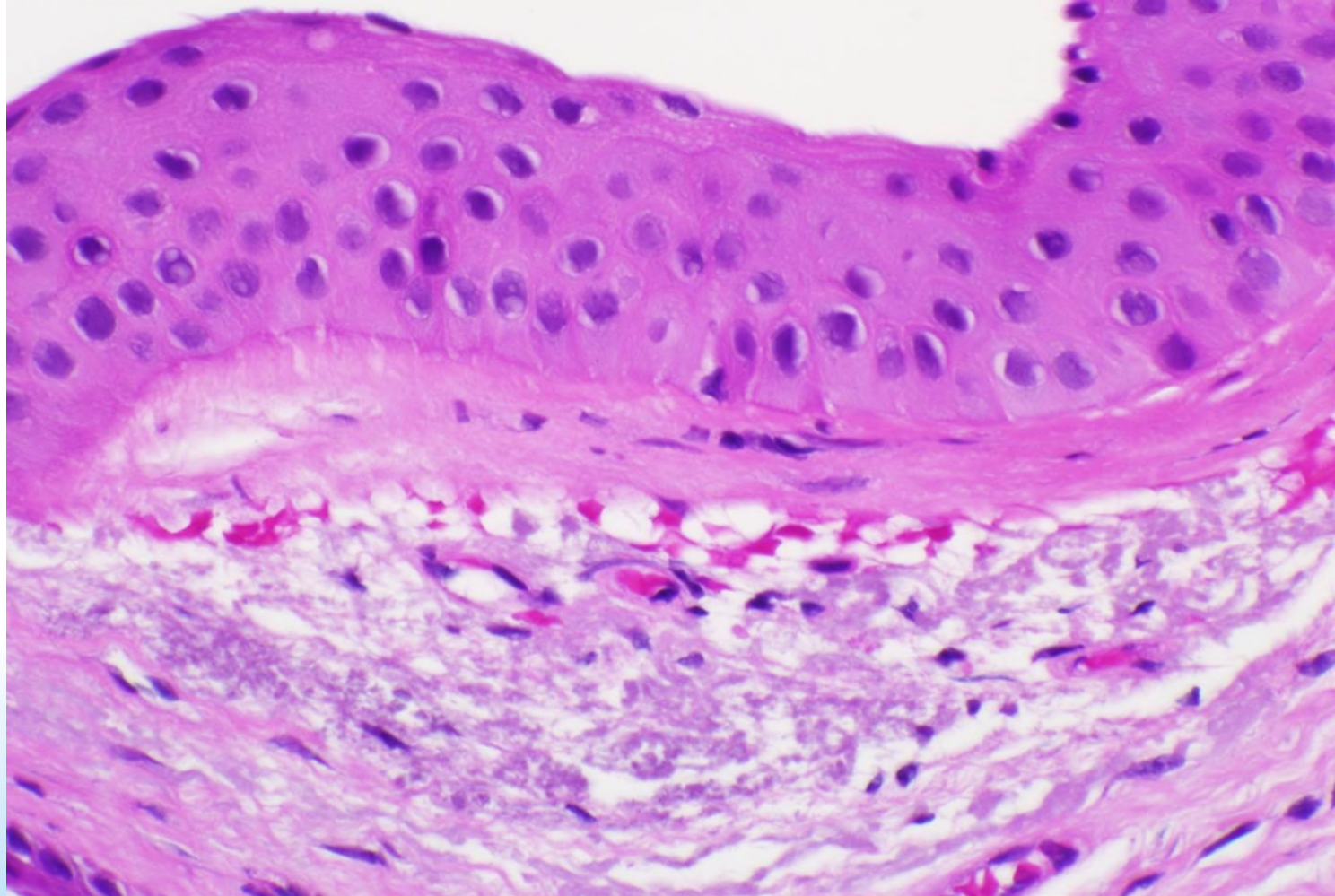
Pterygium Gk: *pteron*, wing



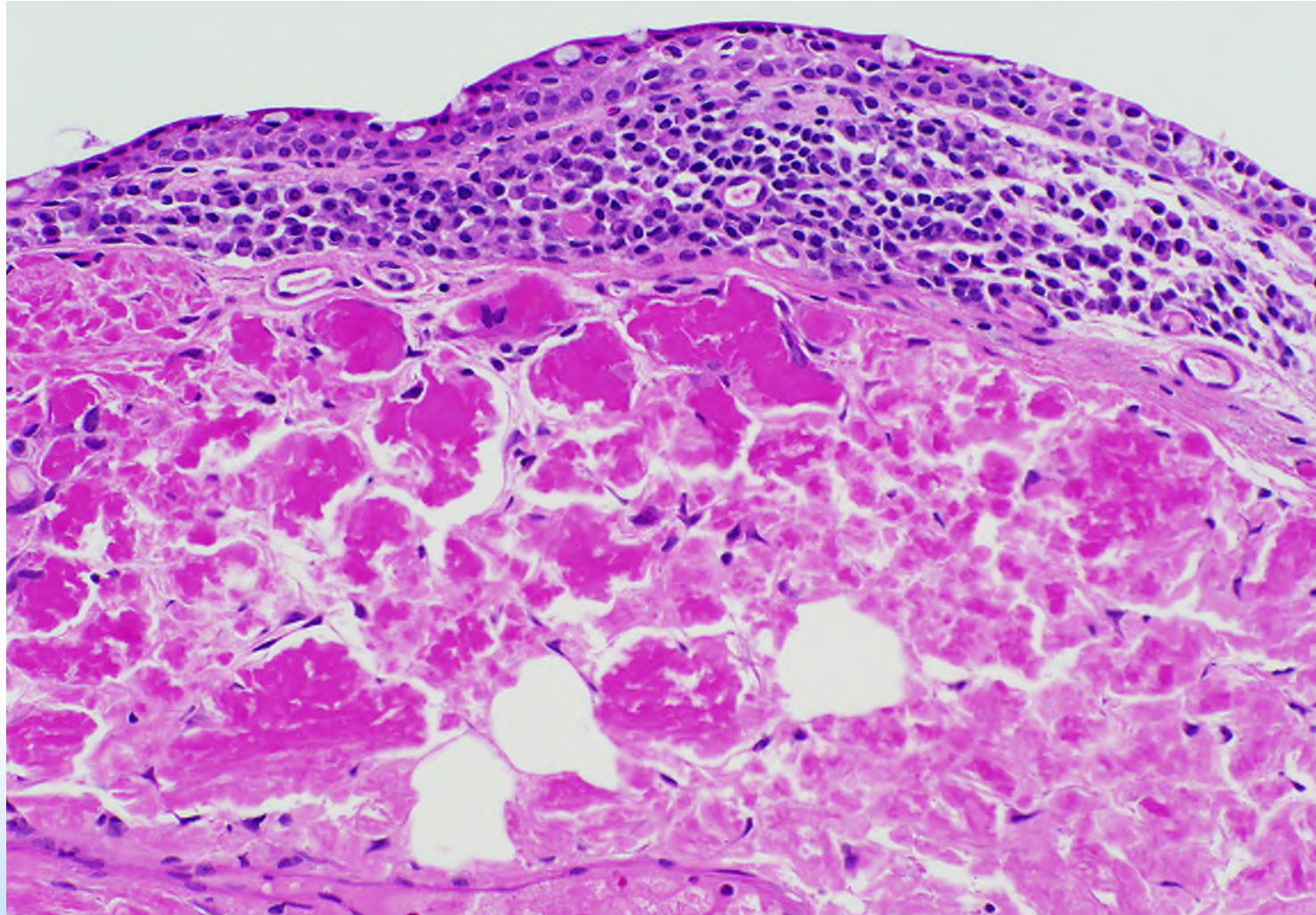
Pterygium: Actinic Elastosis



Pterygium: Actinic elastosis in peripheral corneal stroma



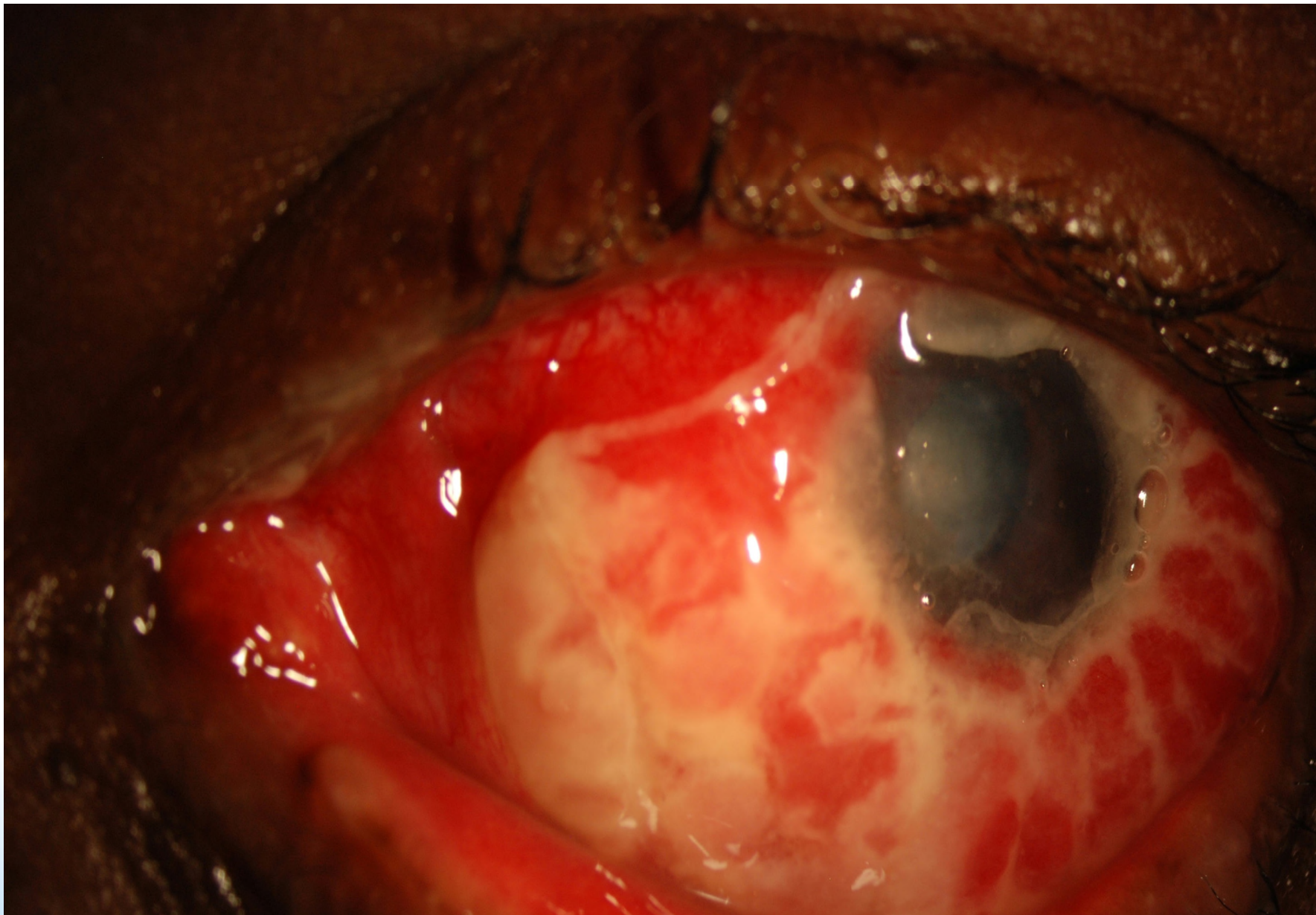
One other degeneration: Conjunctiva Amyloidosis



Inflammatory/Infectious

- **HIV +**
- **Pain, decreased vision O.S. x 2 months**
- **Acyclovir-resistant HSV skin lesions**
- **Bilateral corneal scarring at age 9**
 - **Diagnosed with HSV Keratitis**

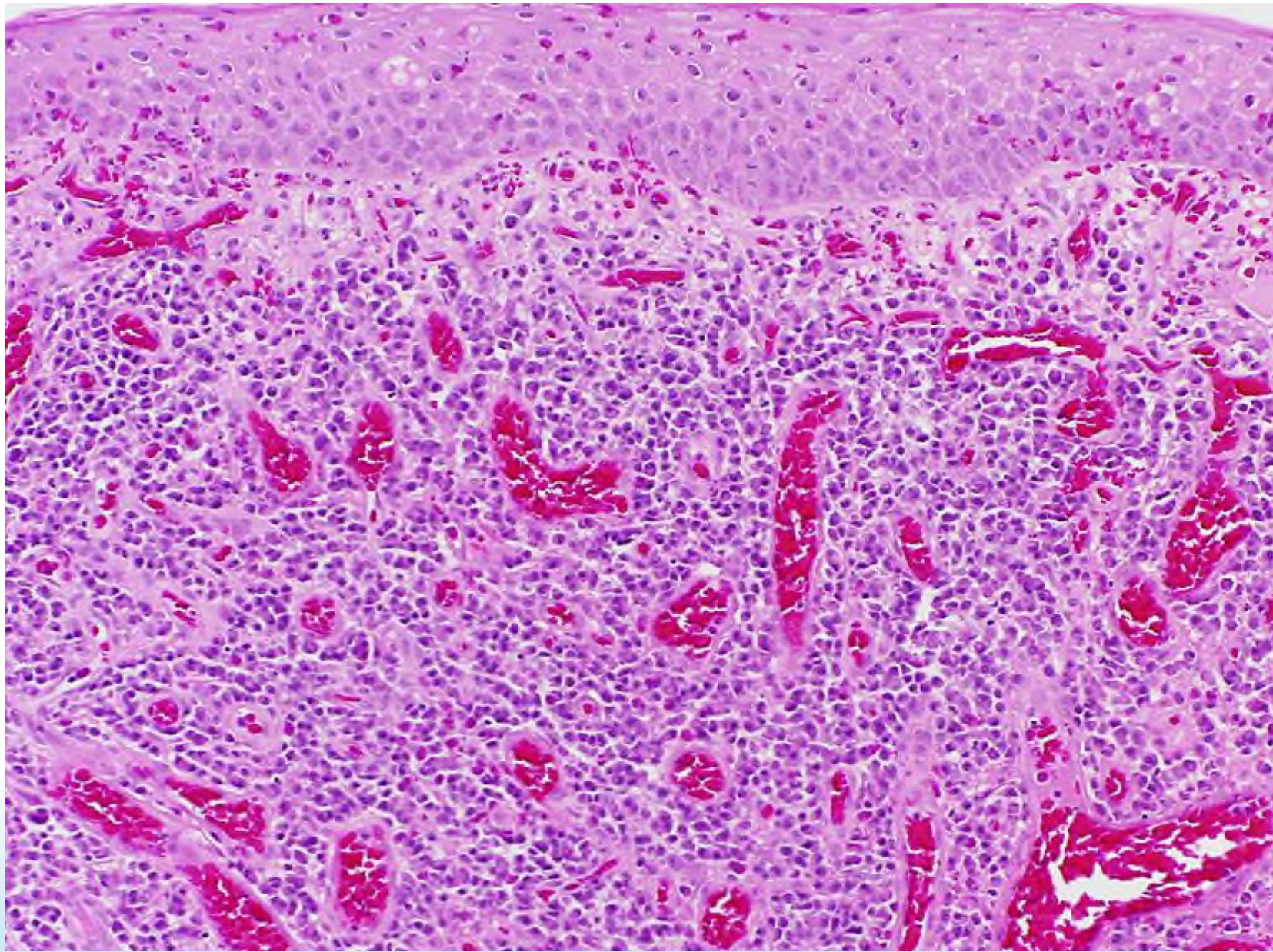


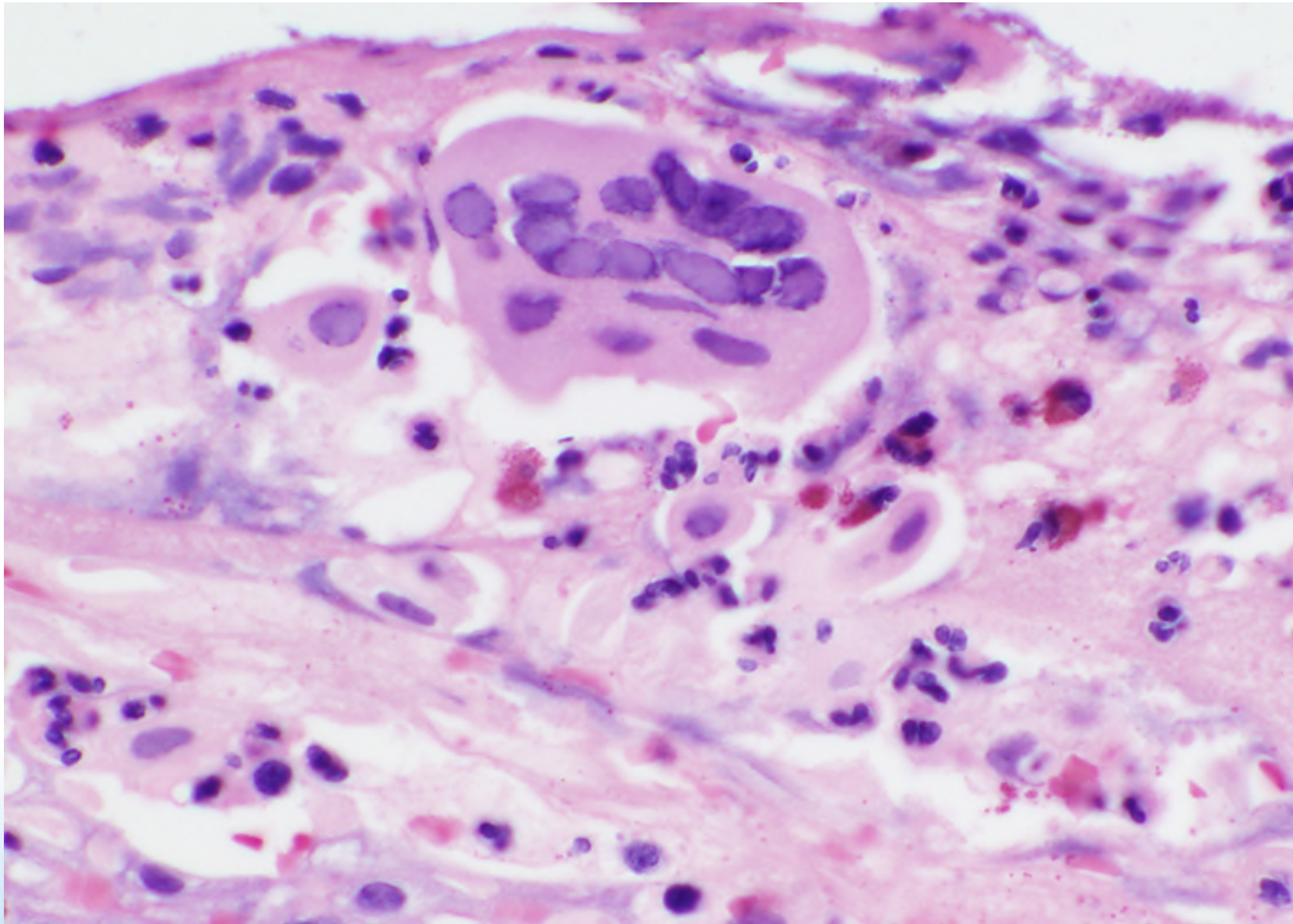


Clinical differential diagnosis:

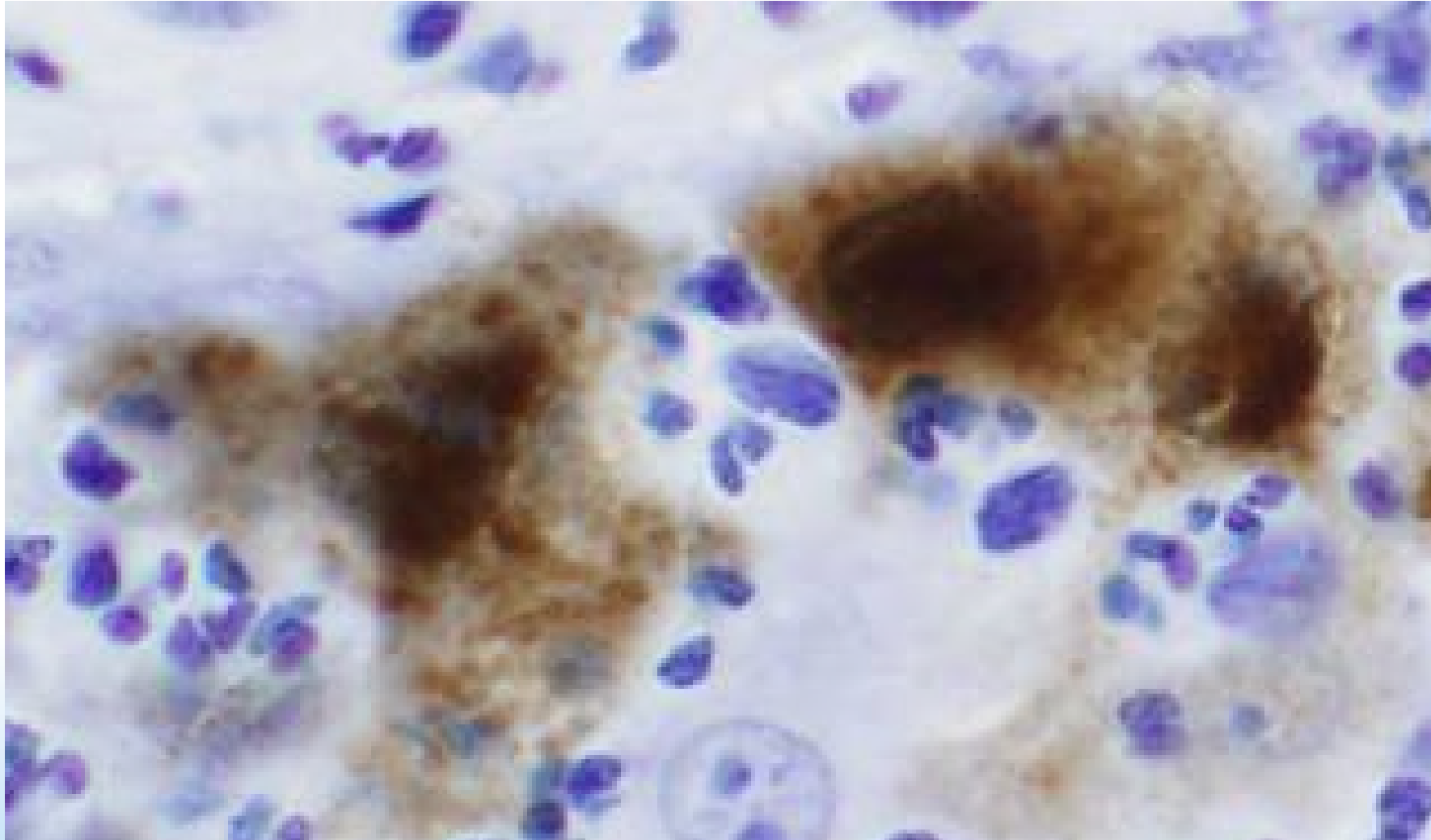
- **Infectious**
- **Lymphoma**
- **Kaposi's sarcoma**
- **Squamous cell carcinoma**
- **Retro-orbital vascular congestion**







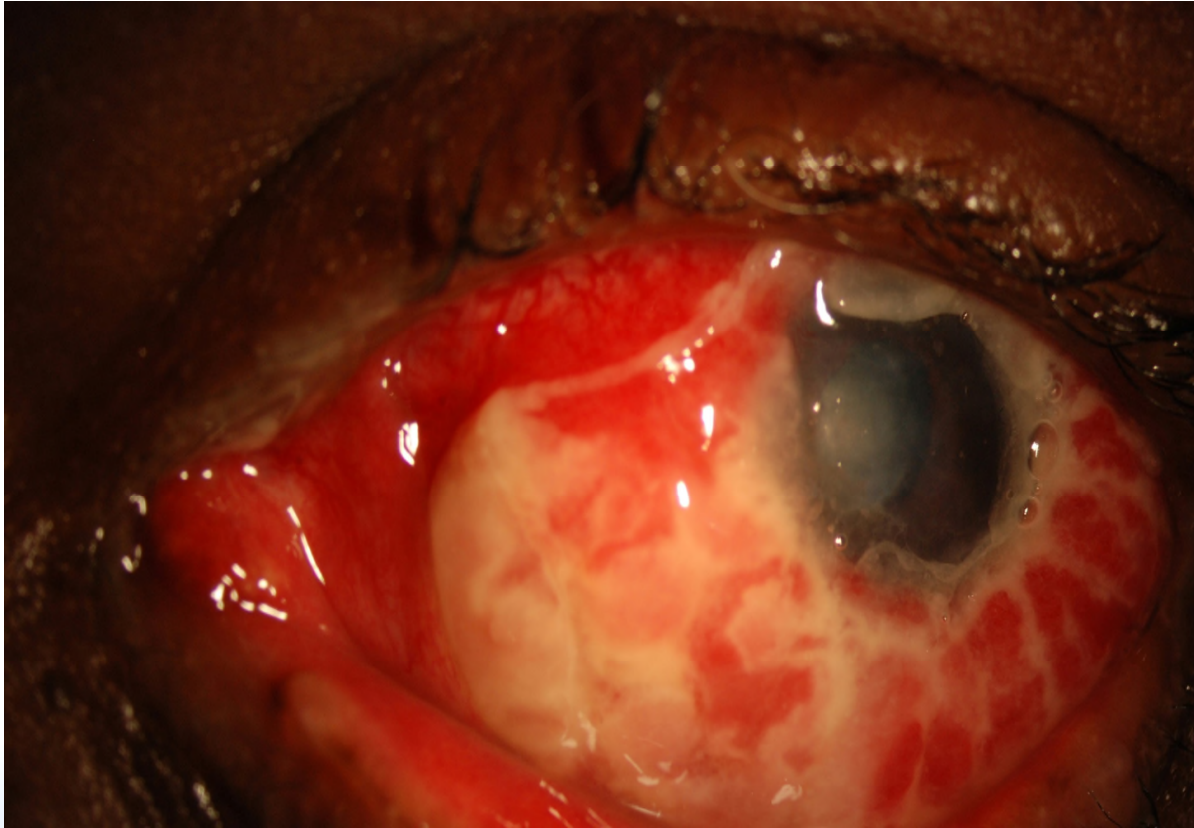
Herpes Simplex Virus



Treatment

- **6 weeks Foscarnet (Foscavir ®)**
- **Indications:**
 - **CMV retinitis**
 - **Mucocutaneous Acyclovir-resistant HSV infection**
- **Va 20/80**





HSV Discussion

- Herpes
 - Lat. < Gk. *Herpes* < *herpein*, “to creep”
- Major cause of blindness in the developed world
- Lifetime latent infection in trigeminal ganglia
- ~400,000 in US with ocular HSV disease
 - Cornea, conjunctiva, eyelid
 - Stromal keratitis, epithelial keratitis, conjunctivitis, blepharitis, uveitis



Conjunctiva

- **Neoplasia**
 - Epithelial lesions
 - Subepithelial lesions
 - Melanocytic lesions

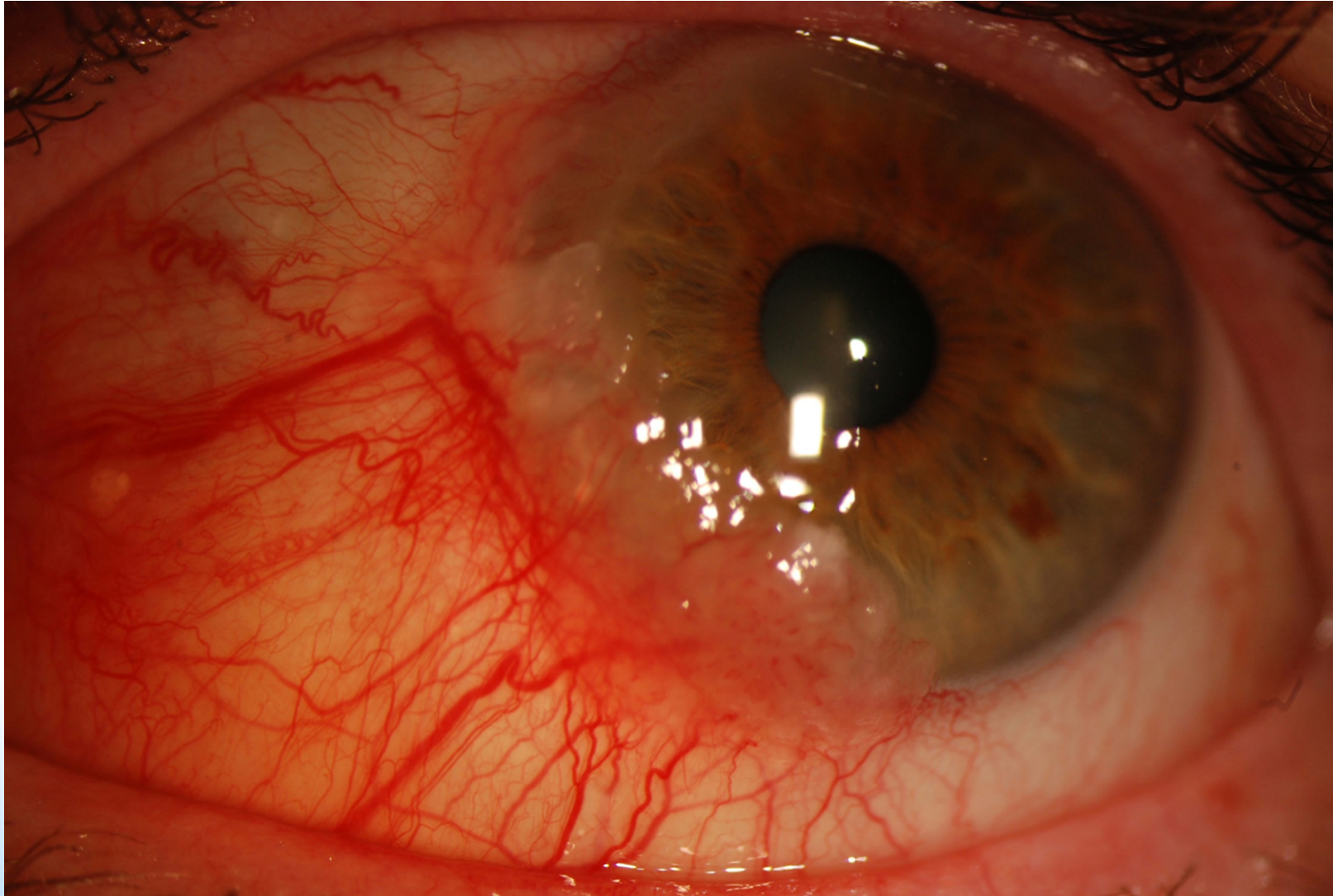


Conjunctiva Squamous Lesions

- **Cornea / Conjunctiva Intraepithelial Neoplasia (CCIN)**
 - **Differential diagnosis: mucoepidermoid carcinoma/adenosquamous carcinoma**
- **Squamous papilloma**

