

Dermatopathology

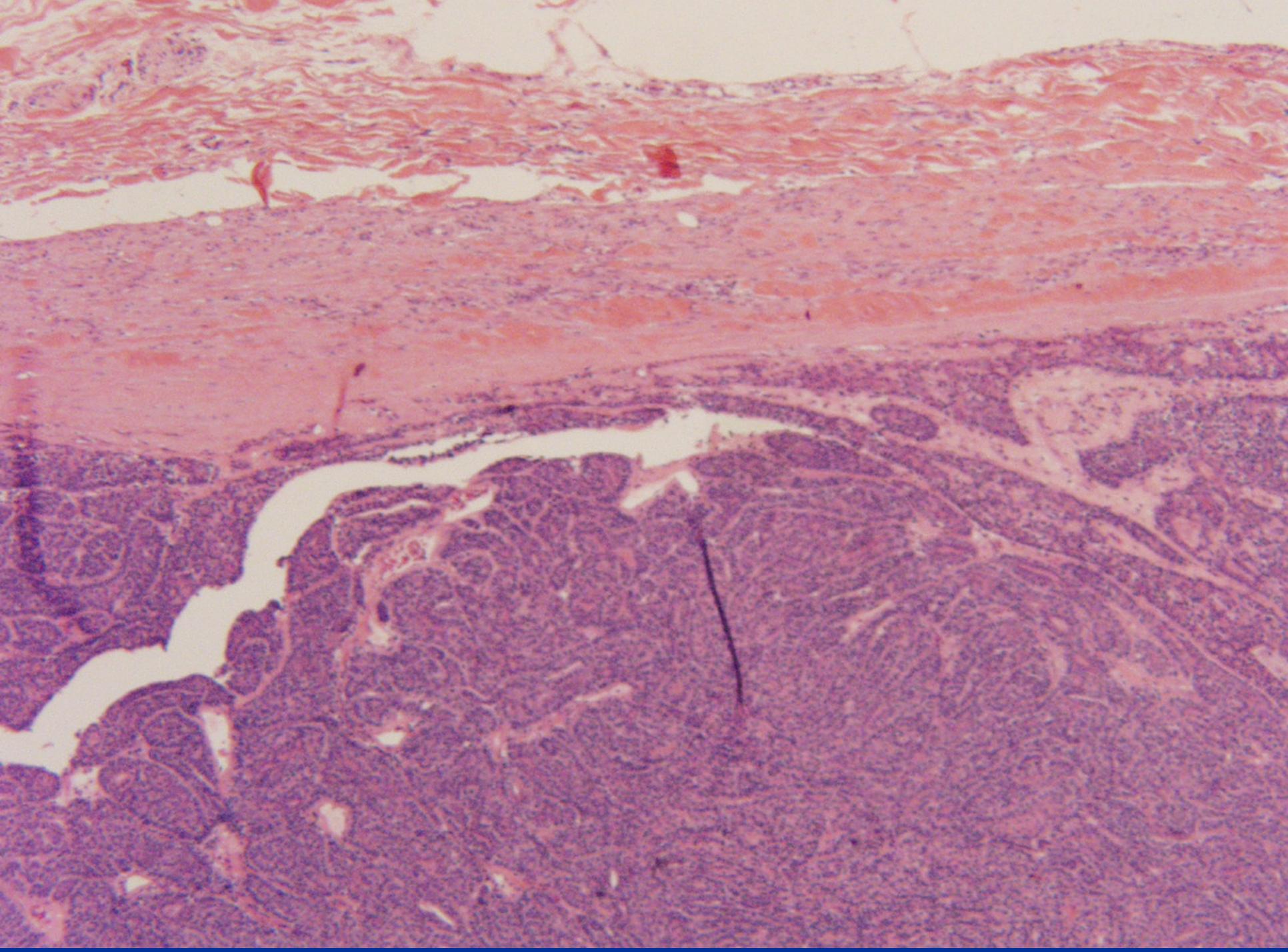
Slide Review

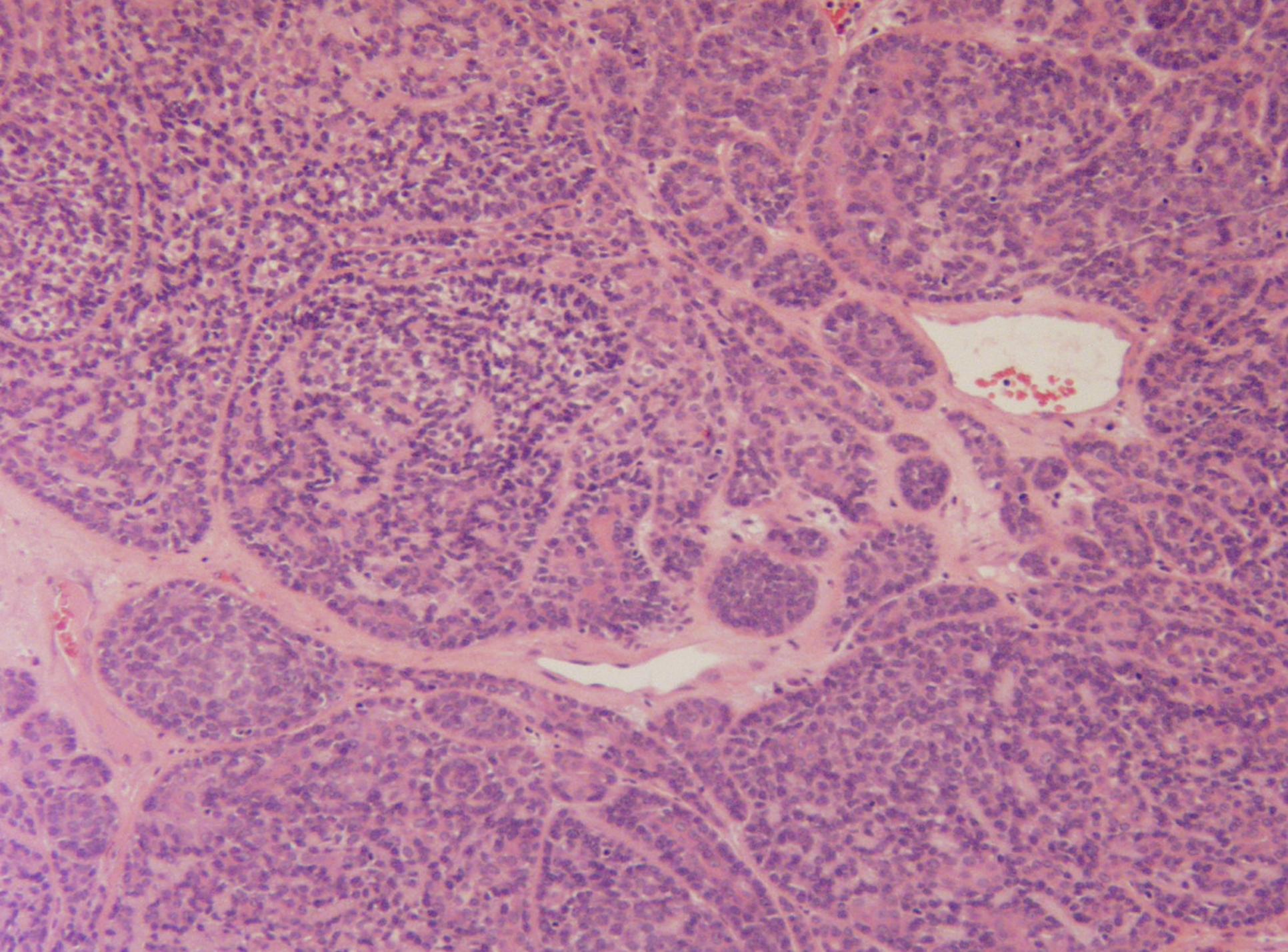
Part 3

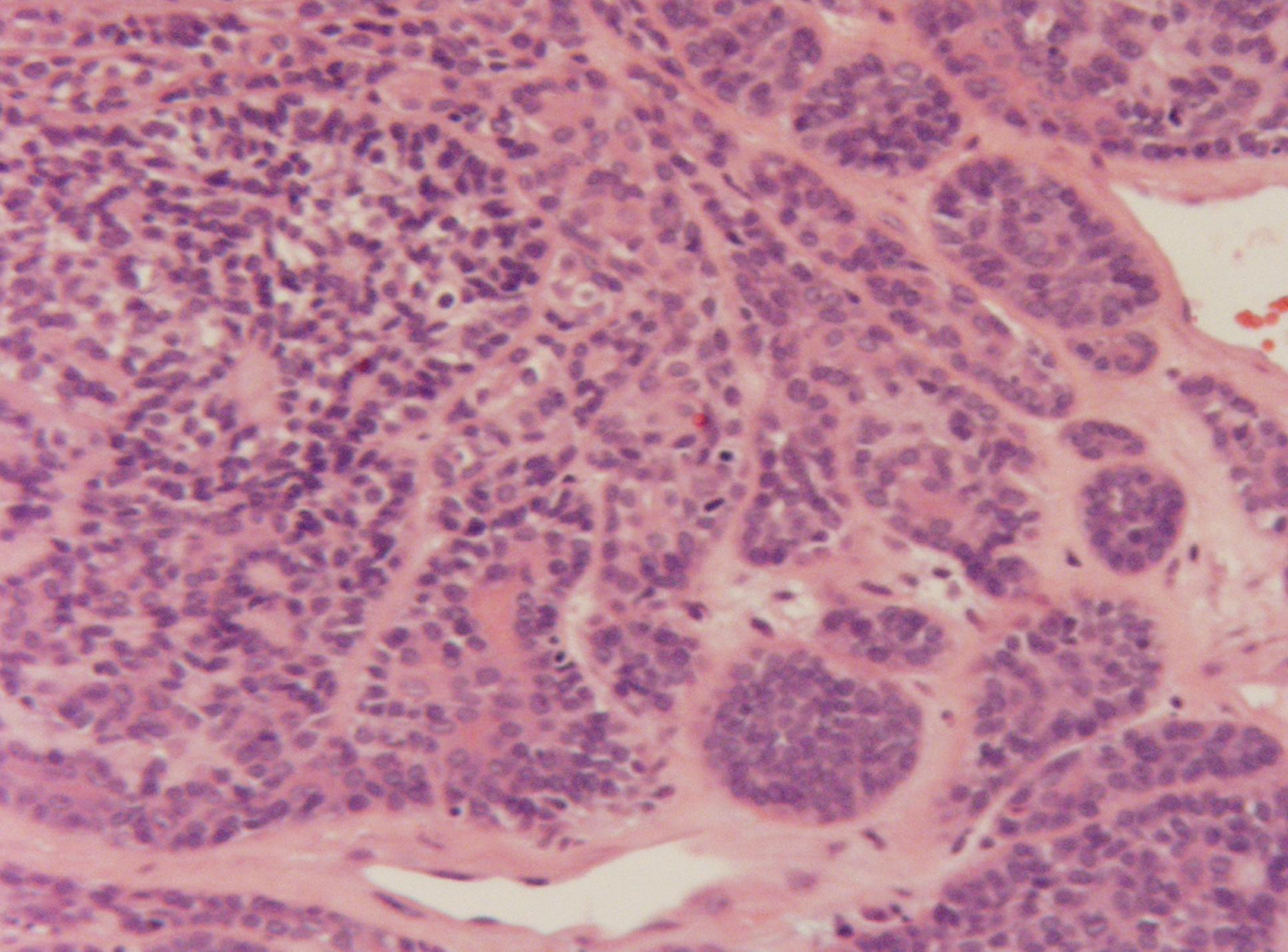
Paul K. Shitabata, M.D.

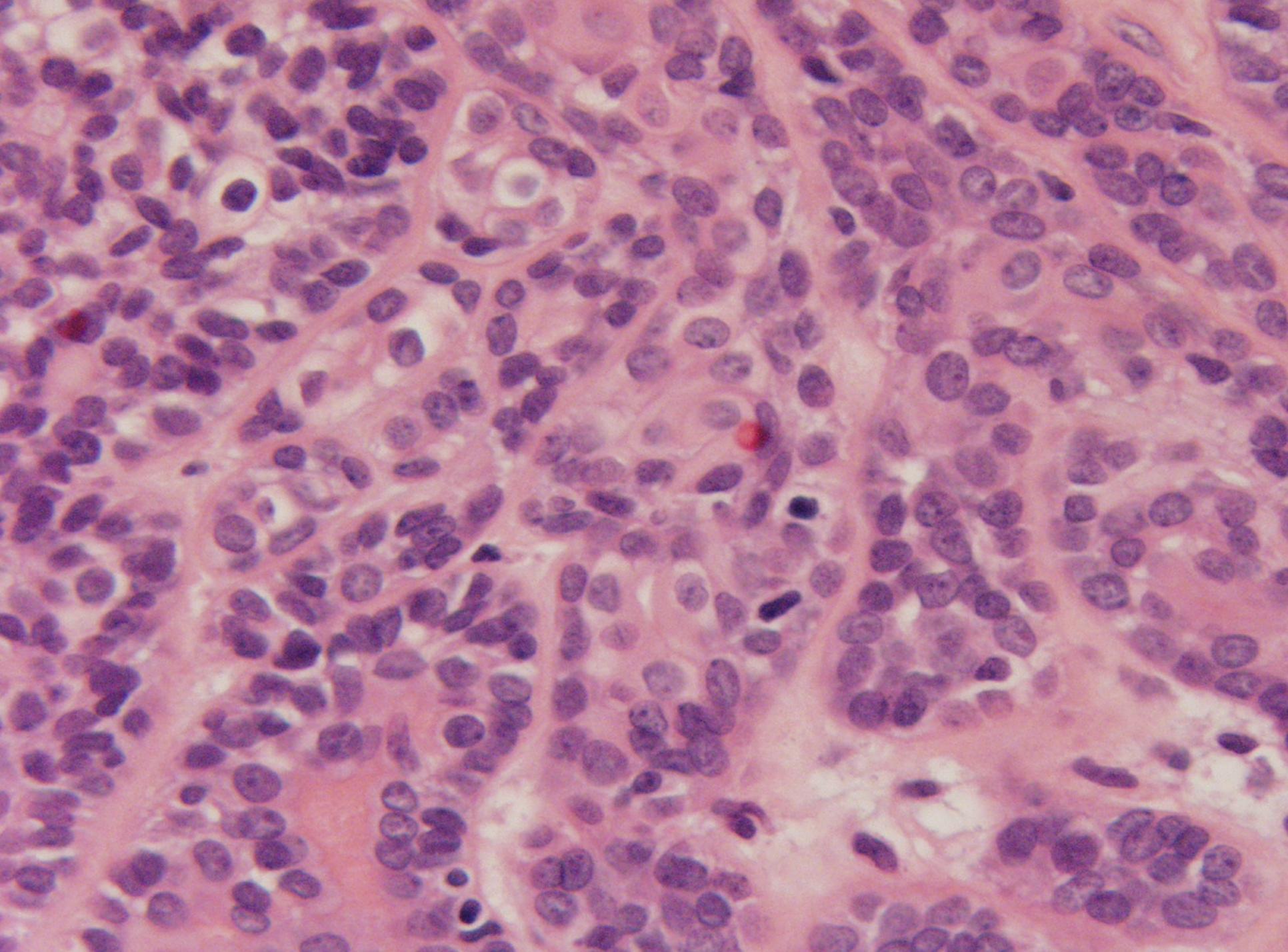
Dermatopathology Institute

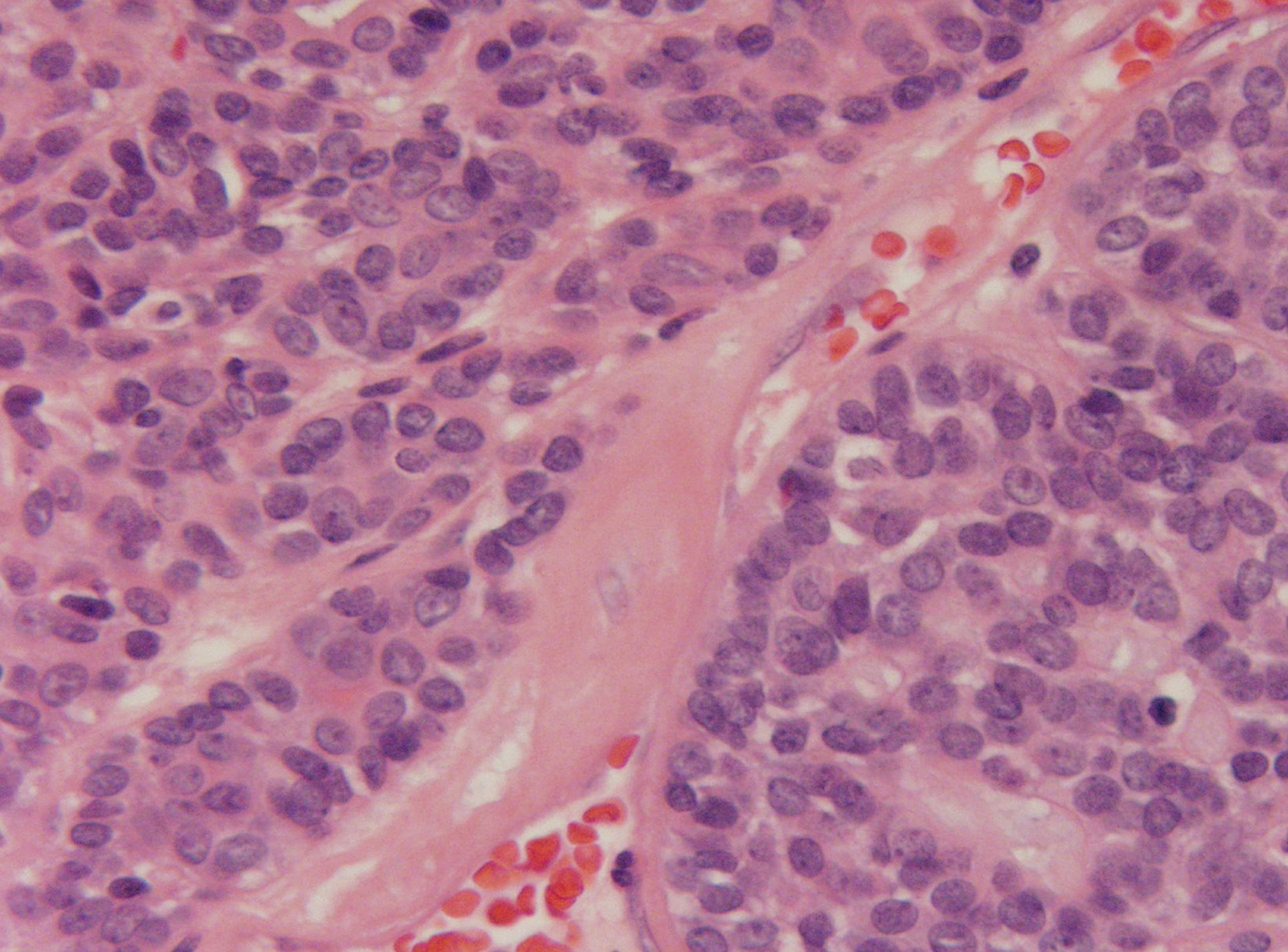
69 y.o. F with a mass on the
upper neck/base of scalp









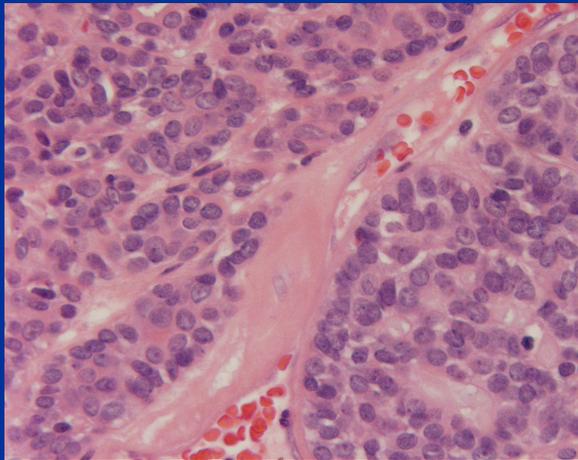
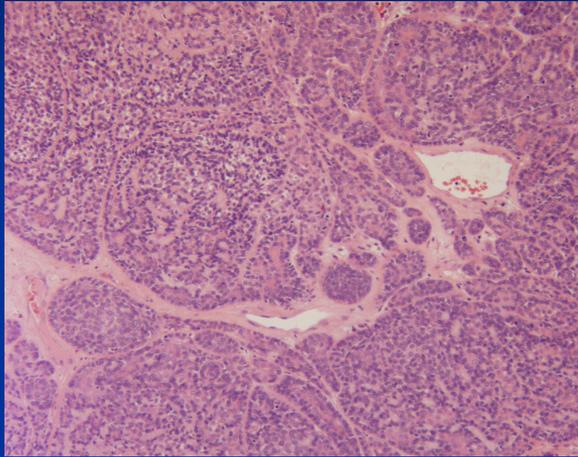


69 y.o. F with a mass on the upper neck/base of scalp

- Eccrine spiradenoma
- Cylindroma
- Basal cell CA
- Merkel cell CA

Eccrine Spiradenoma

Histopathology



- Nodules of basaloid cells
- Mixture of 2 cells types
- Perivascular hyalinization
- Scattered lymphocytes
- Thymoma-like

**Which syndrome(s) is/are
associated with Eccrine
Spiradenoma?**

Brooke-Spiegler Syndrome

What additional tumors are associated with this syndrome?

What is the genetic abnormality?

Brooke-Spiegler Syndrome

- Associated Tumors
 - Spiradenoma
 - Cylindroma
 - Spiradenocylindroma
 - Trichoepithelioma
 - Cribriform trichoblastomas
- CYLD gene, a tumor suppressor gene located on chromosome 16q12-q13.

Mnemonics for Painful Skin Tumors?

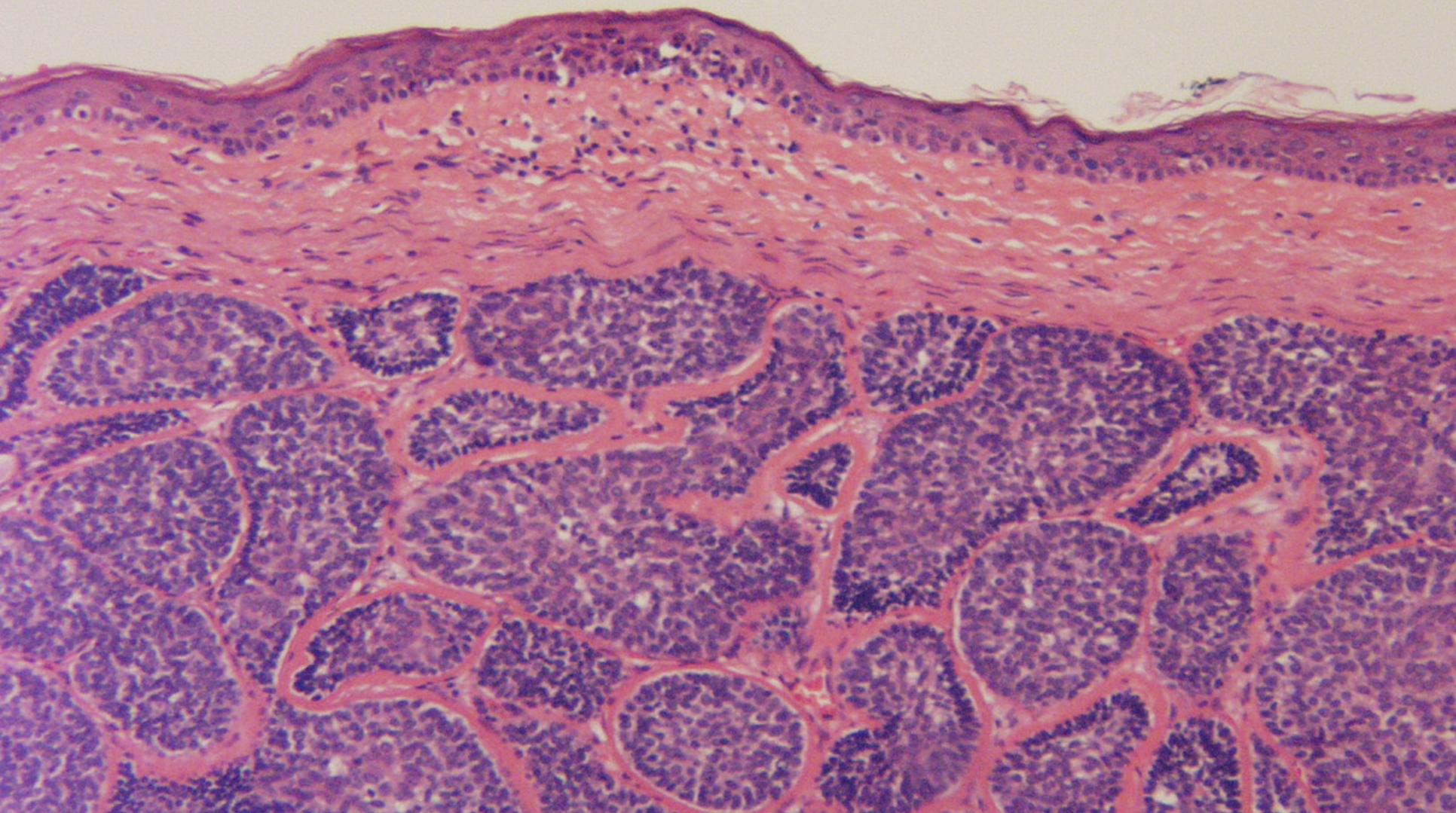
Painful Skin Tumors

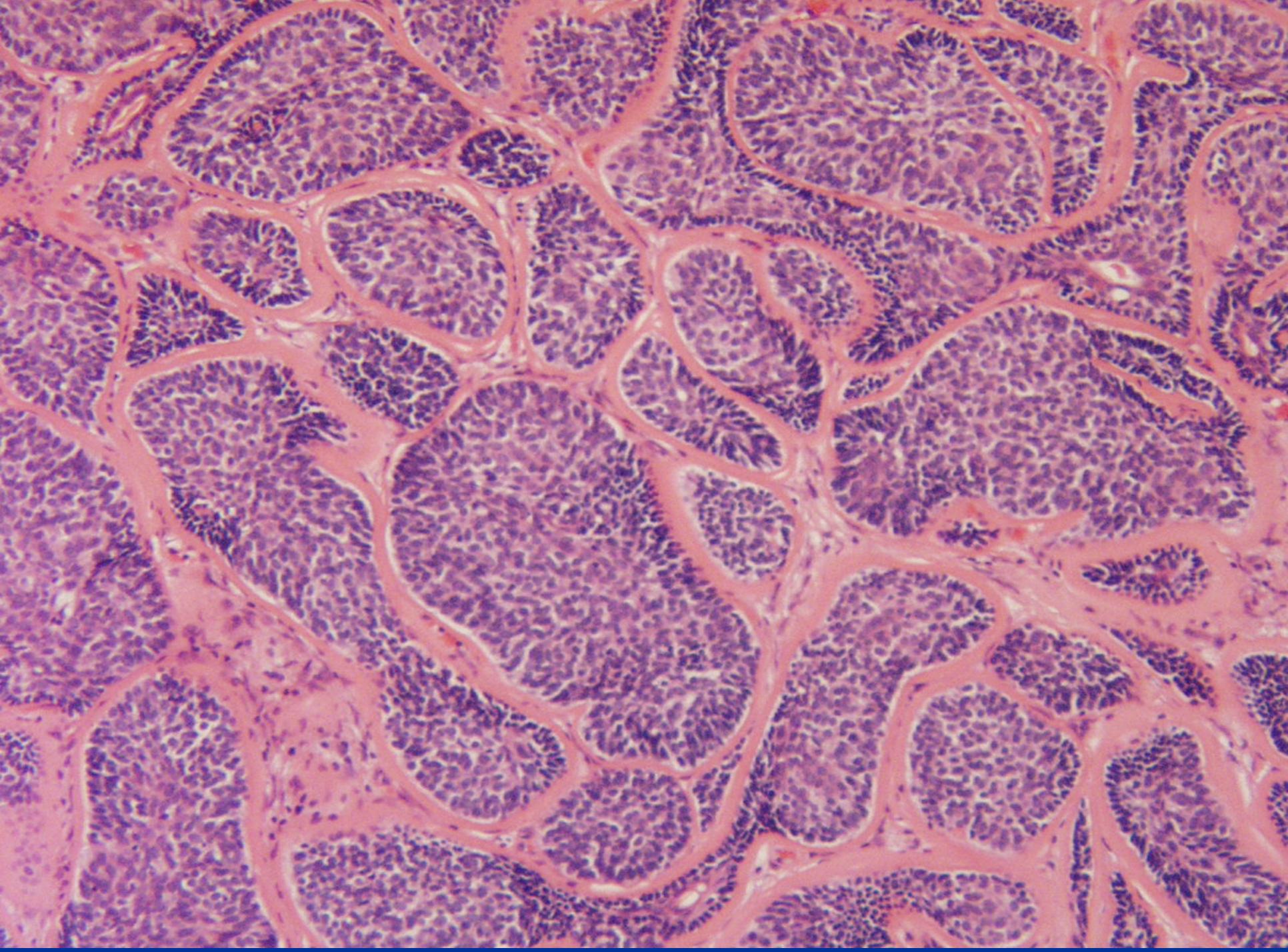
■ Blue ANGEL

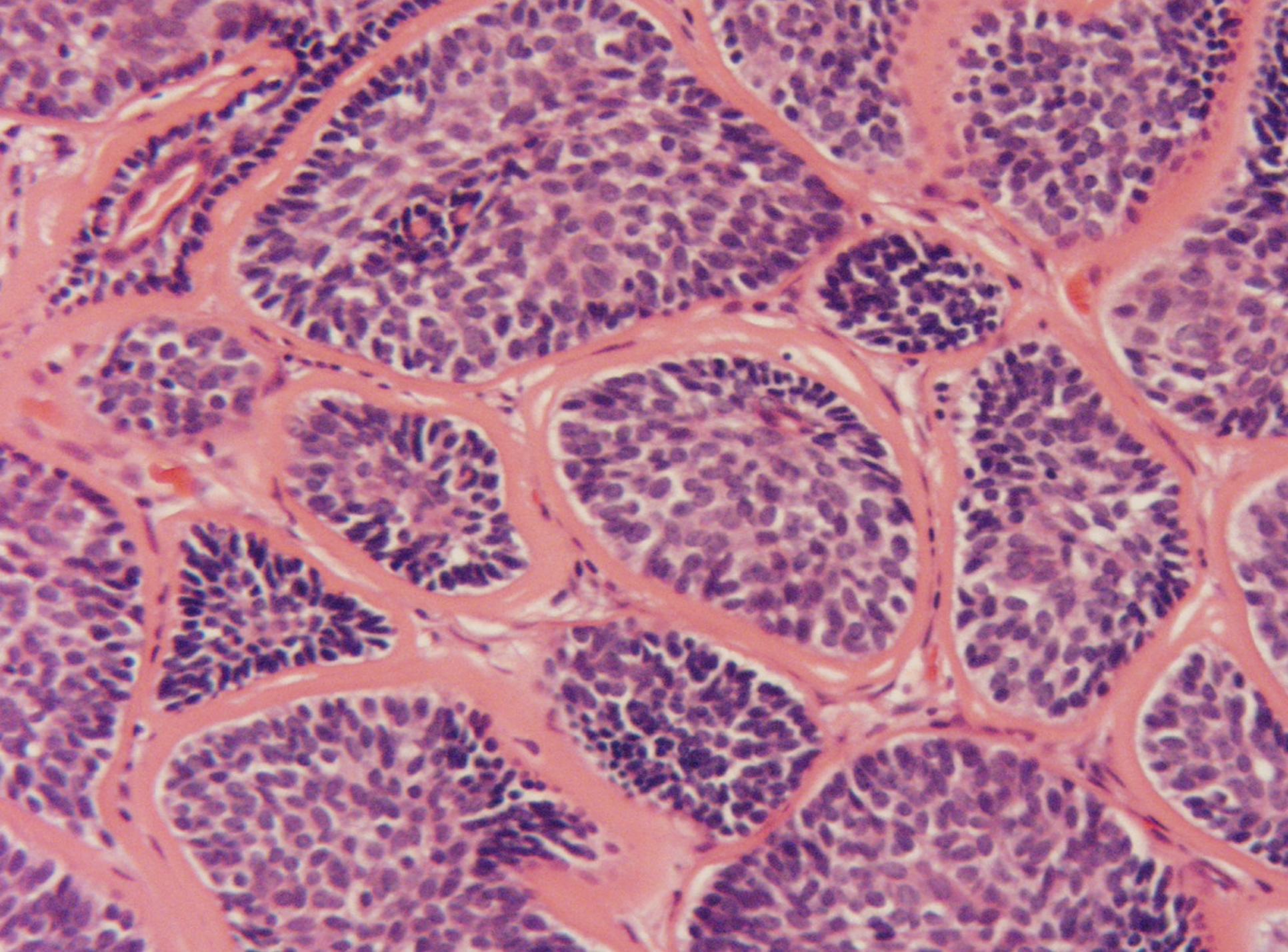
- Blue rubber bleb nevus
- Angiolipoma
- Neuroma
- Glomus tumor
- Eccrine spiradenoma
- Leiomyoma

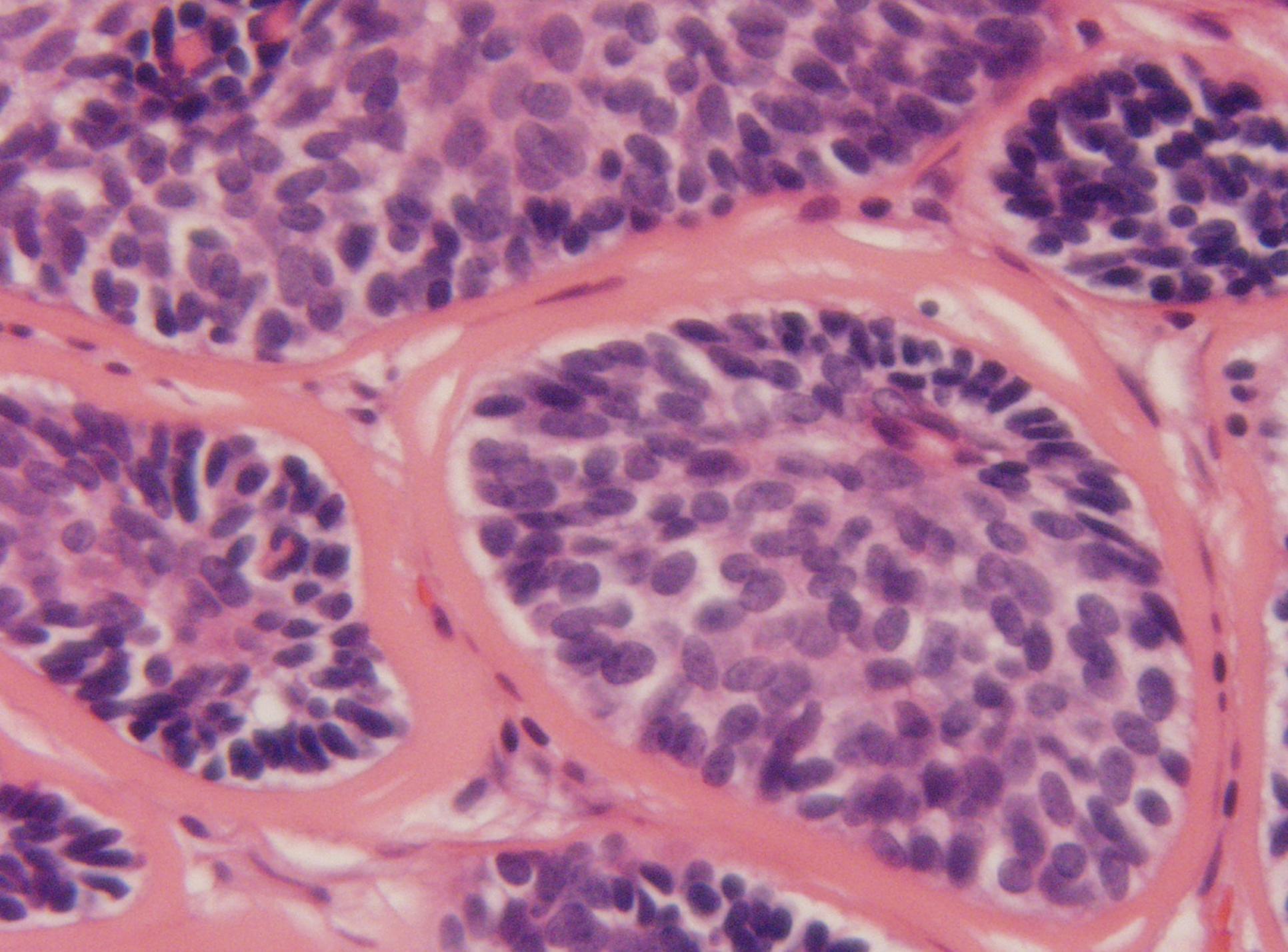
■ BLEND AN EGG

- Blue rubber bleb nevus
- Leiomyoma
- Eccrine spiradenoma
- Neuroma
- Dermatofibroma
- Angiolipoma
- Neurilemmoma
- Endometrioma
- Glomus tumor
- Granular cell tumor









What is the differential diagnosis?

Cylindroma

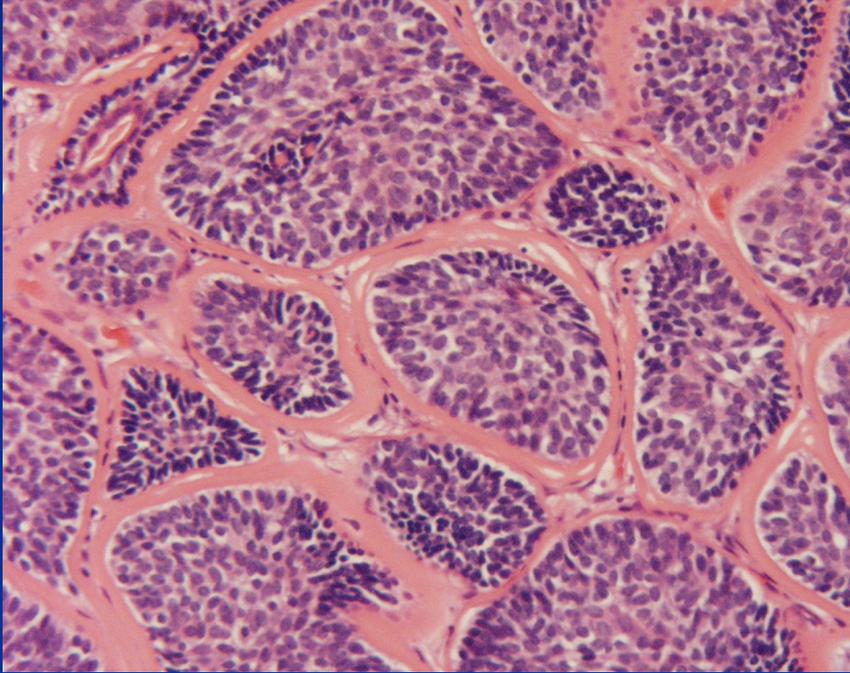
**What is the translocation
associated with Cutaneous
Cylindromas?**

MYB-NFIB gene fusion
t(6;9)(q22 ~ 23;p23 ~ 24)

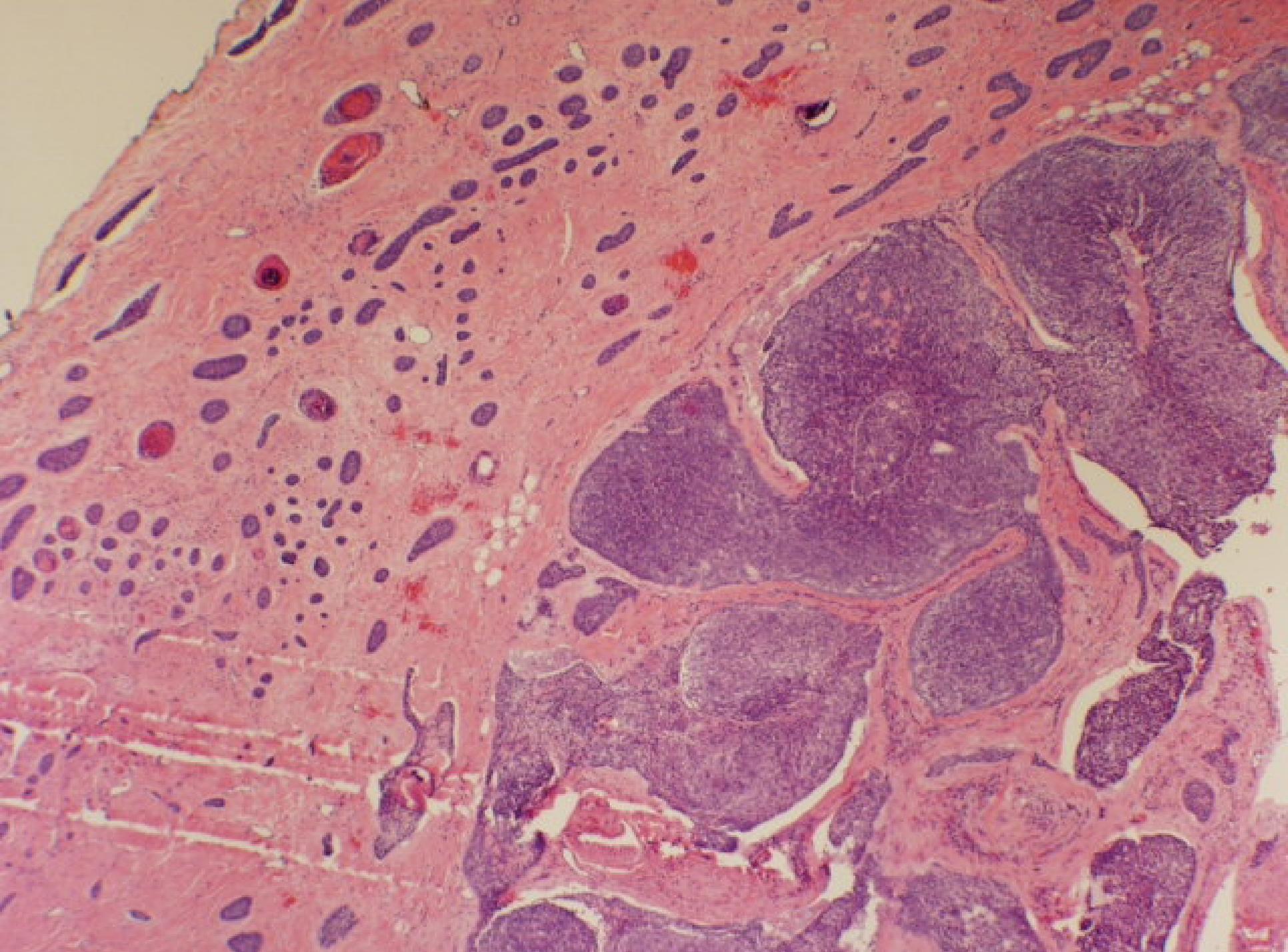
**What other tumors are associated
with this translocation?**