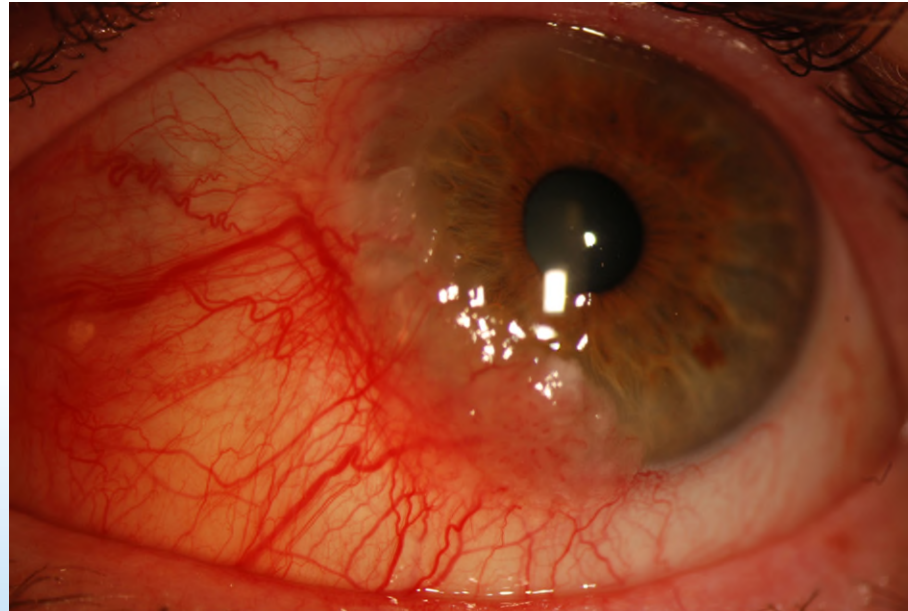


Ocular Surface Squamous Neoplasia

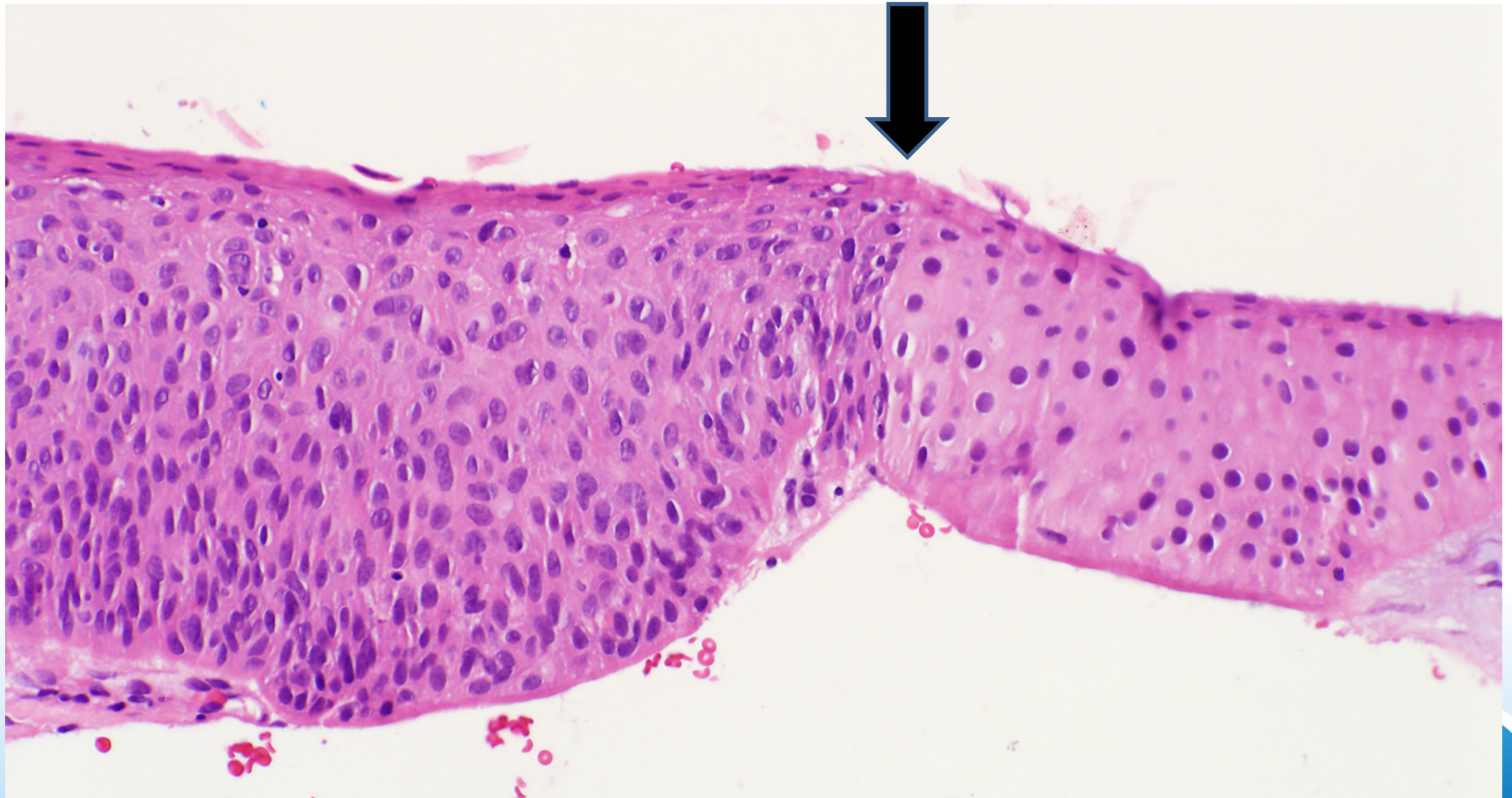


Ocular Surface Squamous Neoplasia

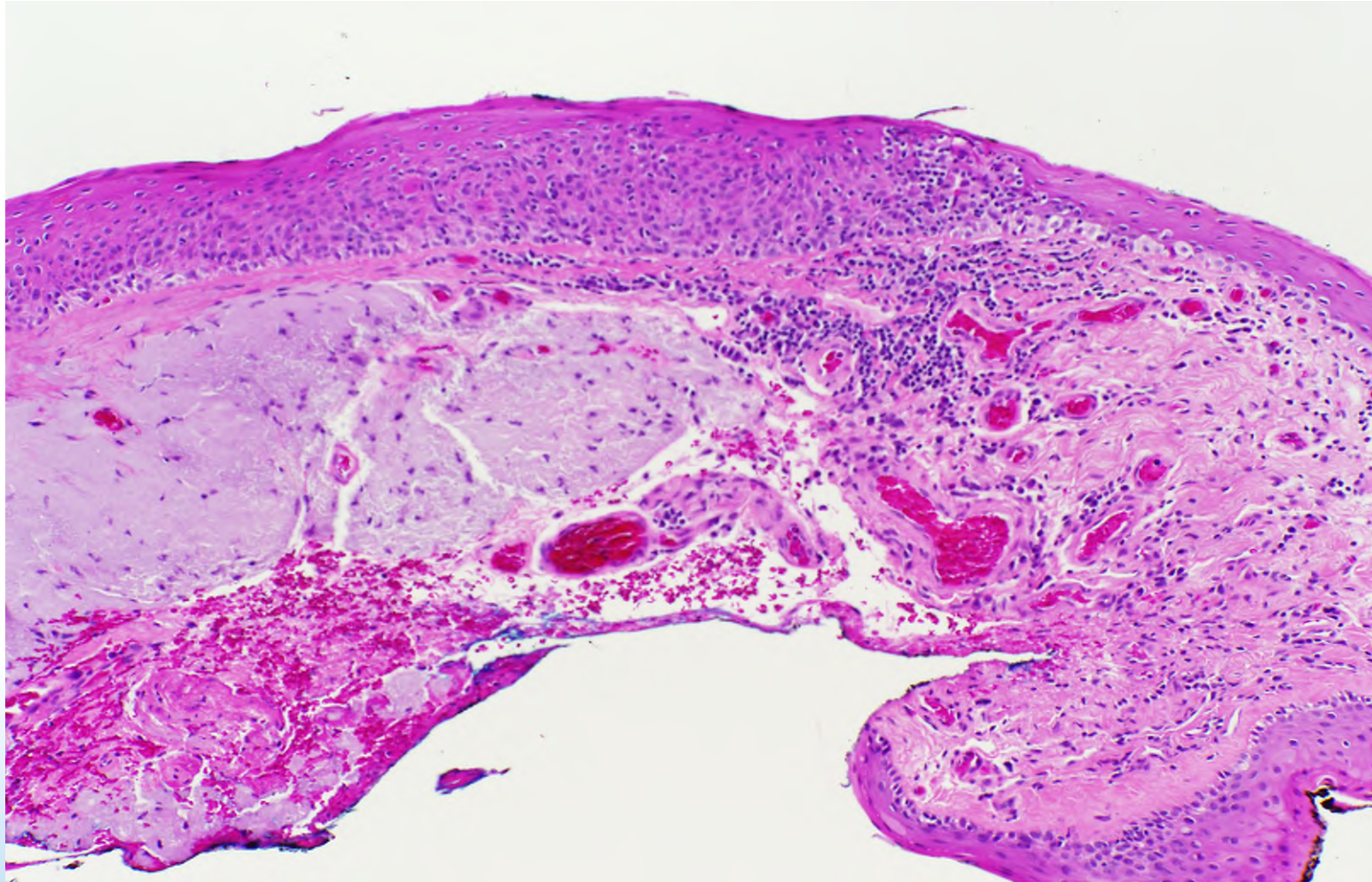
- **Dysplasia: mild, moderate, severe**
- **Squamous cell carcinoma in situ**
- **Invasive squamous cell carcinoma**



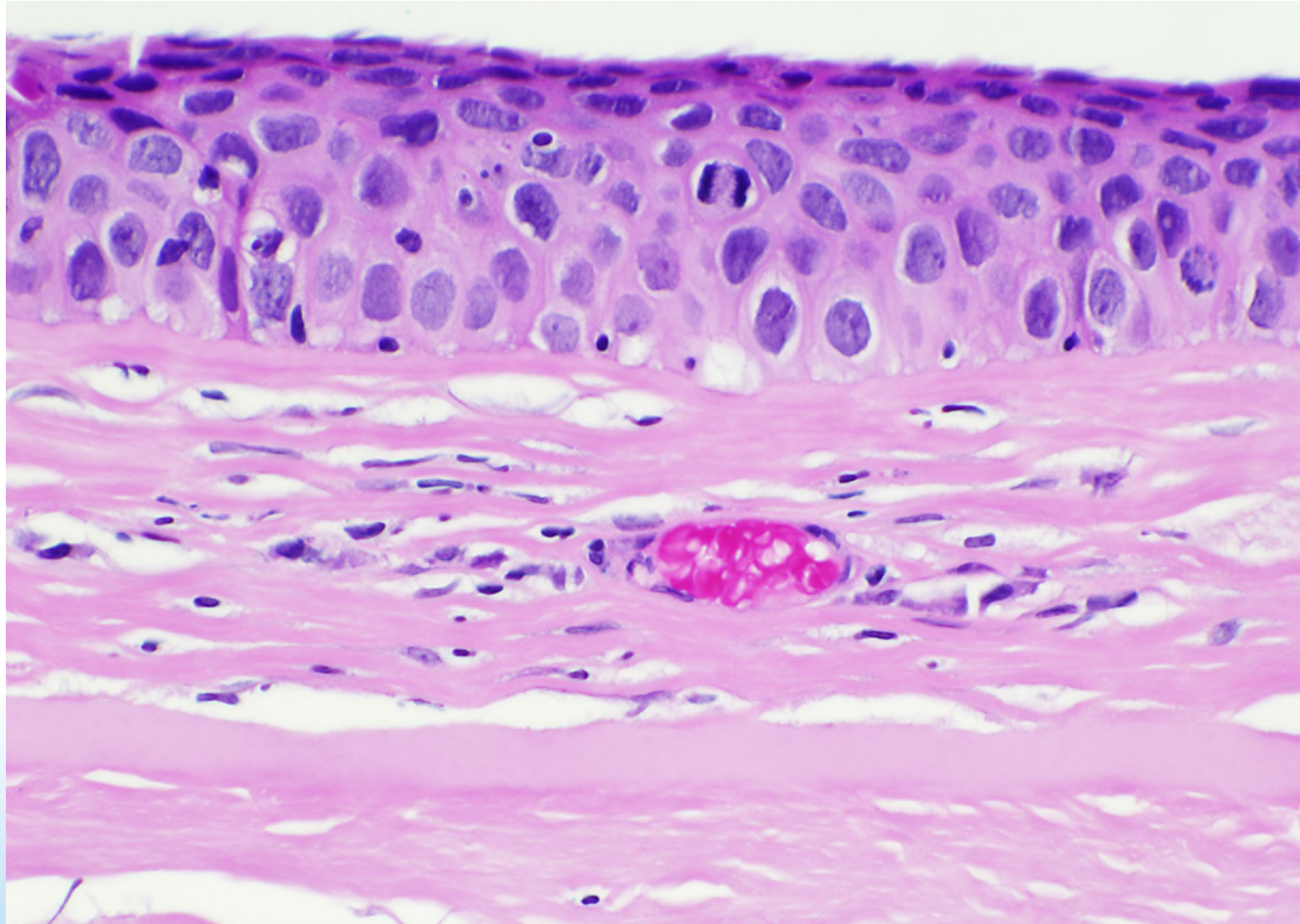
Ocular Surface Squamous Neoplasia



Ocular Surface Squamous Neoplasia (CCIN associated with pterygium)



CCIN involving the cornea



Bowman's layer



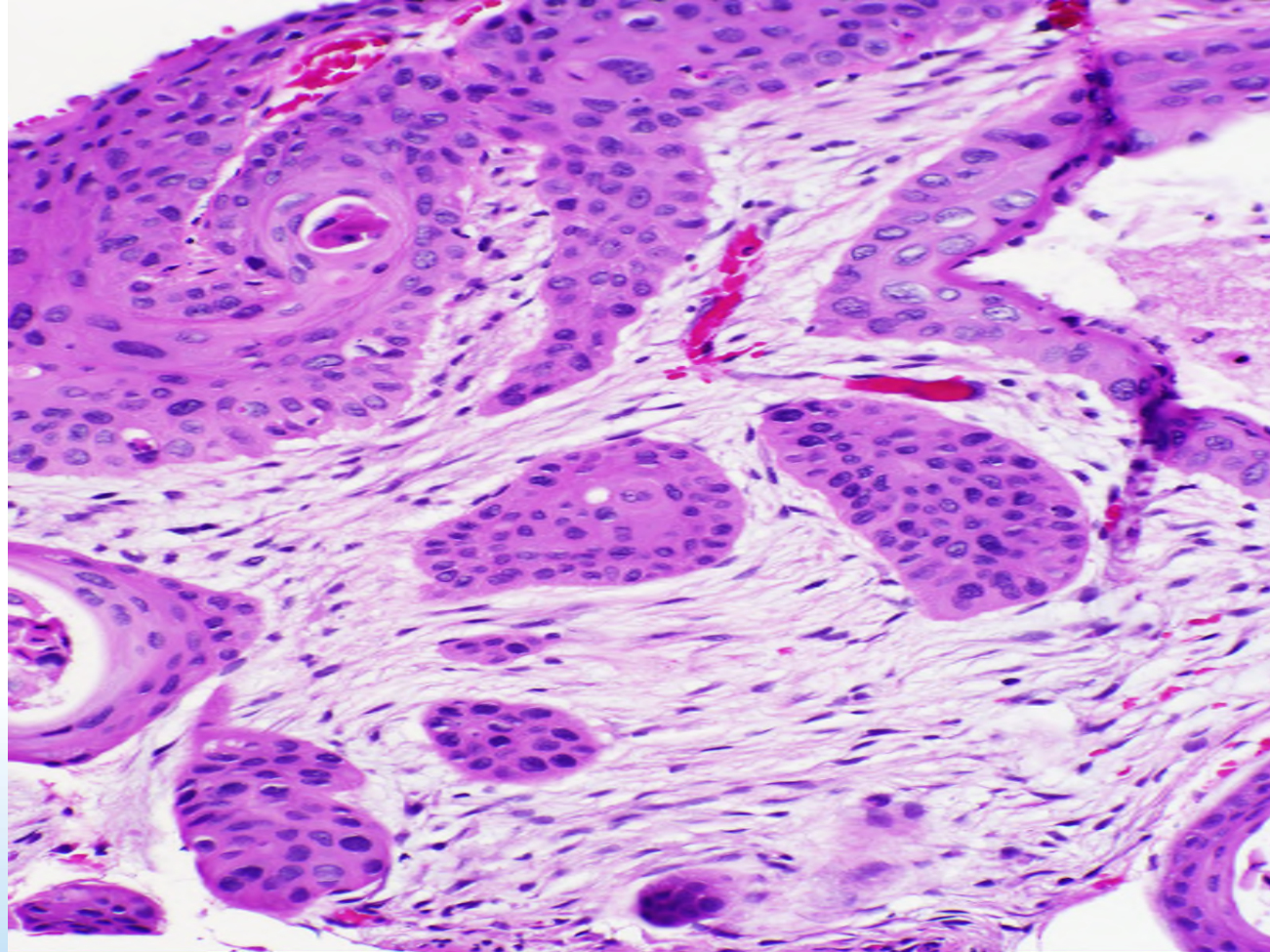
Ocular Surface Squamous Neoplasia (Invasive squamous cell carcinoma)



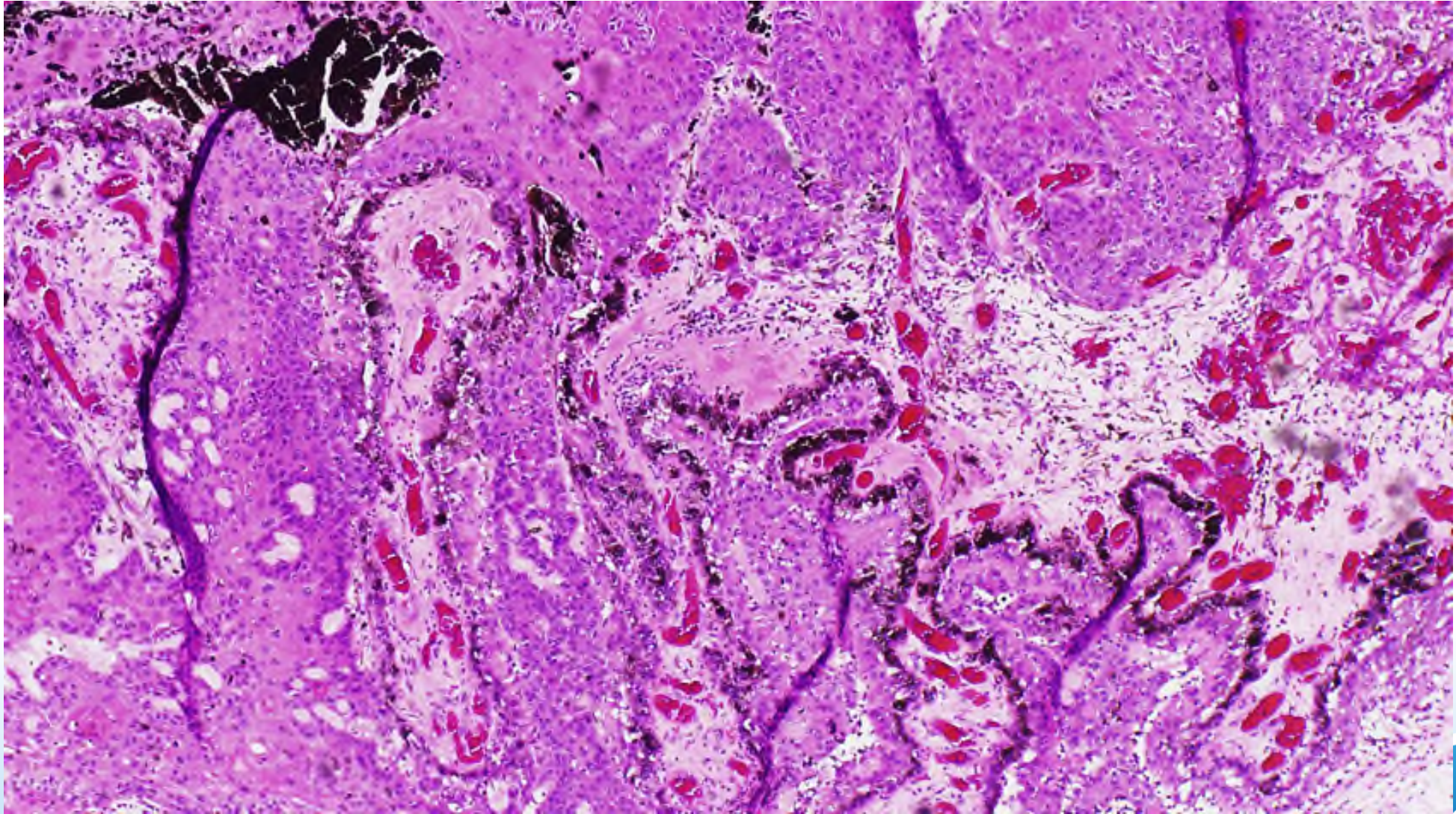
Ocular Surface Squamous Neoplasia (Invasive squamous cell carcinoma)



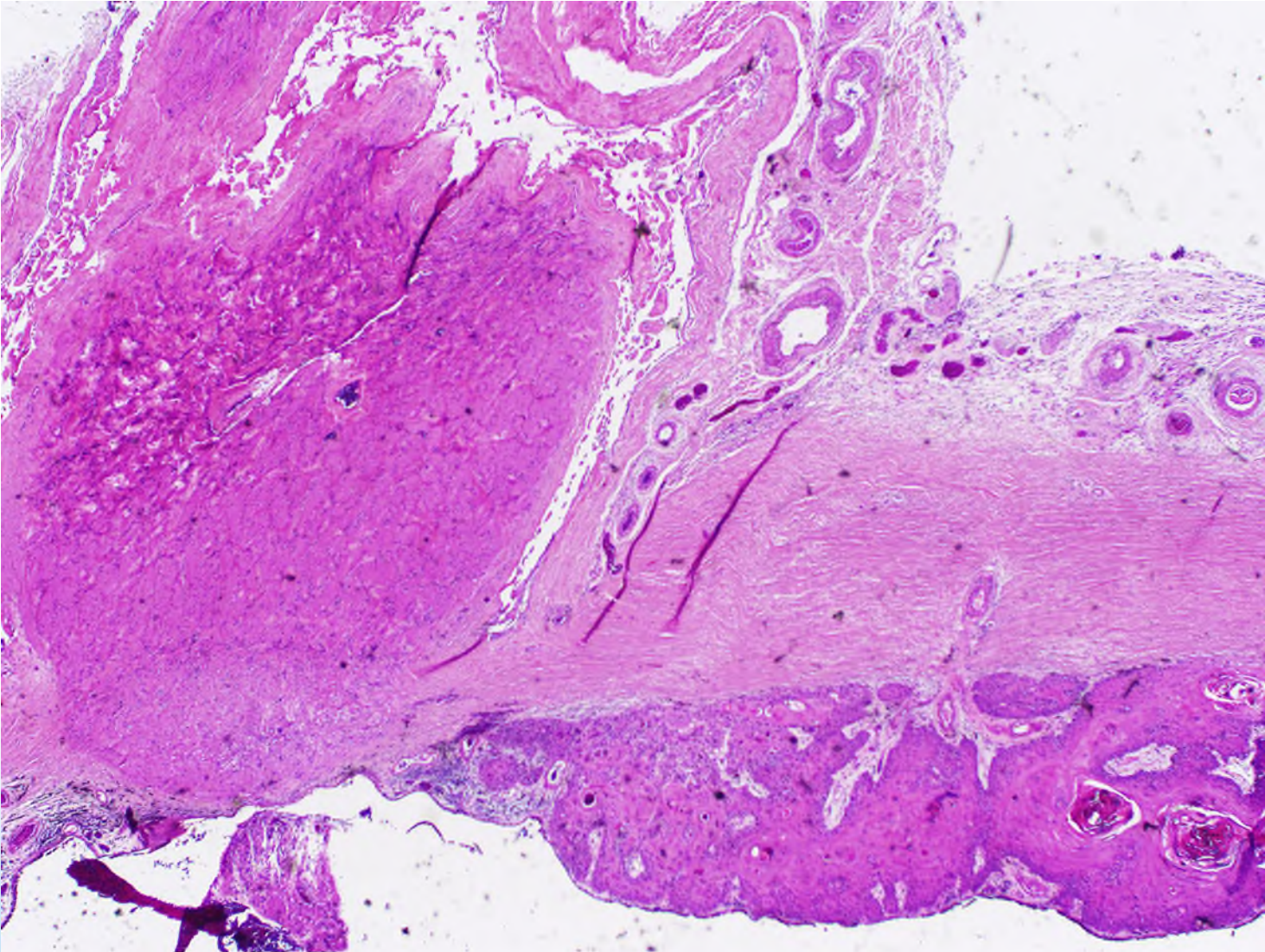
Ocular Surface Squamous Neoplasia (Invasive squamous cell carcinoma)



Invasive squamous cell carcinoma with intraocular extension: ciliary body



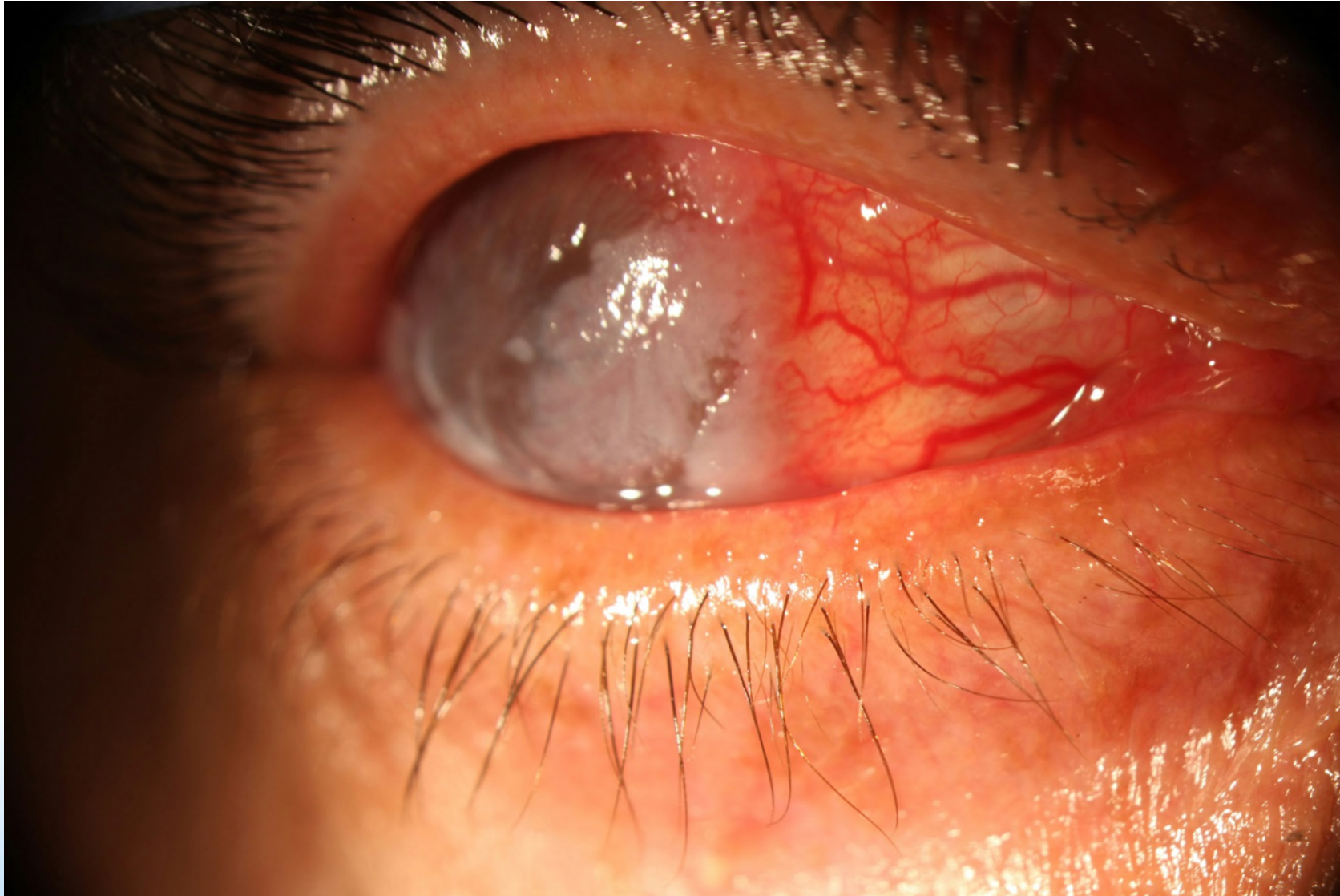
Invasive squamous cell carcinoma with intraocular extension to optic nerve



Hereditary Benign Intraepithelial Dyskeratosis

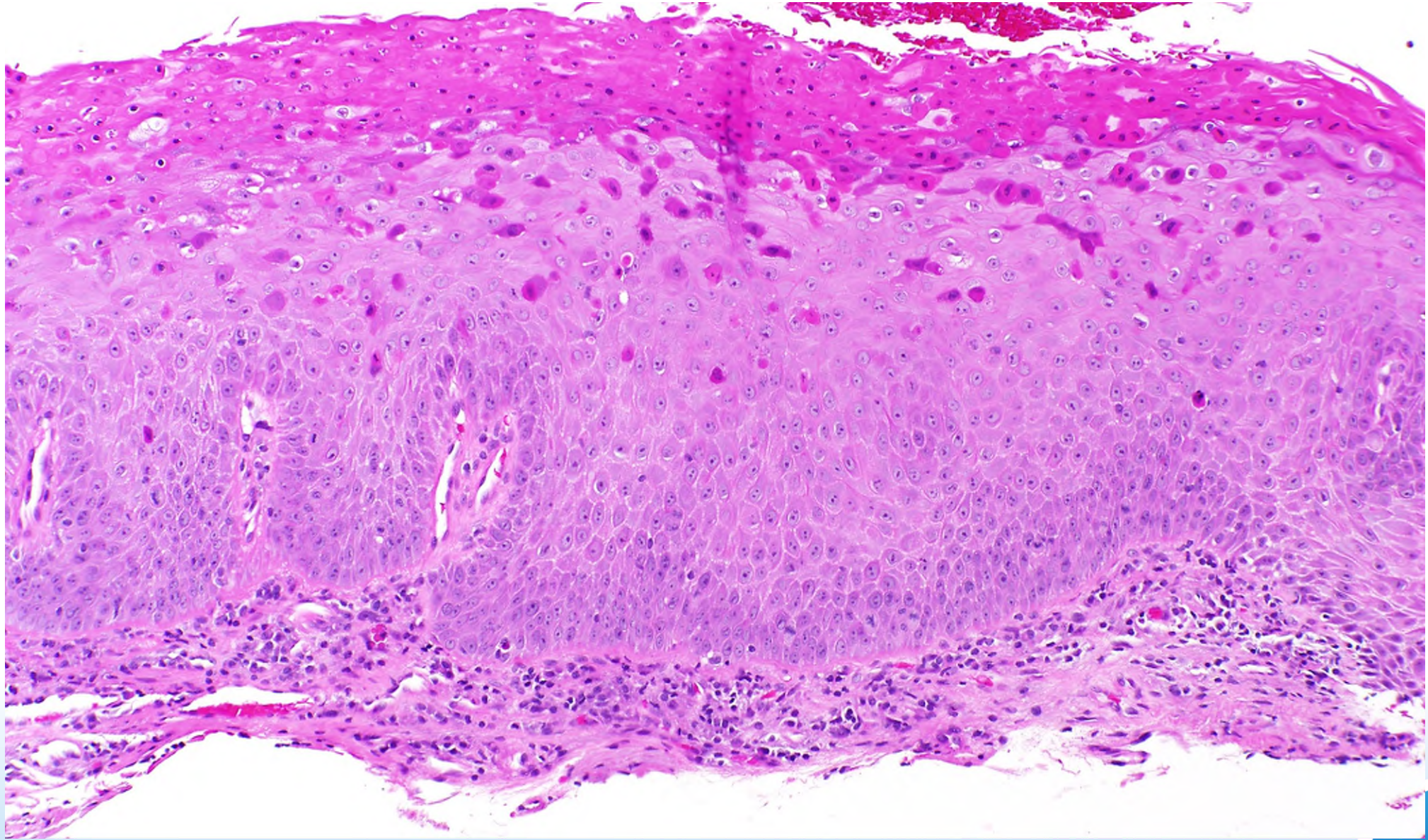


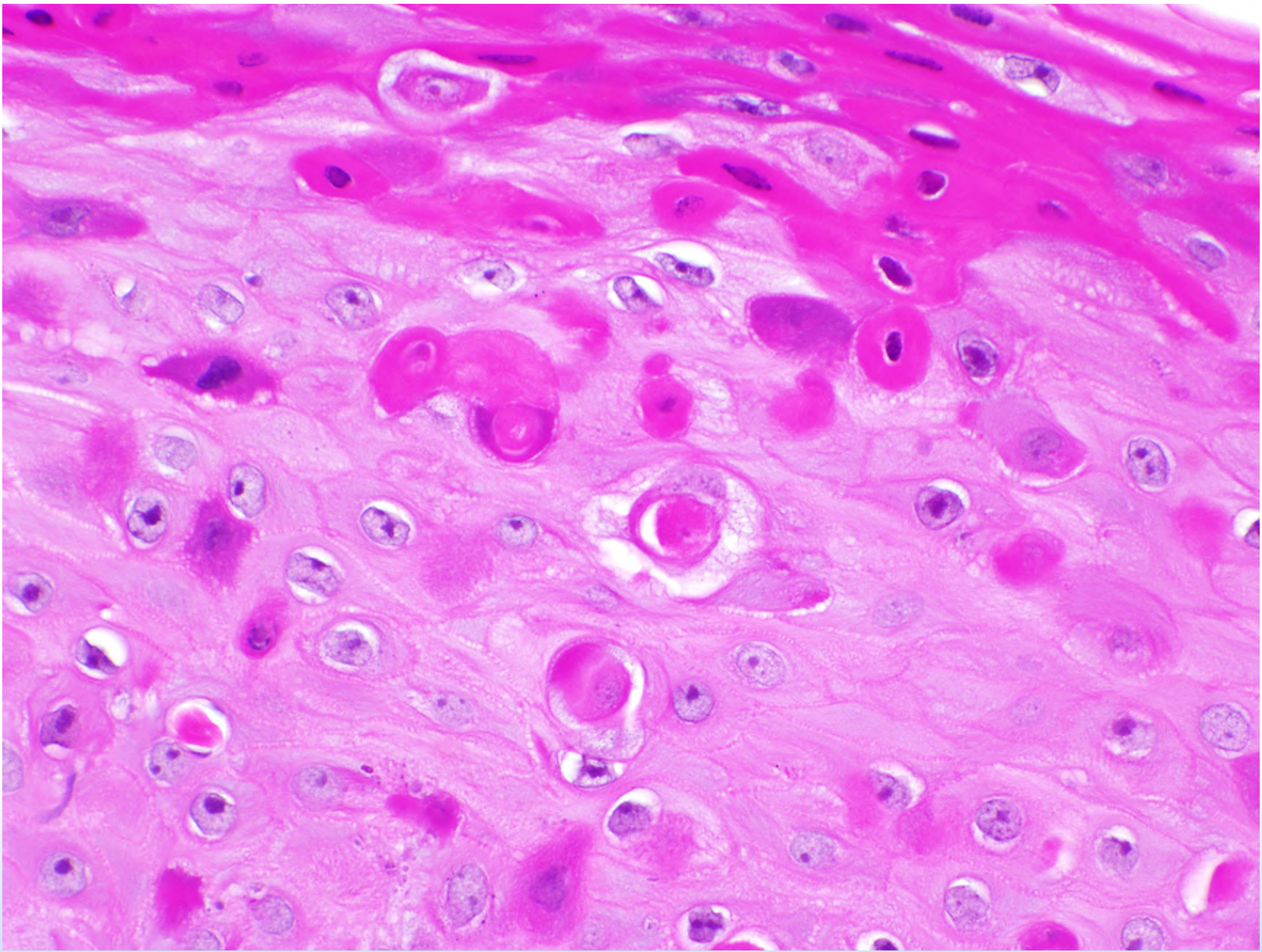
Hereditary Benign Intraepithelial Dyskeratosis

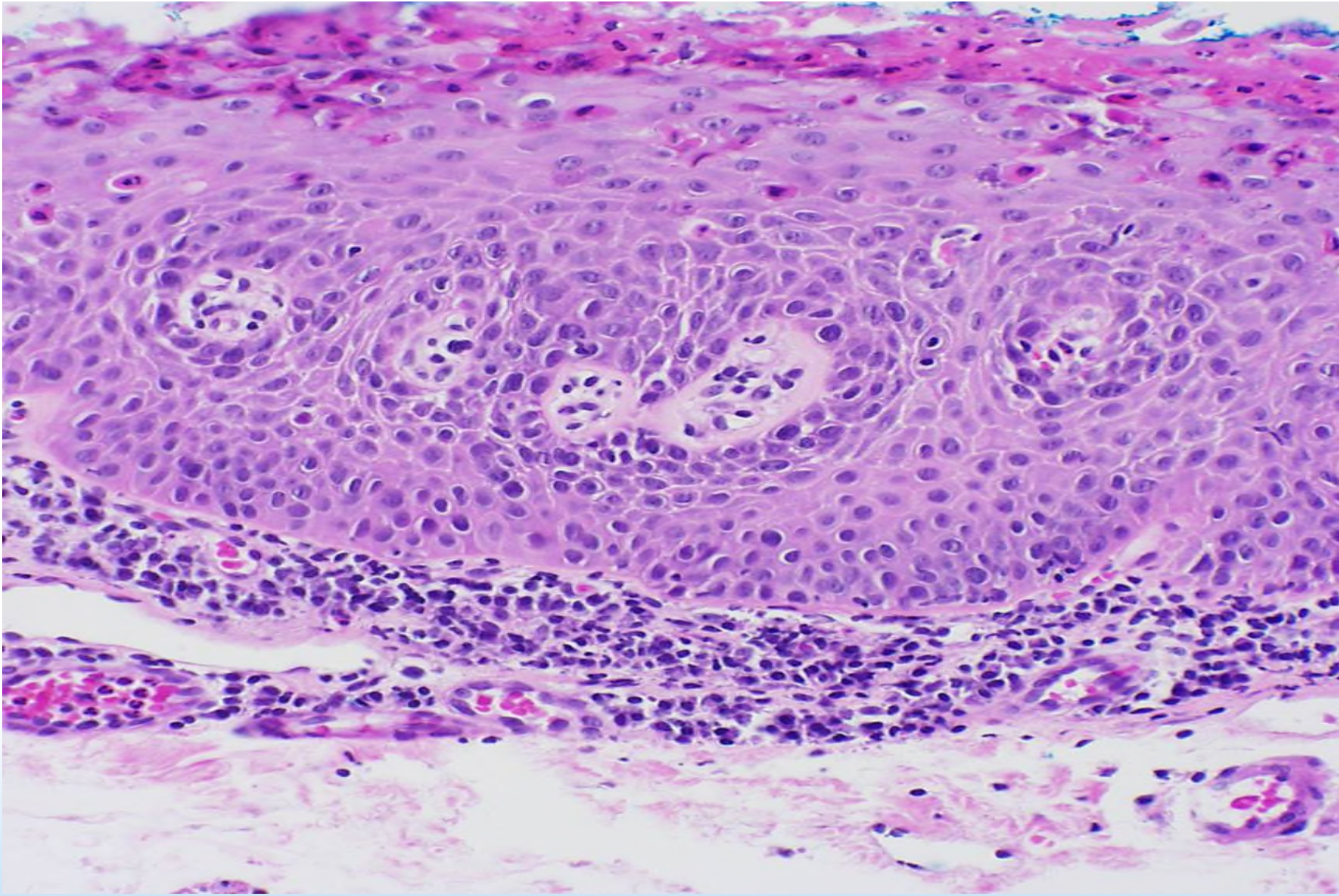


Hereditary Benign Intraepithelial Dyskeratosis

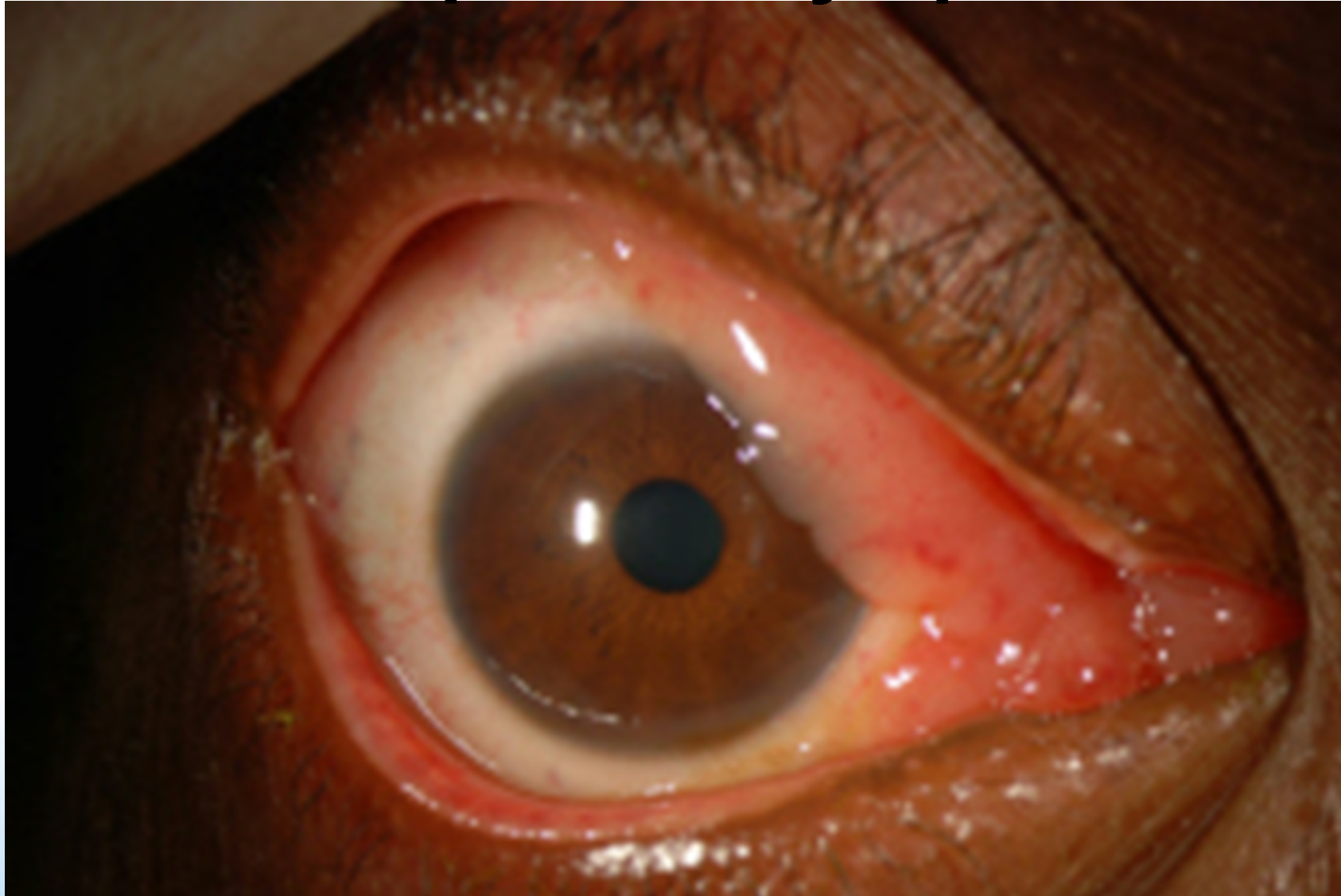








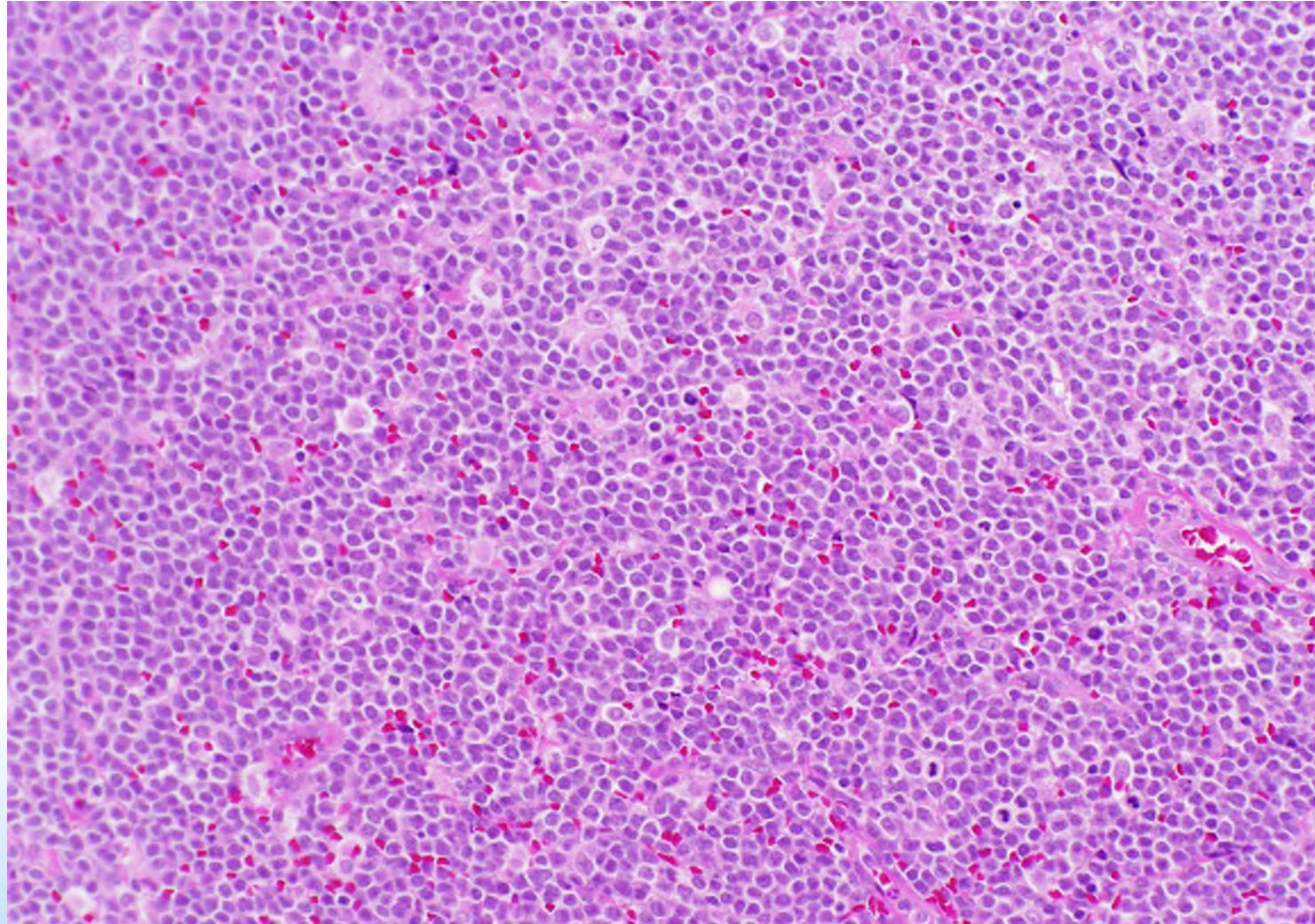
Salmon patch – Lymphoma



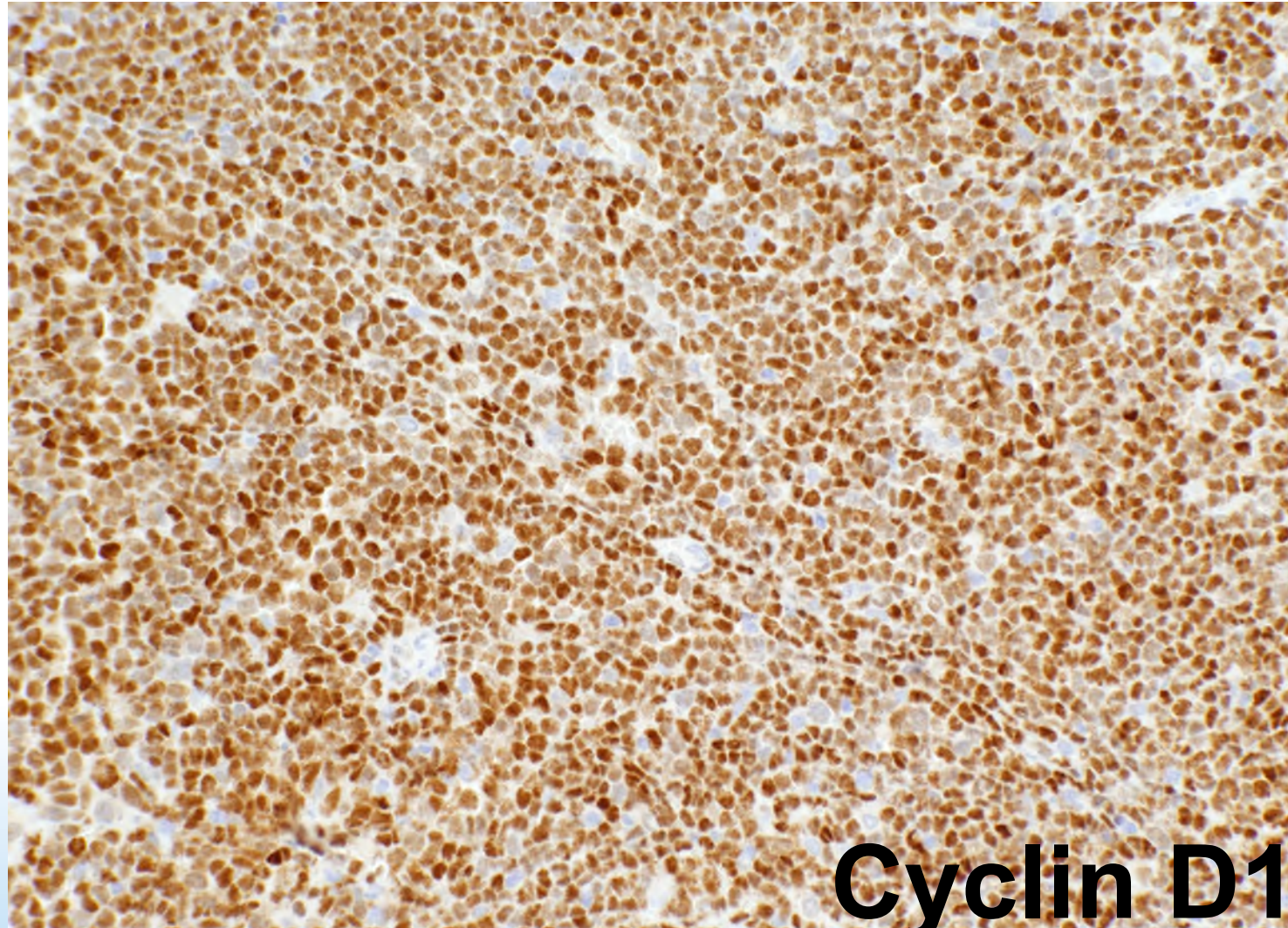
Mantle cell Lymphoma



Mantle cell Lymphoma



Mantle cell Lymphoma



Cyclin D1

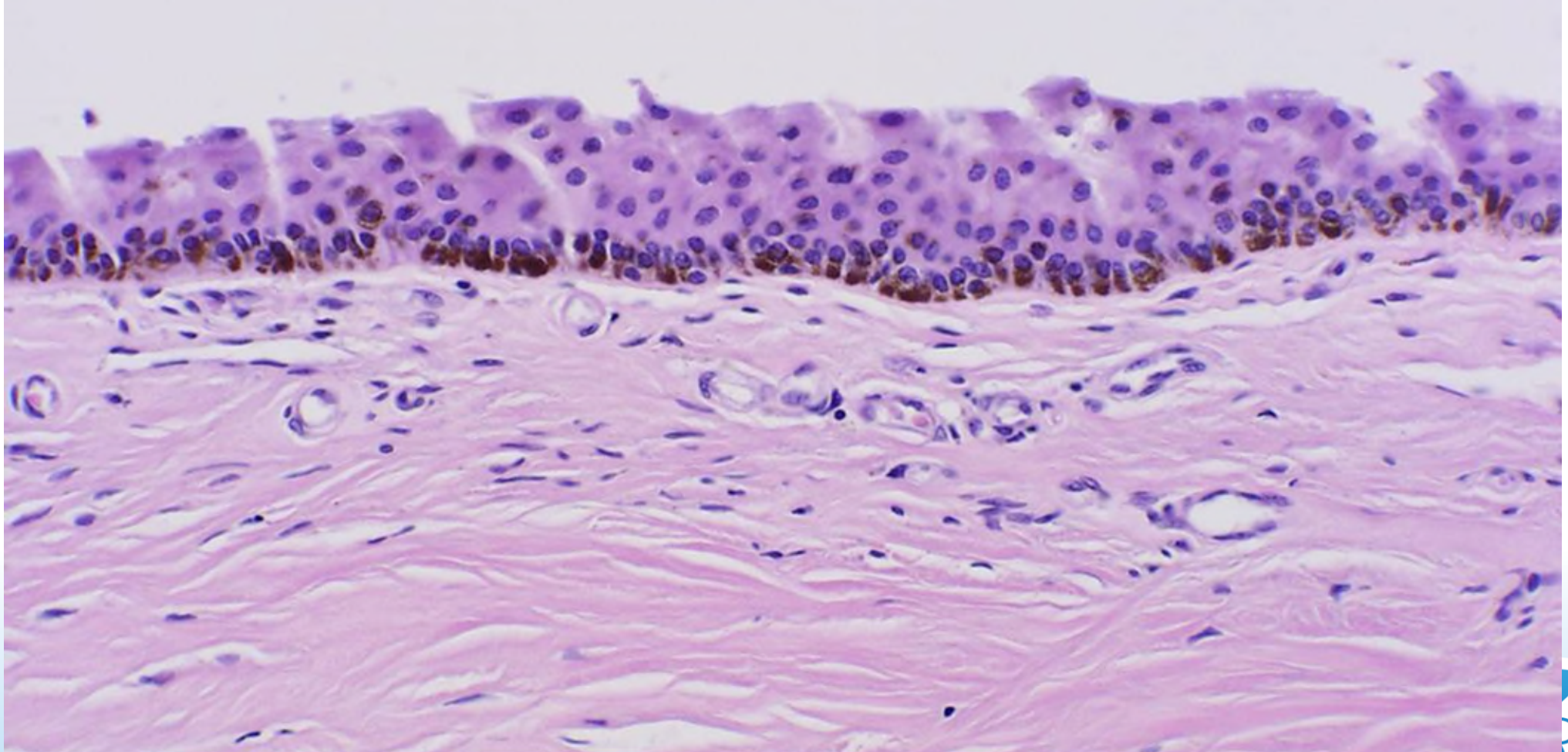


Conjunctiva Melanocytic Lesions

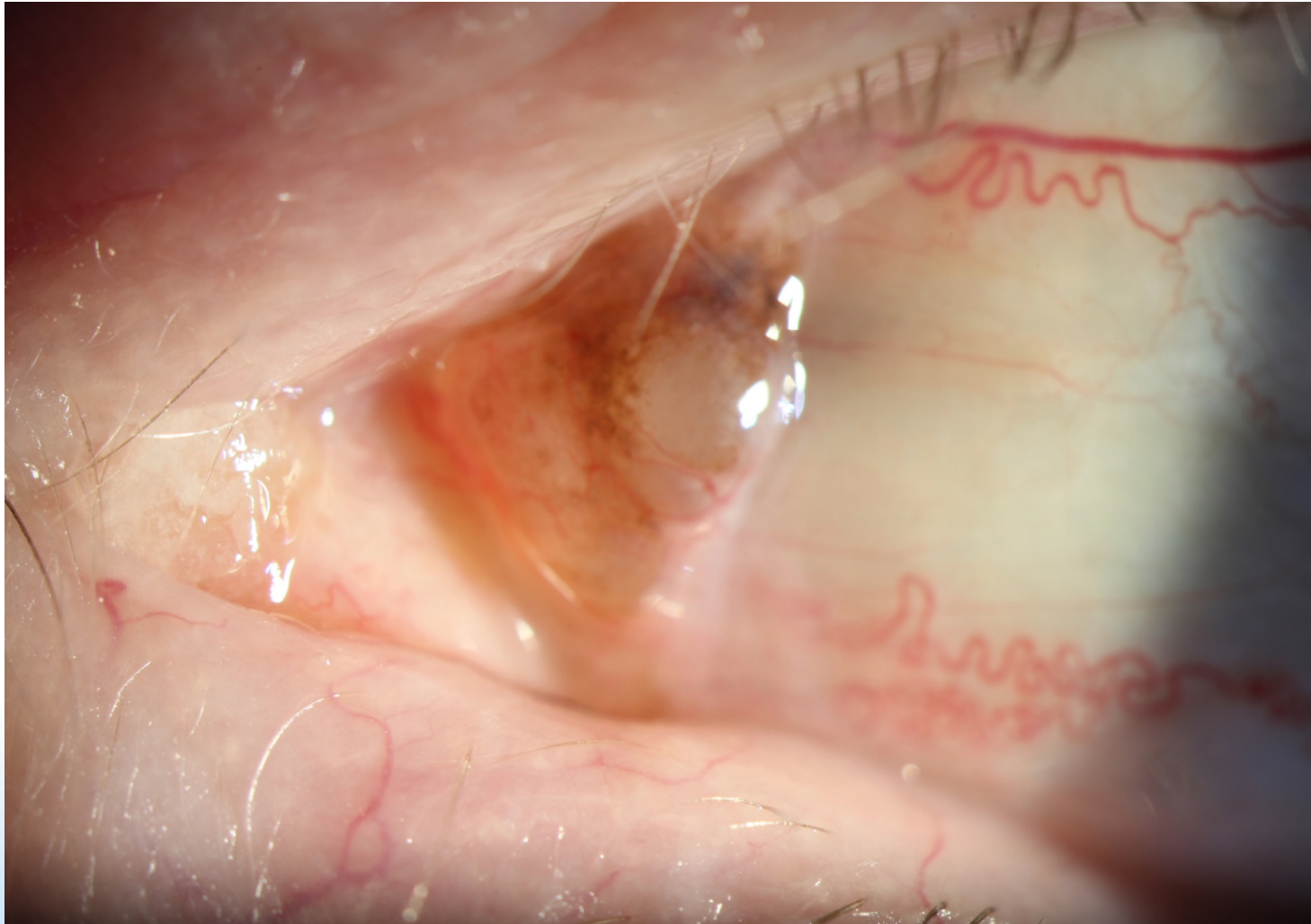
- **Melanosis**
 - Complexion-associated melanosis
 - Ephelis (freckle)
- **Conjunctival Nevi**
- **Conjunctival Melanocytic Intraepithelial Neoplasia (C-MIN) // Primary Acquired Melanosis (PAM)**
 - Without atypia
 - With atypia
 - Malignant melanoma in situ
- **Invasive malignant melanoma**