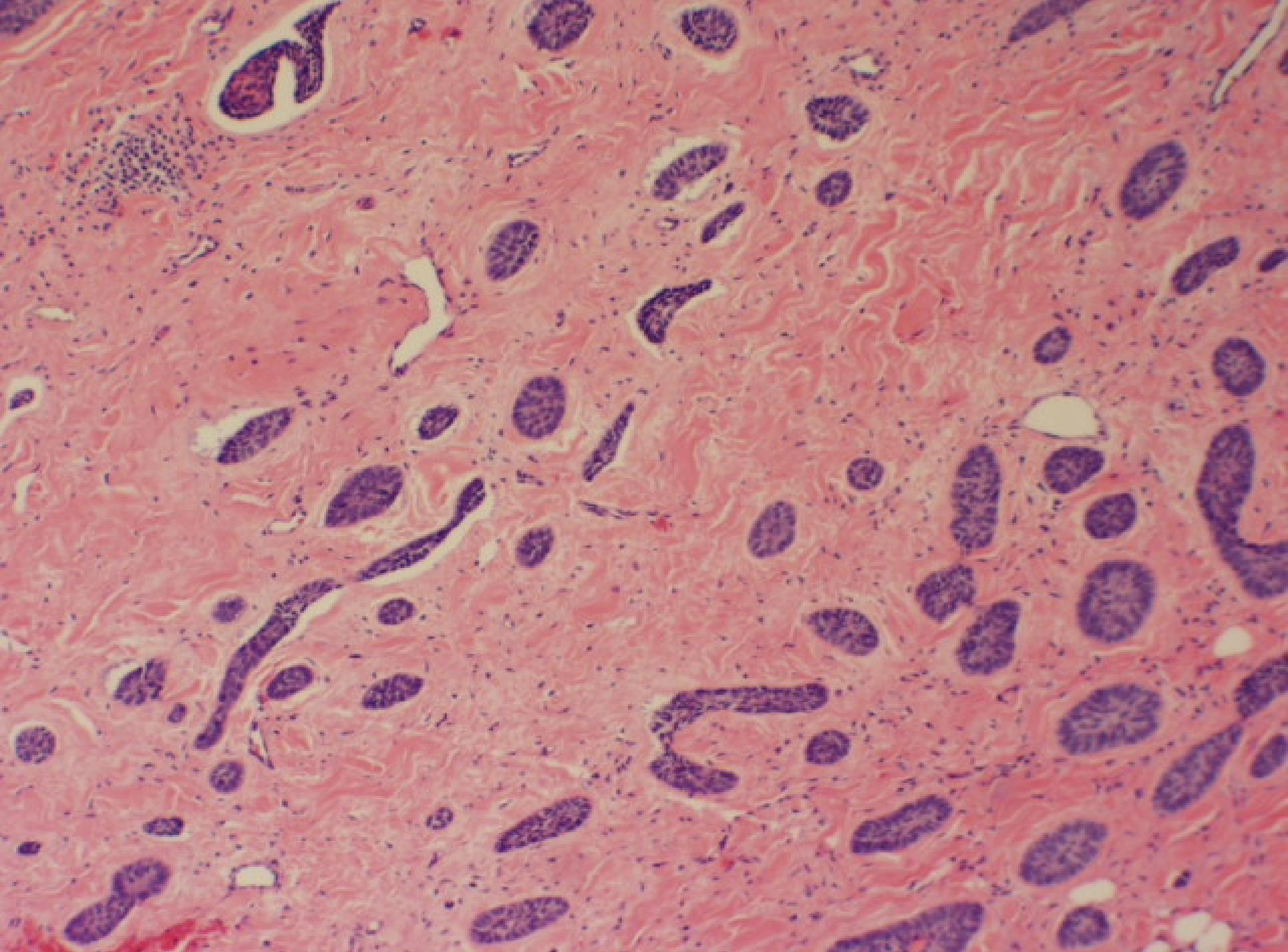
Adenoid Cystic Carcinomas of the breast and head and neck

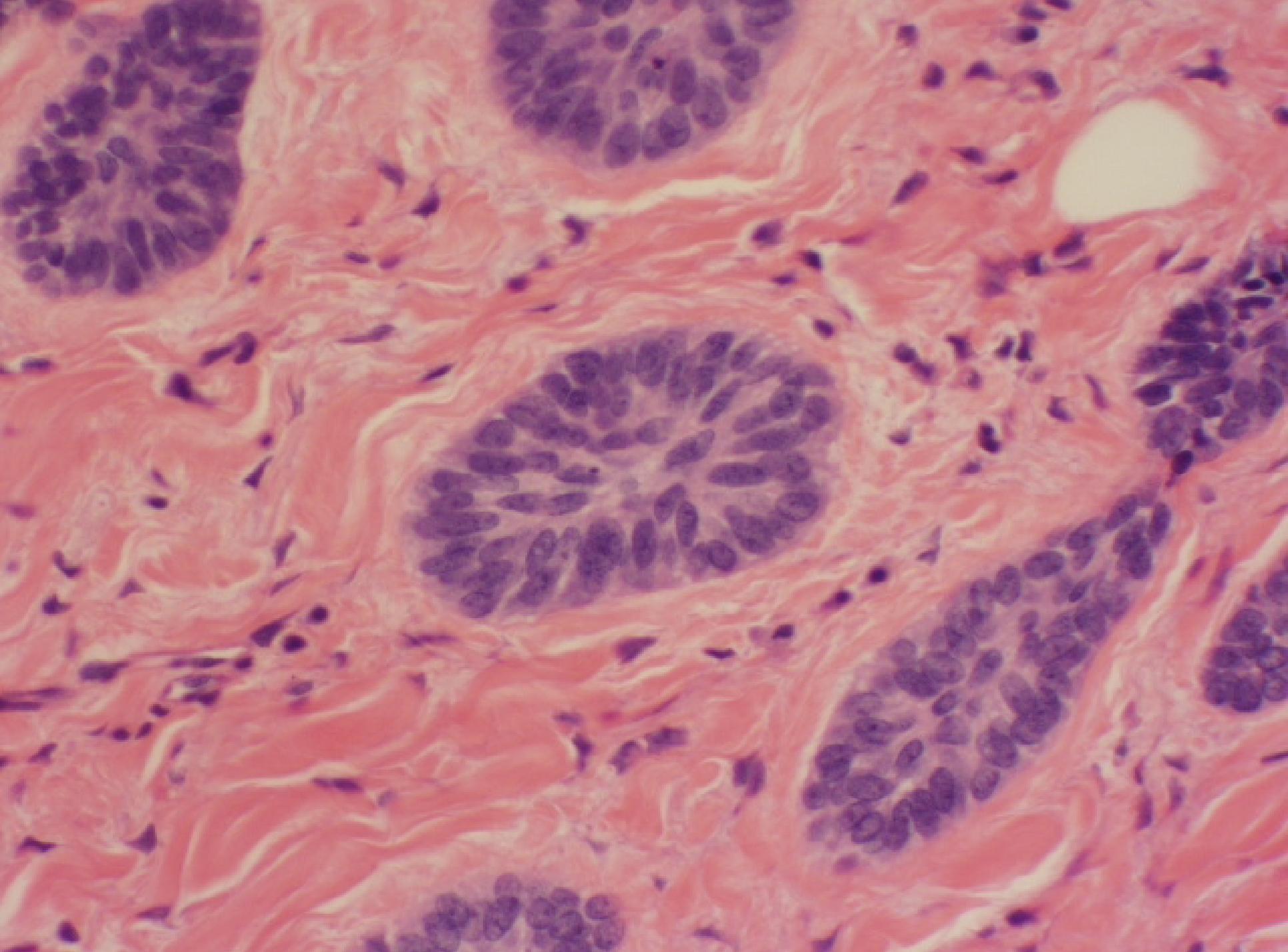
Histopathology



- Low power circumscribed nodule
- Circumscribed nests of basaloid cells
- Characteristic compartmentalization by hyalinized BM







**What is your differential
diagnosis?**

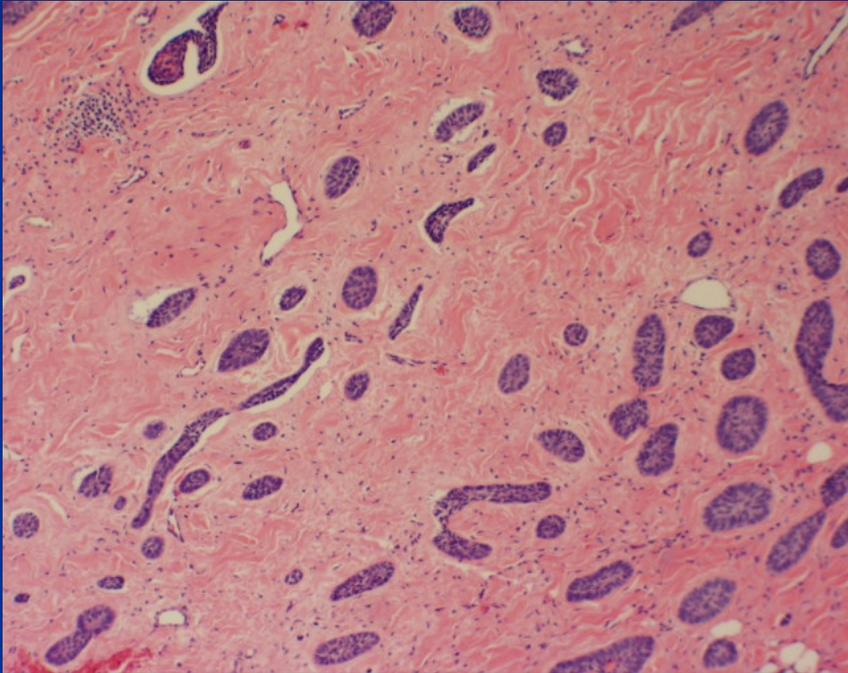
**Basal Cell Carcinoma
with micronodular features**

What are the histopathologic subtypes of locally aggressive basal cell carcinoma?

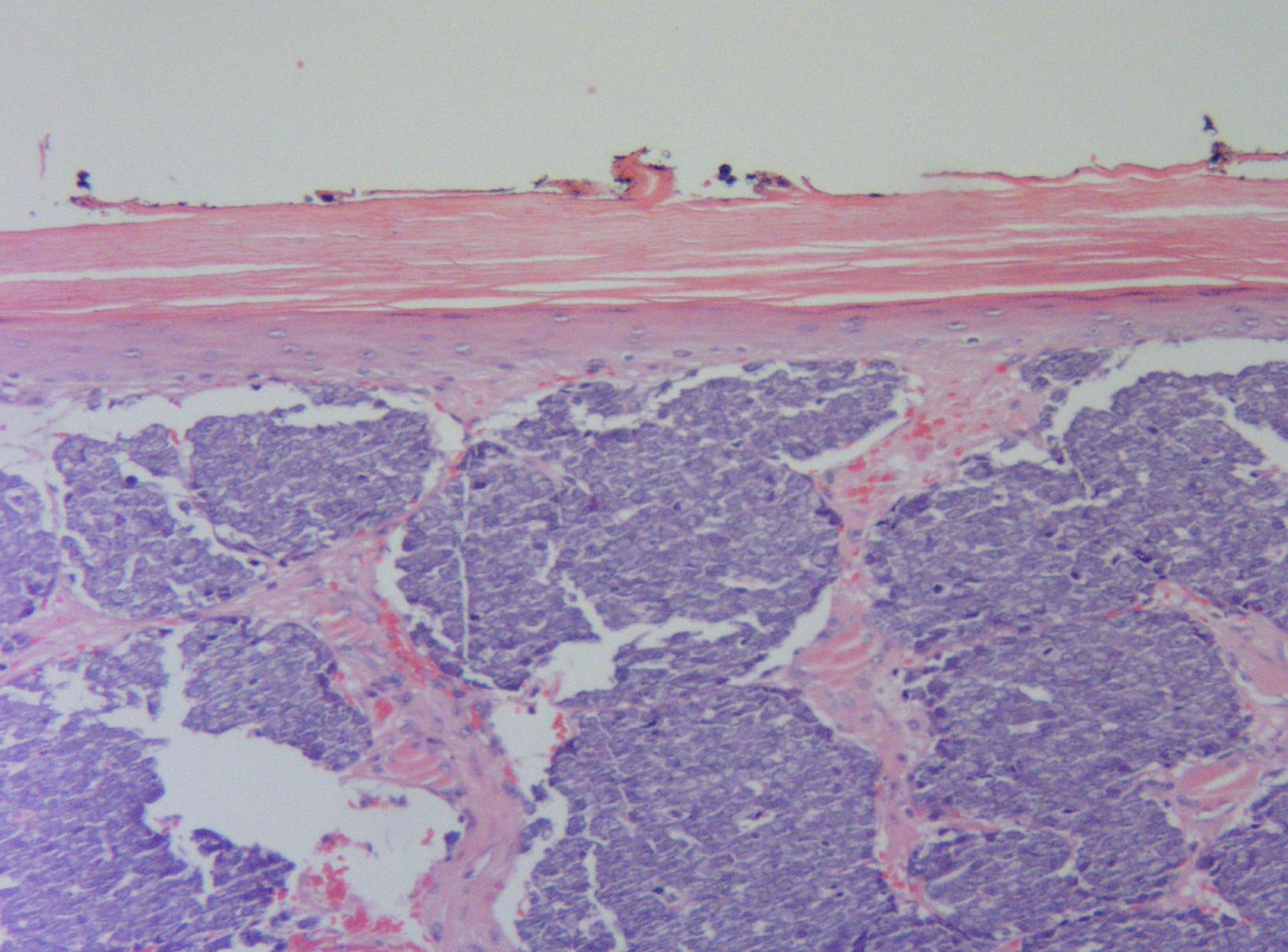
Locally Aggressive Subtypes of Basal Cell Carcinoma

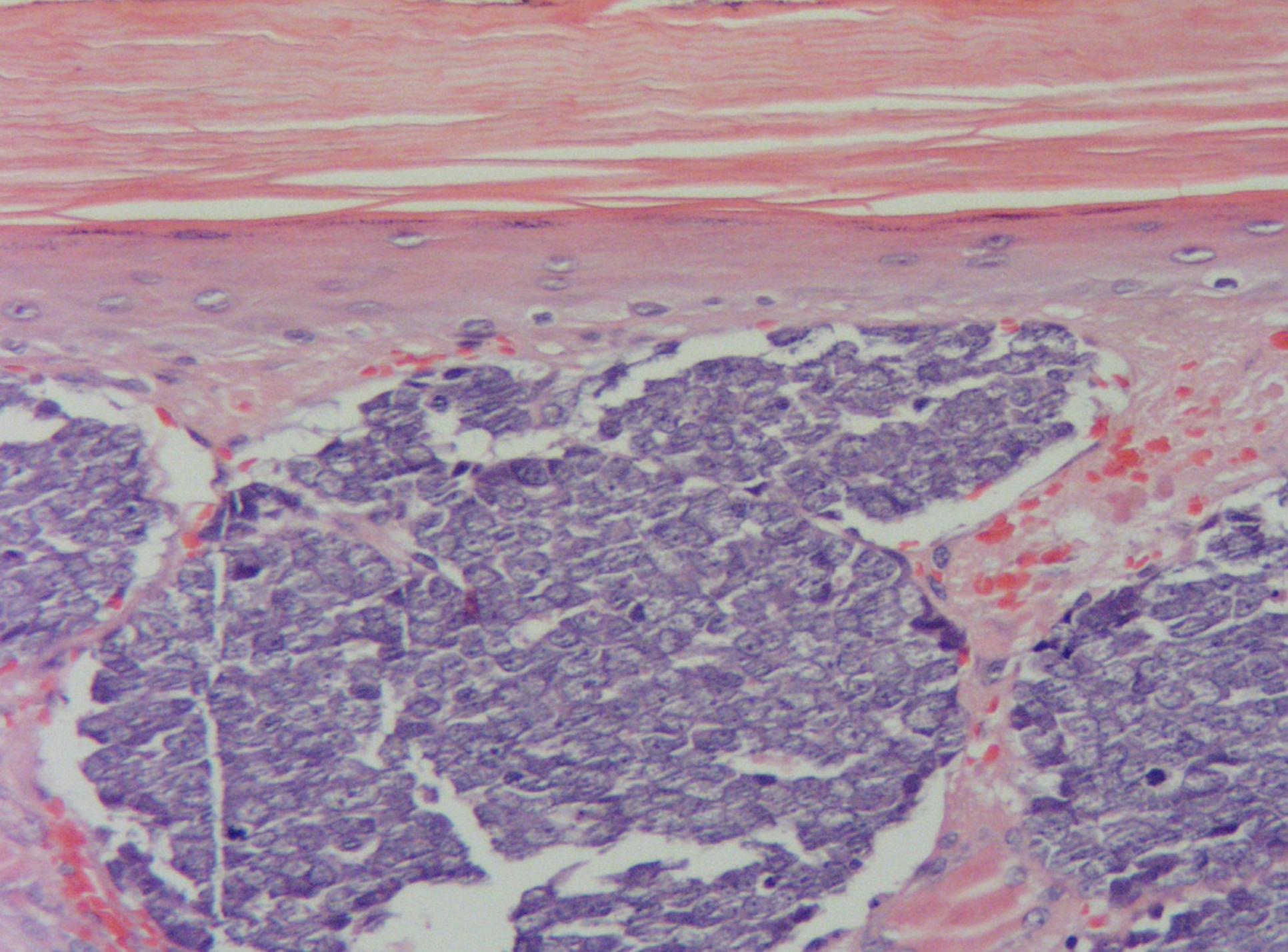
- Morpheaform
- Infiltrative
- Micronodular
- With Squamous Metaplasia (Basosquamous cell carcinoma)