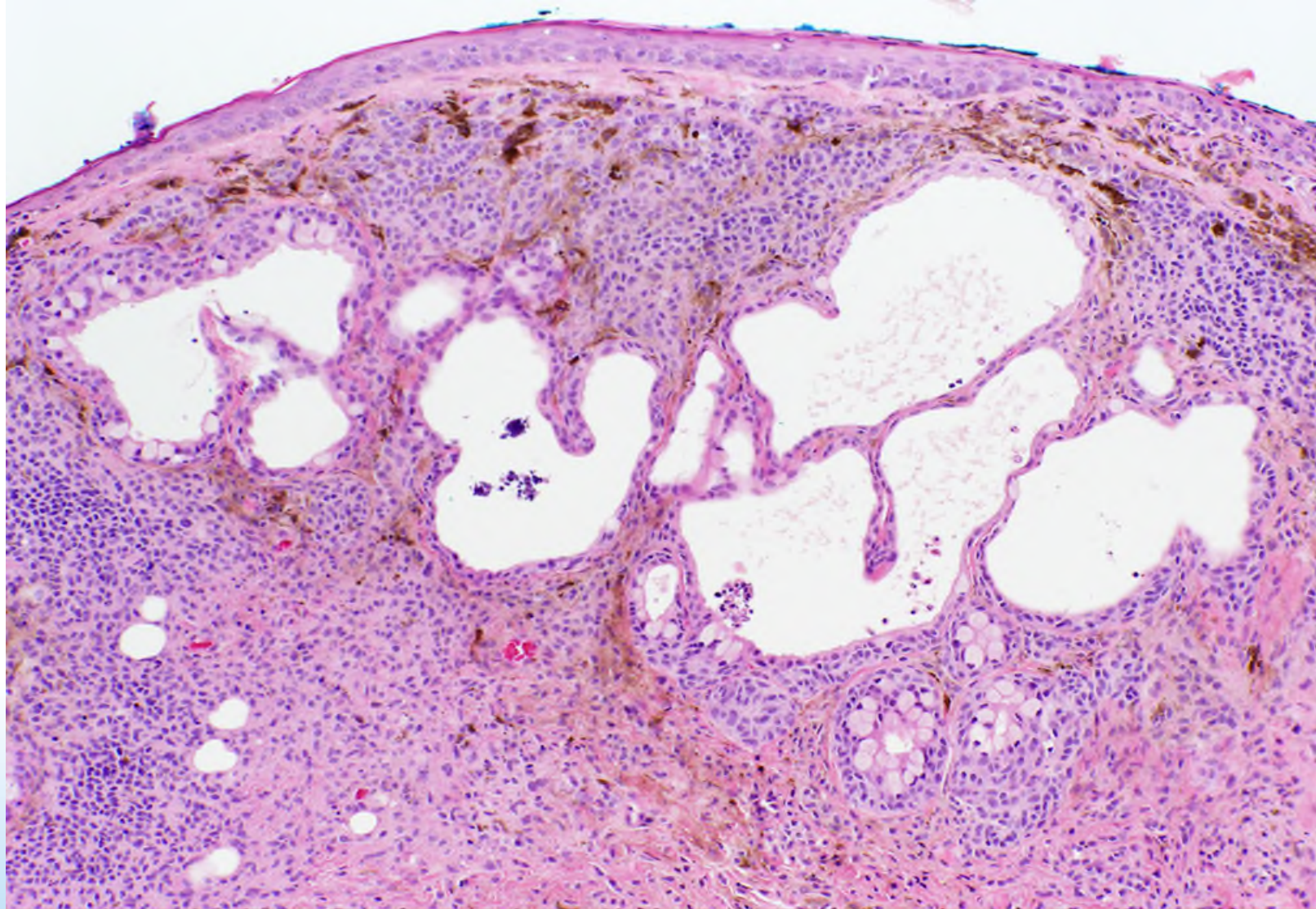
Complexion-Associated Melanosis



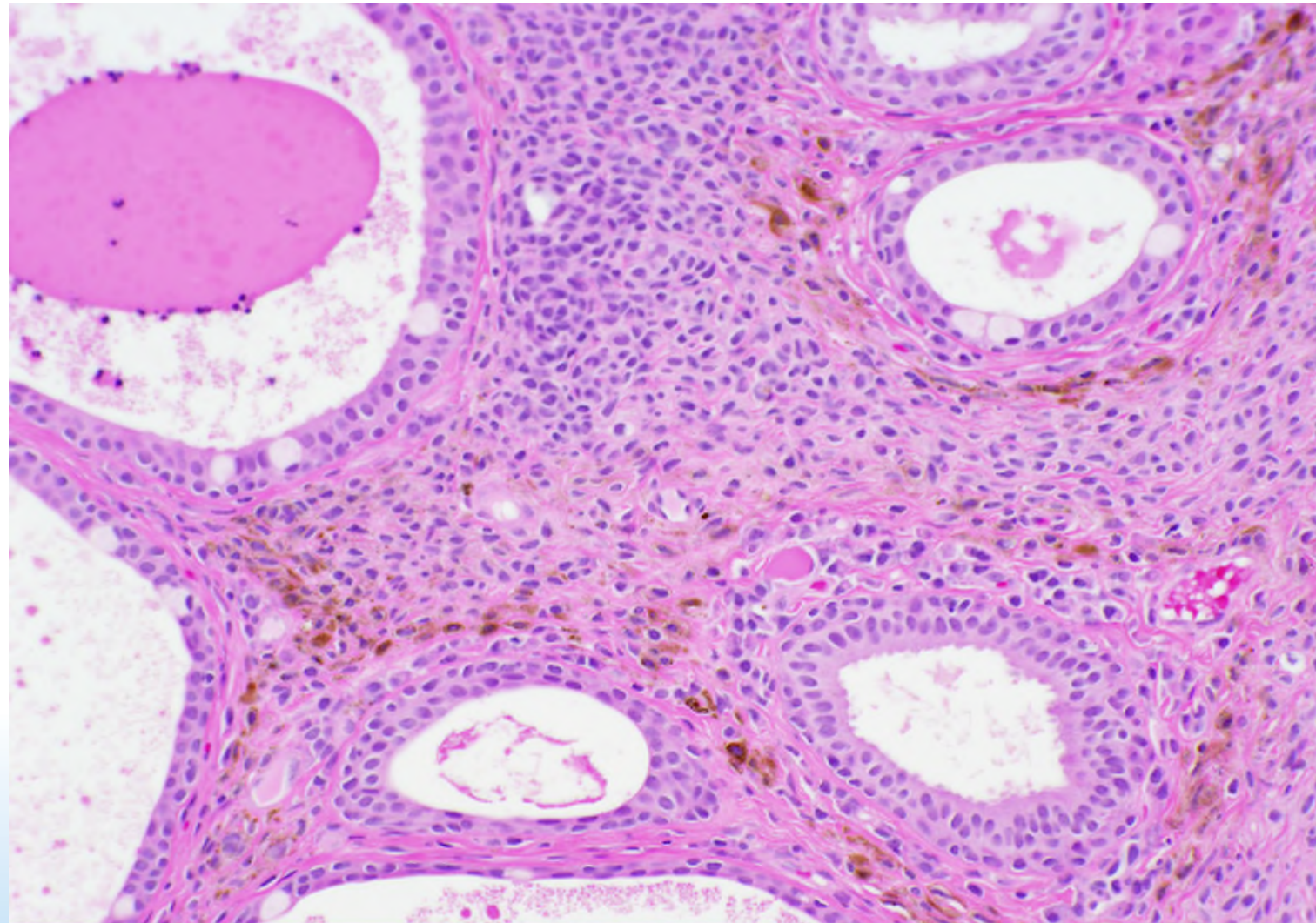
Cystic Compound Nevus



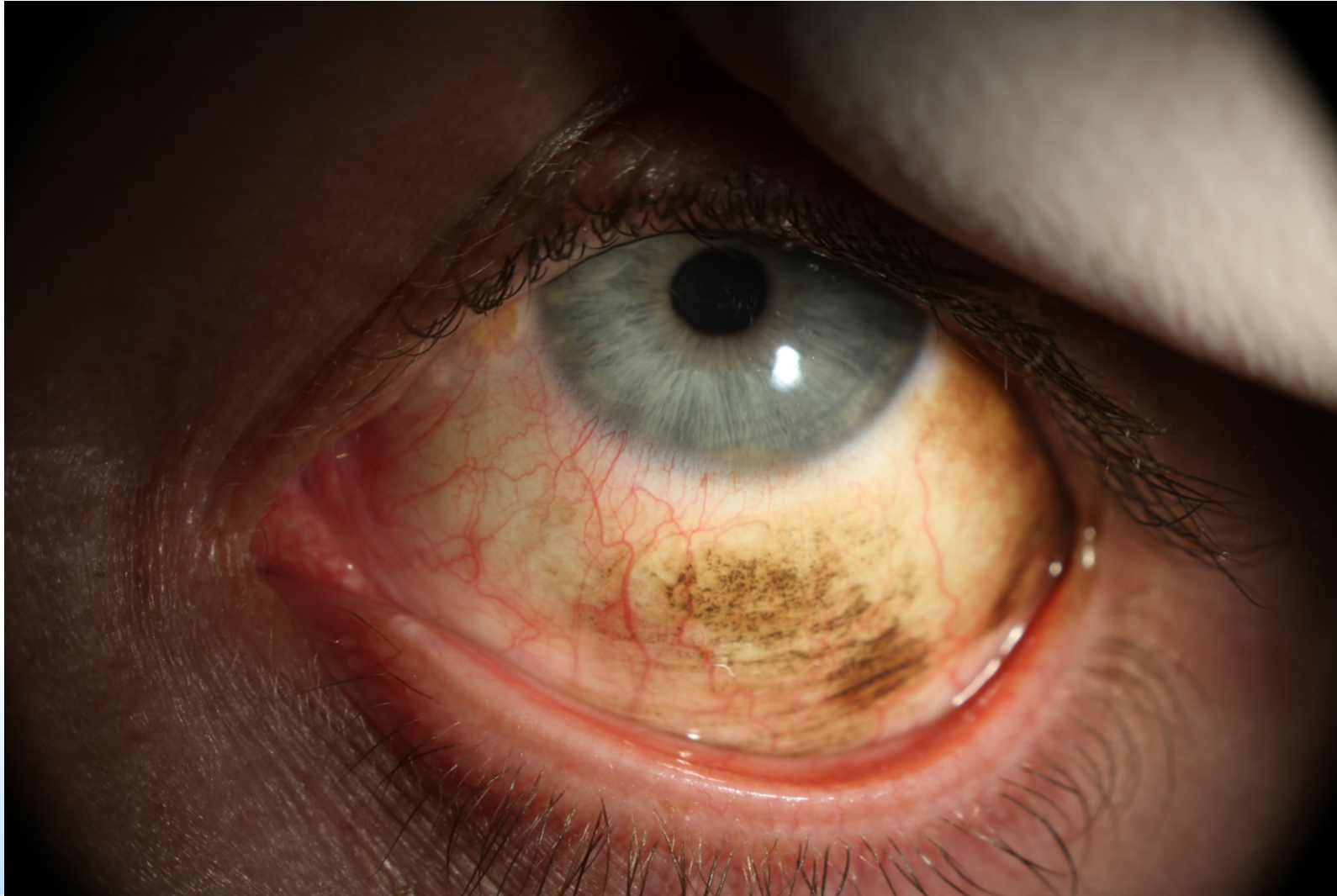
Conjunctival Cystic Compound Nevus

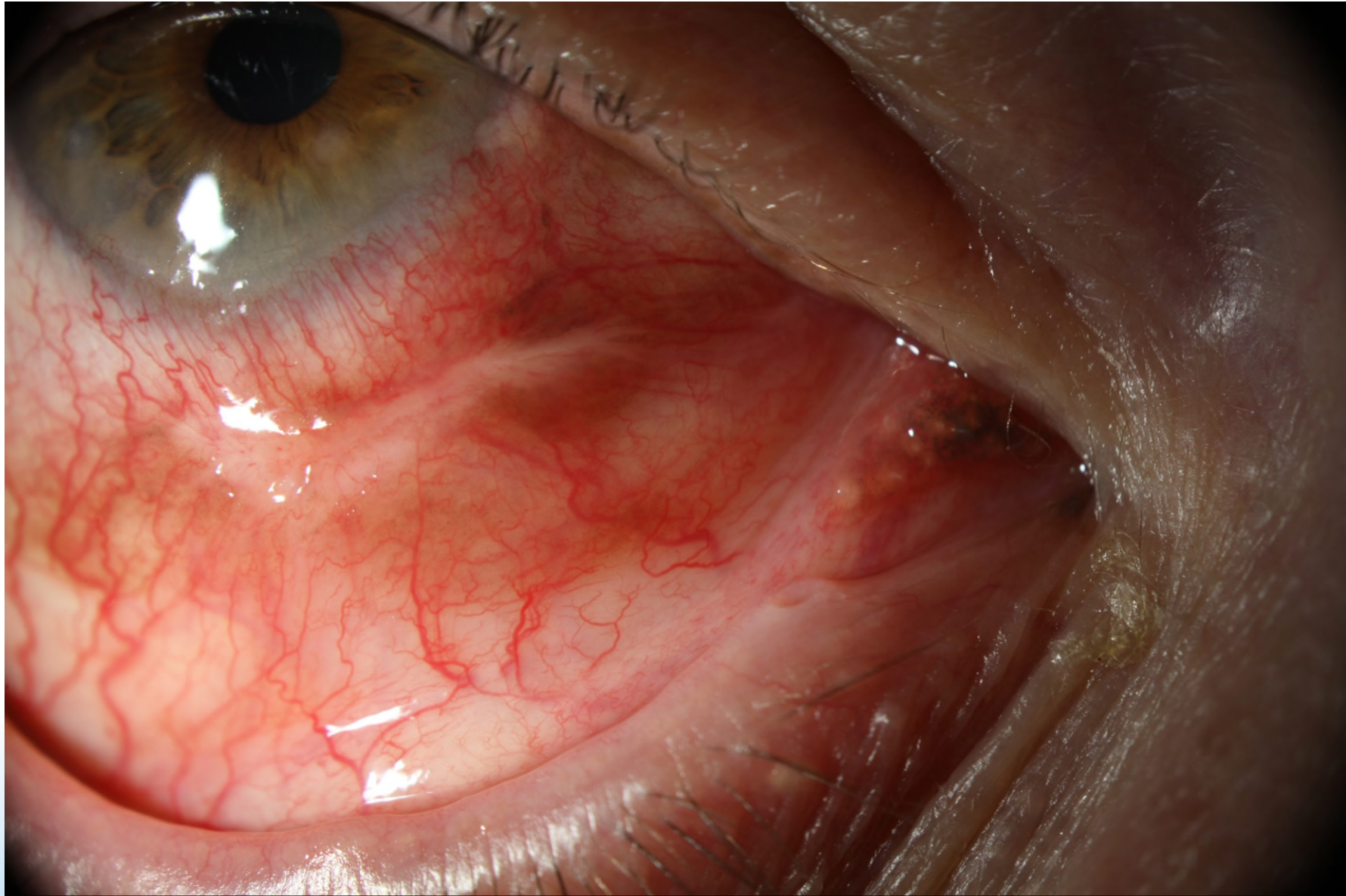


Conjunctival Cystic Compound Nevus -- epithelium, goblet cells

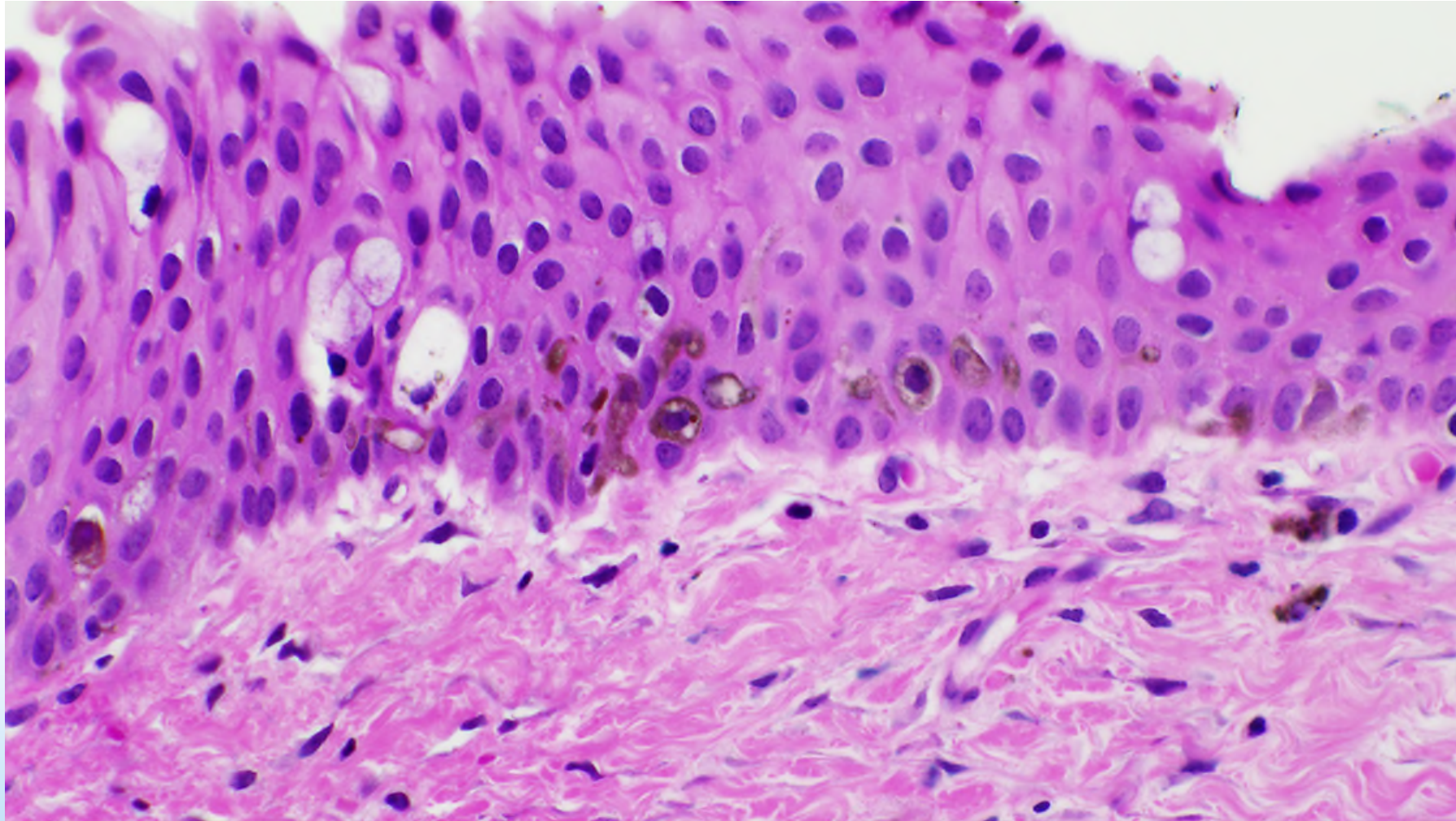


Conjunctival Melanocytic Intraepithelial Neoplasia (C-MIN) Primary Acquired Melanosis (PAM)

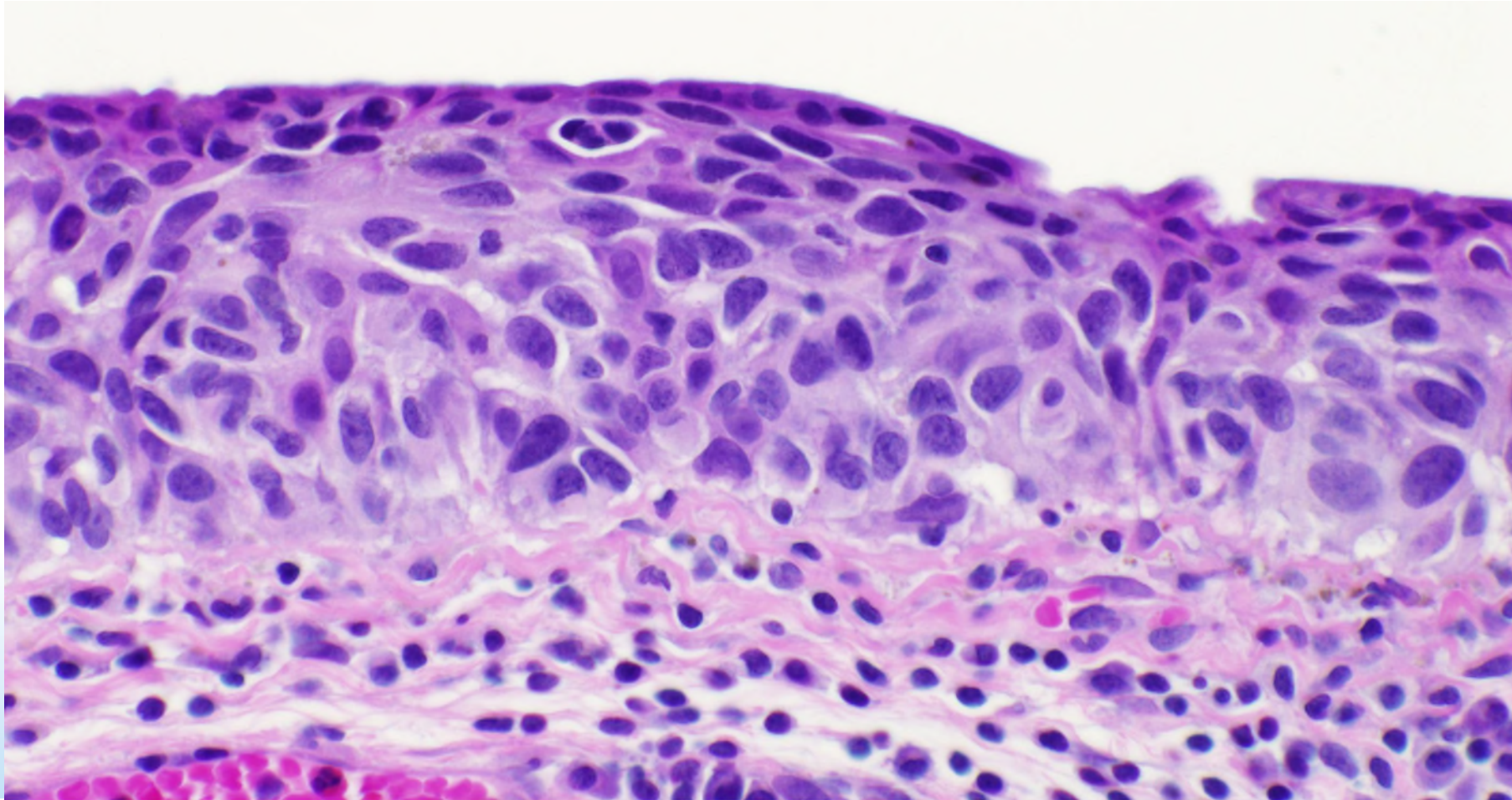




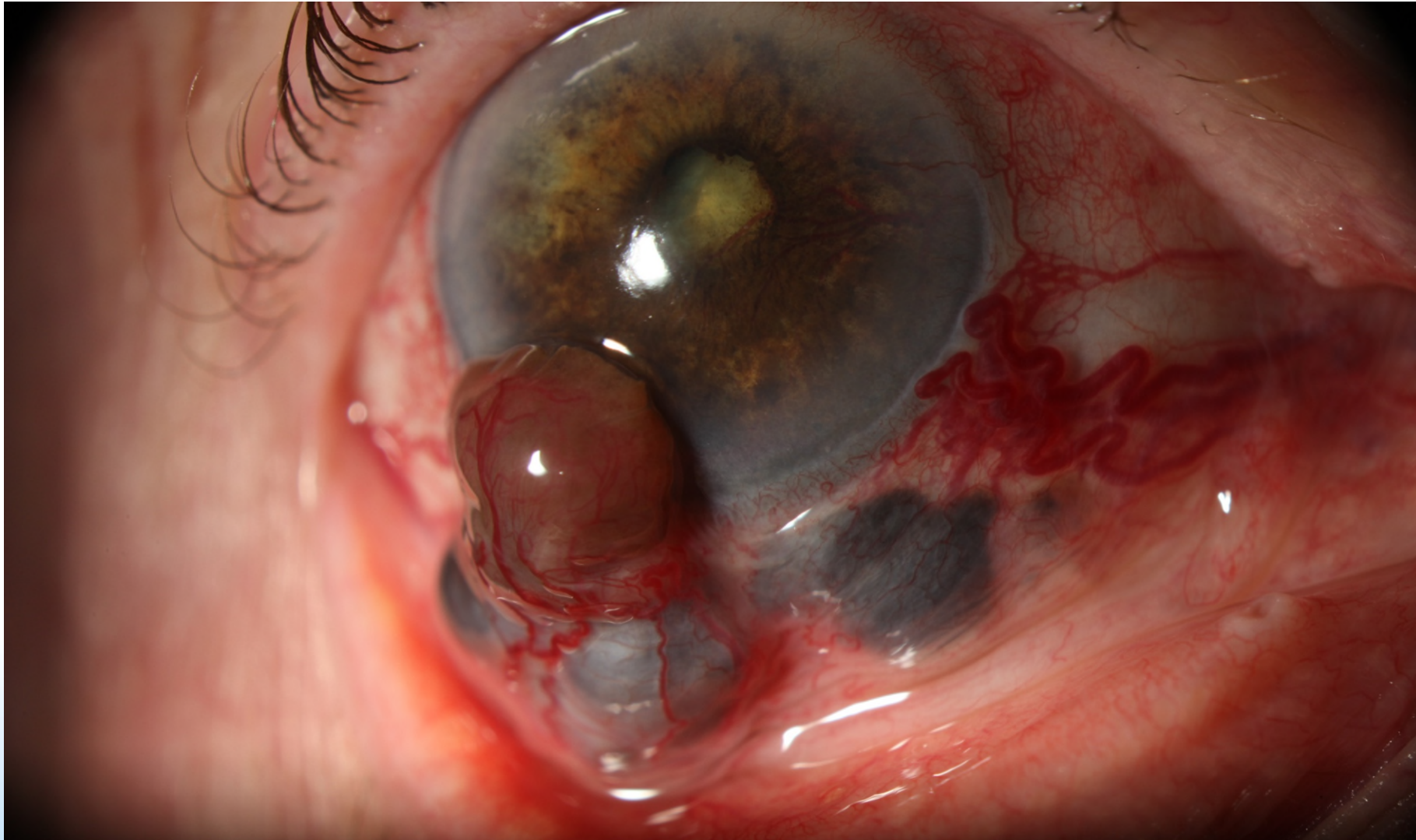
PAM with mild atypia

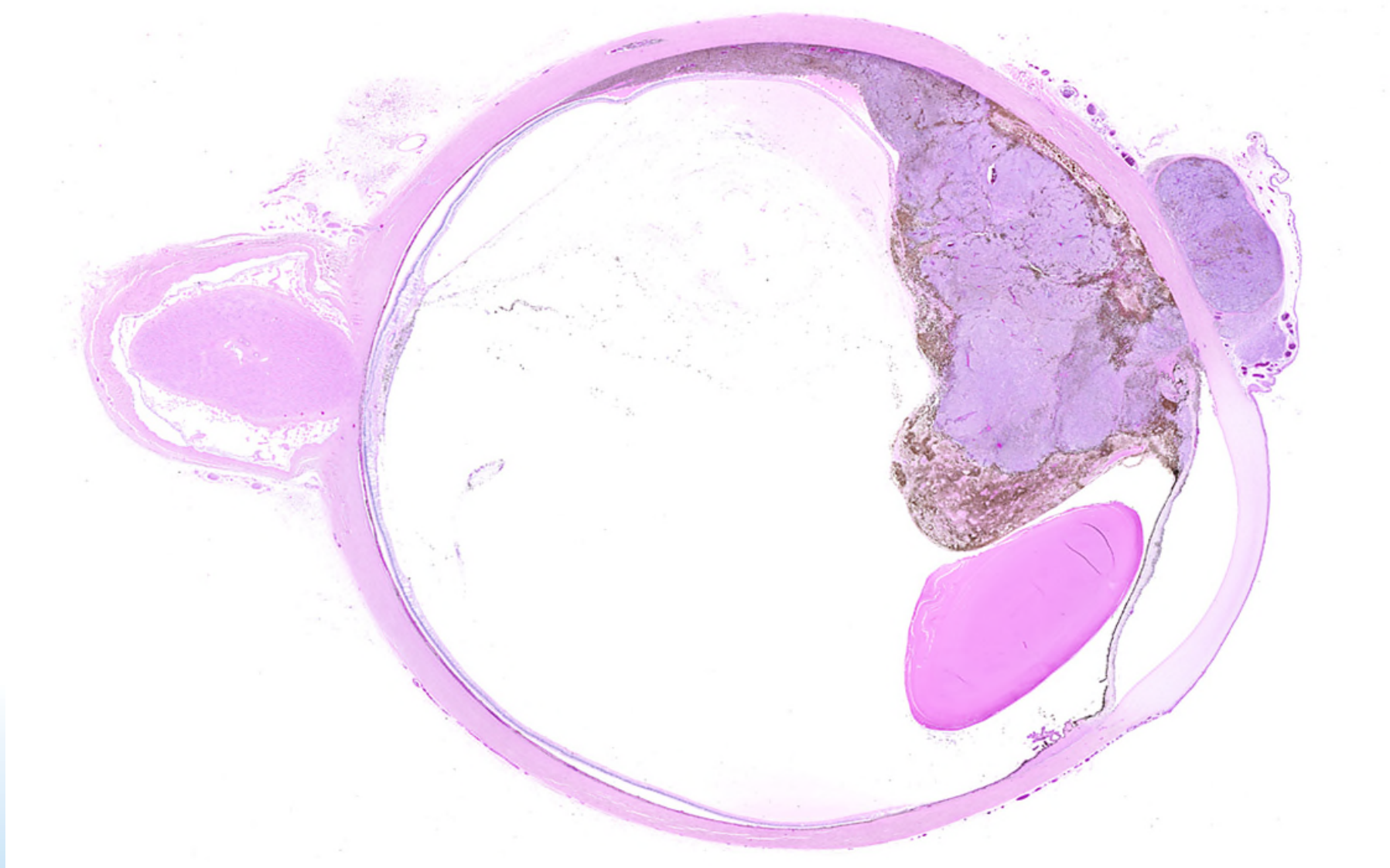


PAM with severe atypia (malignant melanoma in situ)



Malignant Melanoma



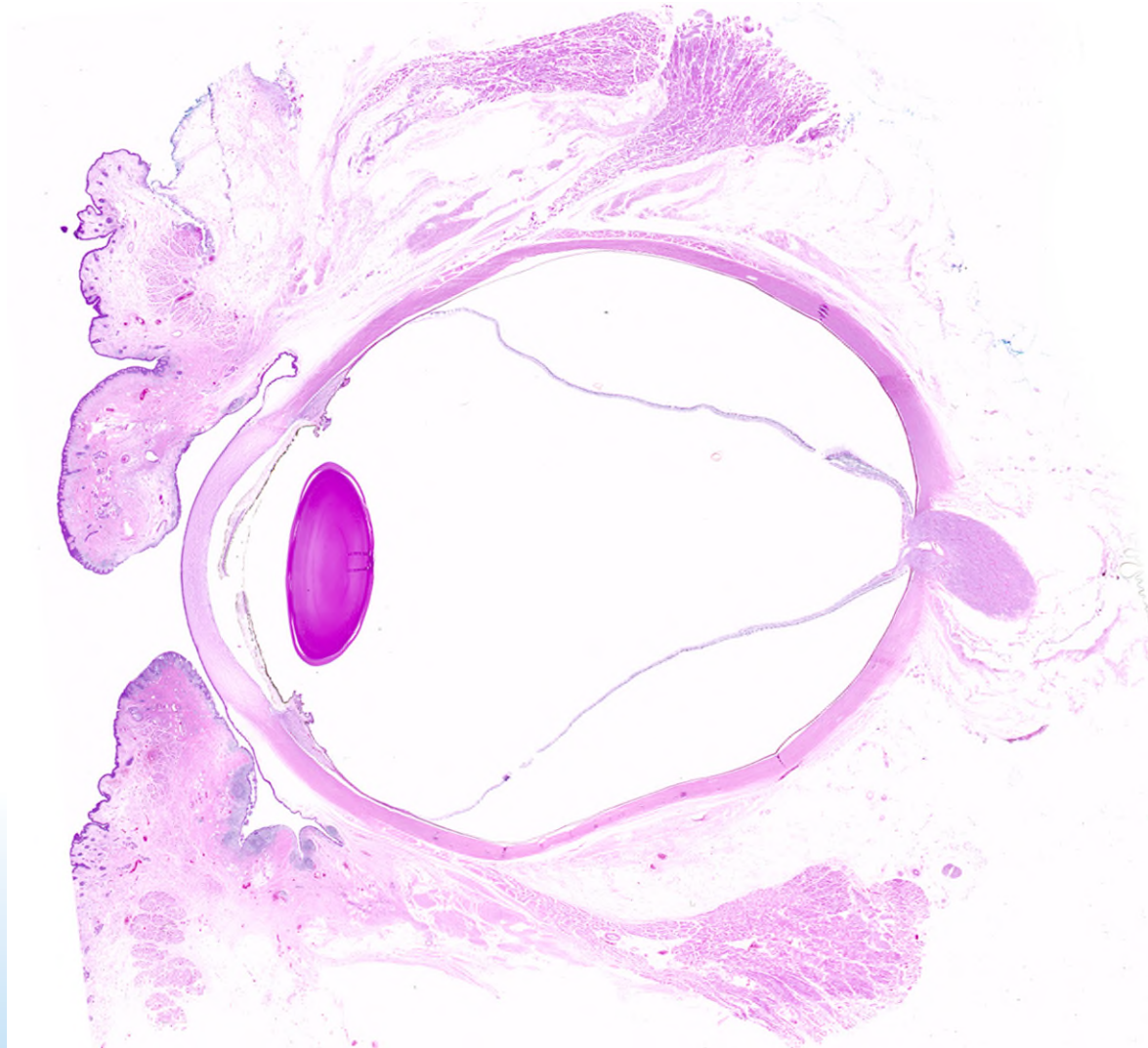


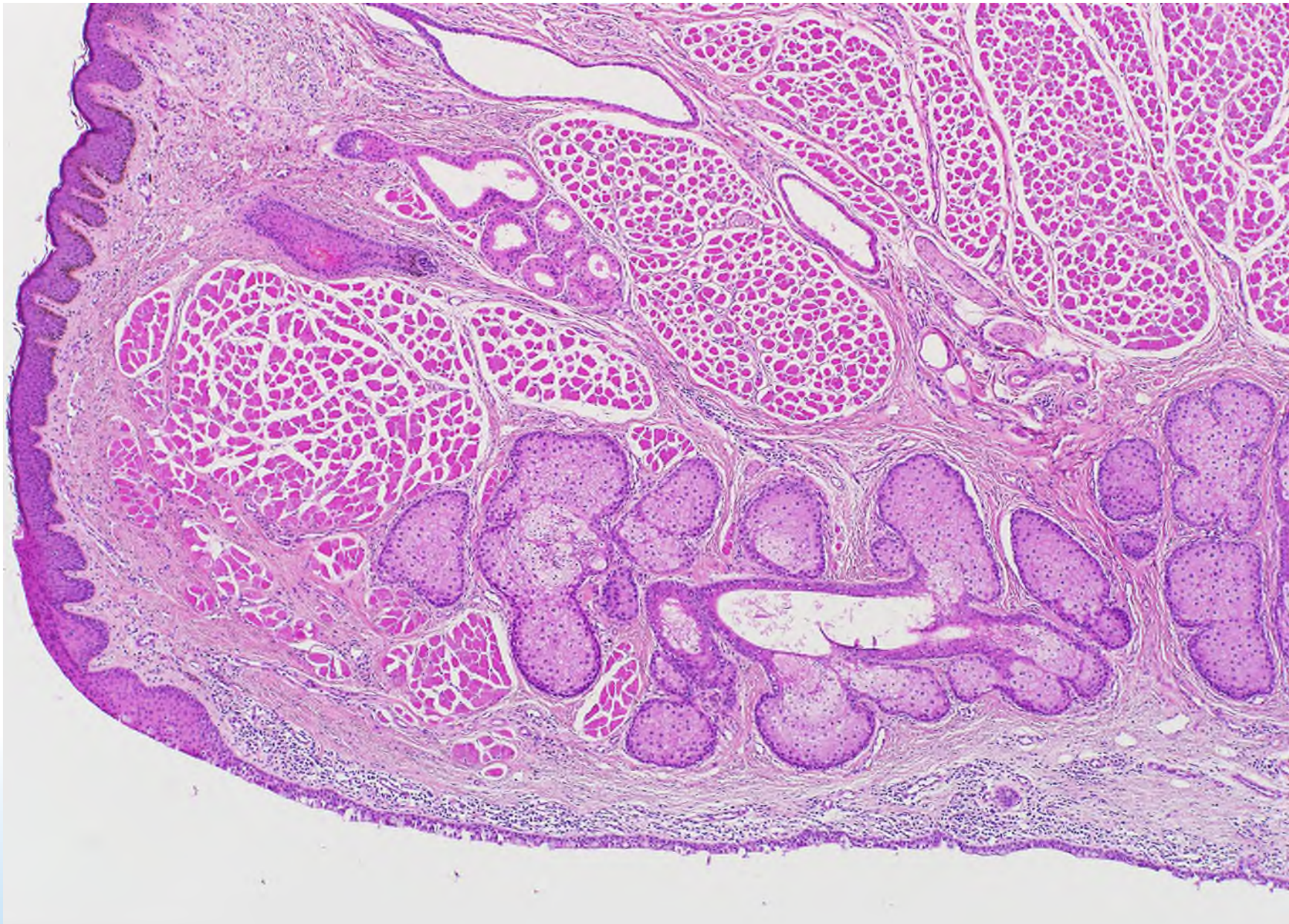
Eyelids

- **The eyelids are skin: Dermatopathology**
- **Everyday dermatologic processes involve the eyelid:**
 - Actinic keratosis, seborrheic keratosis, nevi
- **Posteriorly the eyelids are lined by the palpebral conjunctiva mucous membrane**
- **The eyelids are vital for corneal health and transparency:**
 - facial paralysis and failure to close eyelids with resultant corneal ulceration

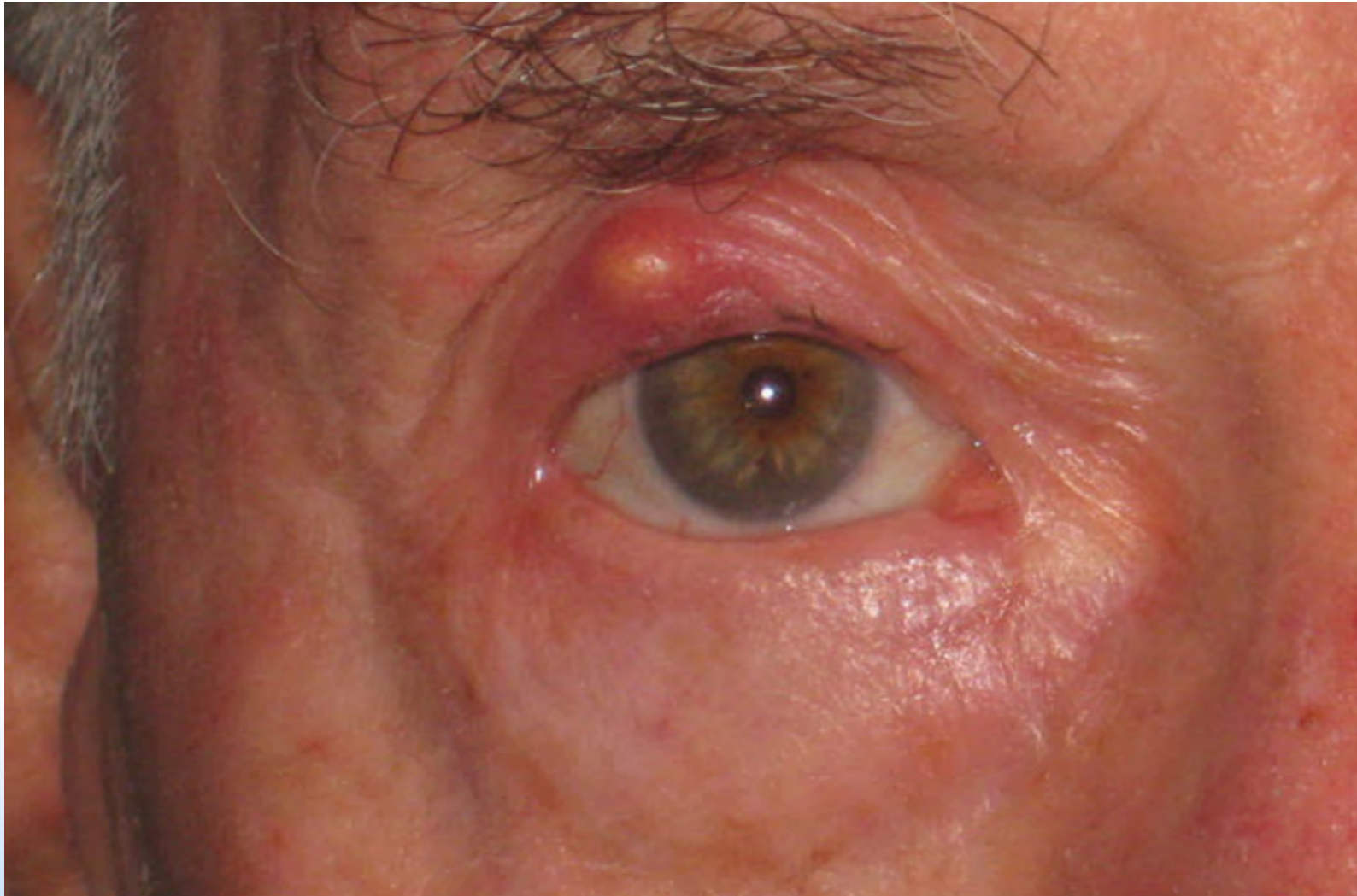


Eyelid (Exenteration)

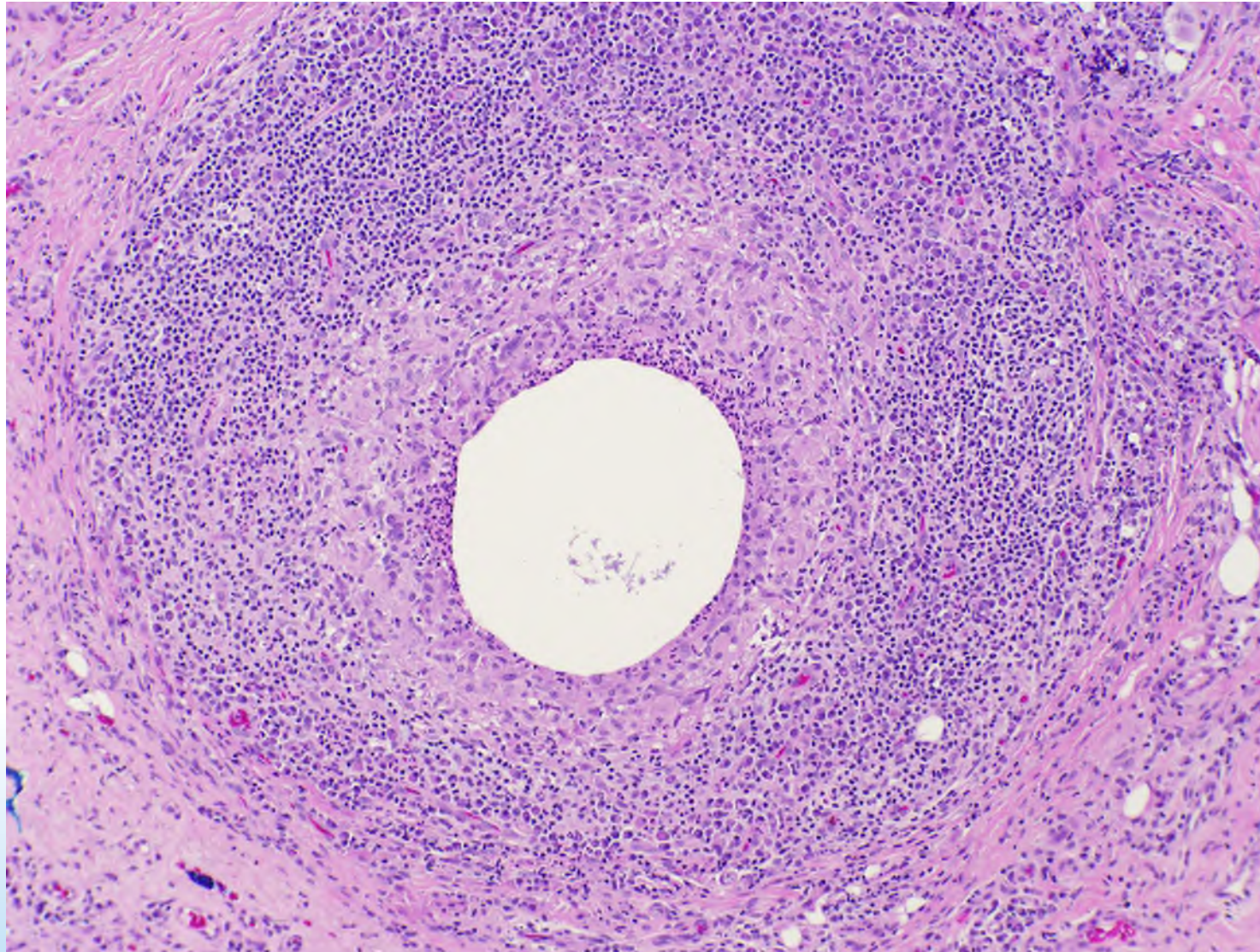




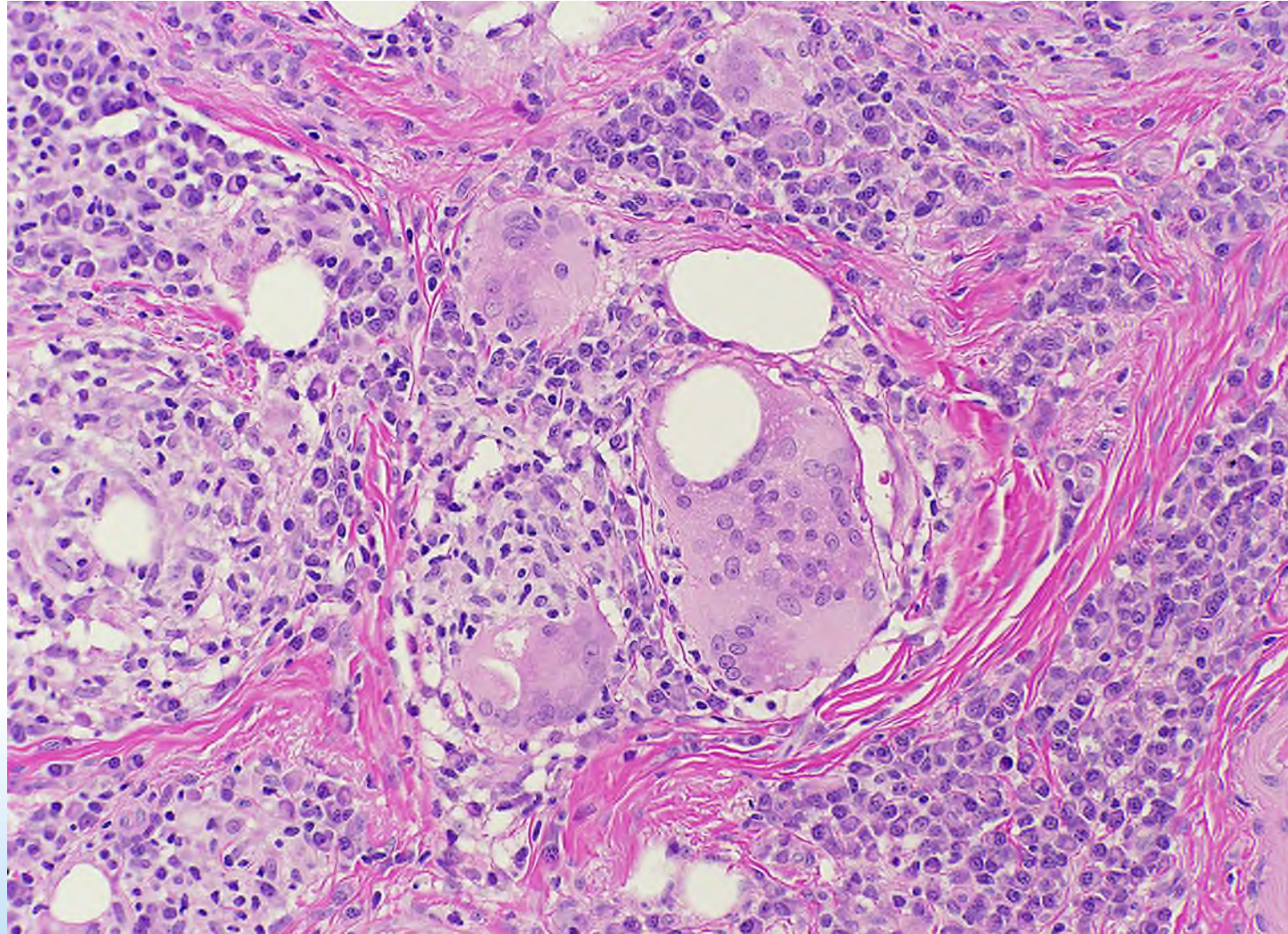
Chalazion: Lipogranuloma of the Eyelid



Chalazion: Lipogranuloma of the Eyelid



Chalazion: Lipogranuloma of the Eyelid



Sebaceous Carcinoma

- **Sebaceous carcinoma accounts for 5% of malignant eyelid tumors:**
 - Basal cell carcinoma
 - Squamous cell carcinoma
 - Sebaceous carcinoma
 - Merkel cell carcinoma
 - Microcystic adnexal carcinoma
 - Metastases
 - Malignant melanoma
 - Signet ring cell / histiocytoid carcinoma



Sebaceous Carcinoma

- Usually in older adults
- Sebaceous glands of ocular adnexa
 - Meibomian glands (tarsal plate)
 - Zeis glands (lash follicles)
 - Upper eyelid more common (more glands)
- Caruncle, conjunctiva, lacrimal gland - rare



Sebaceous Carcinoma

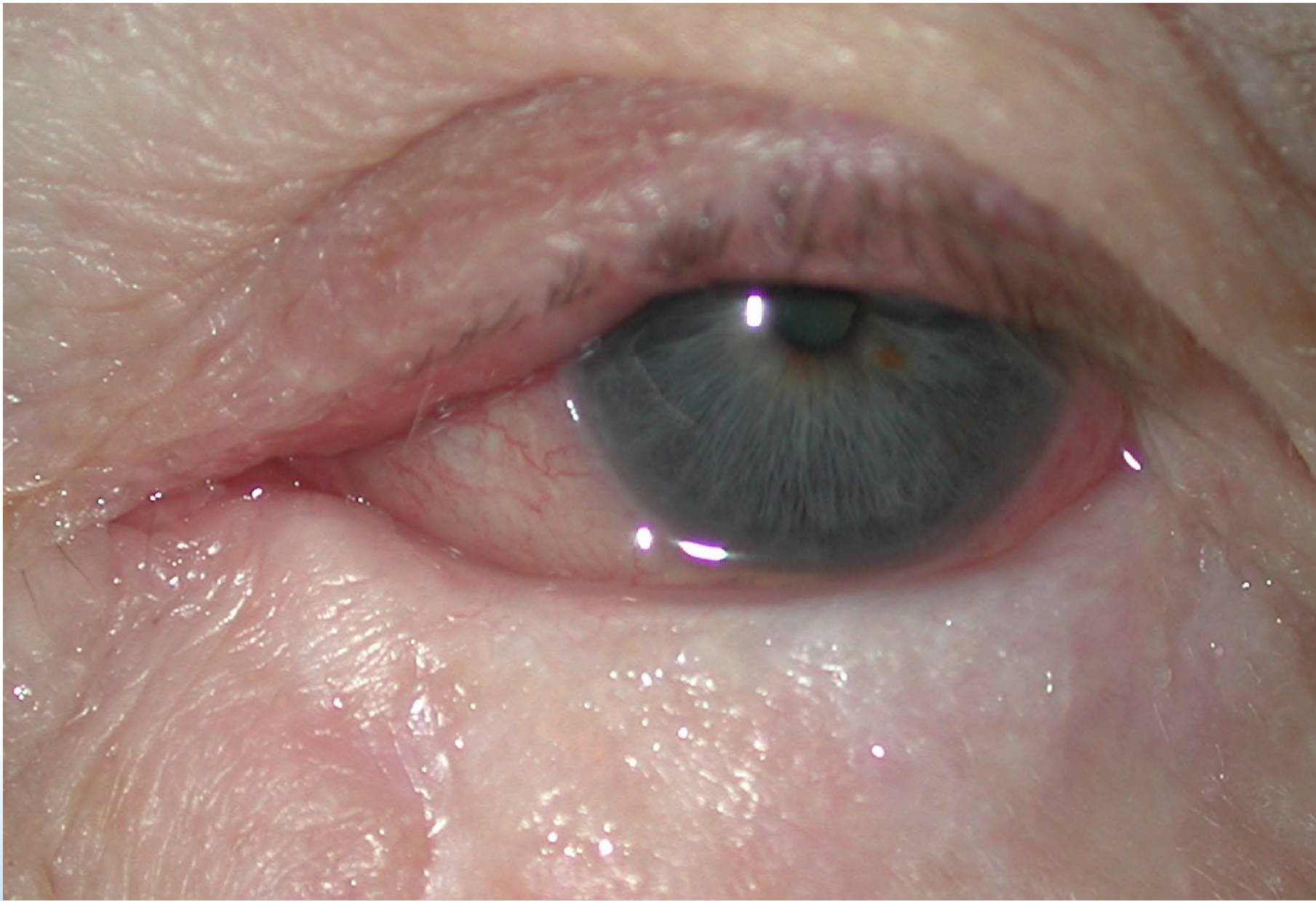
- **Madarosis: Loss of eyelashes**
- **Eyelid nodule // can resemble a chalazion**
- **Diffuse eyelid thickening**
- **Persistent keratoconjunctivitis // blepharitis**
- **Caruncular mass**