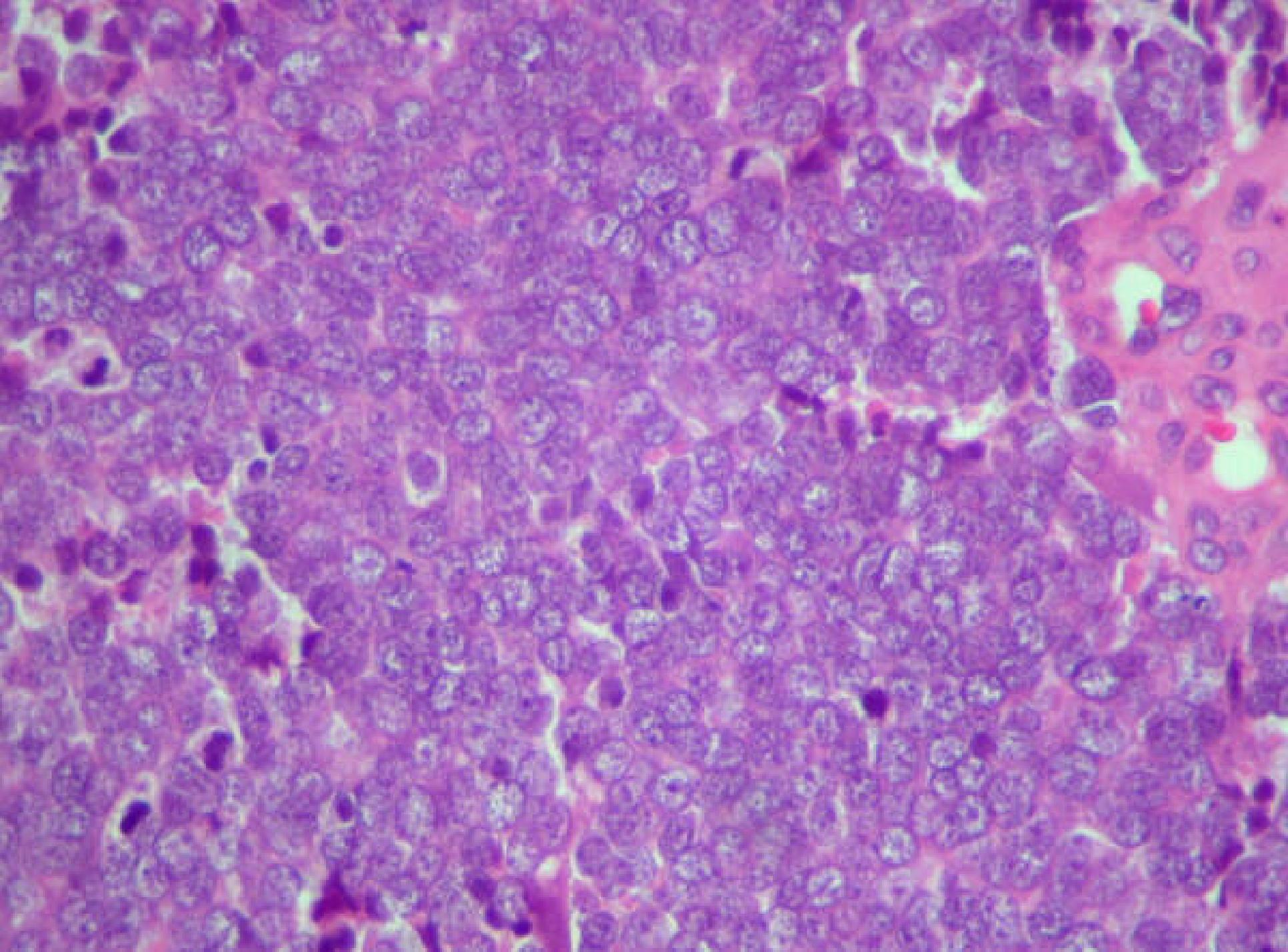
Histopathology



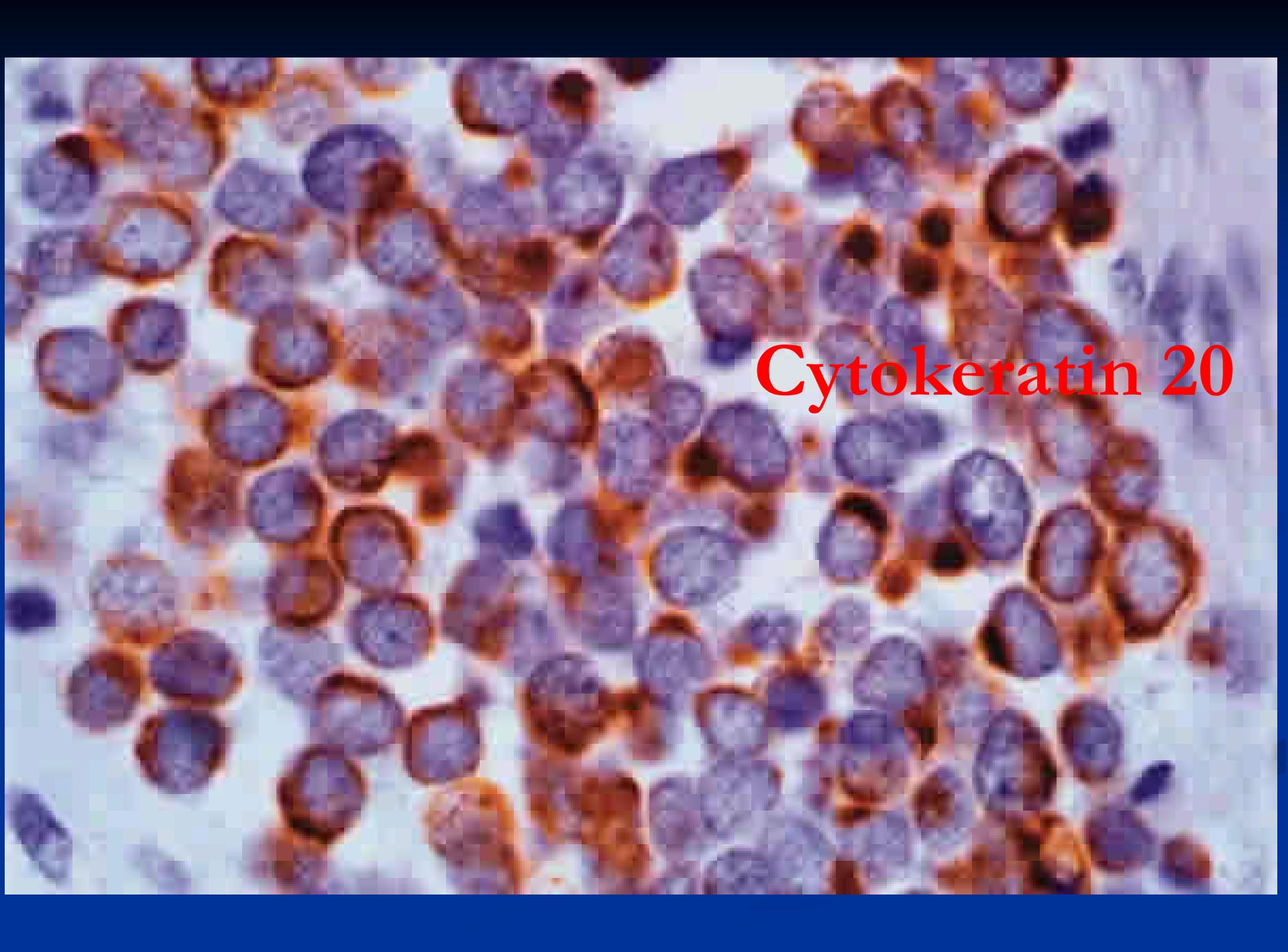
- Nodules of basaloid cells showing minimal atypia
- Deep infiltrative growth pattern
- Minimal stromal response
- Limited sampling may be difficult to distinguish from hair follicles/eccrine glands







**What additional stains/IHC
would you order?**

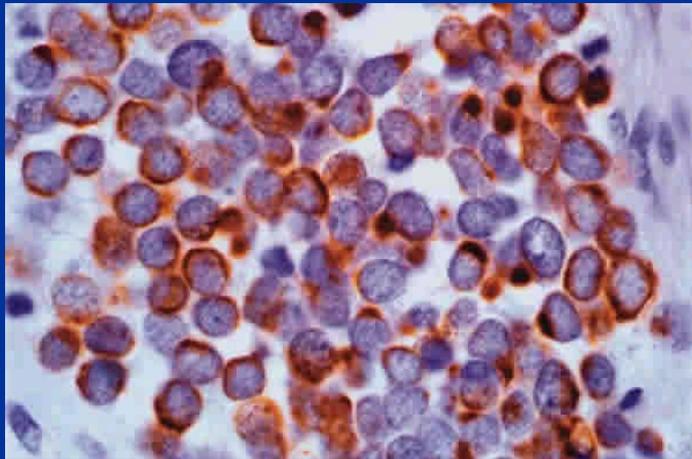
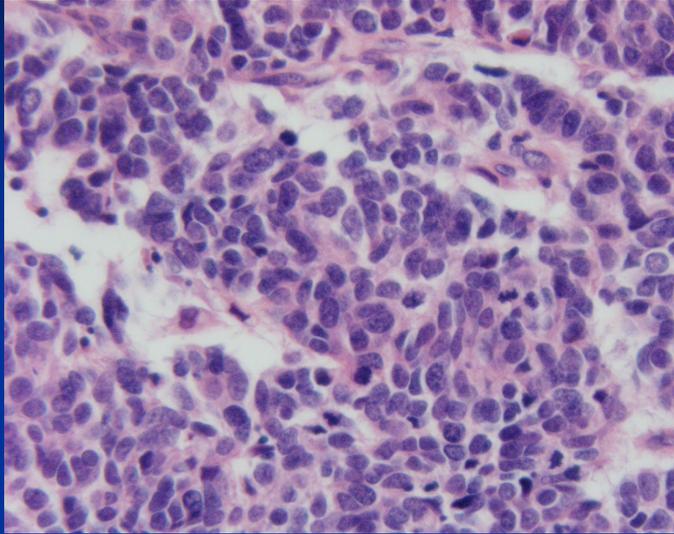


Cytokeratin 20

This image shows a high-magnification view of a tissue section stained for Cytokeratin 20. The cells are densely packed and exhibit a characteristic morphology with large, round nuclei stained purple. The cytoplasm of many cells is stained a dark brown color, indicating the presence of Cytokeratin 20. The overall appearance is consistent with a malignant epithelial tumor, such as a carcinoma, where Cytokeratin 20 is a common marker.

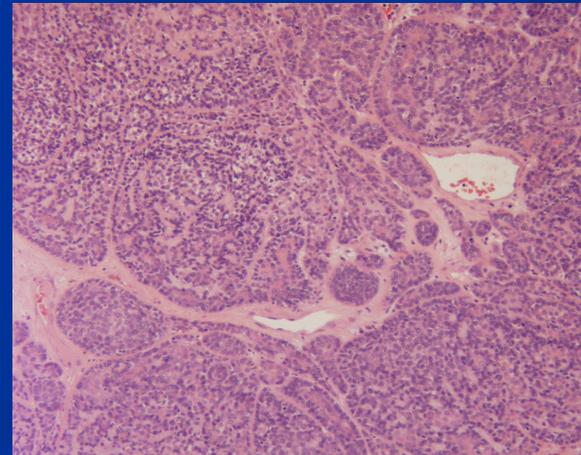
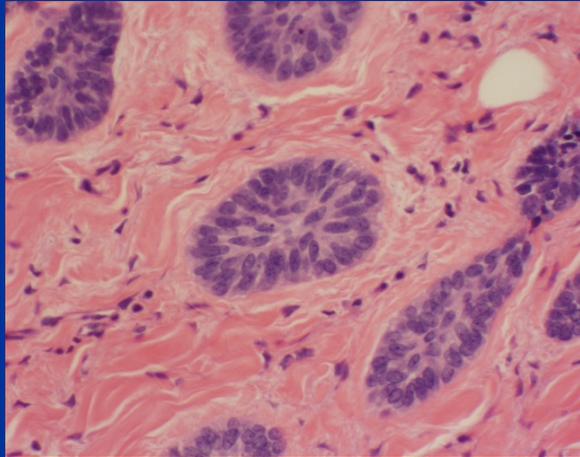
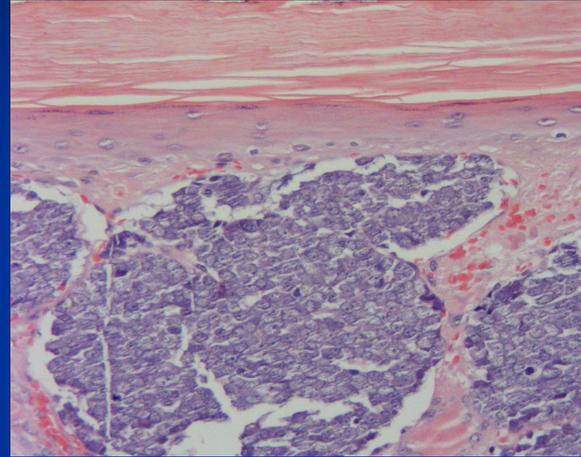
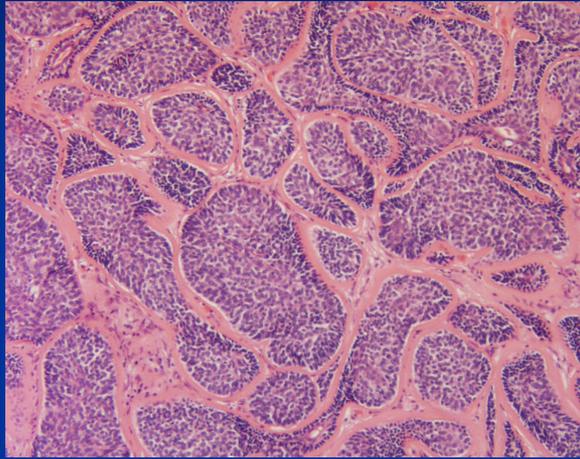
Merkel Cell Carcinoma

Histopathology

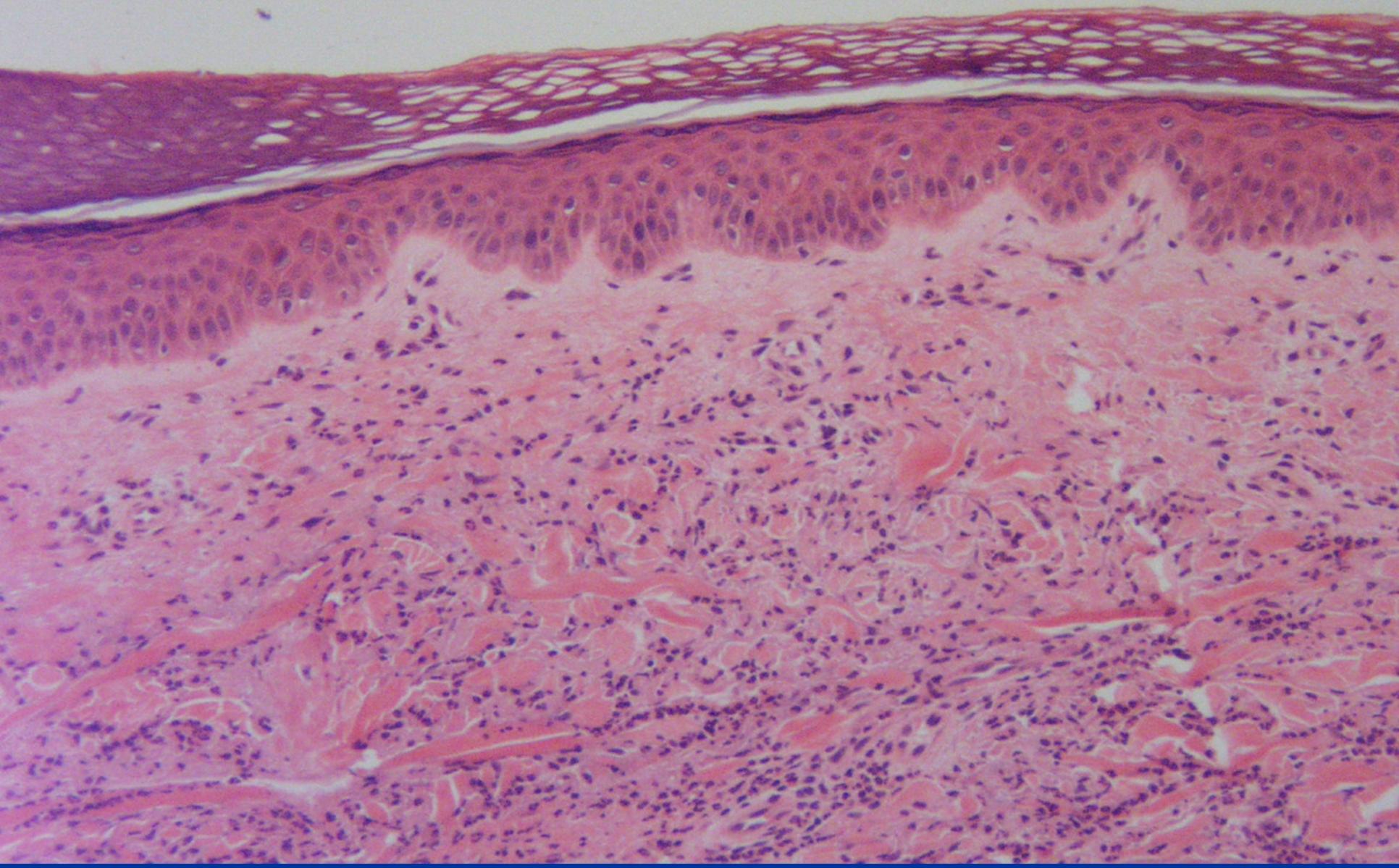


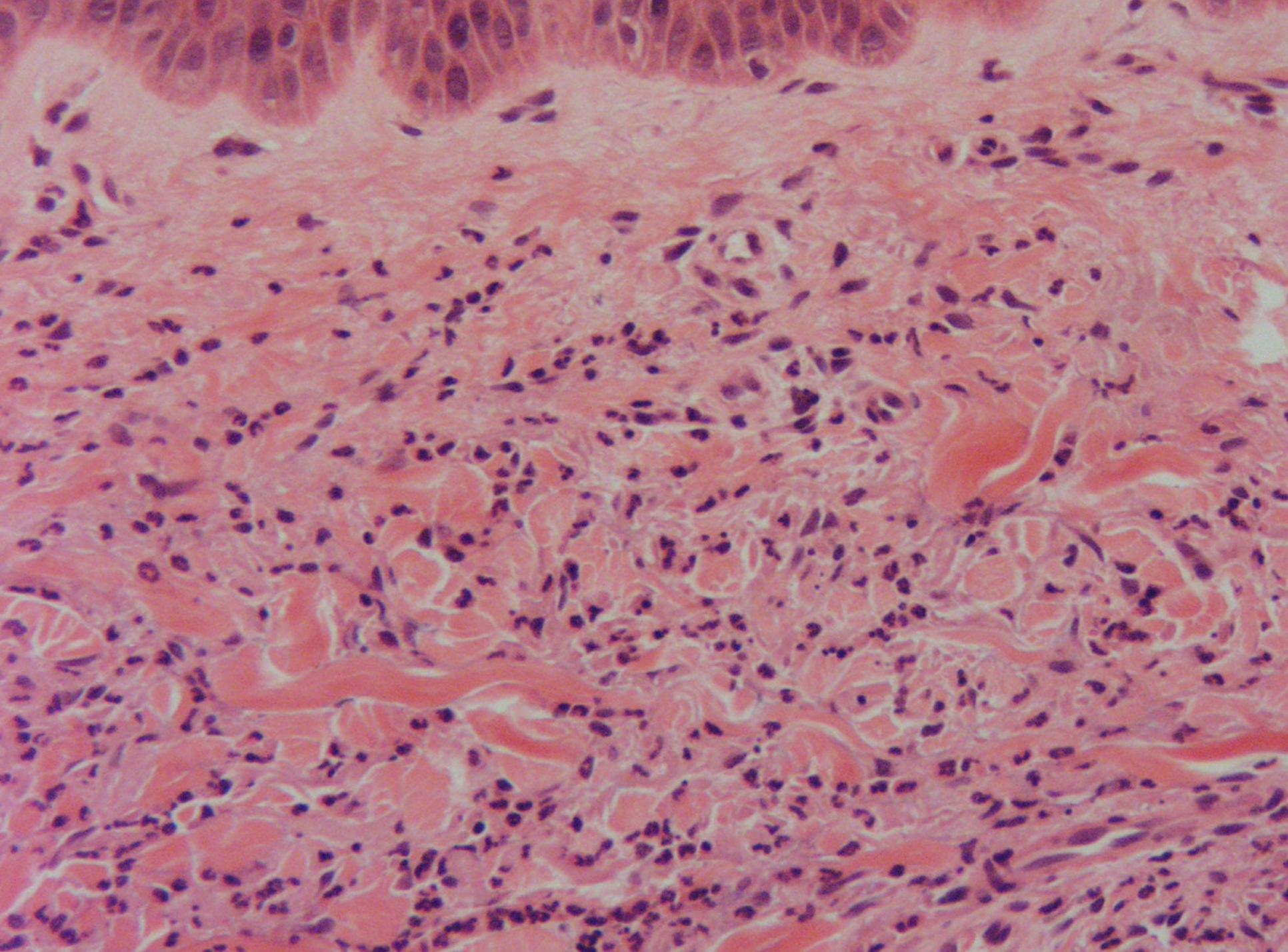
- Small round blue cells
- High mitotic rate
- Nuclear molding
- Stippled chromatin
- Epidermal involvement occasionally
- Paranuclear dot-like reactivity for CK20, CK
- Neuroendocrine markers: synaptophysin, chromogranin, NSE, NF
- DDX: metastatic neuroendocrine tumors, get TTF-1, CEA