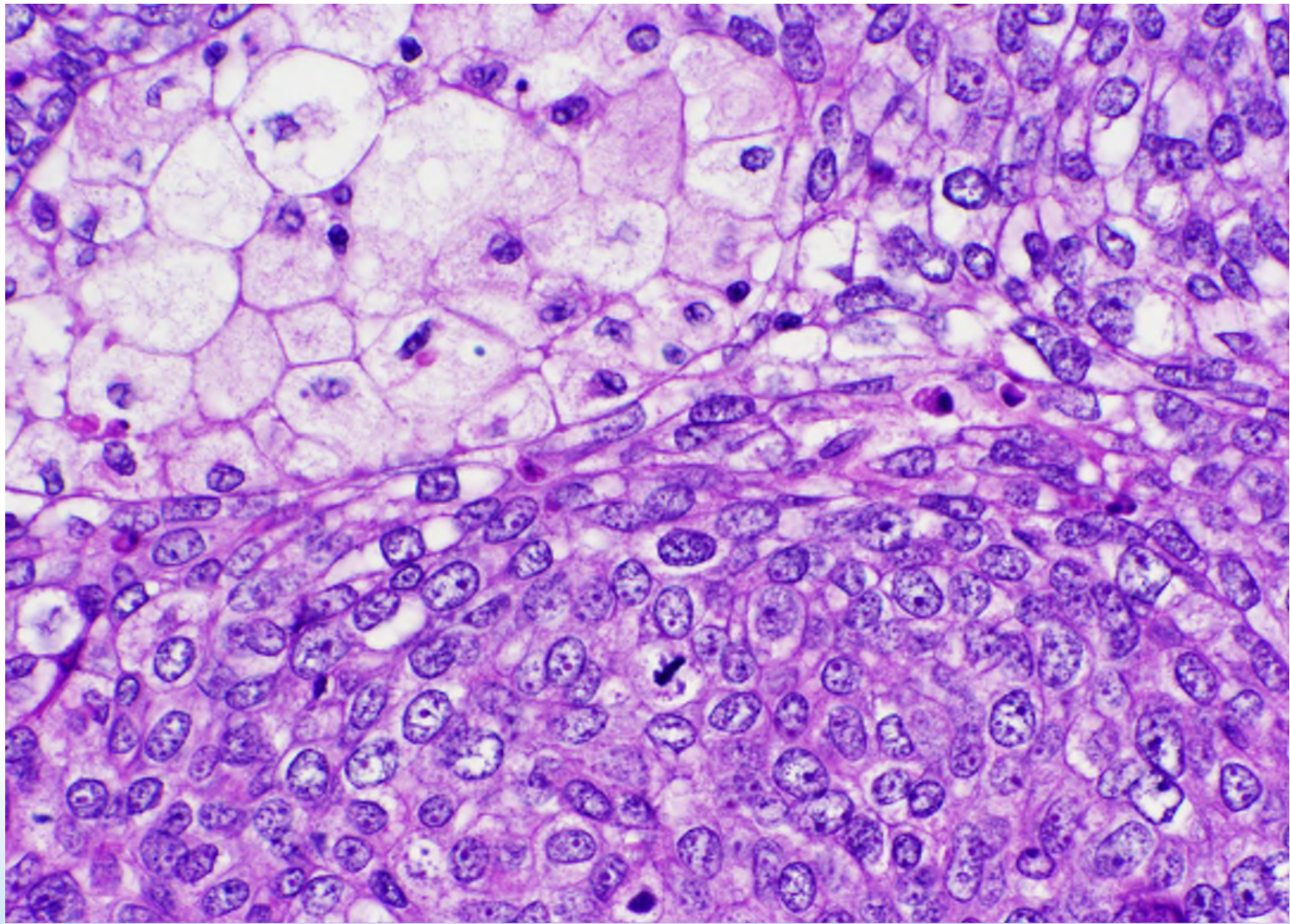


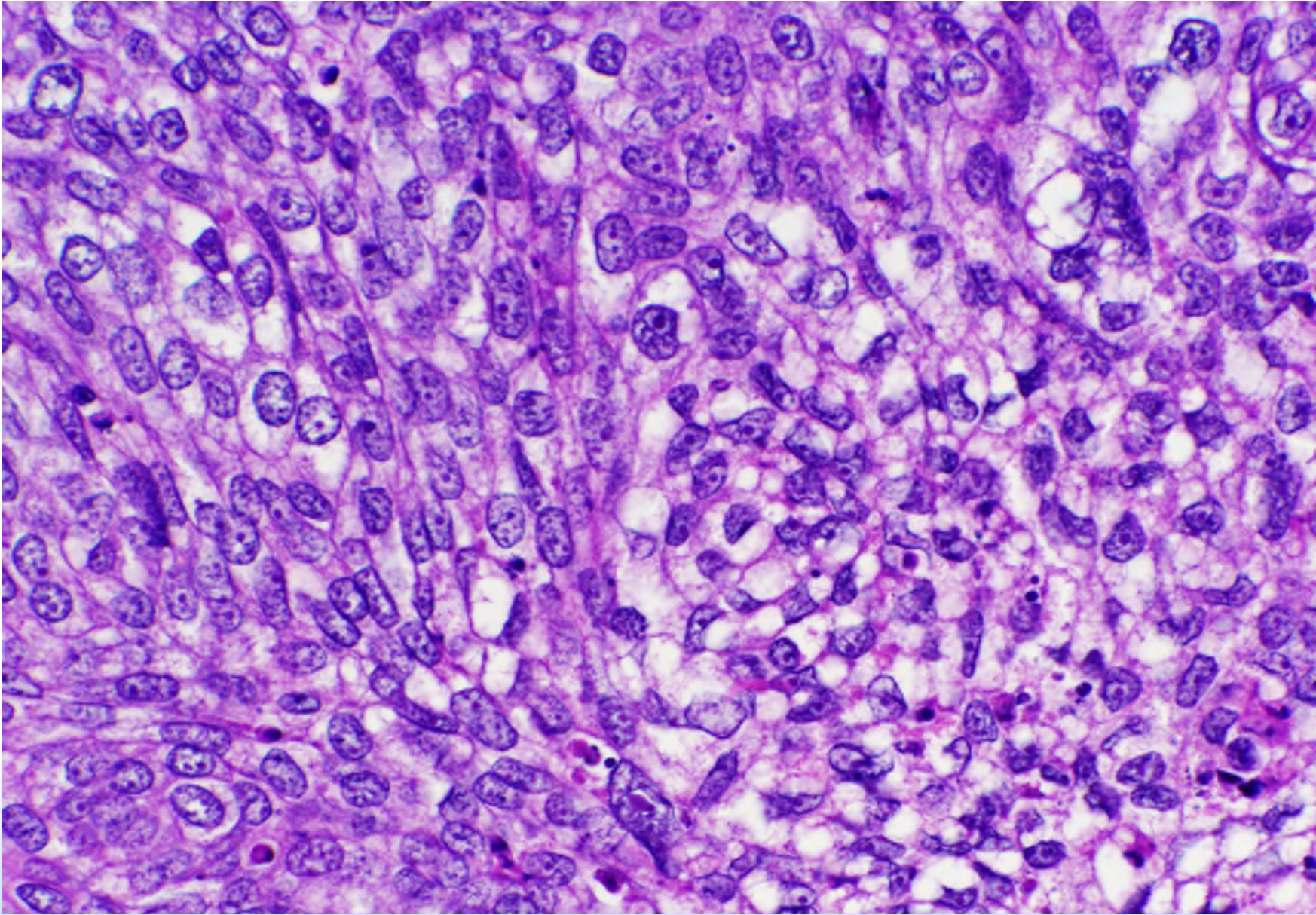
Sebaceous Cell Carcinoma



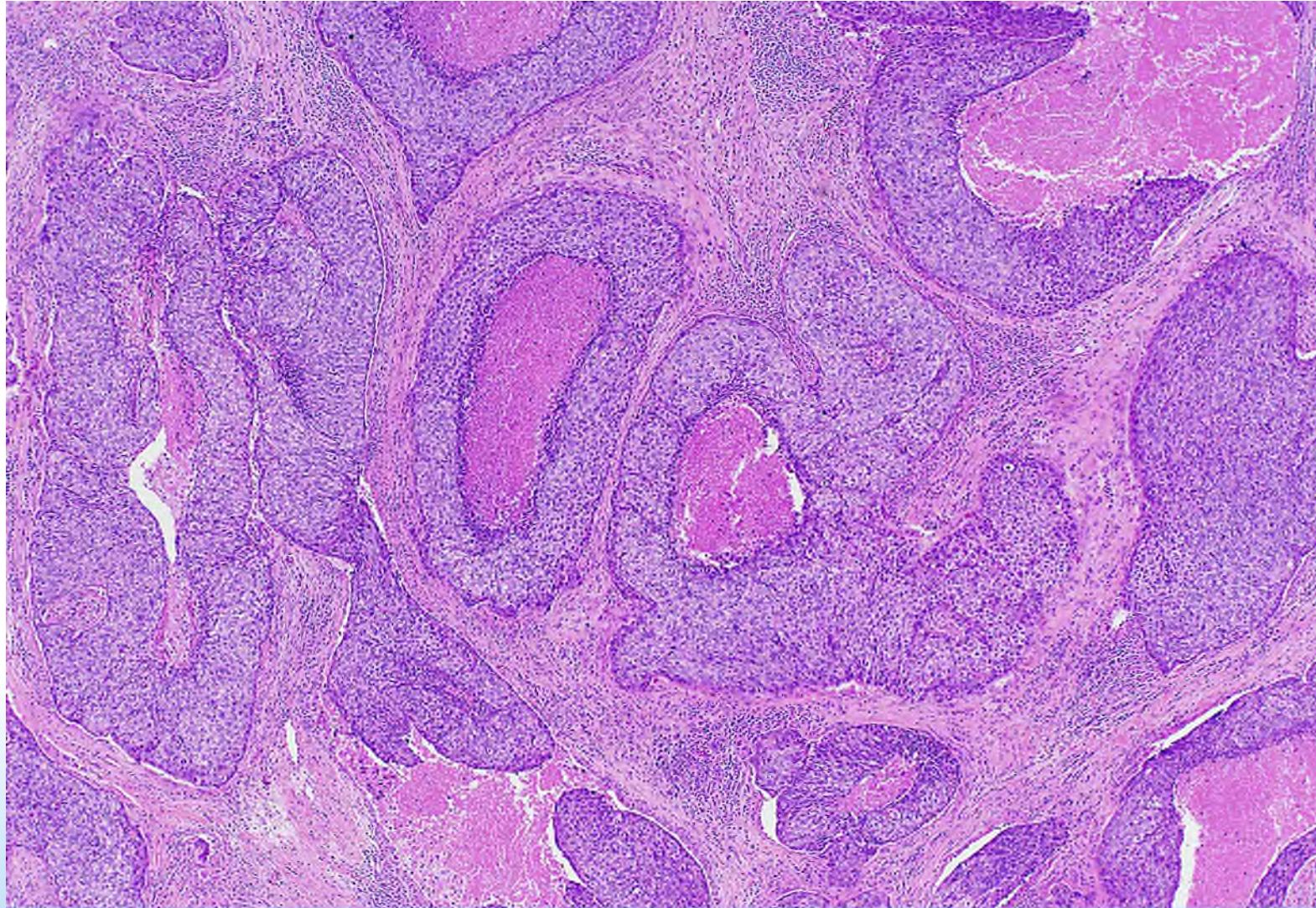






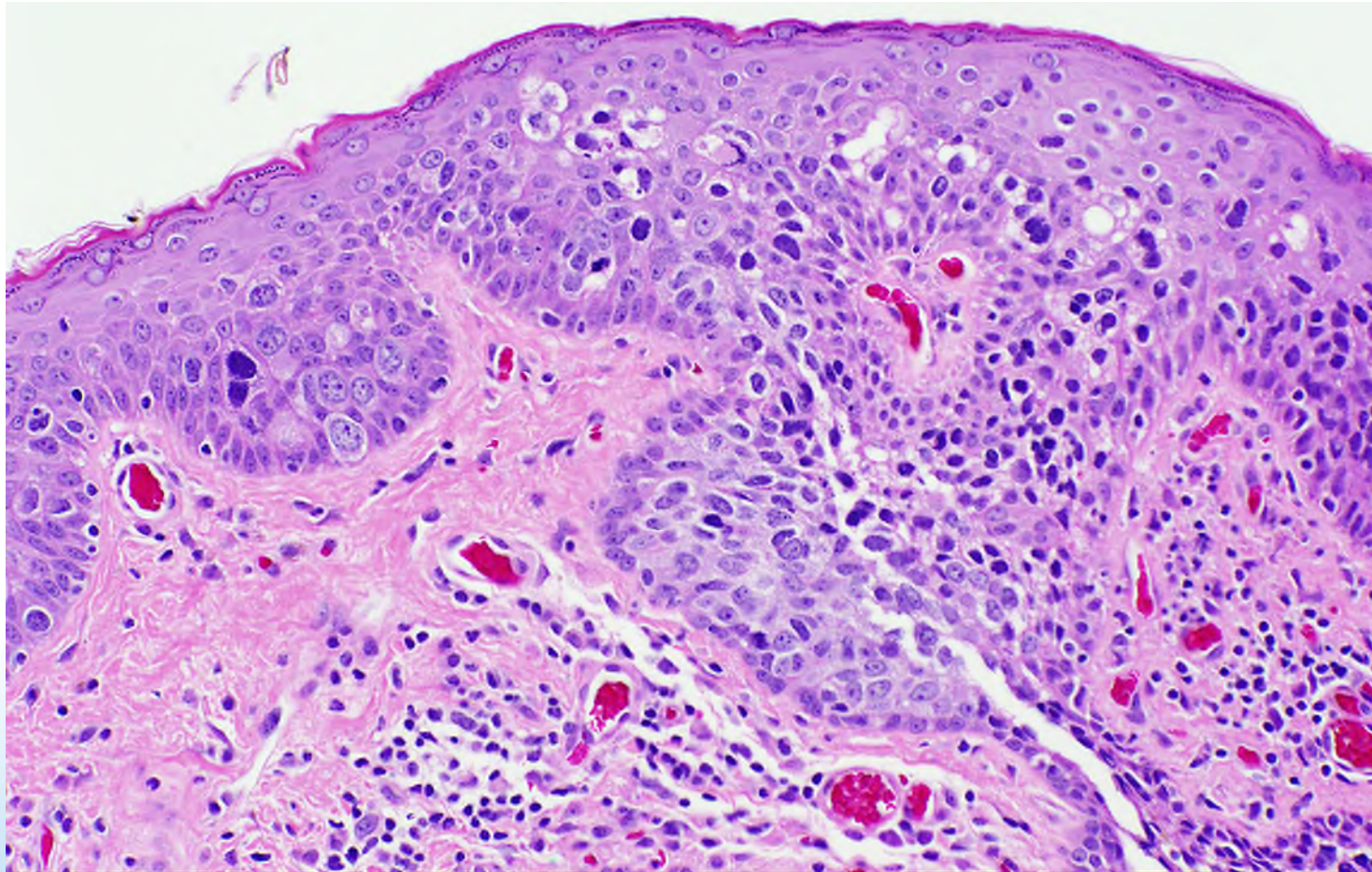


Sebaceous Carcinoma

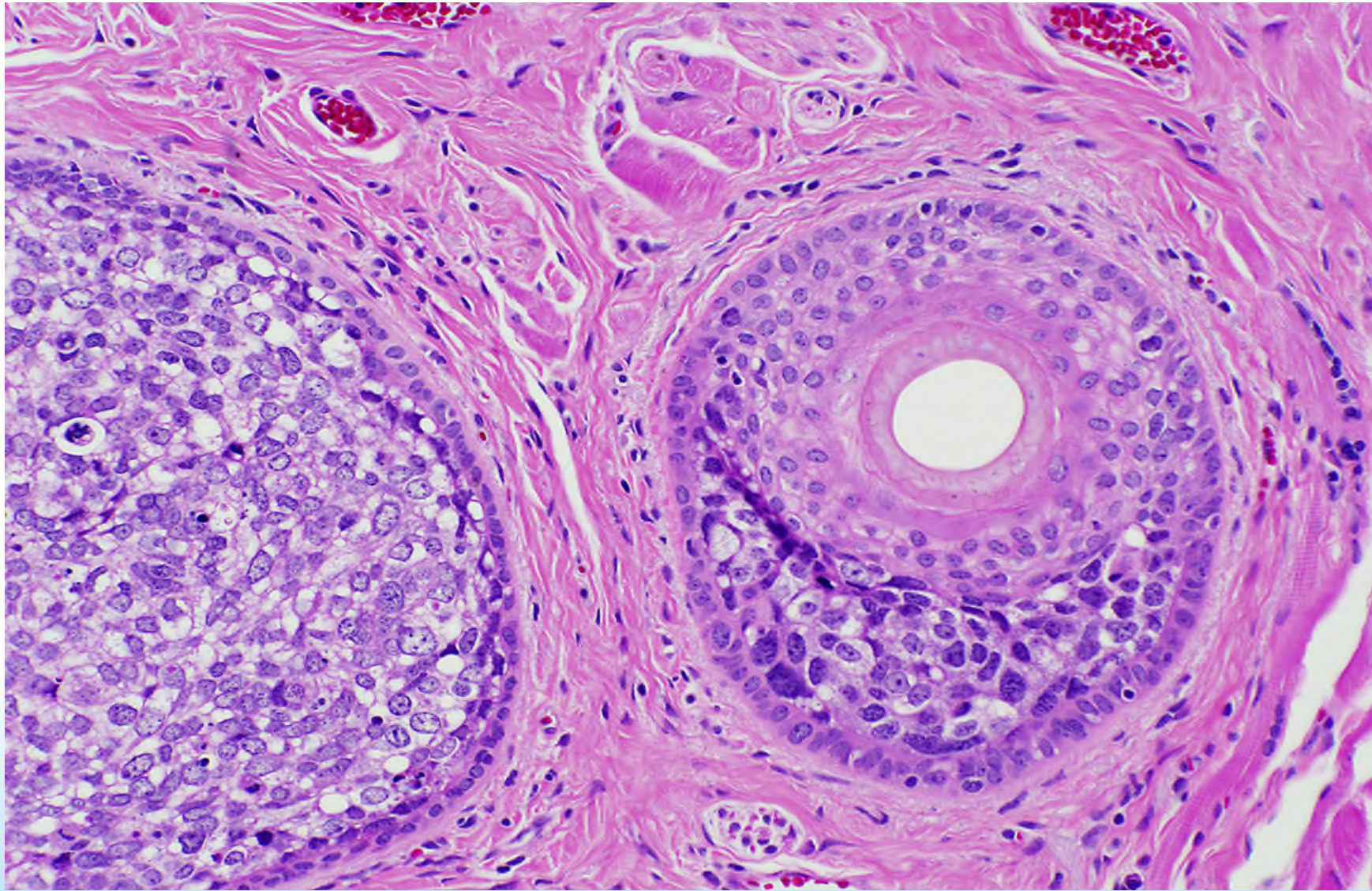


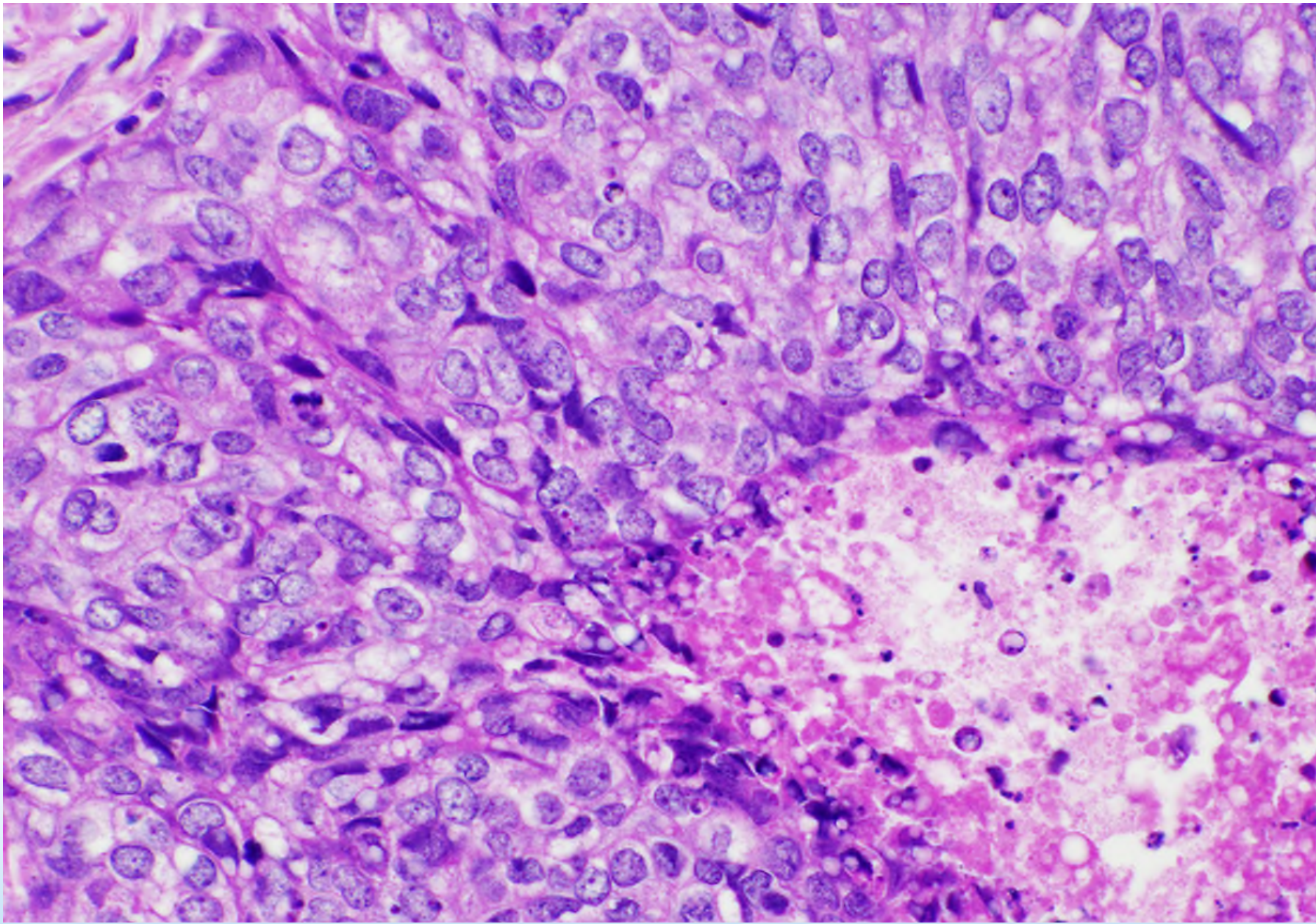
Sebaceous Carcinoma

Pagetoid // Intraepithelial spread

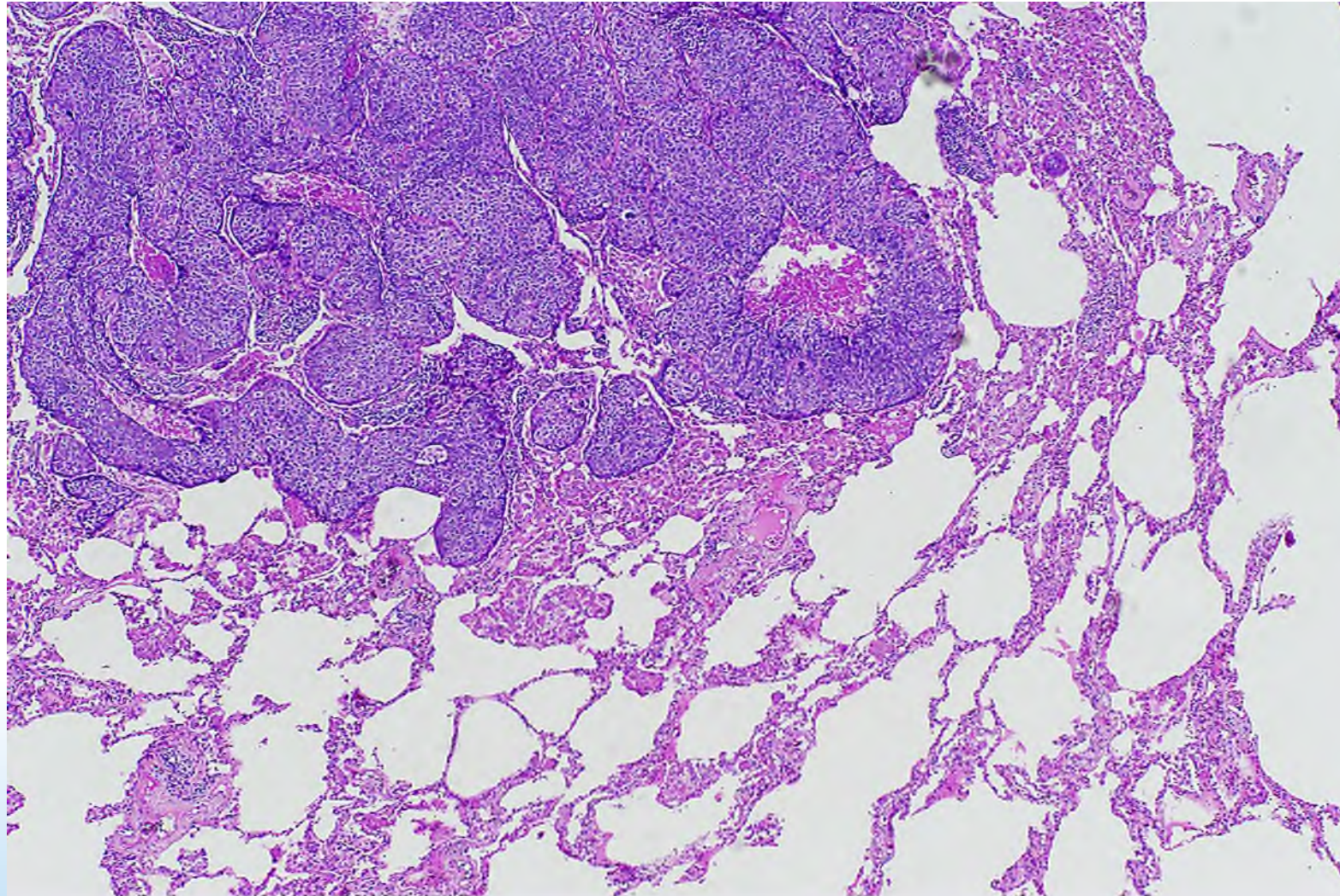


Periadnexal spread





Sebaceous Carcinoma Metastatic to Lung

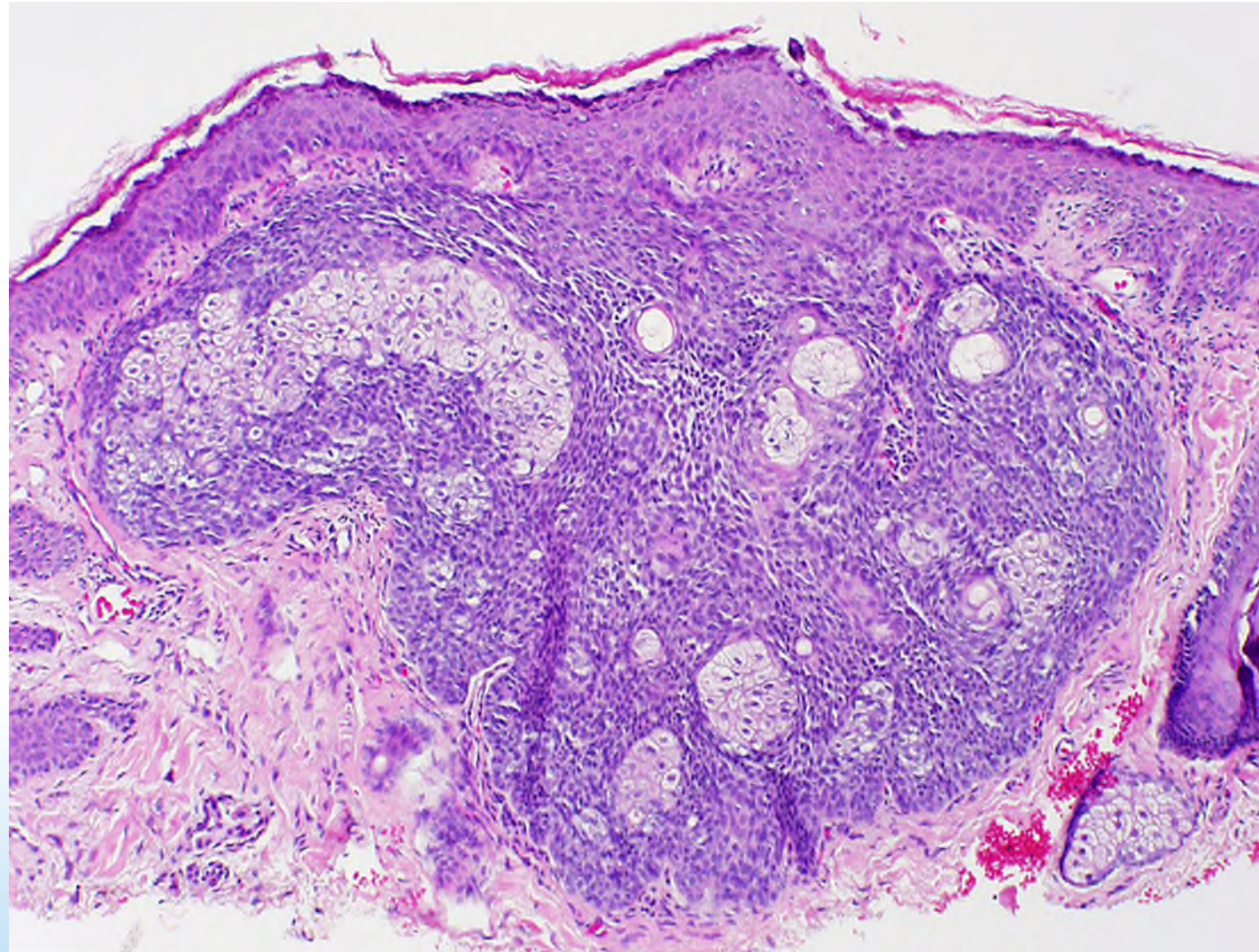


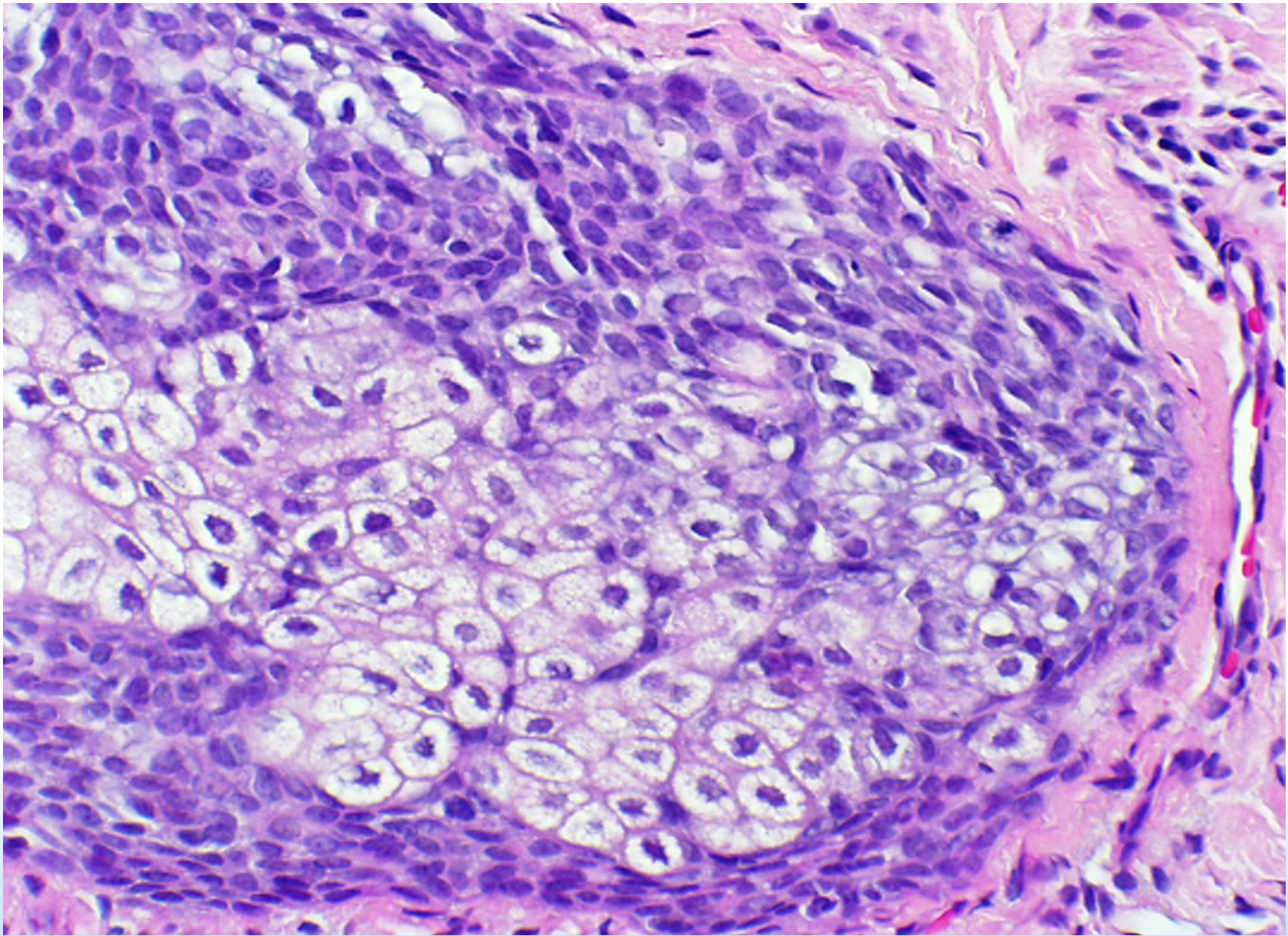
Sebaceous lesions

- **Sebaceous hyperplasia**
- **Sebaceoma**
- **Sebaceous adenoma**
 - **Muir-Torre Syndrome: cutaneous sebaceous neoplasm + visceral malignancy**
- **Sebaceous carcinoma**
 - **sebaceous cell / sebaceous gland carcinoma**