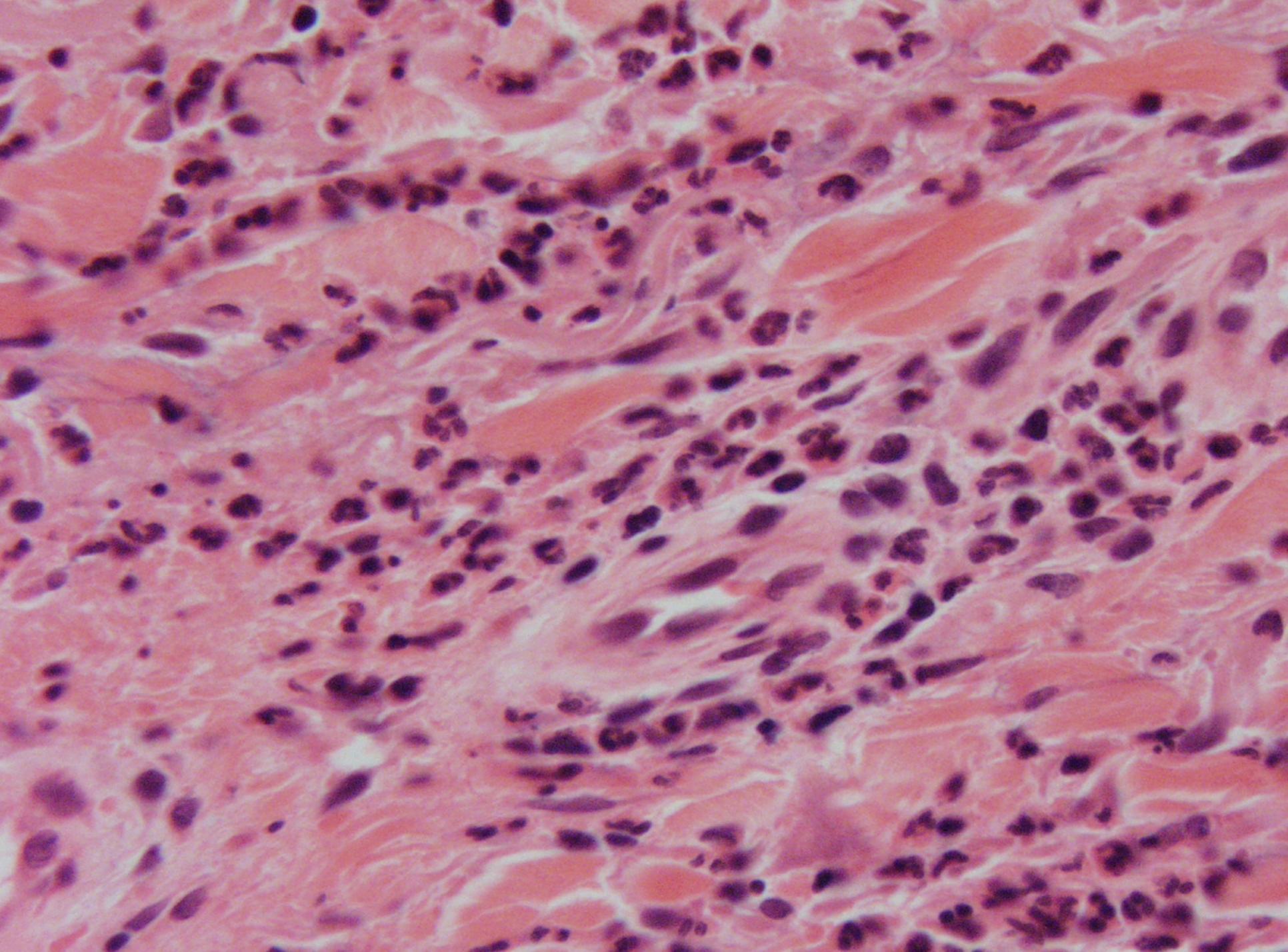
Basaloid Tumor DDX



38 y.o. F with a lesion
on her left elbow







38 yr F complained of a lesion on her left elbow

- Sweet's syndrome
- Leukemia cutis
- Leukocytoclastic vasculitis
- Pustular psoriasis

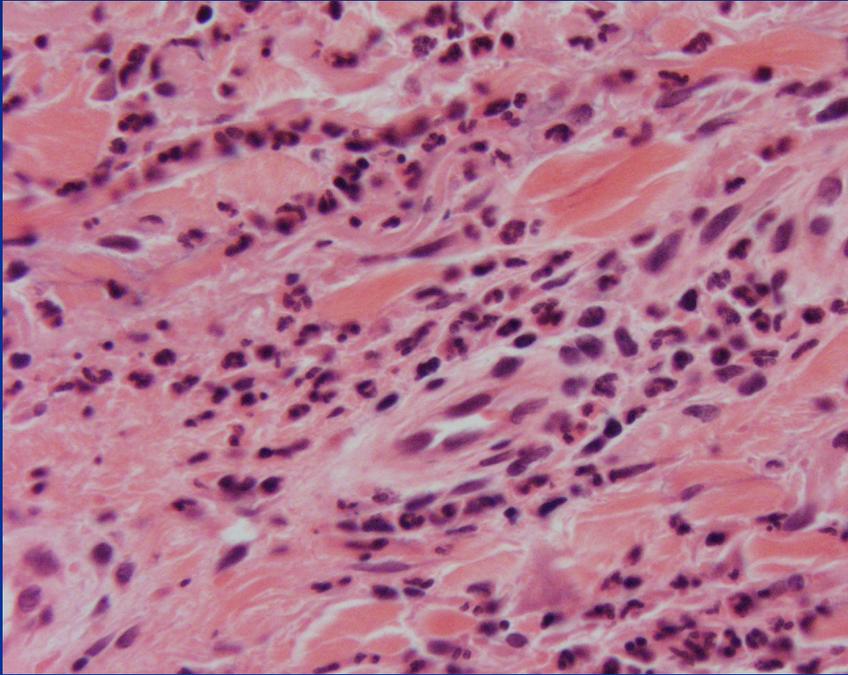
Sweet's Syndrome

What medical conditions are associated with a neutrophilic dermatosis?

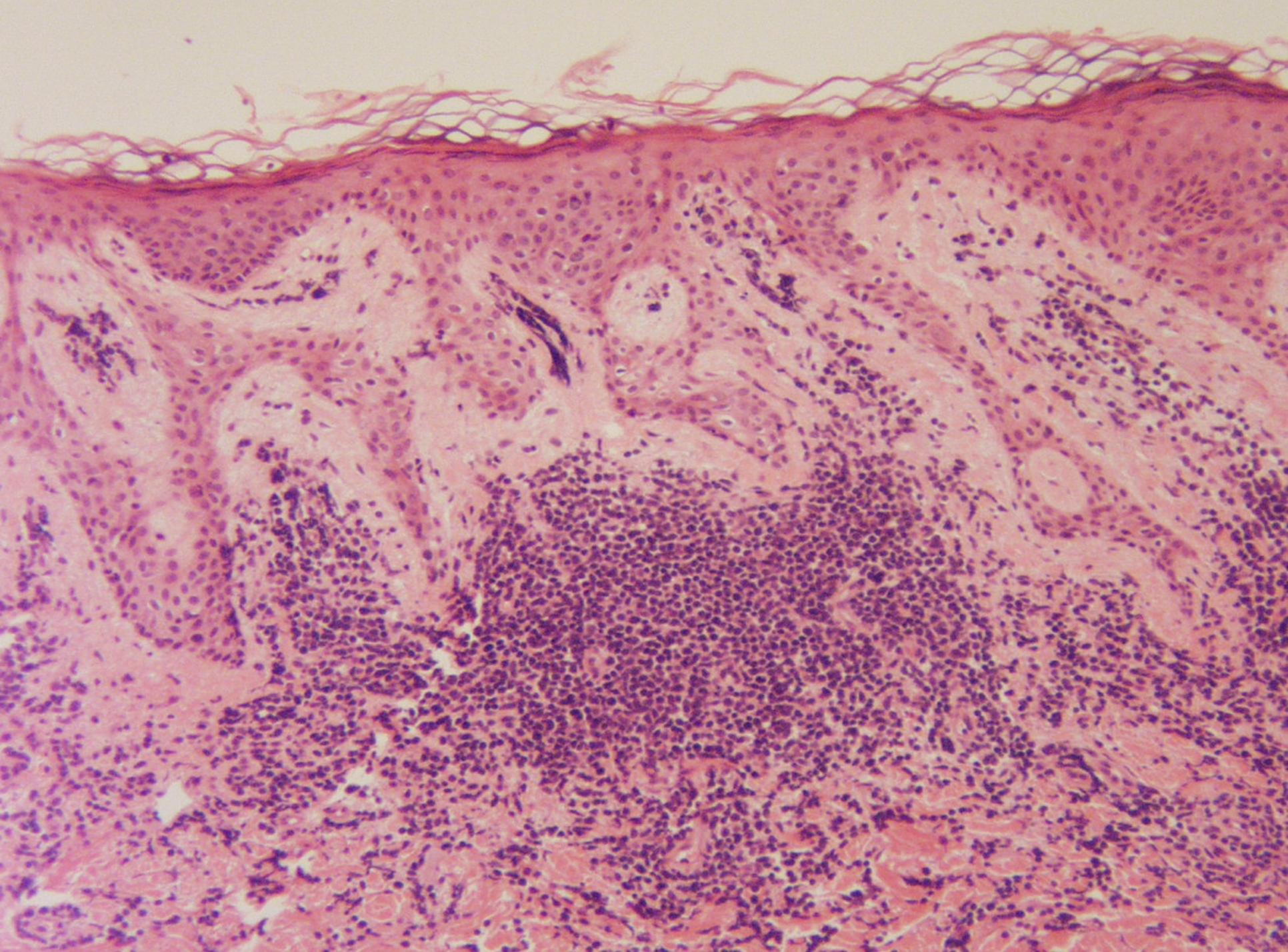
Neutrophilic Dermatosis DDX

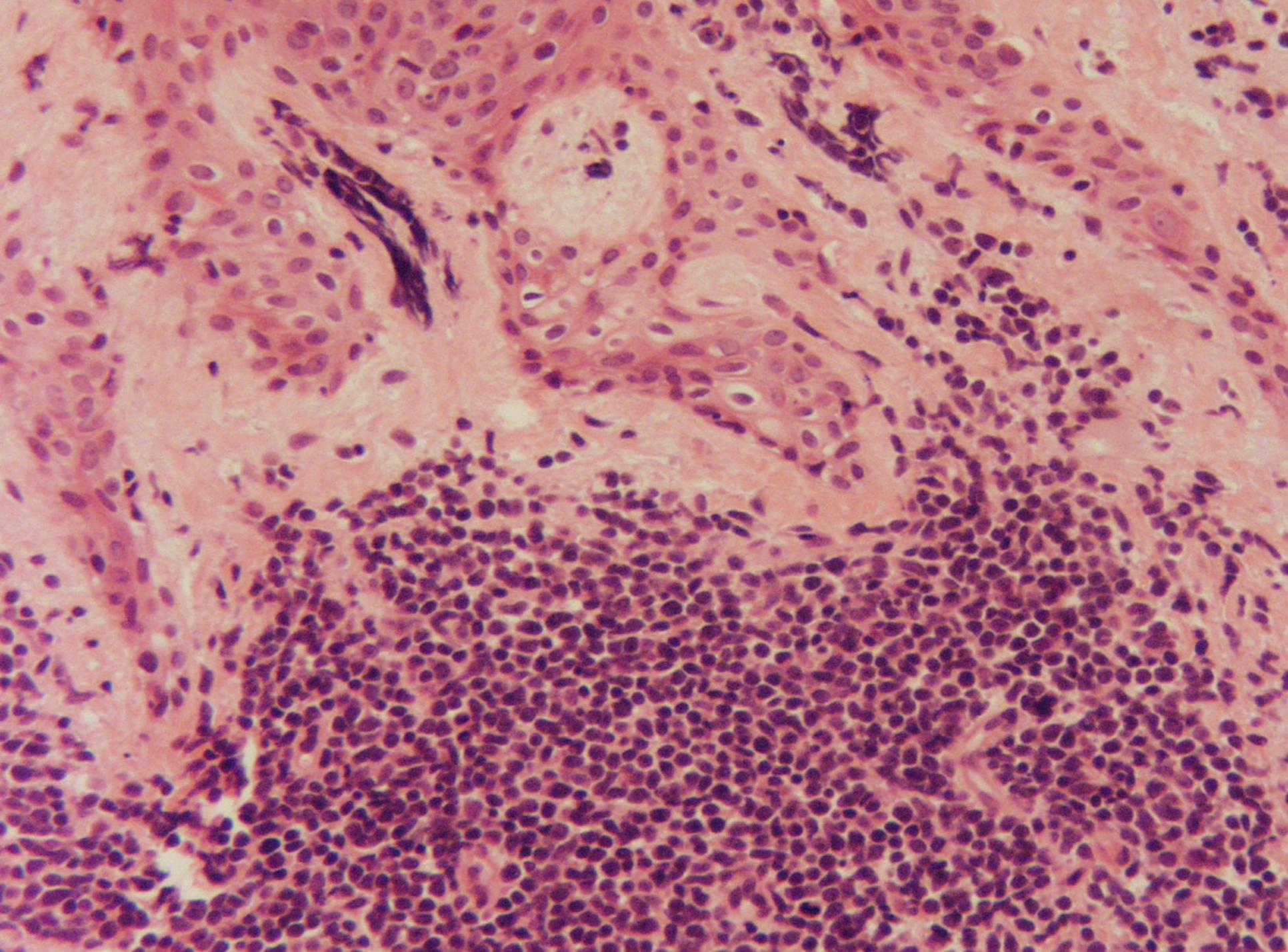
- Sweet's syndrome
- Drug reaction
 - Colony stimulating factors
- Bowel bypass syndrome
- Rheumatoid neutrophilic dermatosis

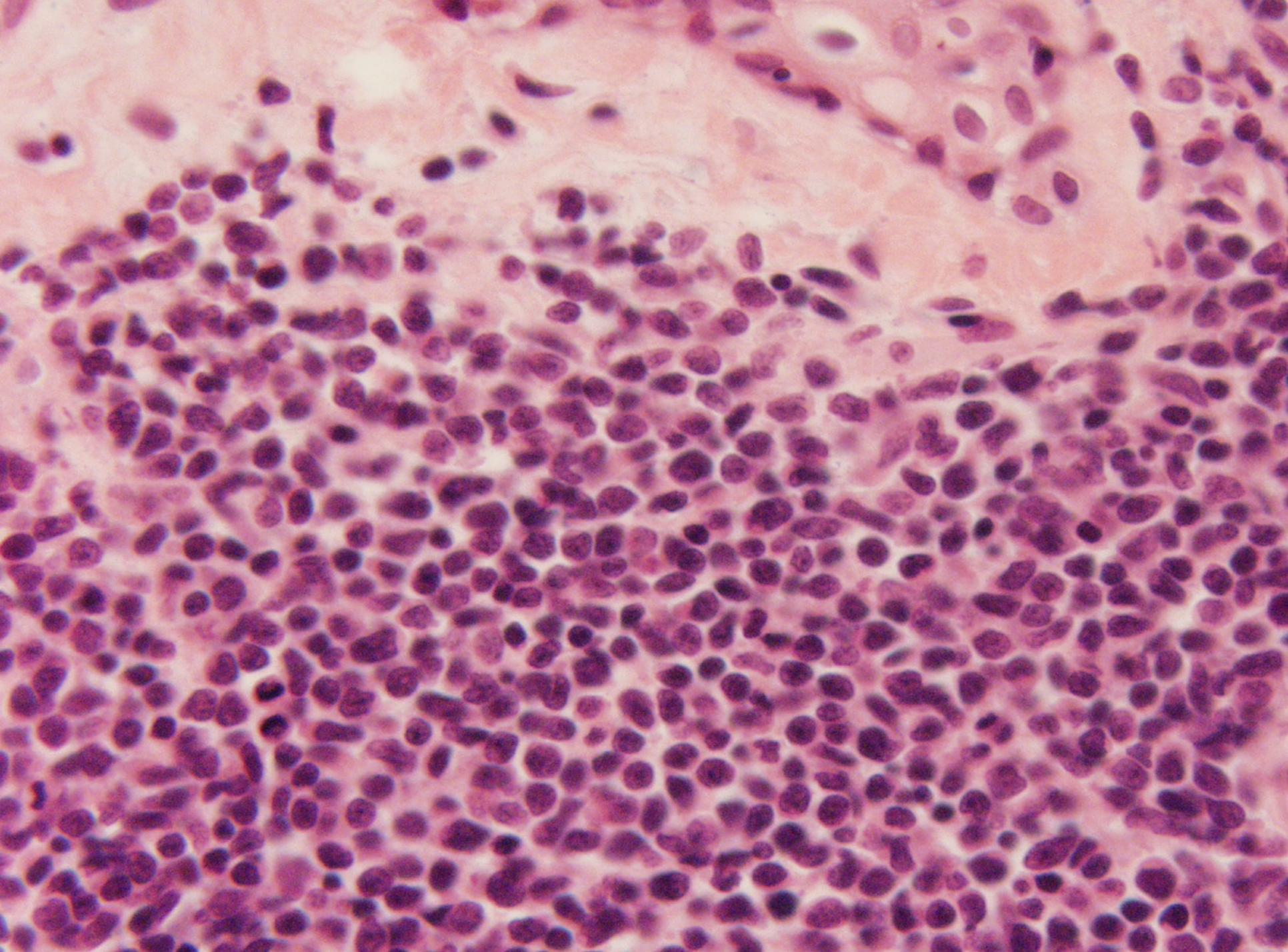
Histopathology



- Diffuse neutrophilic dermatosis
- No vasculitis
- May have secondary vesicle/bulla formation
- Rule out underlying blood dyscrasia, esp. myelodysplasia/myeloid leukemia







What is your differential diagnosis and what stains/IHC would be helpful?

Leukemia Cutis
(Chronic lymphocytic
leukemia type)

What are helpful IHC stains to determine the phenotype of this leukemia?

Leukemia Cutis IHC stains

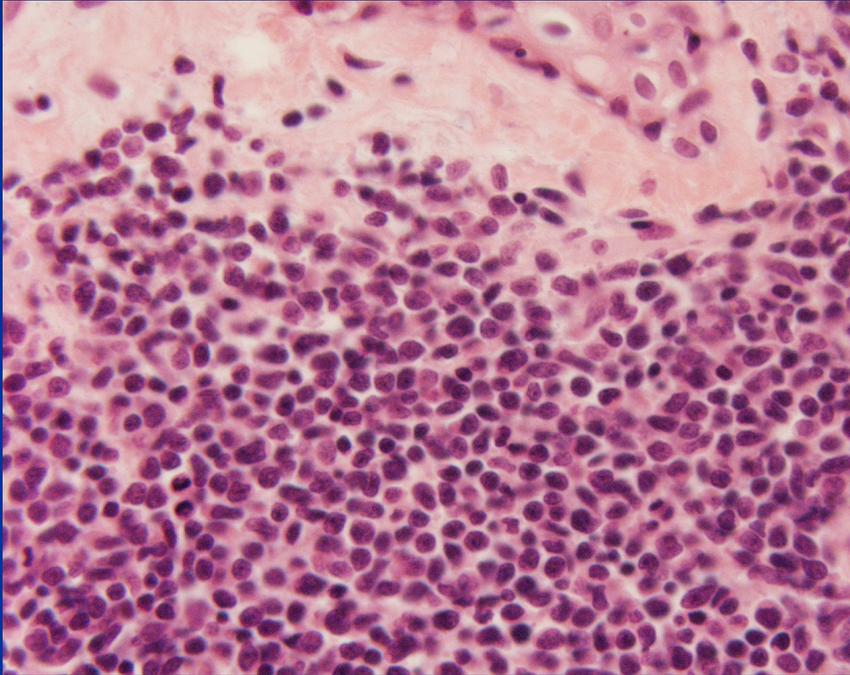
■ CLL

- >95% are B-cell lineage (CD20, CD79a, CD5 co-expression)

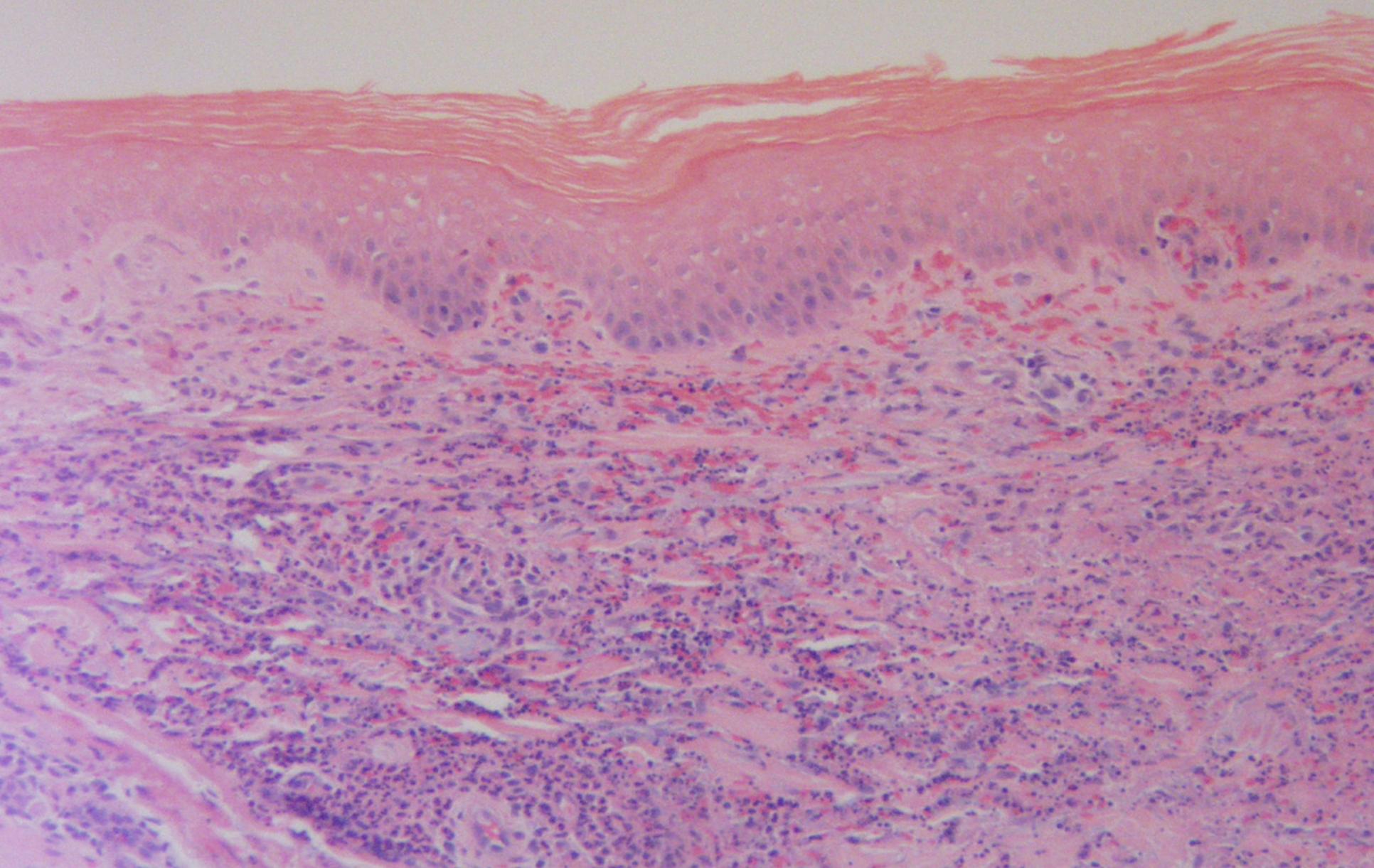
■ Granulocytic sarcoma (Myeloid leukemia)