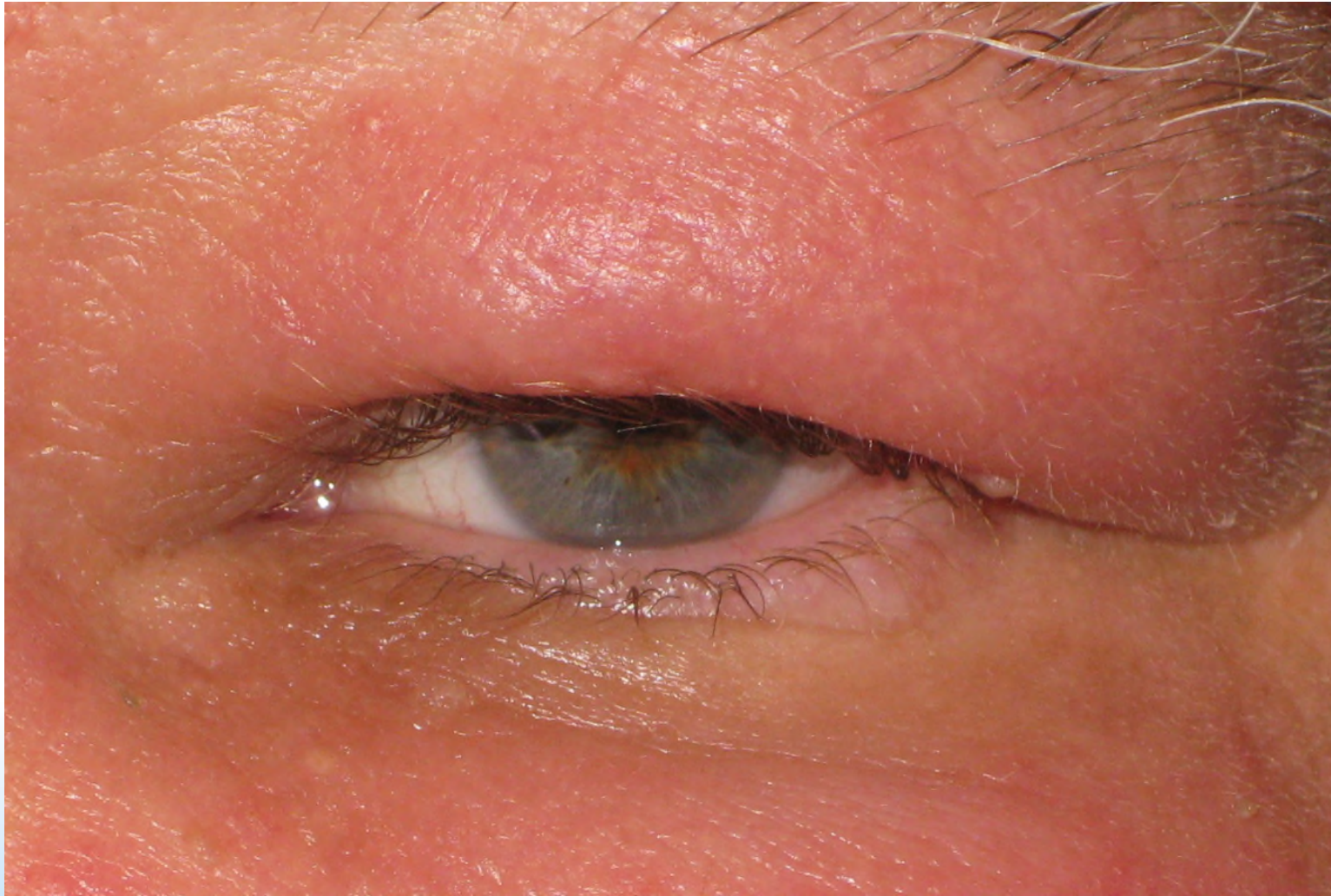


Sebaceous Adenoma

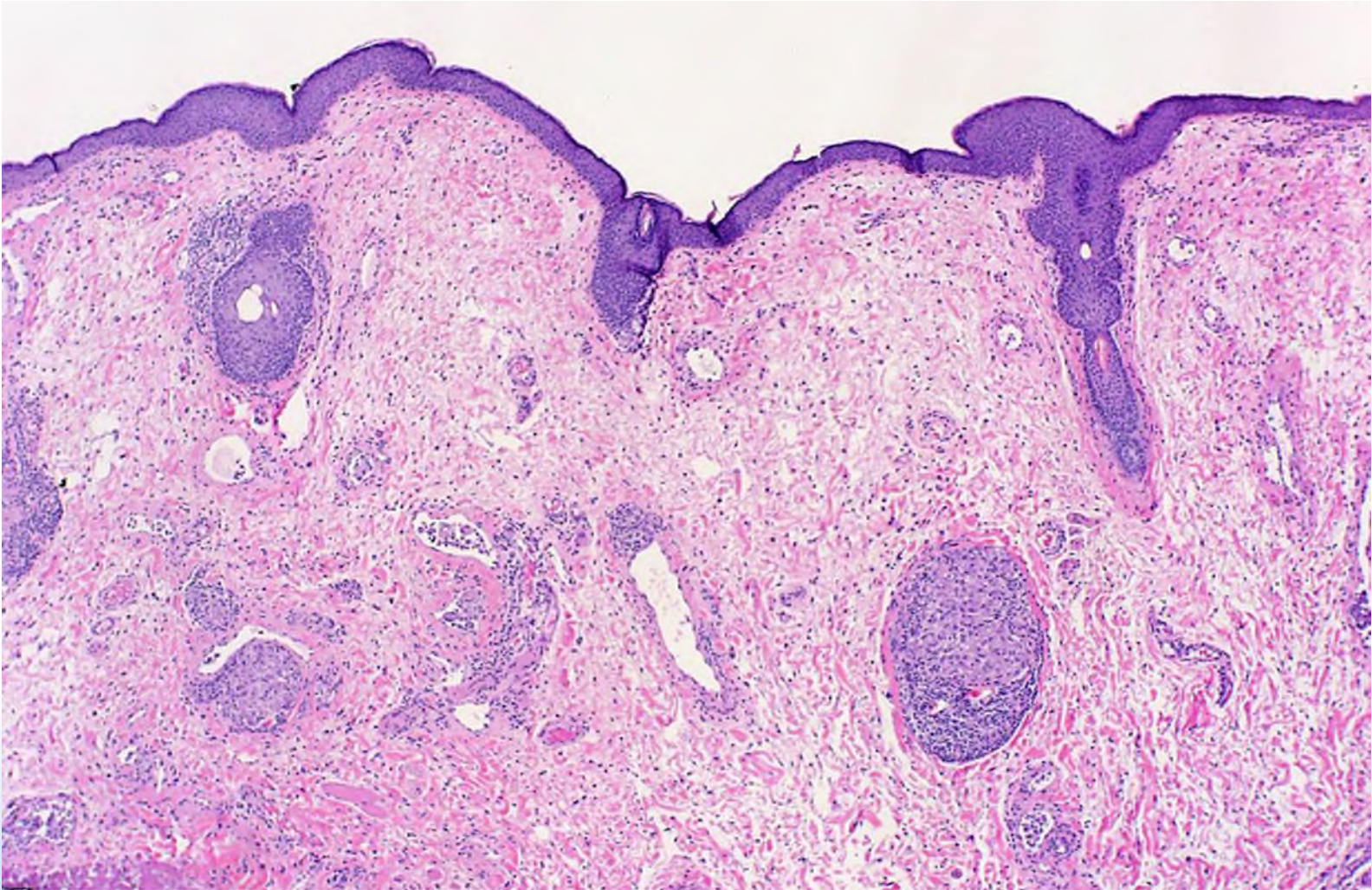




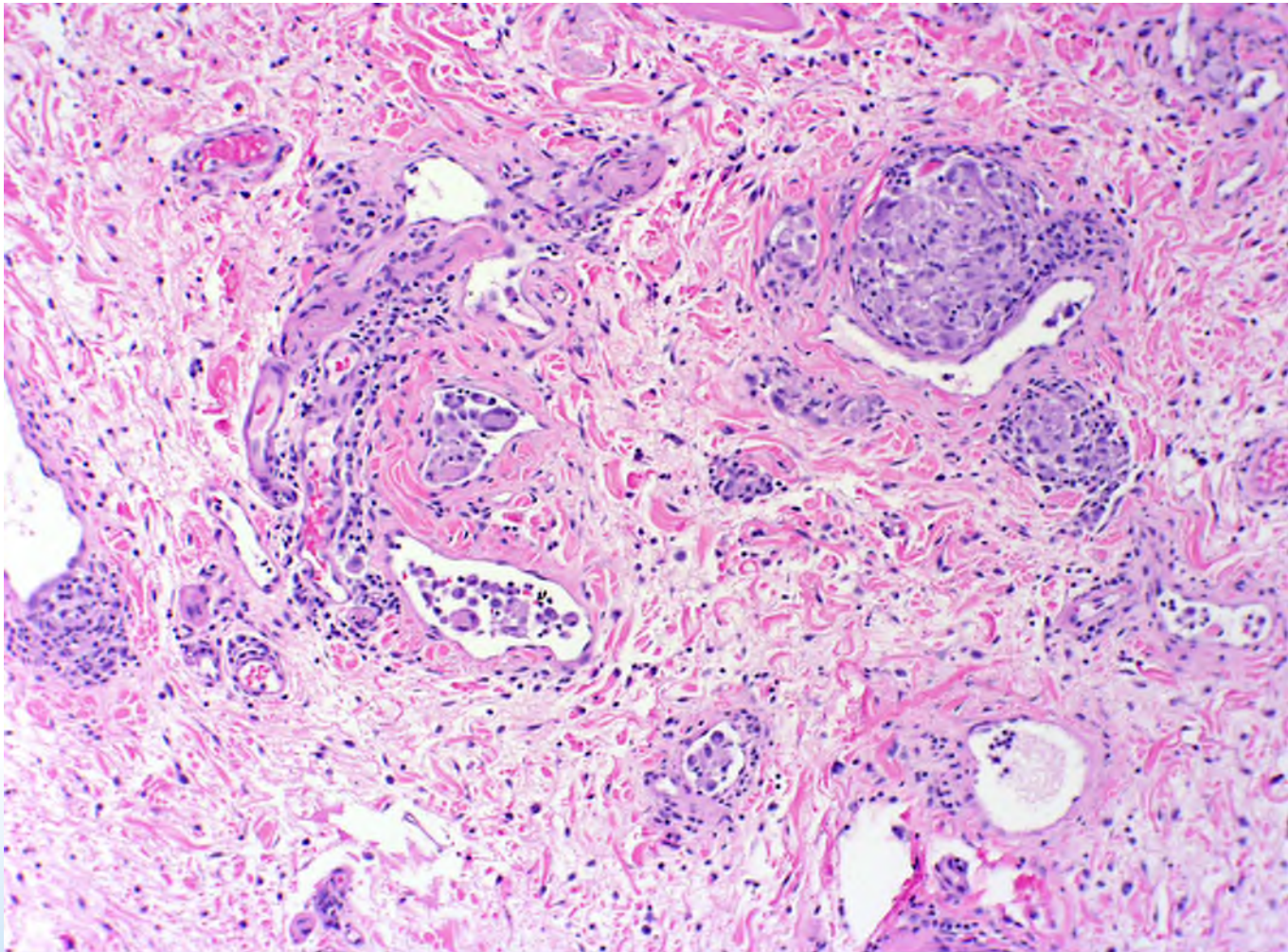
Granulomatous lymphangitis



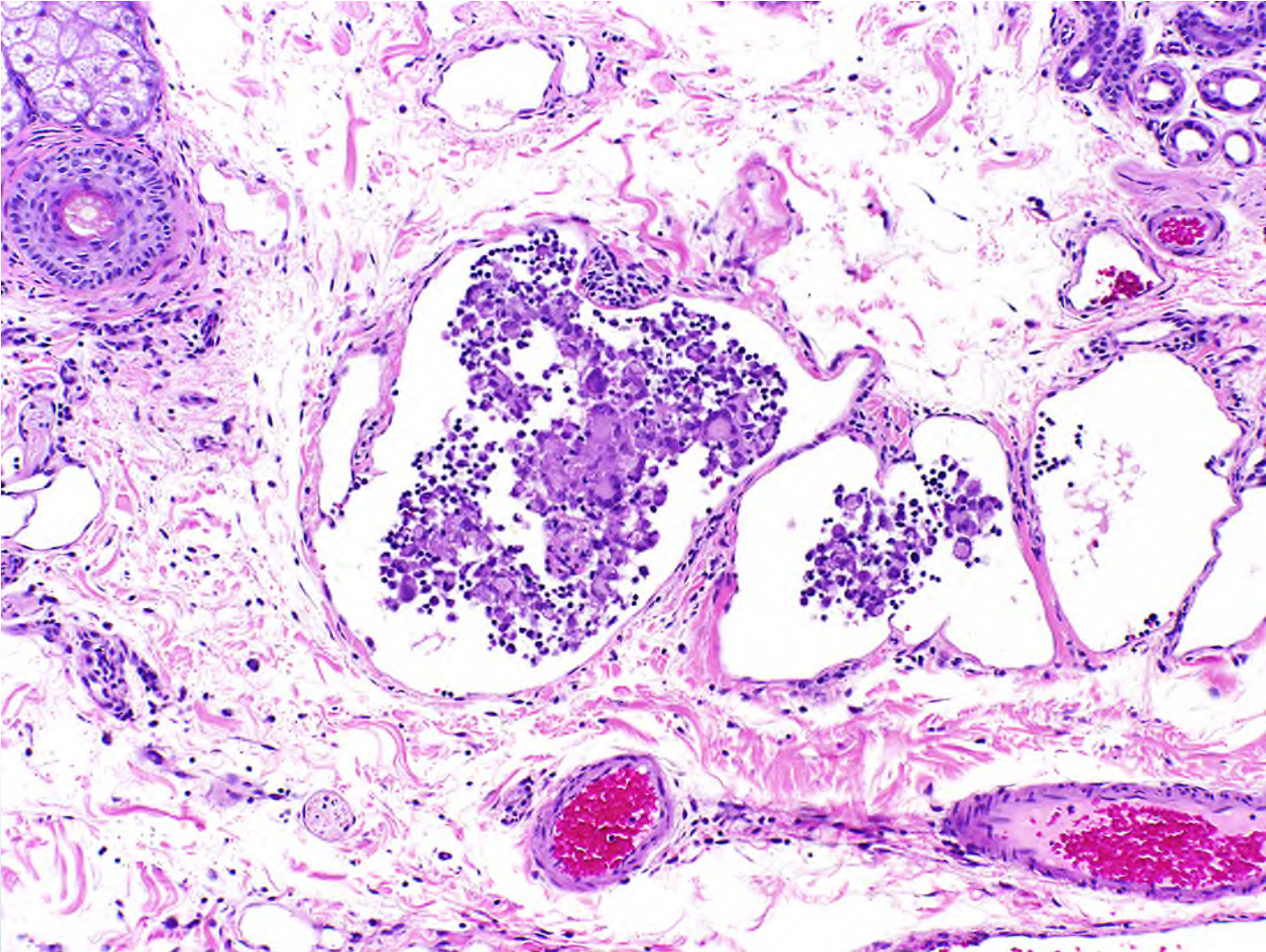
Granulomatous lymphangitis



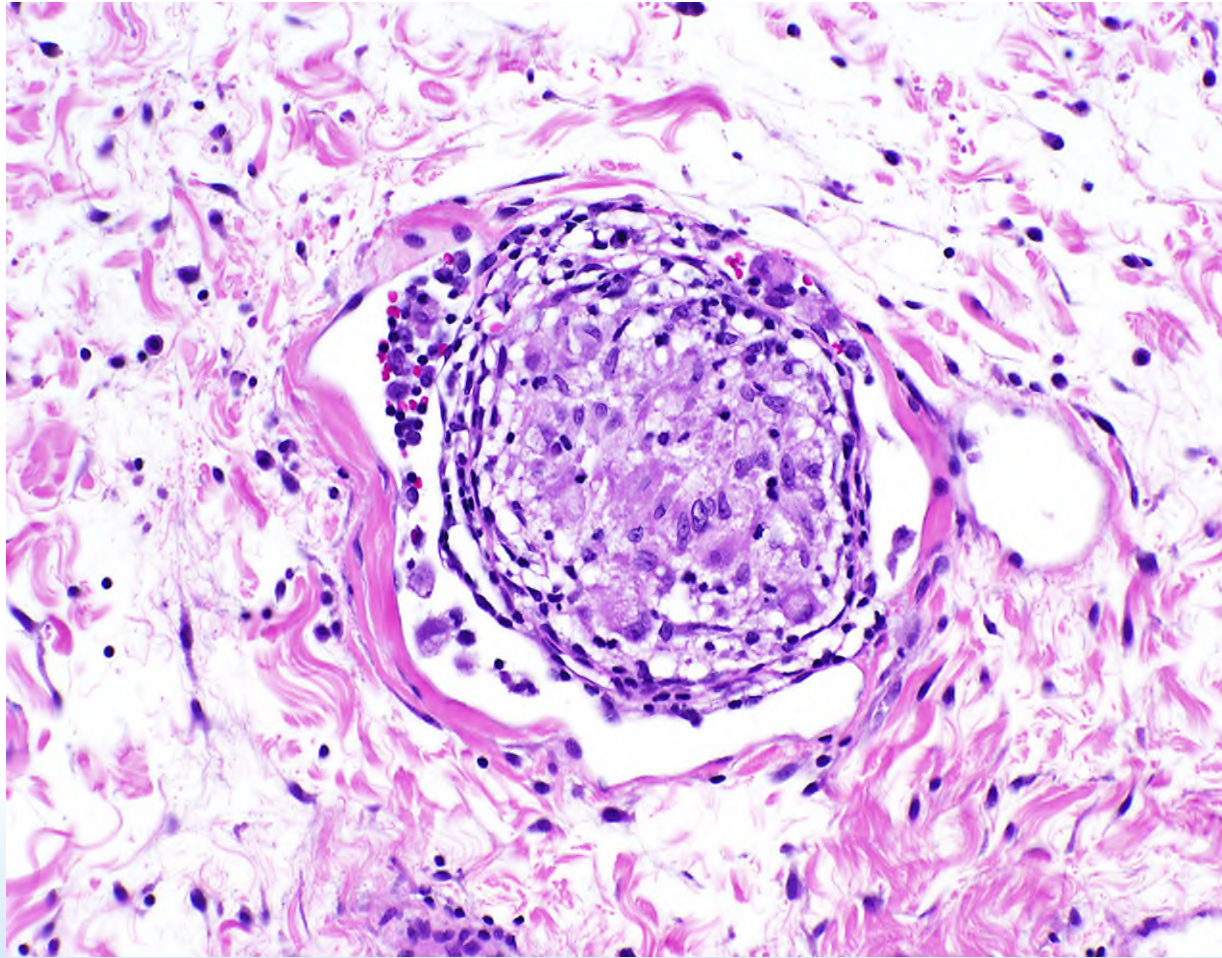
Granulomatous lymphangitis



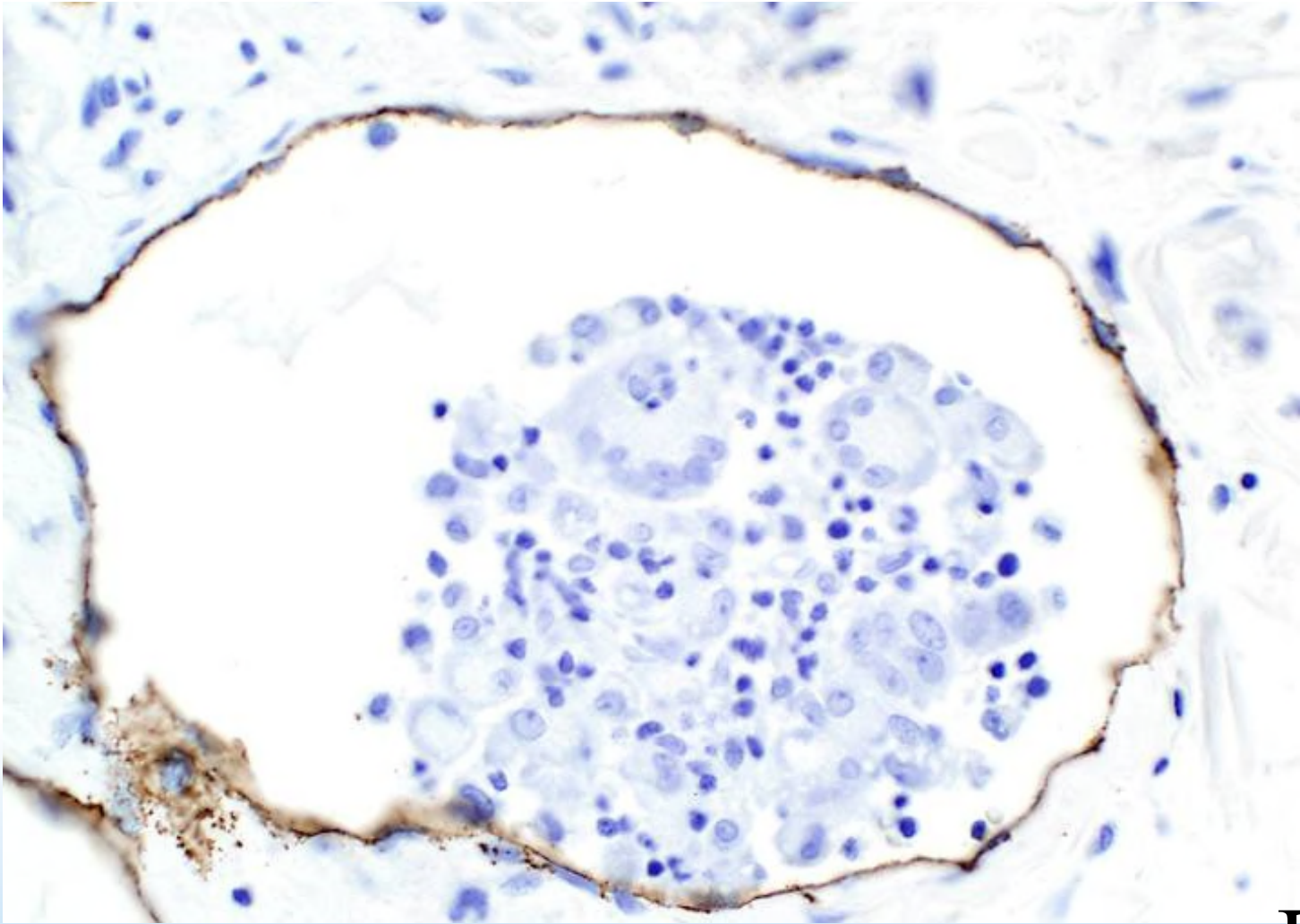
Granulomatous lymphangitis



Granulomatous lymphangitis



Granulomatous lymphangitis



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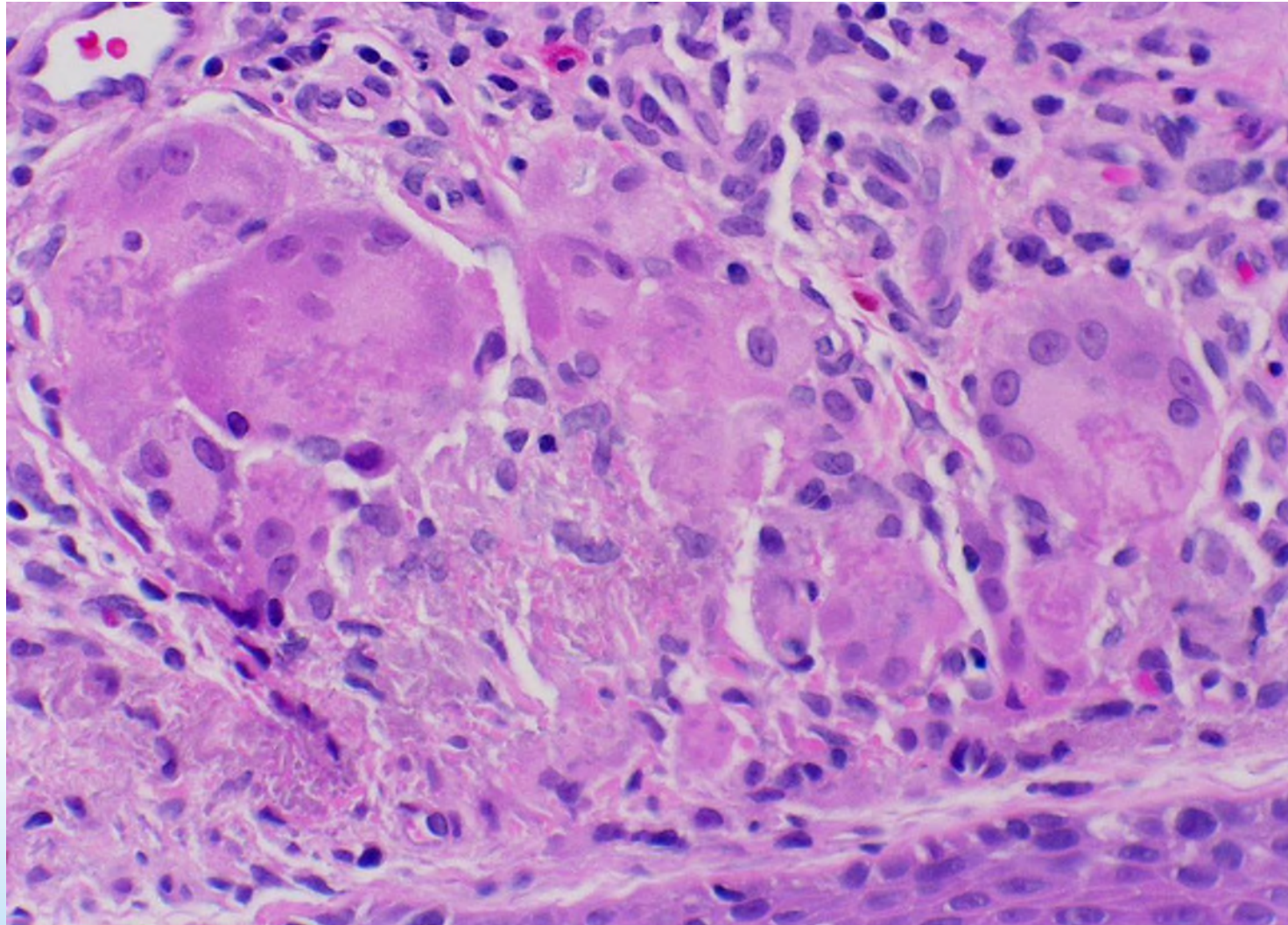


Granulomatous lymphangitis

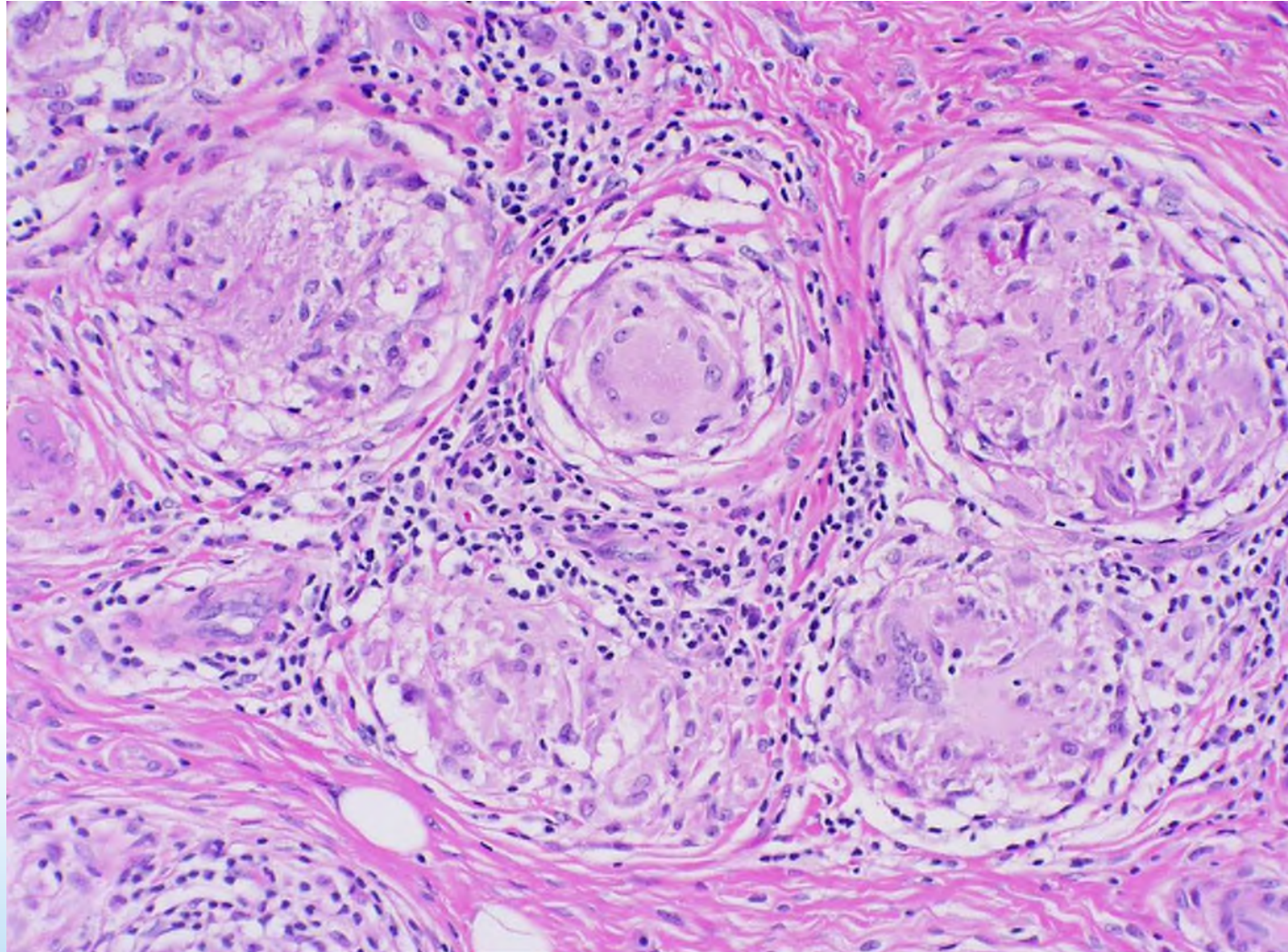
- Intralymphatic/perilymphatic granulomatous inflammation
- Lymphangiectasia // lymphedema
- D2-40 immunostain confirms lymphatics
- Melkersson-Rosenthal Syndrome:
 - Recurrent facial paralysis
 - Chronic edema of the face and lips
 - Tongue hypertrophy // fissuring (lingua plicata)