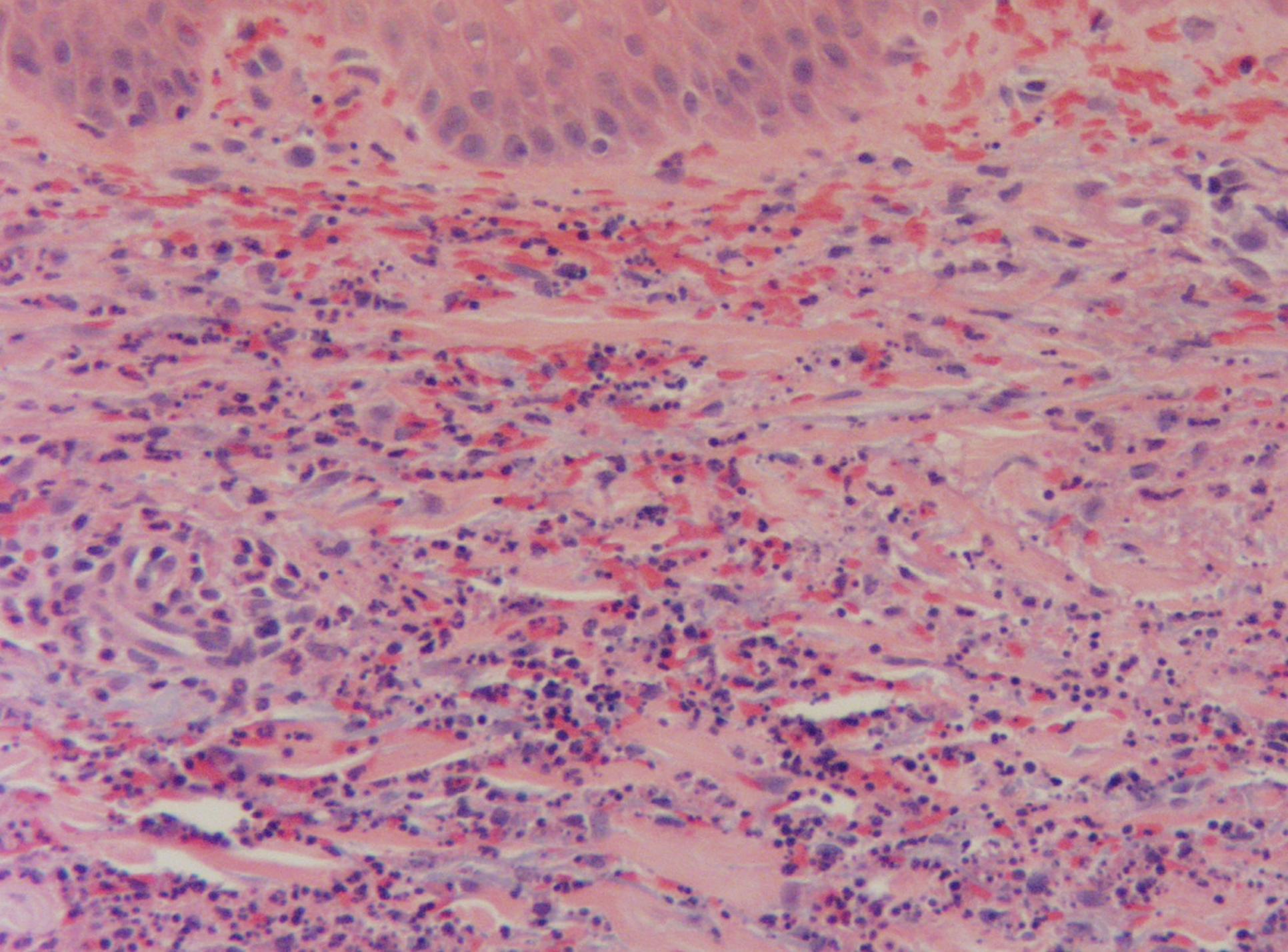
- CD68>CD117>CD56>>CD34>CD4
- Myeloperoxidase, Lysozyme

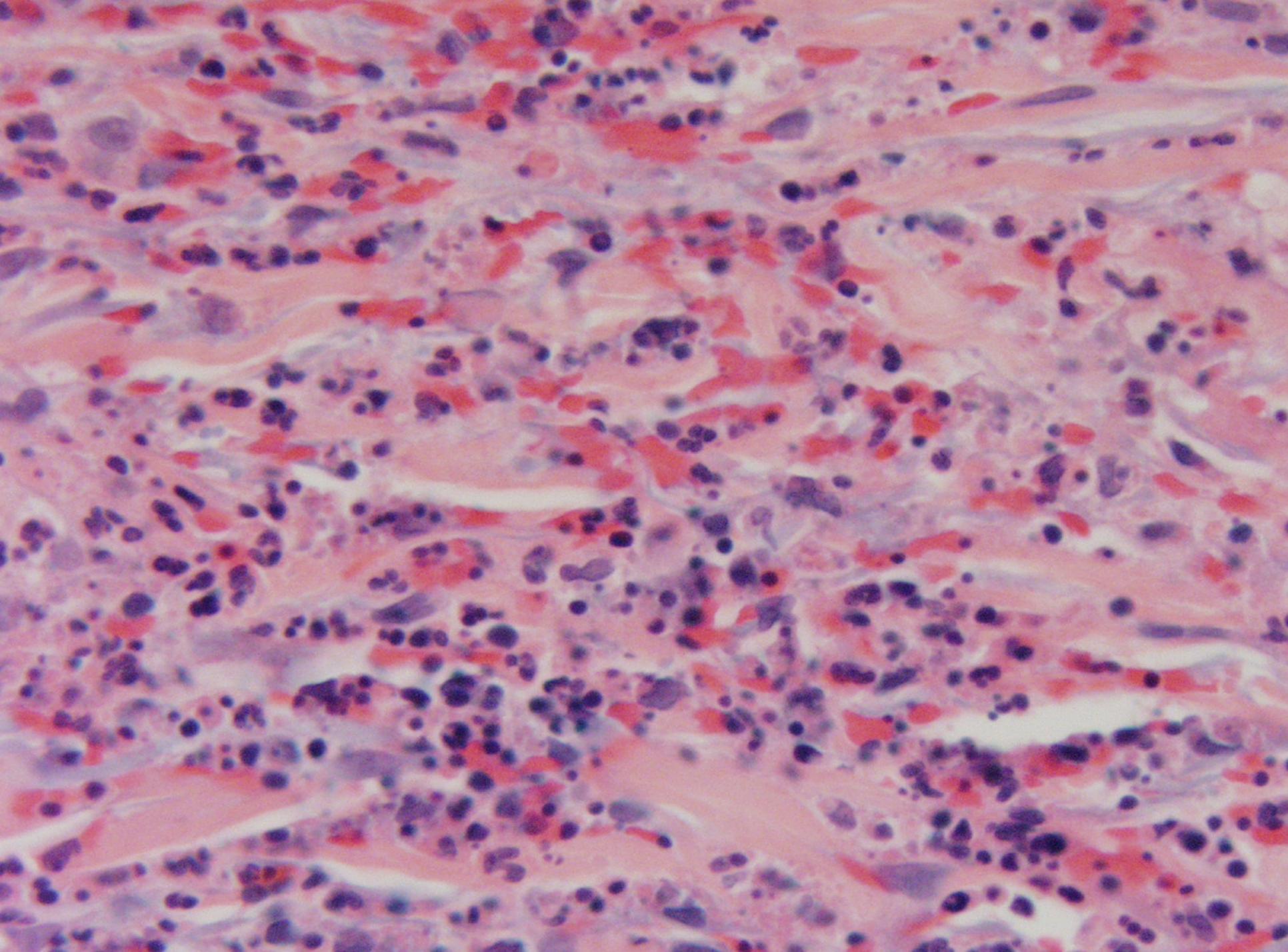
Histopathology

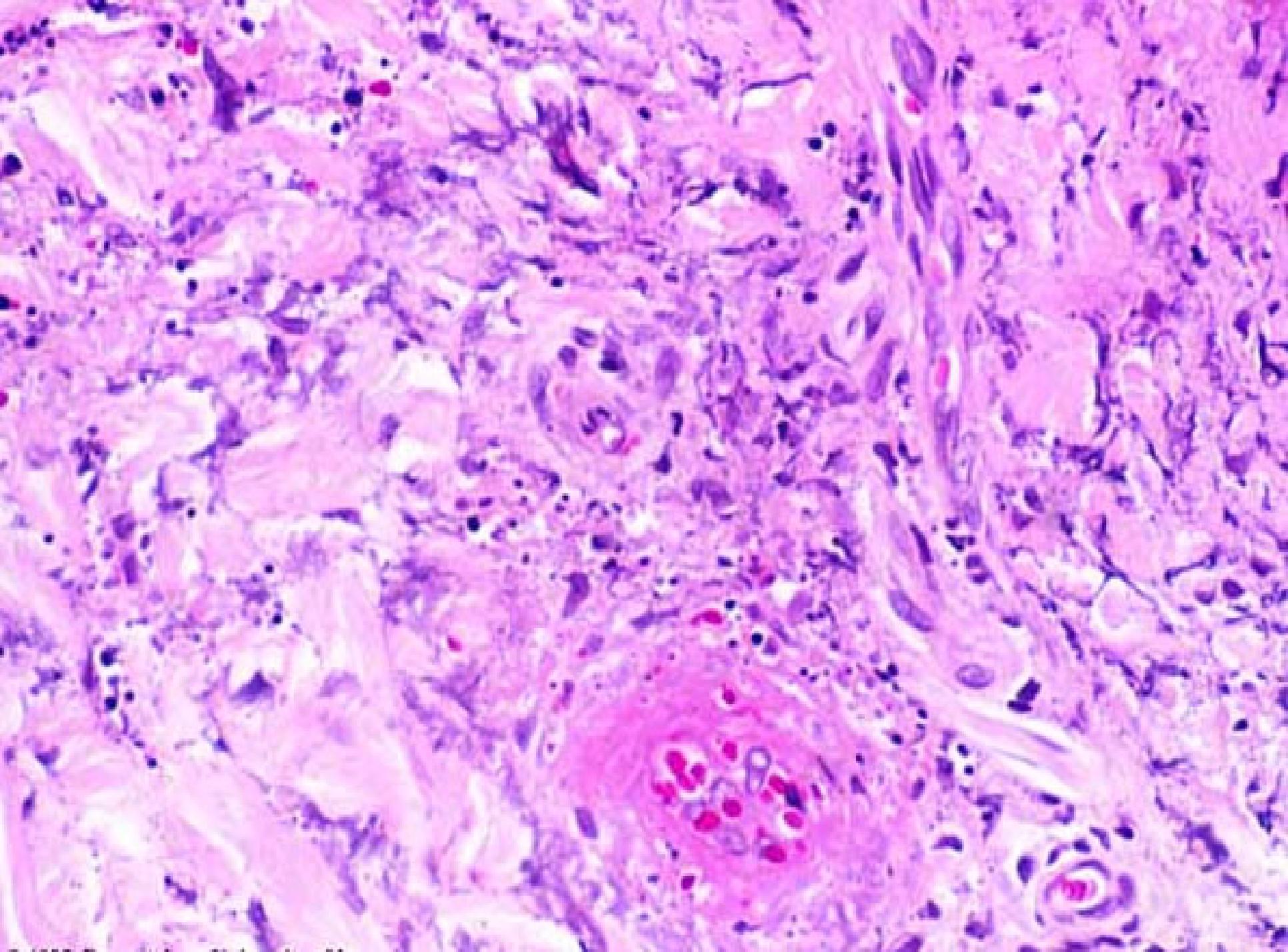


- Depends upon histologic subtype
- Small lymphocytic leukemia/CLL has superficial and deep and diffuse changes
- Rule out granulocytic sarcoma









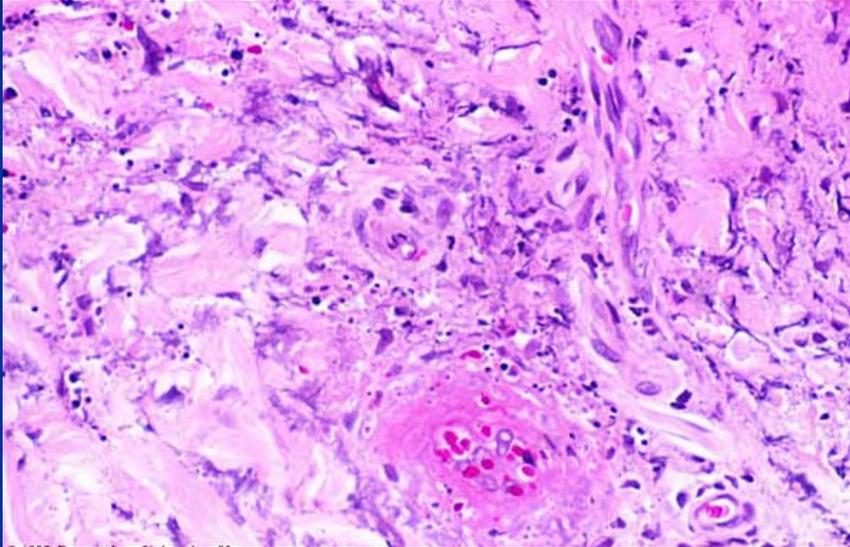
Leukocytoclastic Vasculitis

When is the best timing to take a skin biopsy for diagnosis and DIF if one is suspecting a leukocytic vasculitis?

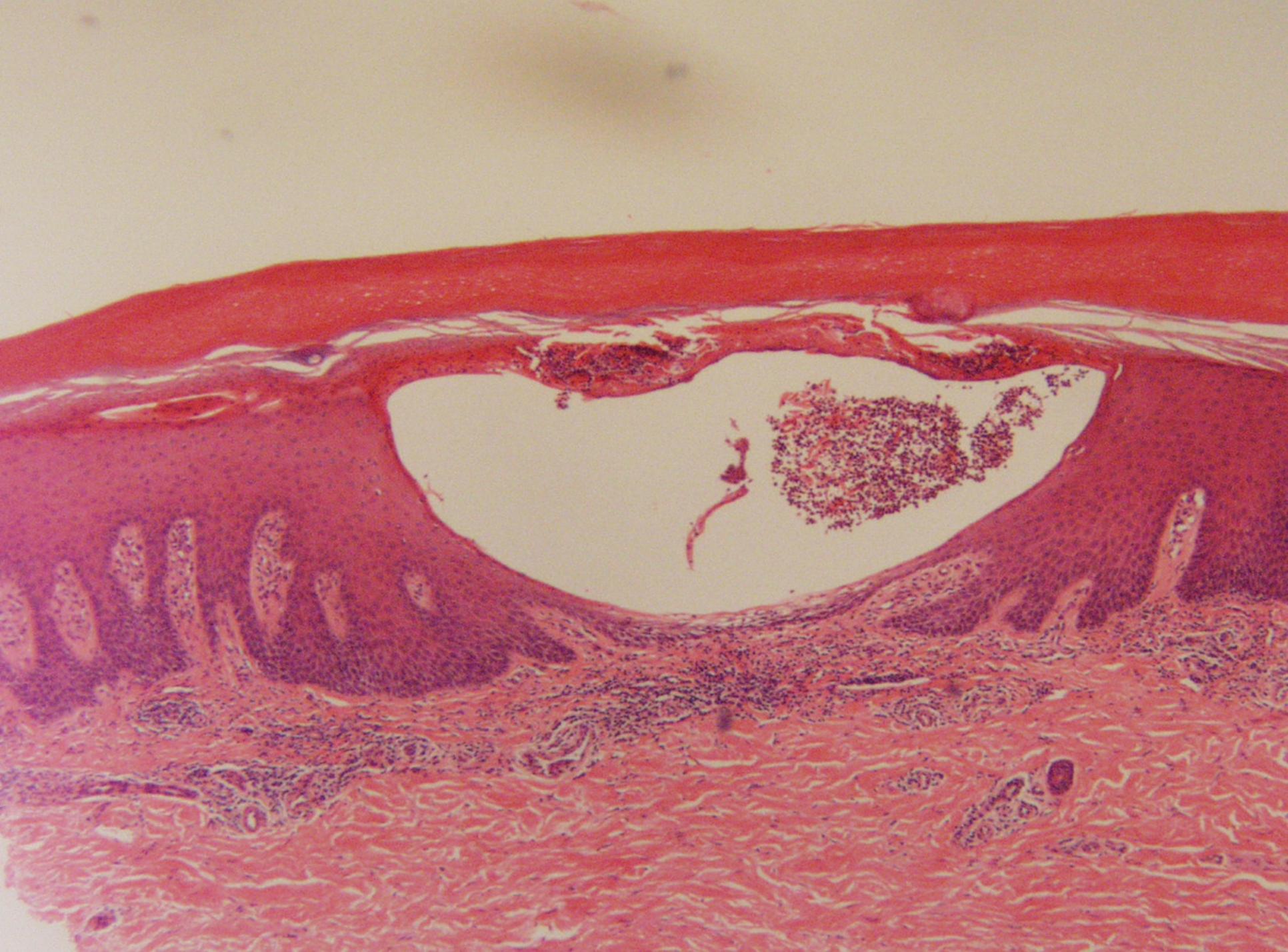
Biopsy Sites for LCV

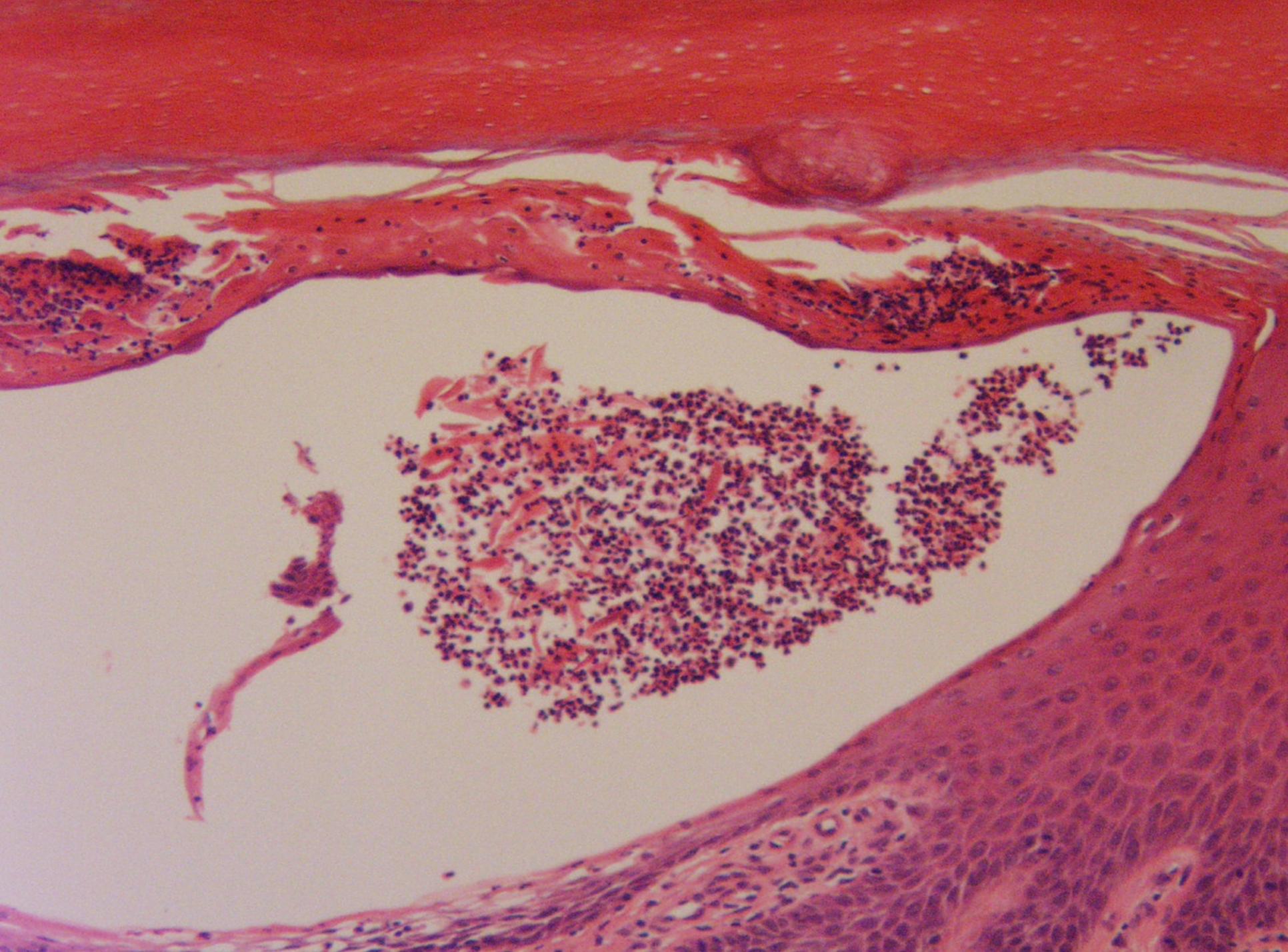
- Established purpuric lesion (ie, >72 hrs old)
- For DIF, acute lesion (<24 hrs old) provides the highest yield
 - May be as long as 7 days in selected cases