Eyelid Granulomas: Actinic Granuloma



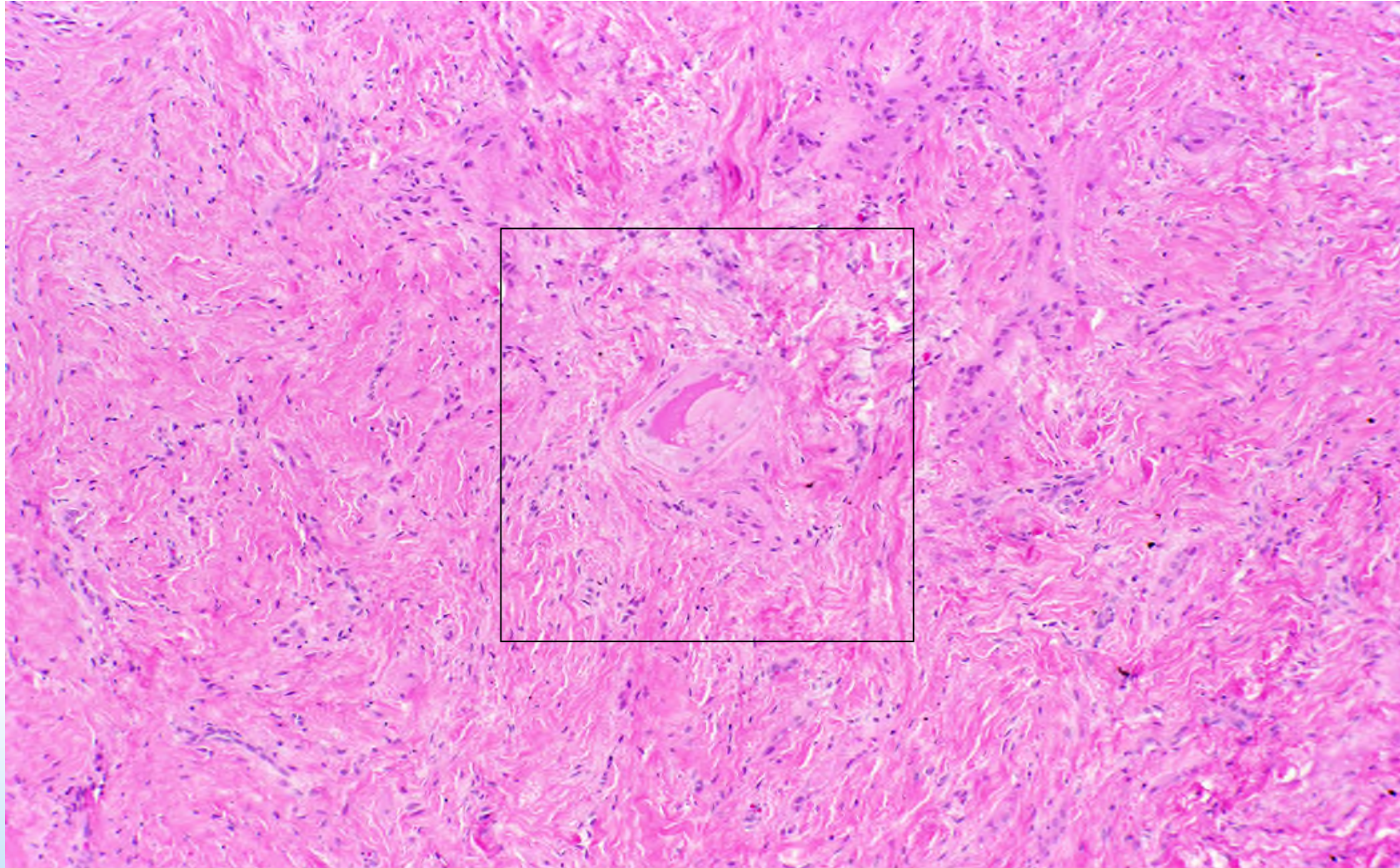
Eyelid Granulomas: Sarcoidosis



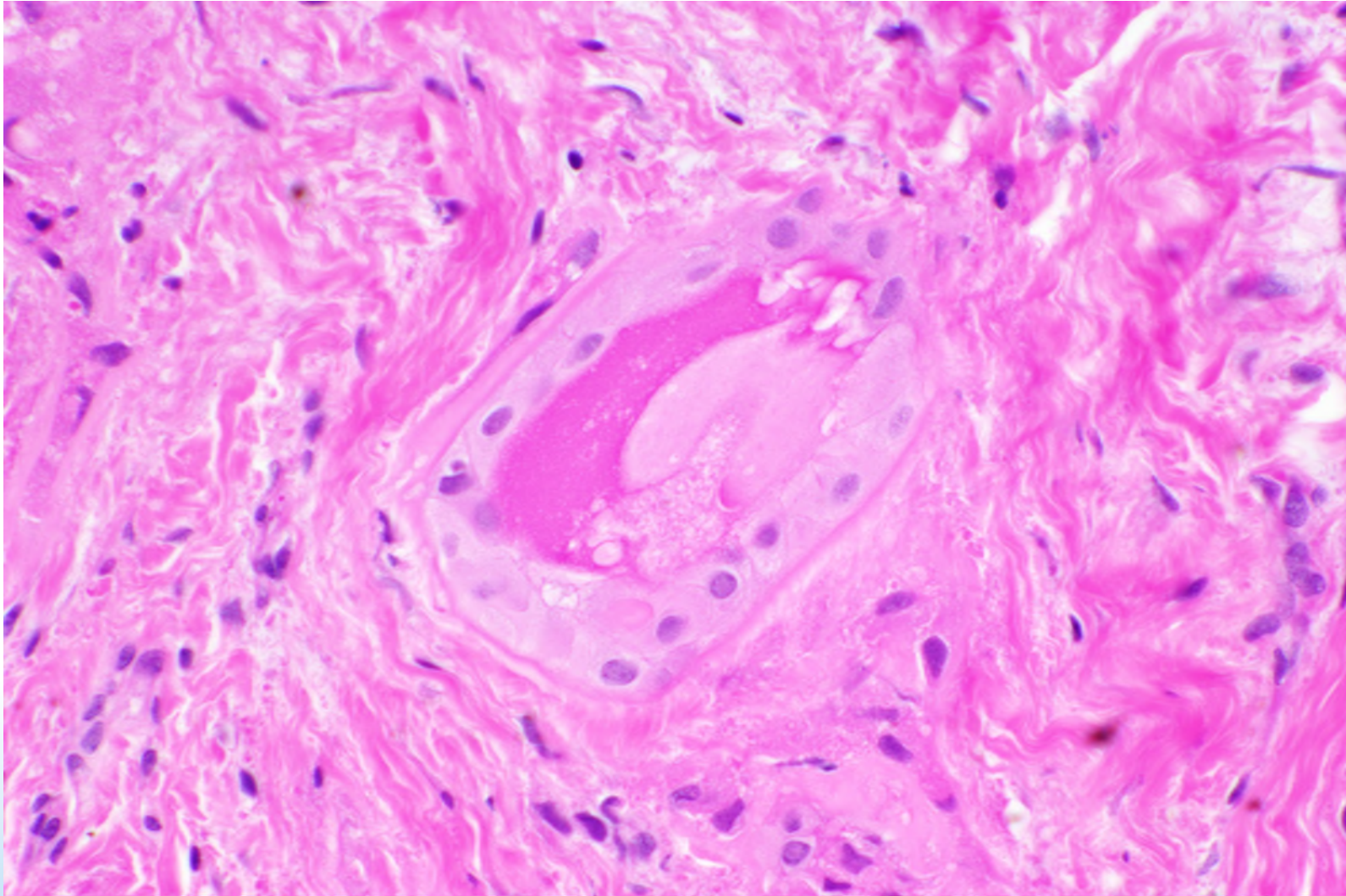
Phakomatous Choristoma



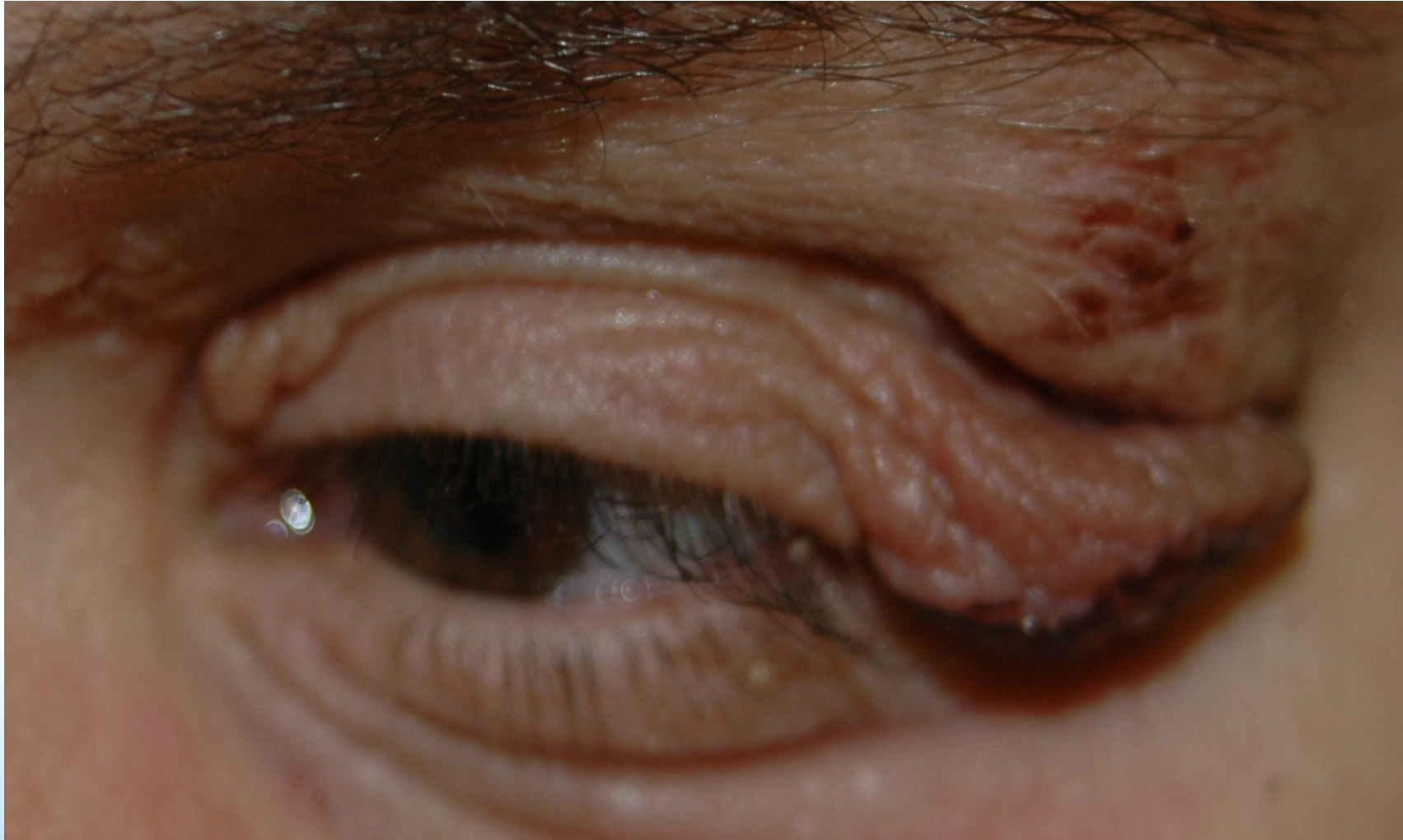
Phakomatous Choristoma



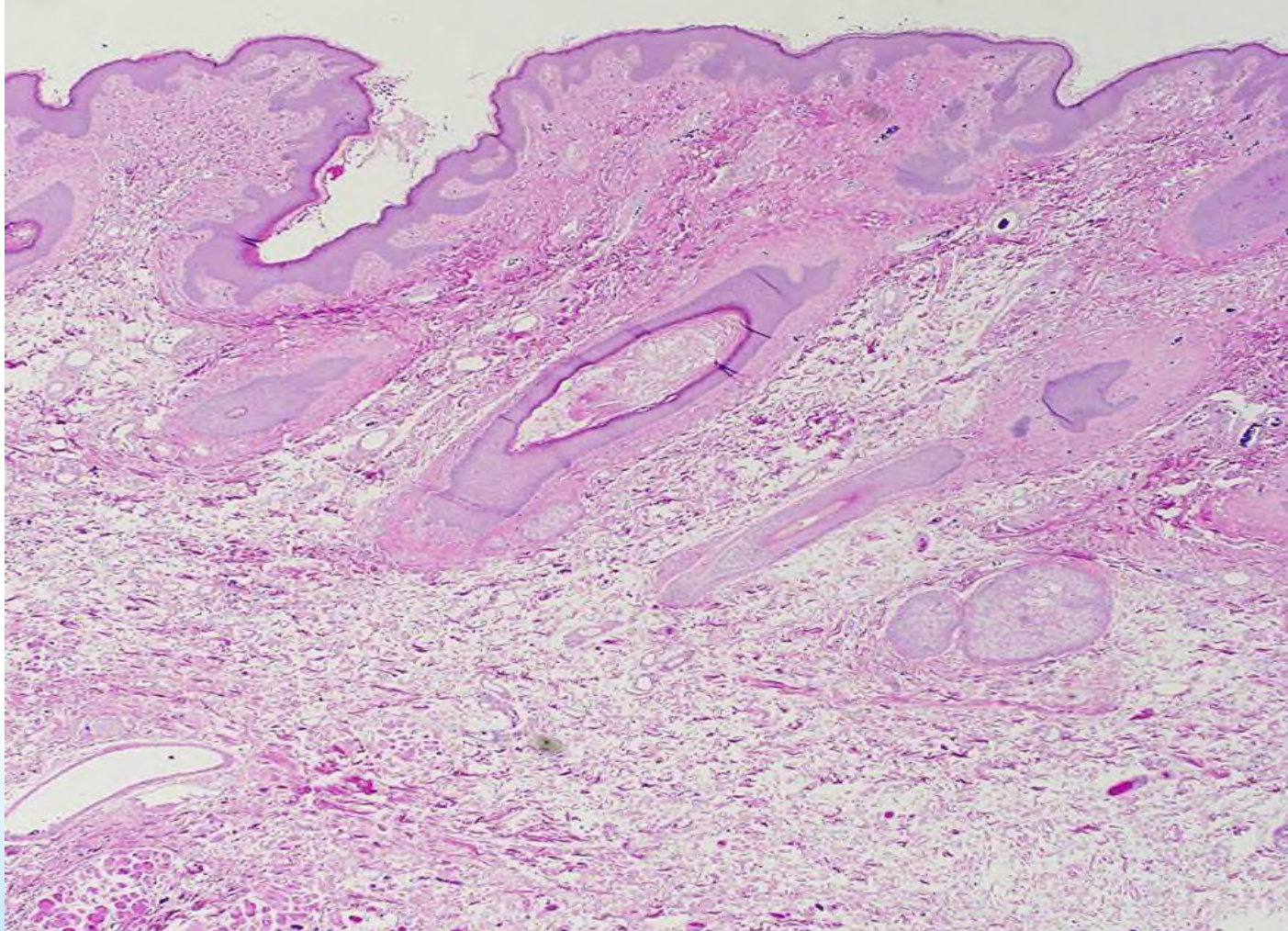
Phakomatous Choristoma



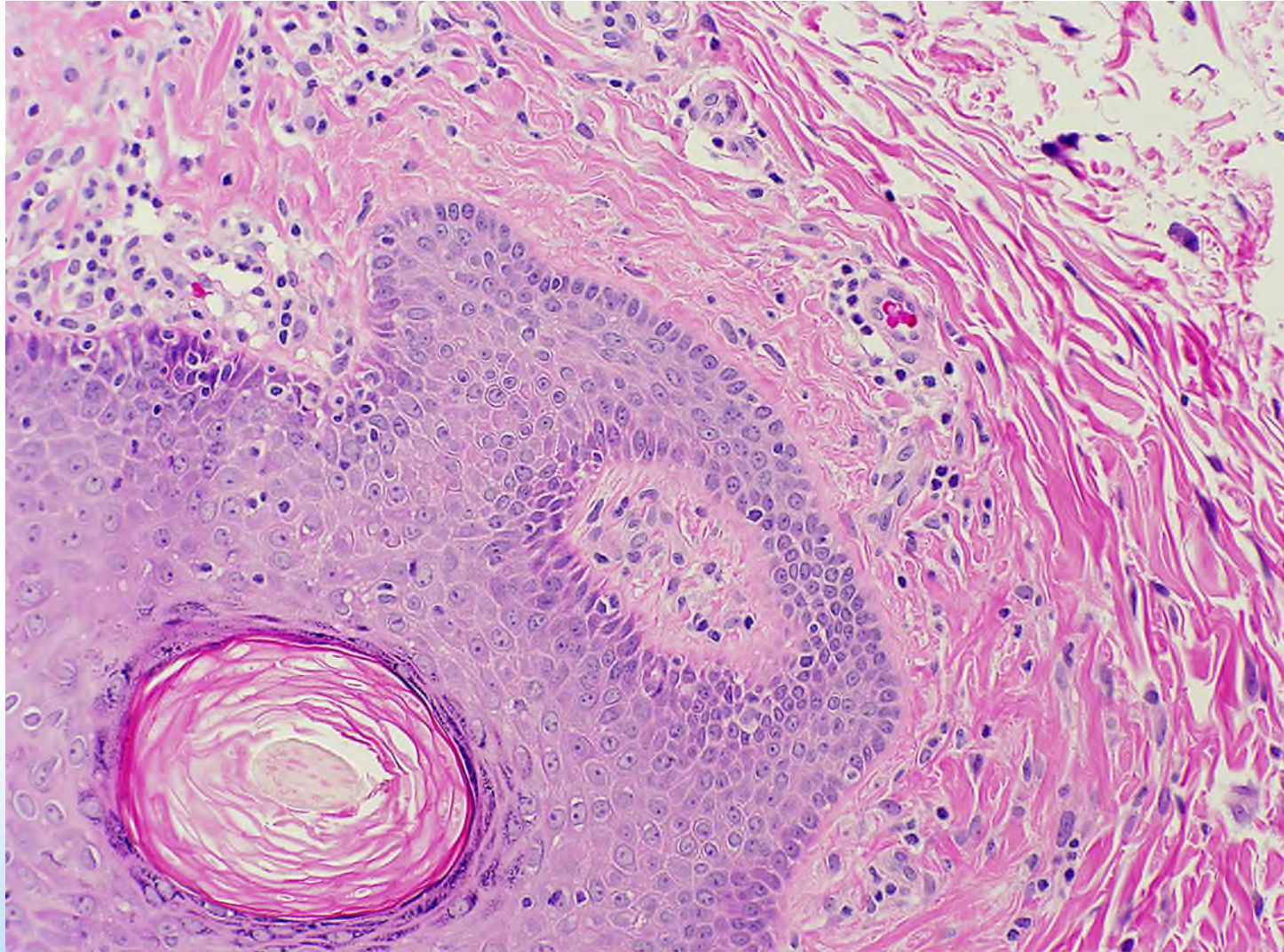
Tuberous sclerosis: Angiofibroma



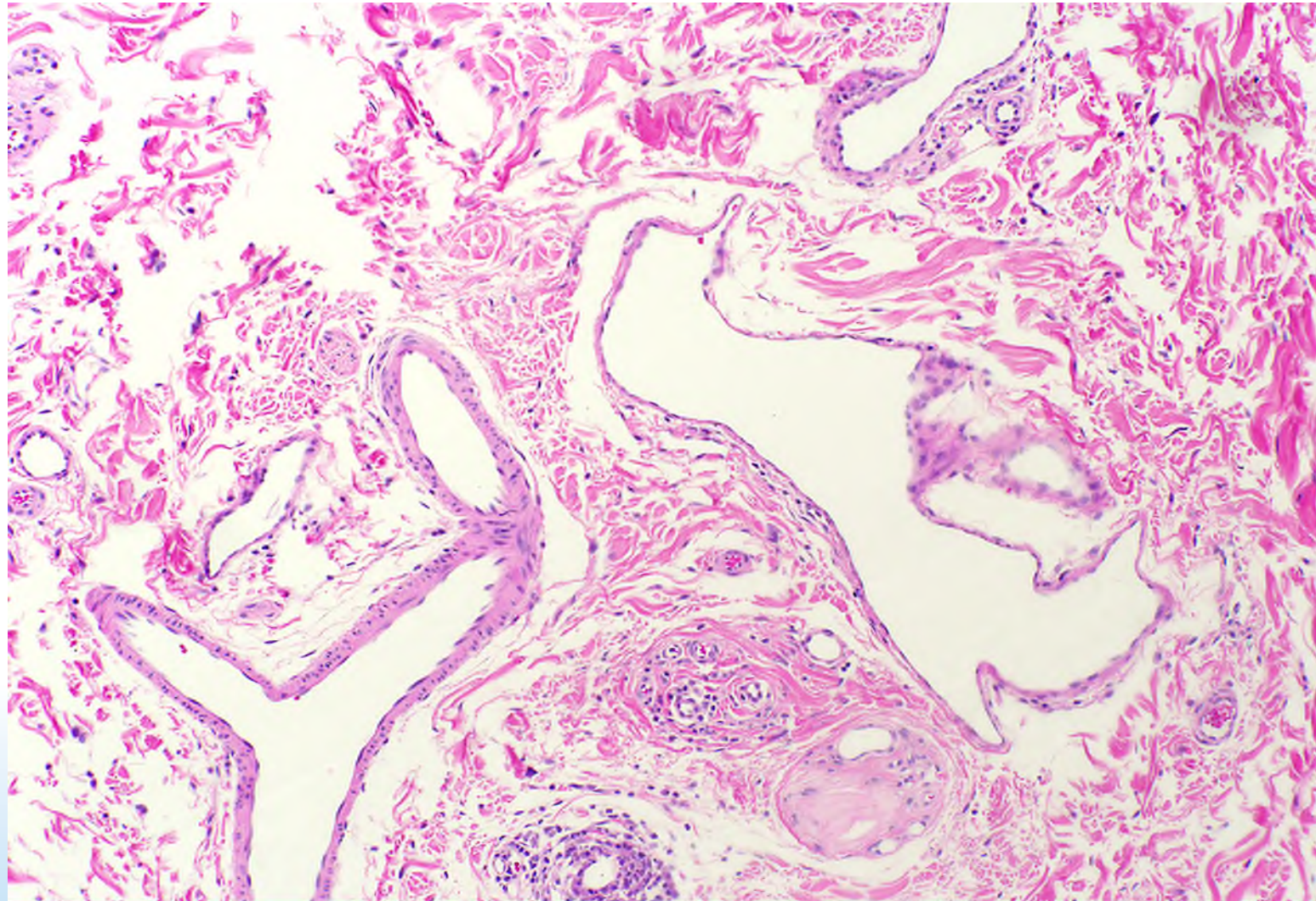
Tuberous sclerosis: Angiofibroma



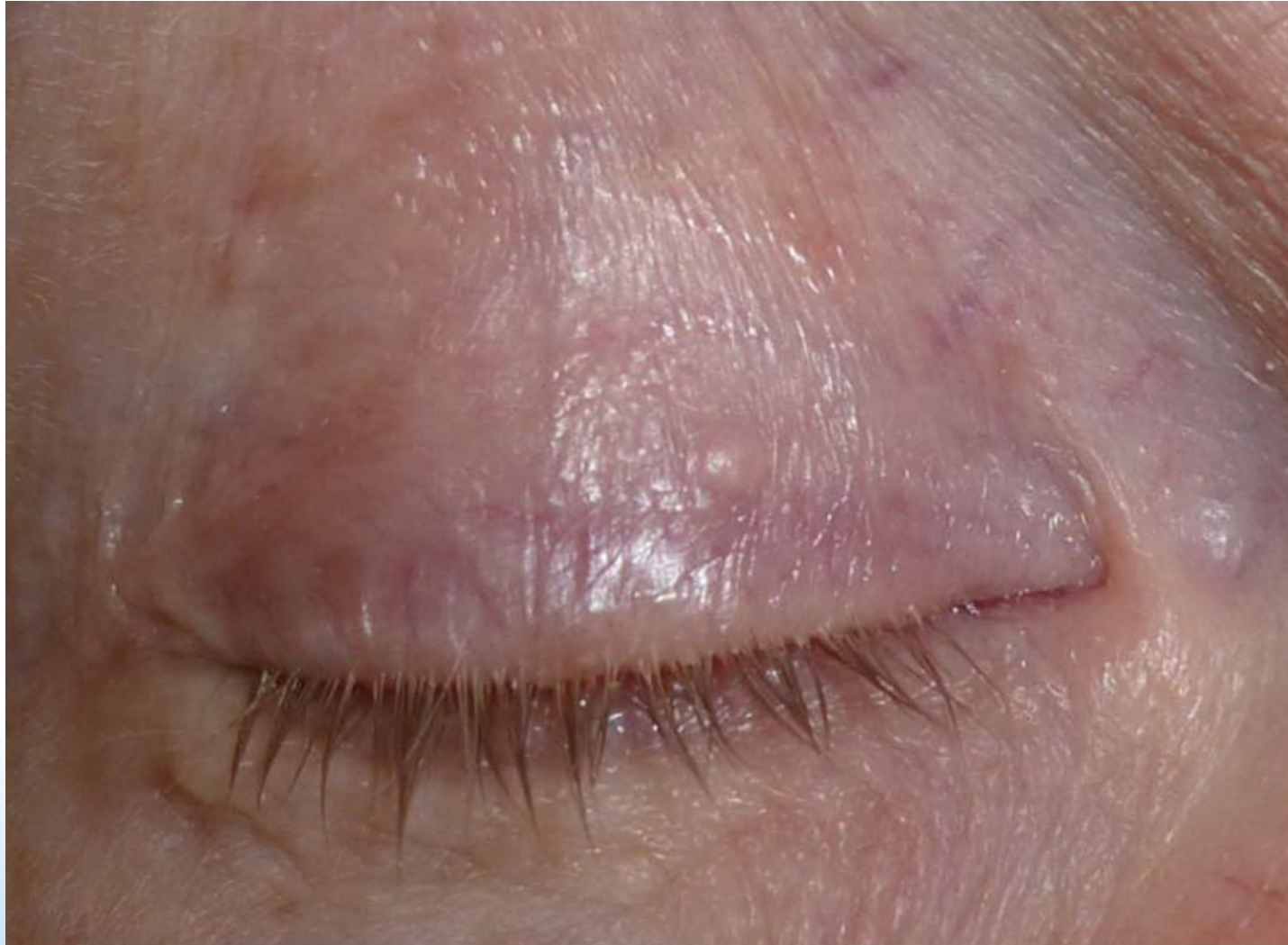
Tuberous sclerosis: Angiofibroma



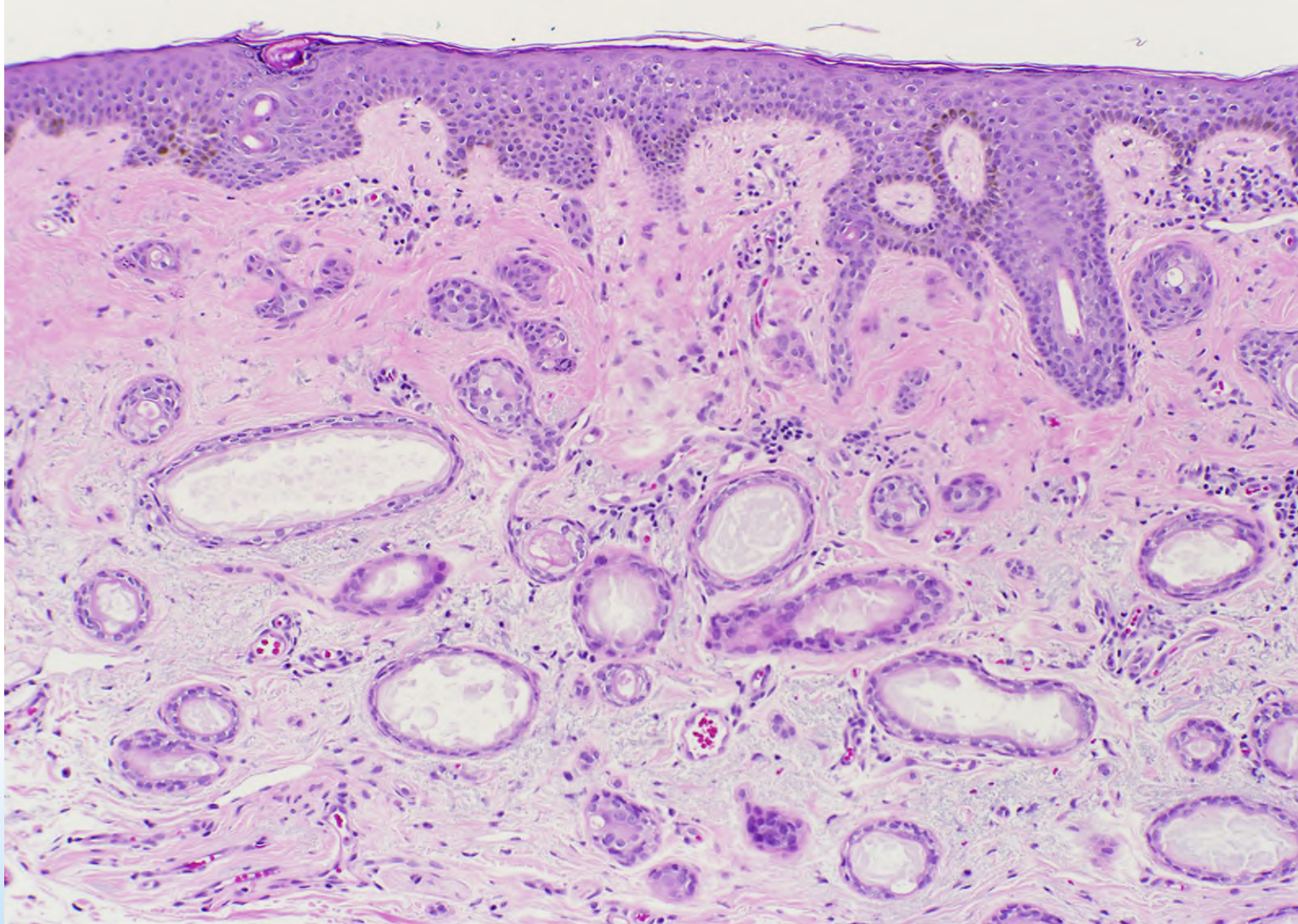
Tuberous sclerosis: Angiofibroma



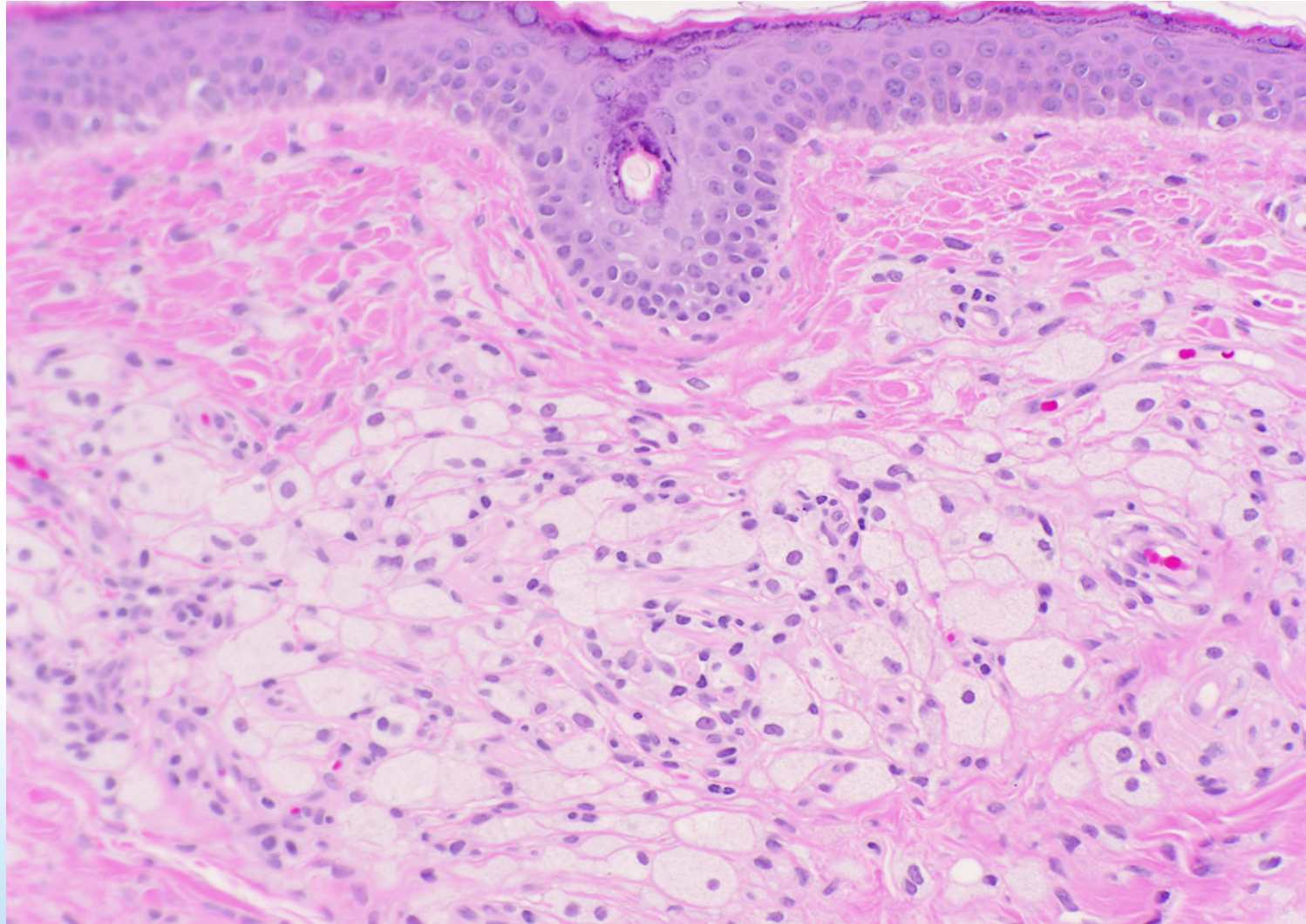
Syringoma



Syringoma



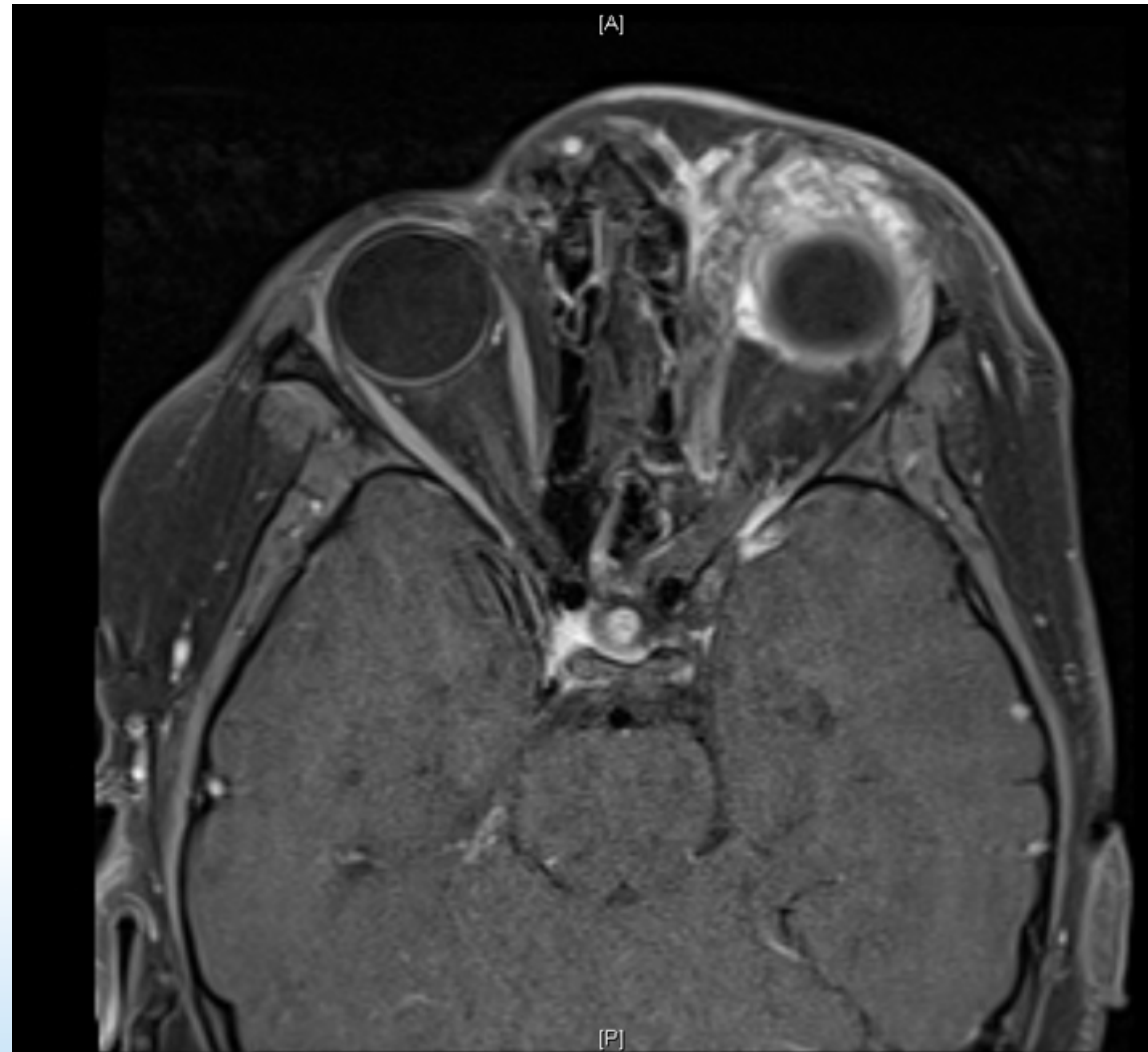
Xanthelasma



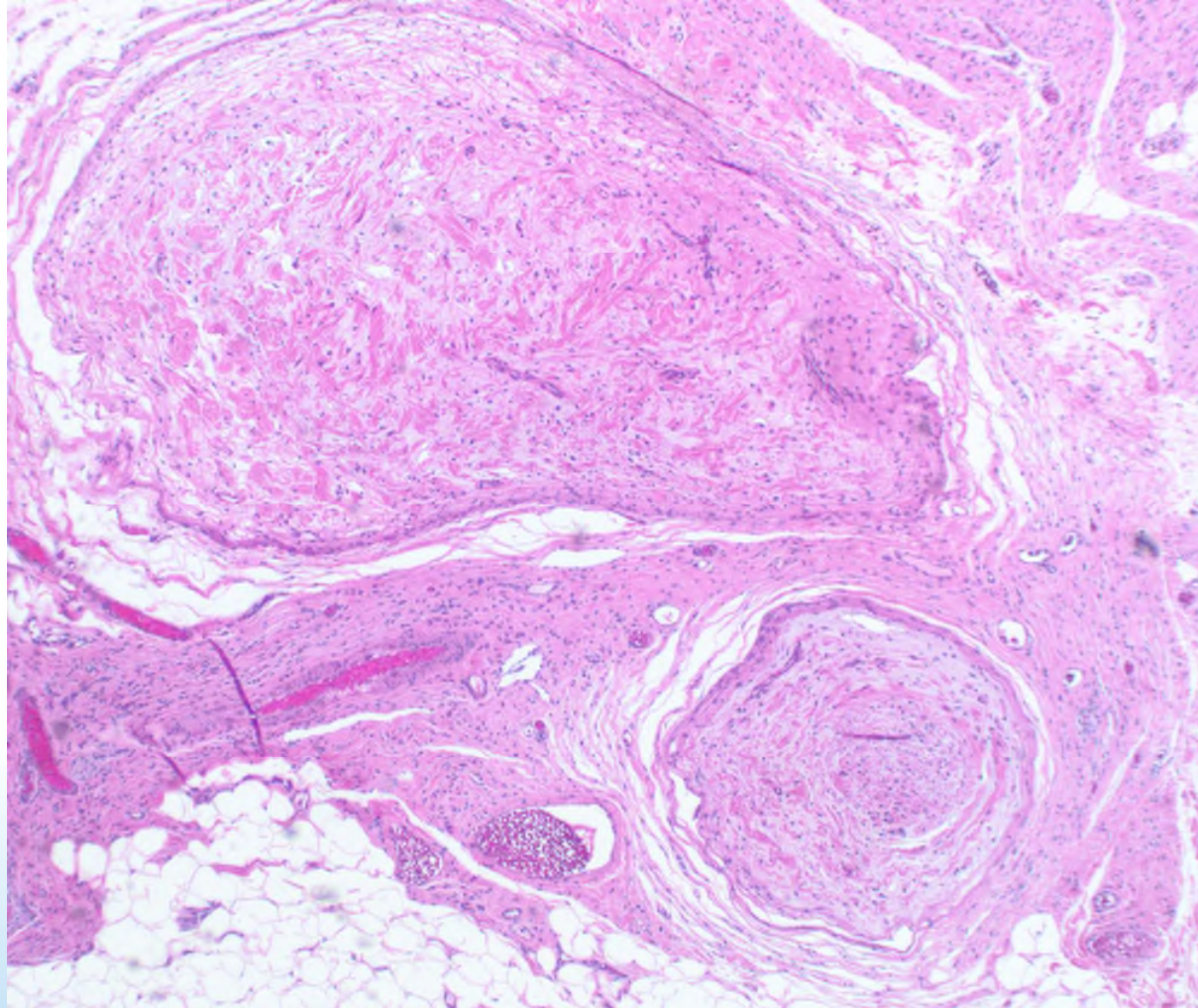
Neurofibroma



Neurofibroma



Neurofibroma



Question 1

1. You remain more likely to receive a biopsy of hereditary benign intraepithelial dyskeratosis in which geographic location:

a. Pacific Northwest

b. North Carolina

c. Northeast

d. Southwest

e. Nevada



Correct answer and rationale: B

Hereditary benign intraepithelial dyskeratosis has a strong association with the Haliwa-Saponi tribe located in North Carolina.



Question 2

2.	Limbal dermoid:
A	Histologically is identical to a dermoid cyst
B	Is a component of malignant teratoma
C	Is a congenital choristomatous lesion composed of epithelium, collagen bundles and epidermal appendages
D	Frequently metastasizes
E	Anatomically involves the superiorlateral orbit



Correct answer and rationale: C

- **Limbal dermoid is a congenital choristomatous lesion composed of epithelium, collagen bundles and epidermal appendages. It is benign and does not involve the orbit.**



Question 3

3

When a patient presents with a “recurrent or atypical chalazion” a biopsy is submitted to evaluate for:

- a. Ocular cicatricial pemphigoid
- b. Parasitic infection
- c. Sebaceous carcinoma
- d. Basal cell carcinoma
- e. Malignant melanoma



Correct answer and rationale: C

- **“Recurrent or atypical chalazia” are concerning for the possibility of sebaceous carcinoma. The other choices do not typically present clinically as “chalazia.”**



The End