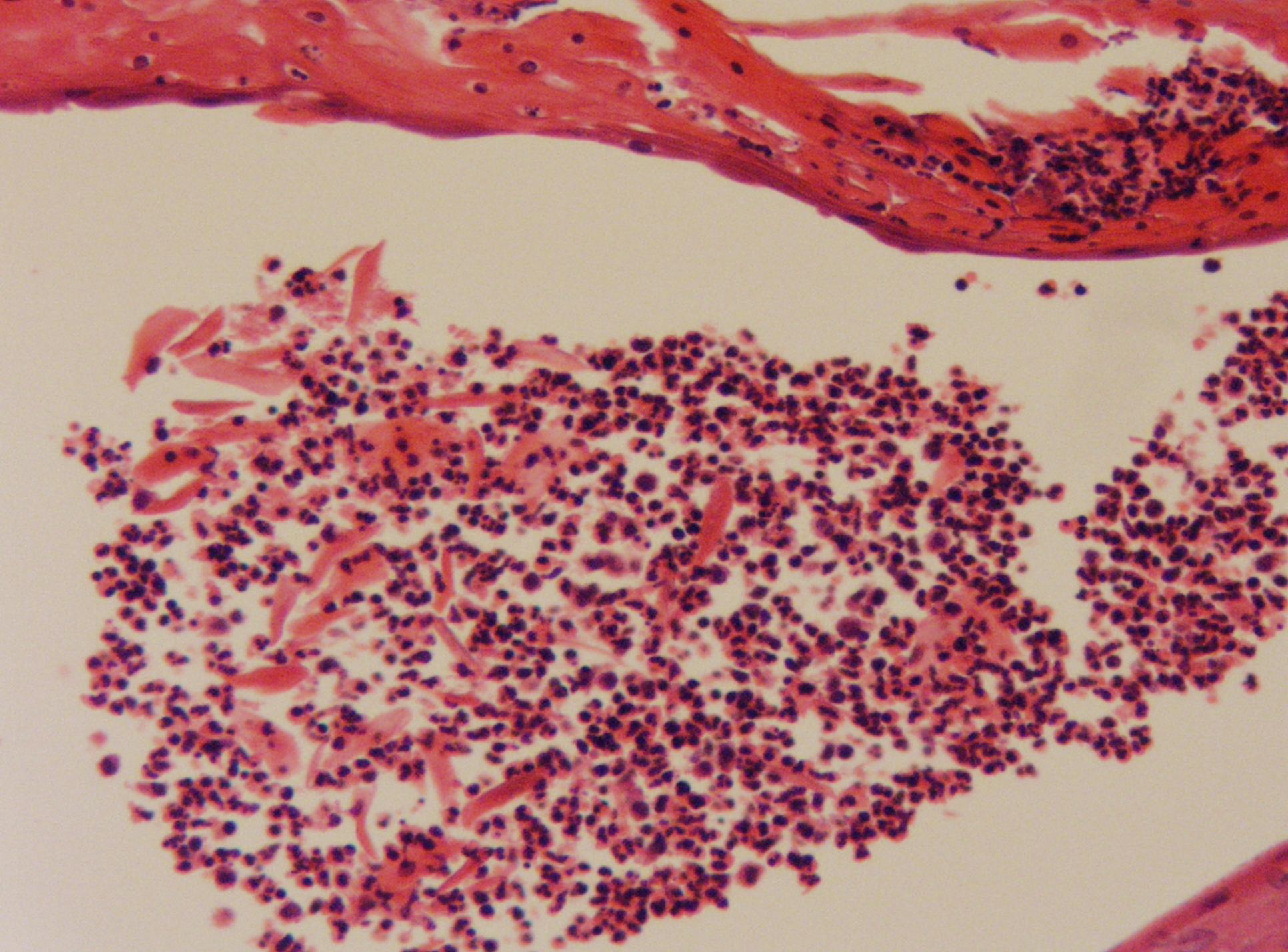
Histopathology

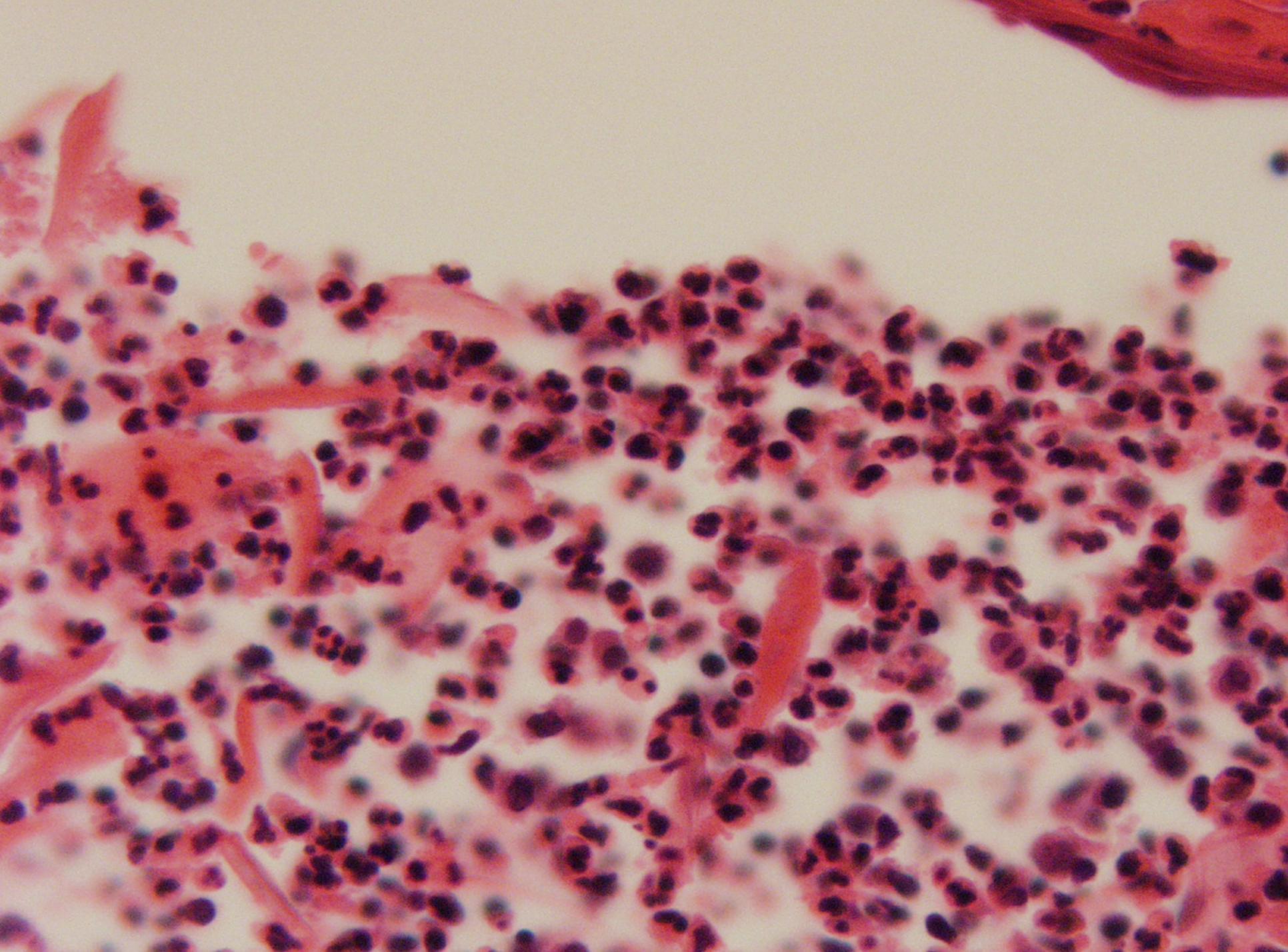


- Must have fibrinoid necrosis of small vessels
- Neutrophils, nuclear dust, hemorrhage
- DIF-if IgA positive, highly predictive of renal disease









**What is your differential
diagnosis and what stains/IHC
would be helpful?**

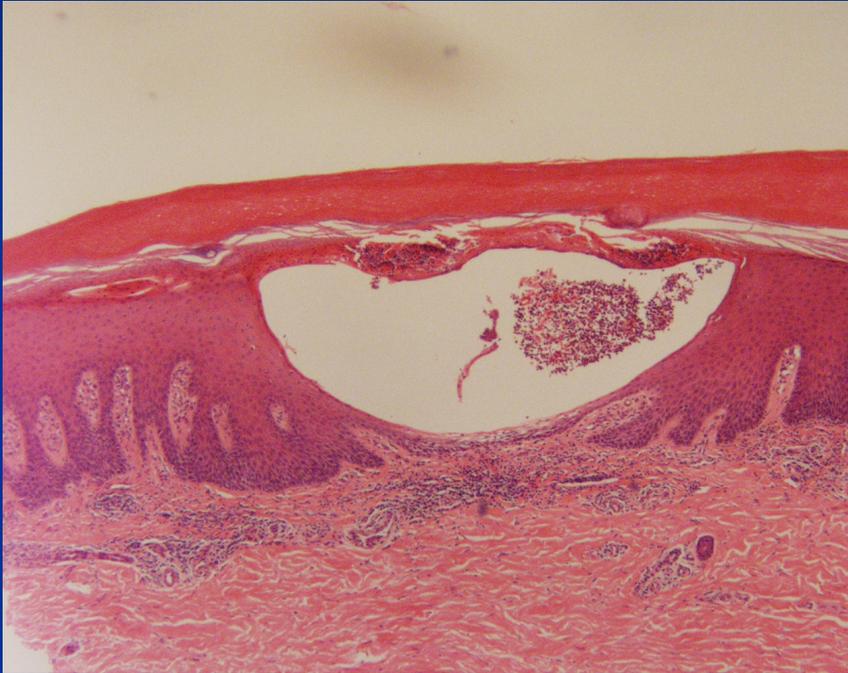
Pustular Psoriasis

What are triggering factors for
pustular psoriasis?

Triggering Factors for Pustular Psoriasis

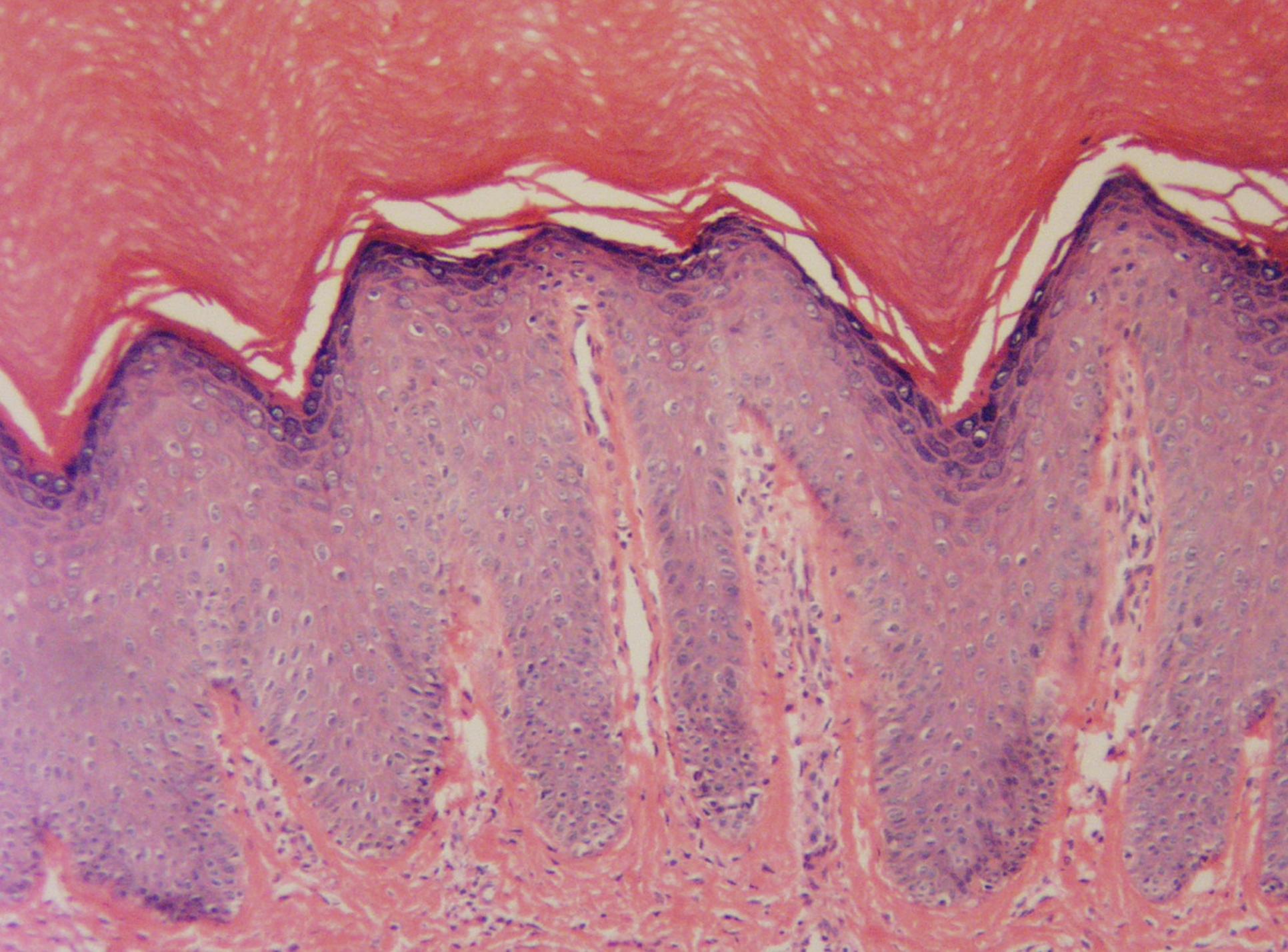
- Medications and withdrawal of medications
- Infections
- Irritating topica agents
- Stress
- UV light overexposure
- Pregnancy
- Systemic steroids

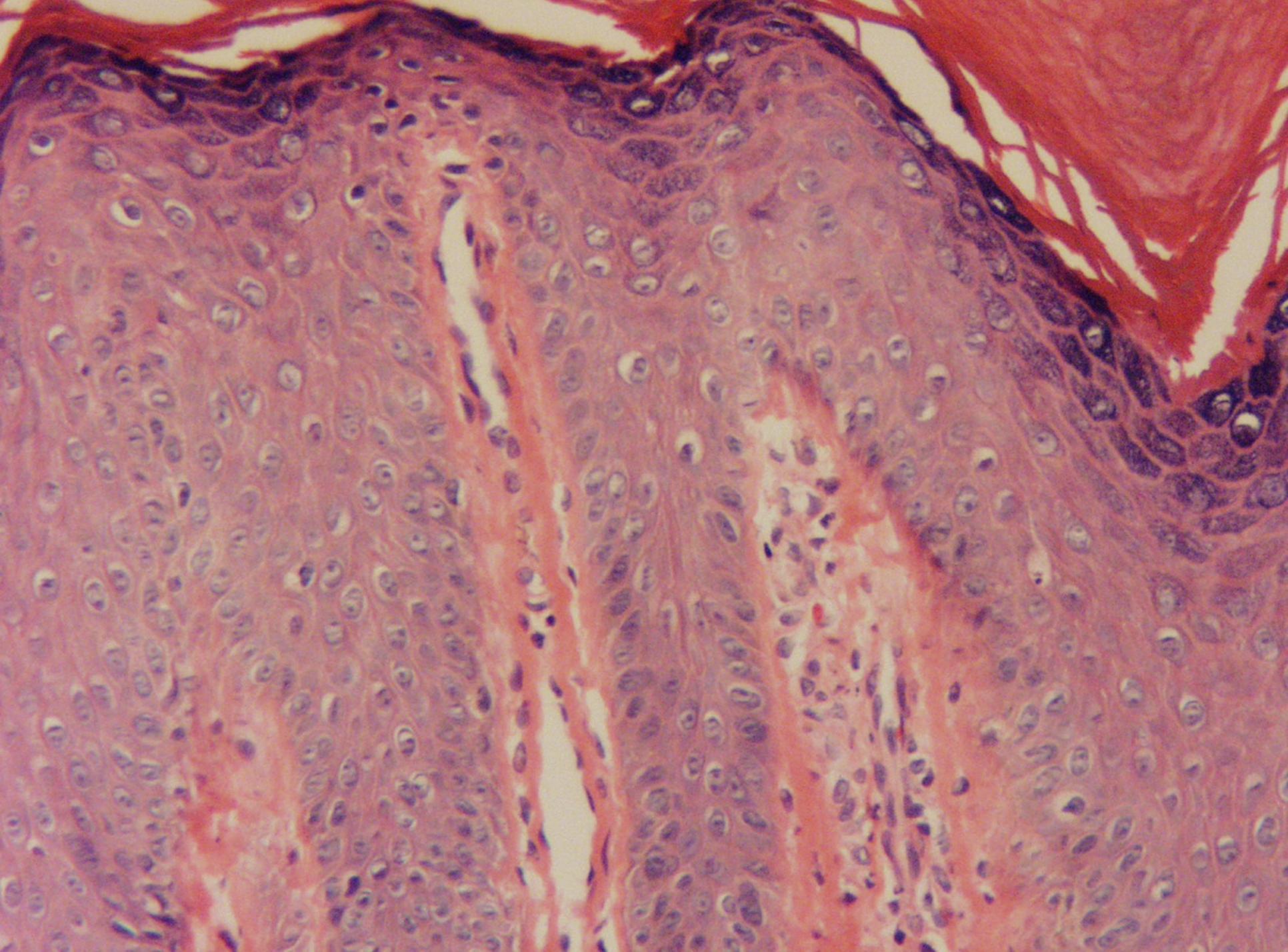
Histopathology

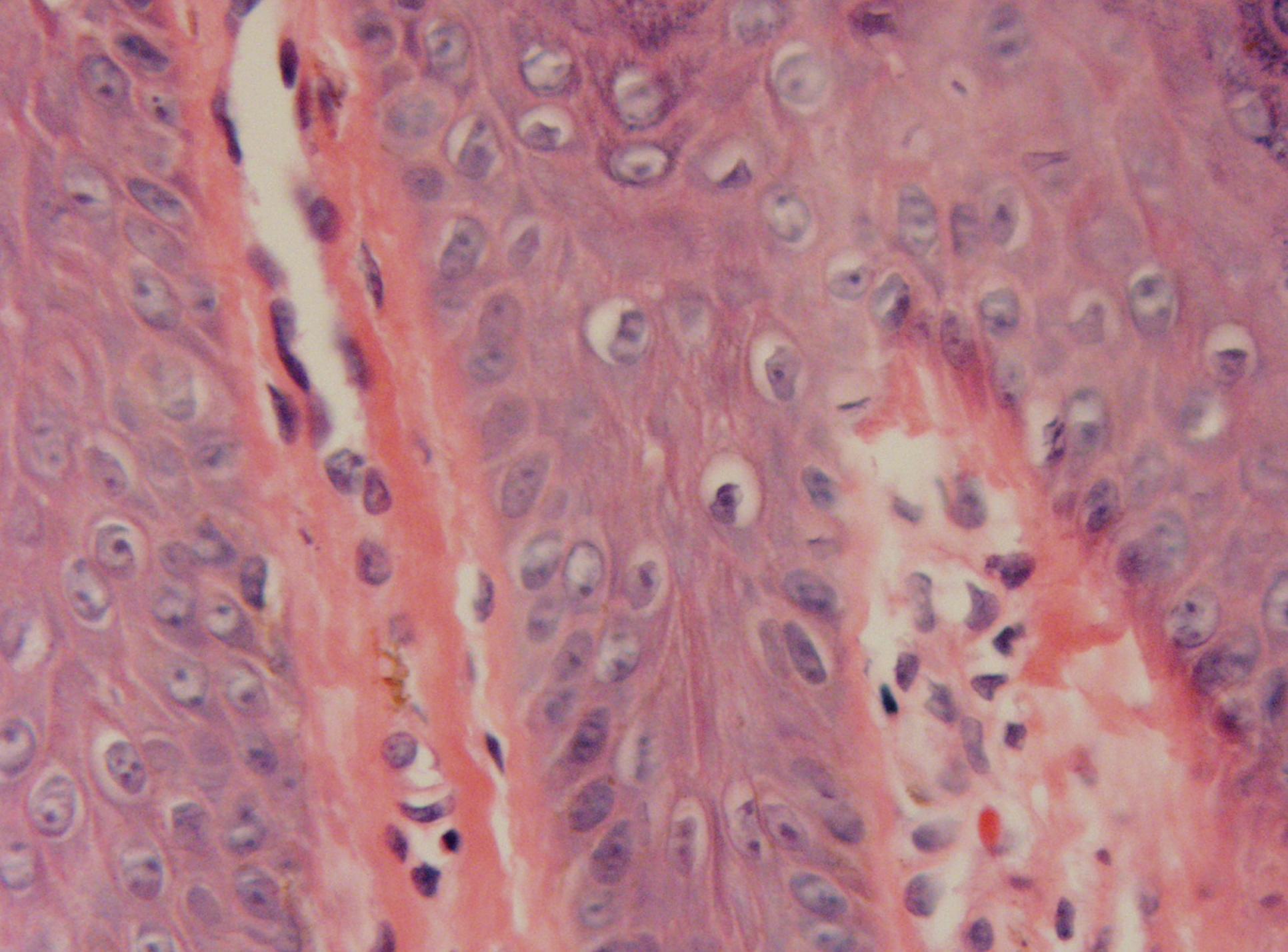


- Intraepidermal pustule
- No acantholysis
- Psoriasiform elongation of the rete ridges
- Hypogranulosis
- Rule out dermatophyte infection-PAS/GMS stain

48 y.o. M with scaly lesion
on right index finger





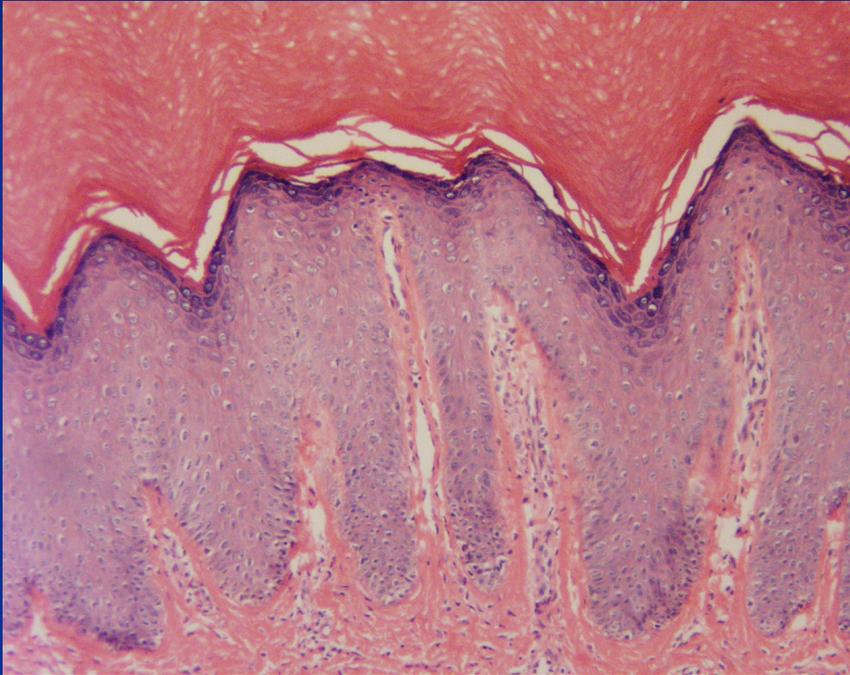


48 y.o. M with scaly lesion on right index finger

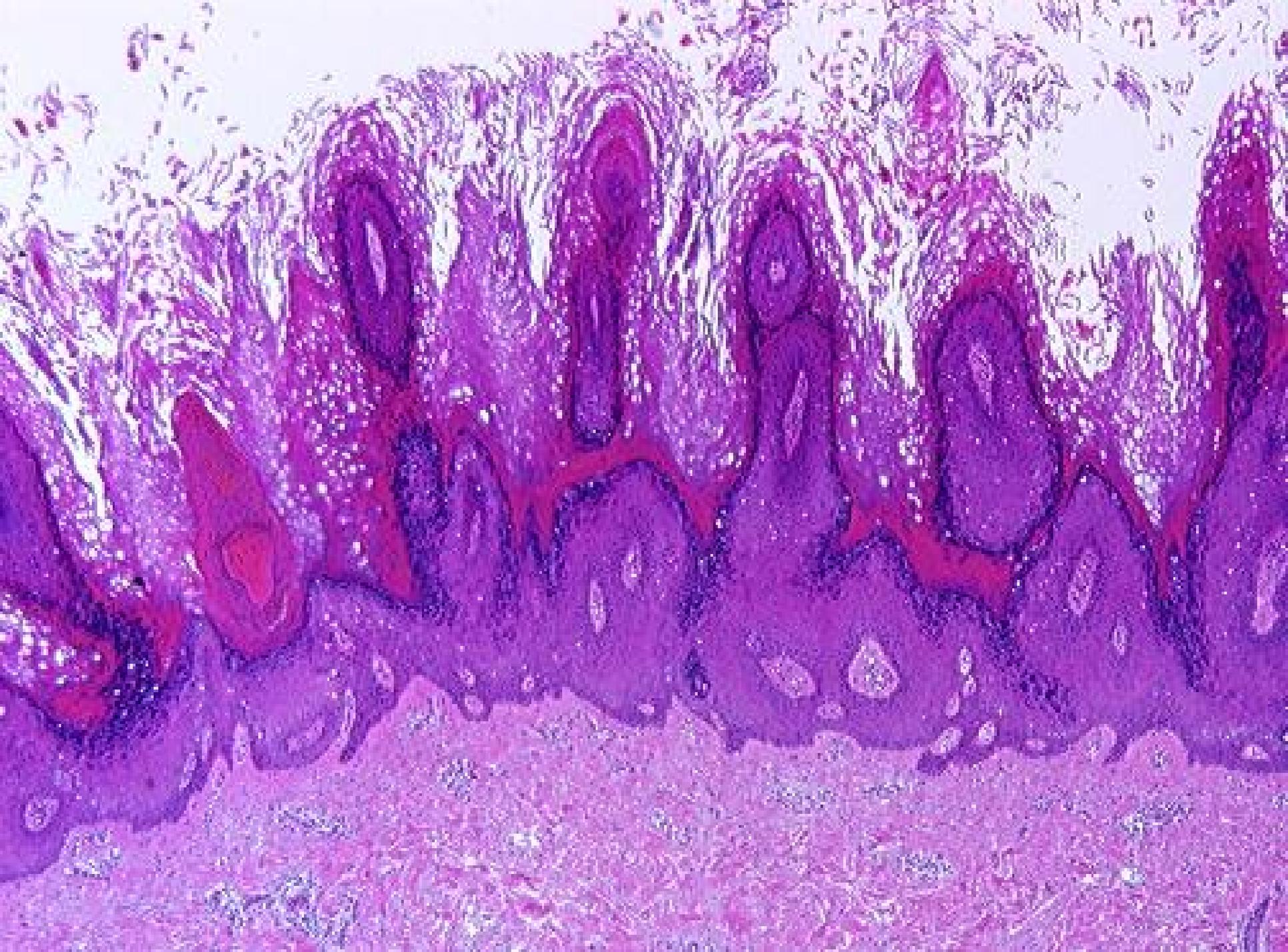
- Lichen simplex chronicus
- Verruca vulgaris
- Porokeratosis
- Verruca plantaris (myrmecia)

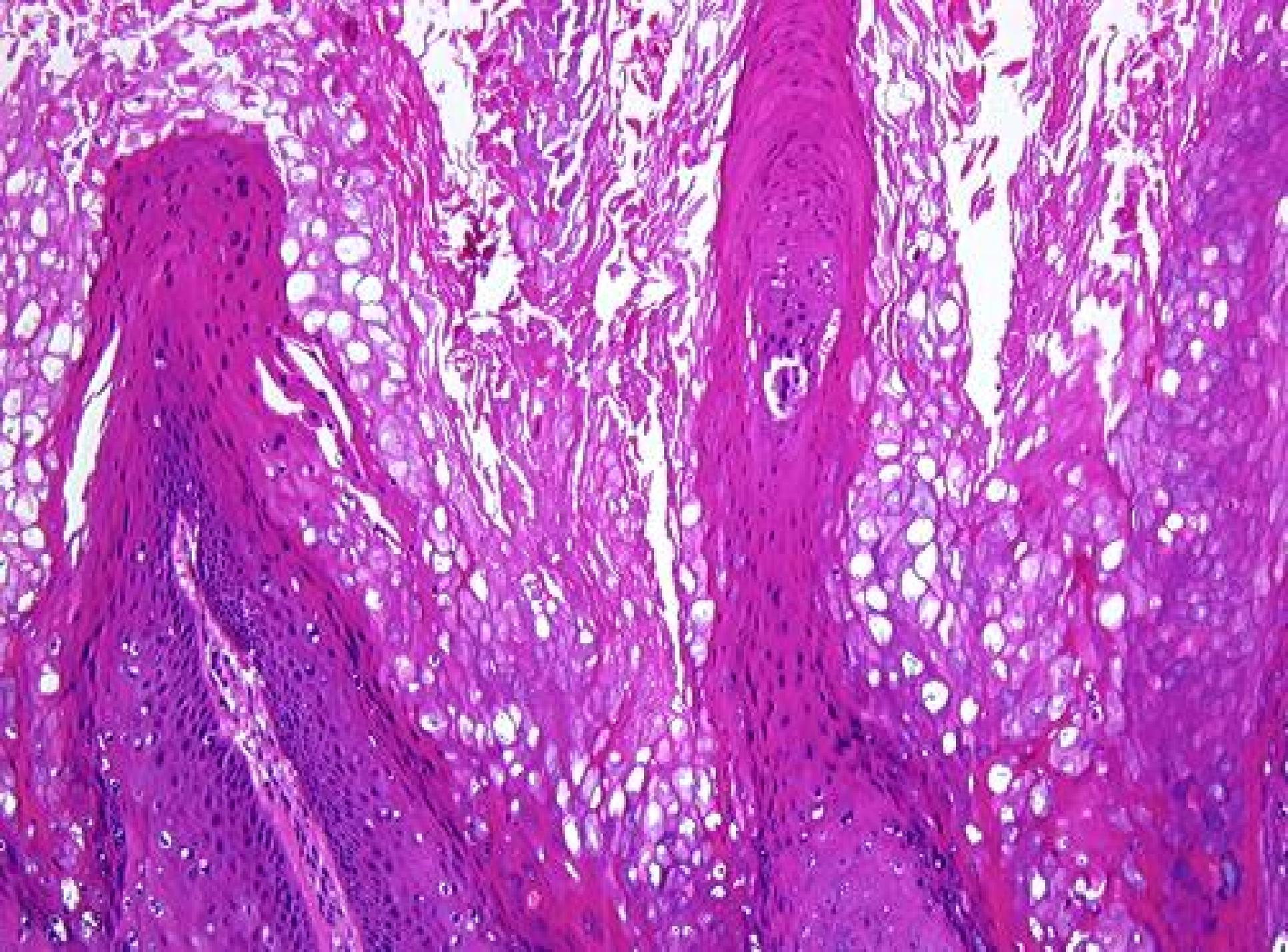
Lichen Simplex Chronicus

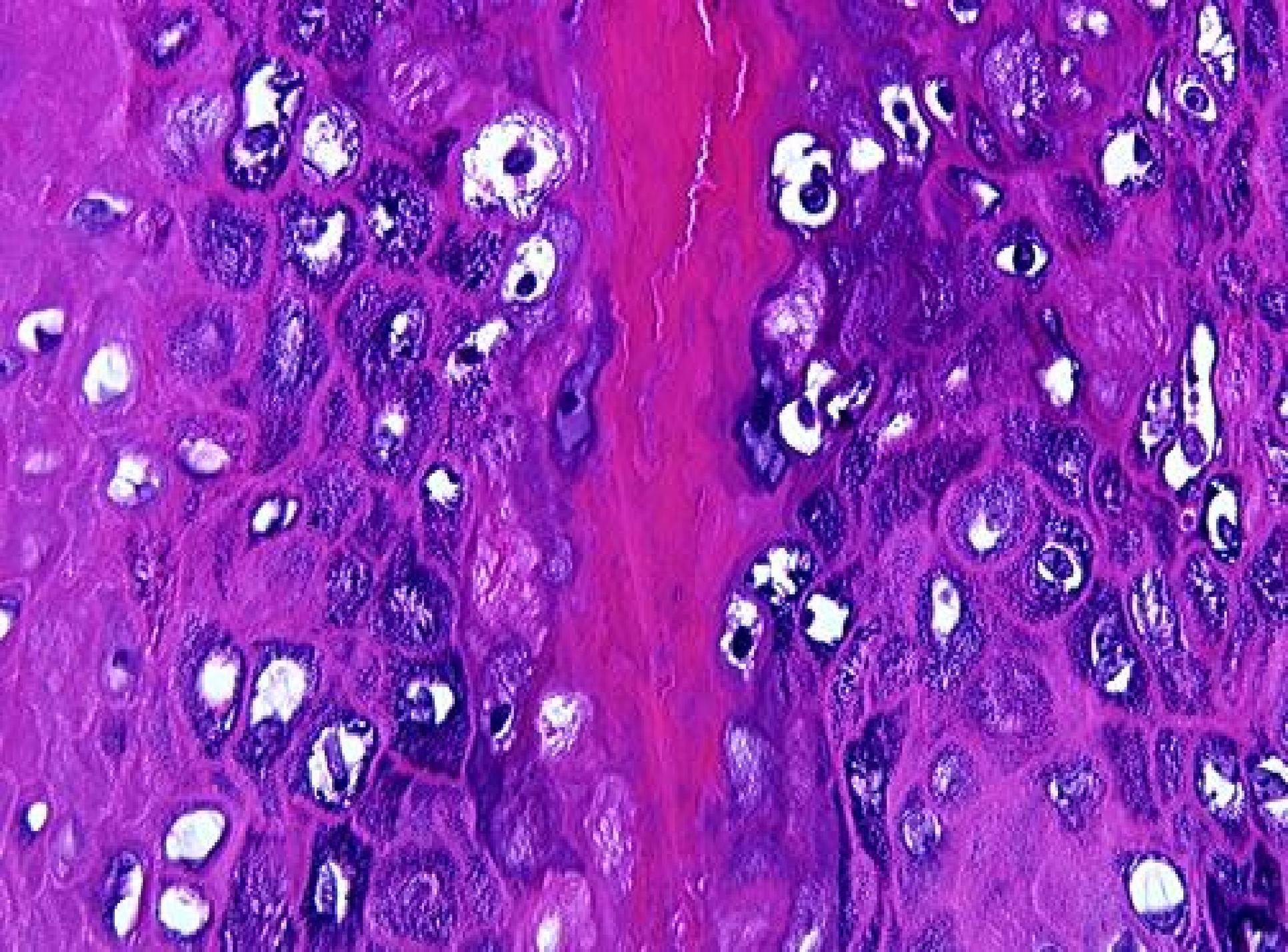
Histopathology



- Irregular epidermal hyperplasia
- Hypergranulosis
- Dermal papillary fibrosis
- Overlap with prurigo nodularis





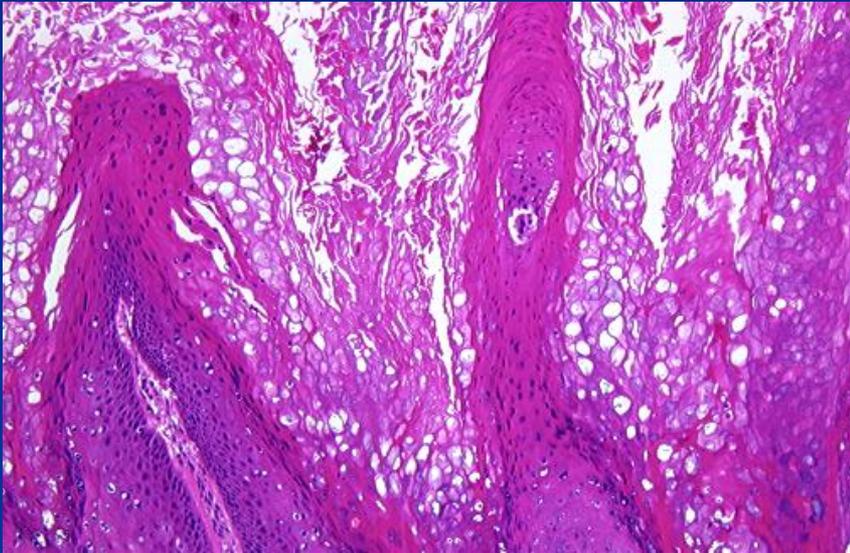


What is the most likely diagnosis?

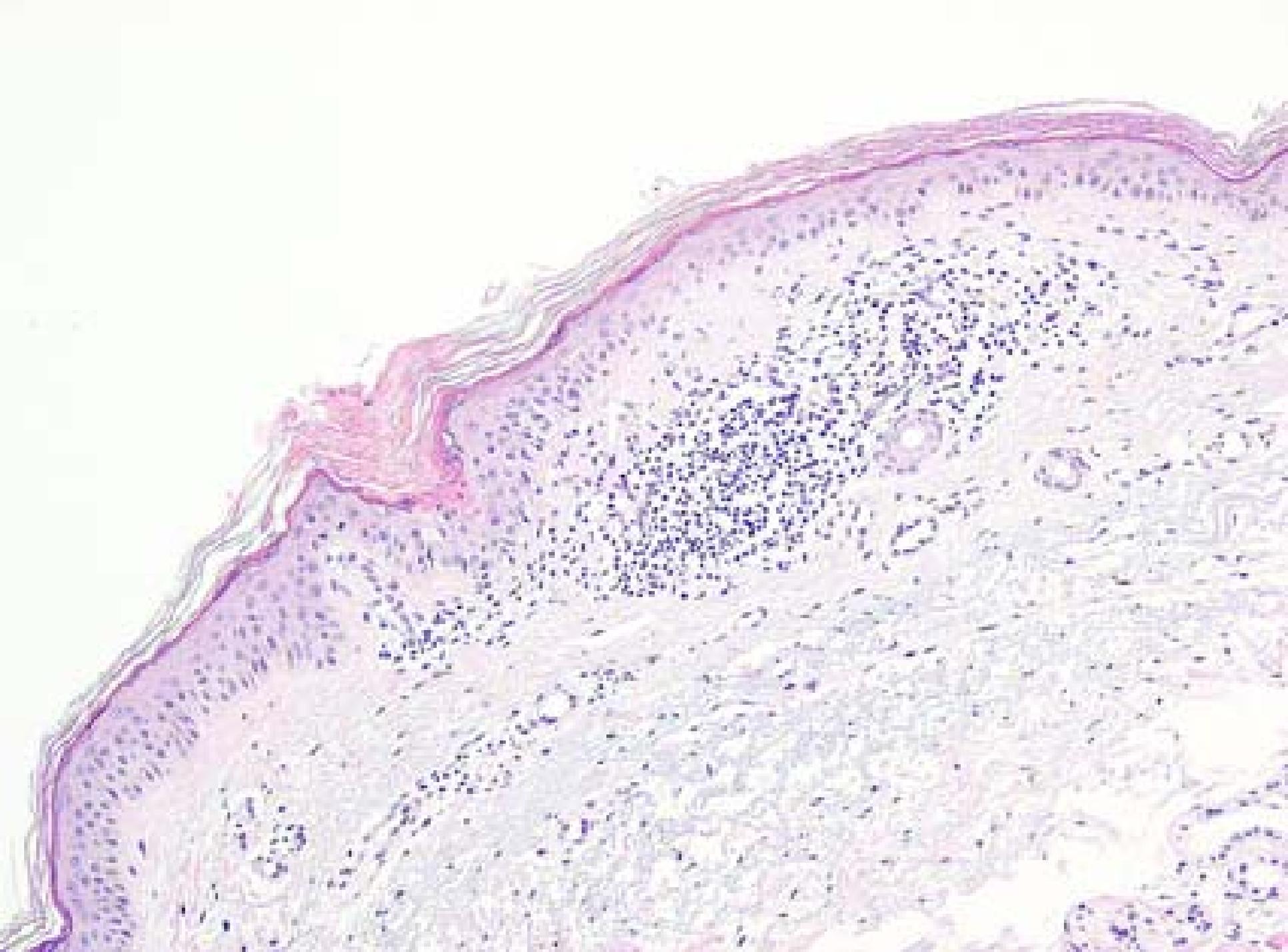
- Myrmecia
- Epidermolytic hyperkeratosis
- Verruca vulgaris
- Pox virus infection

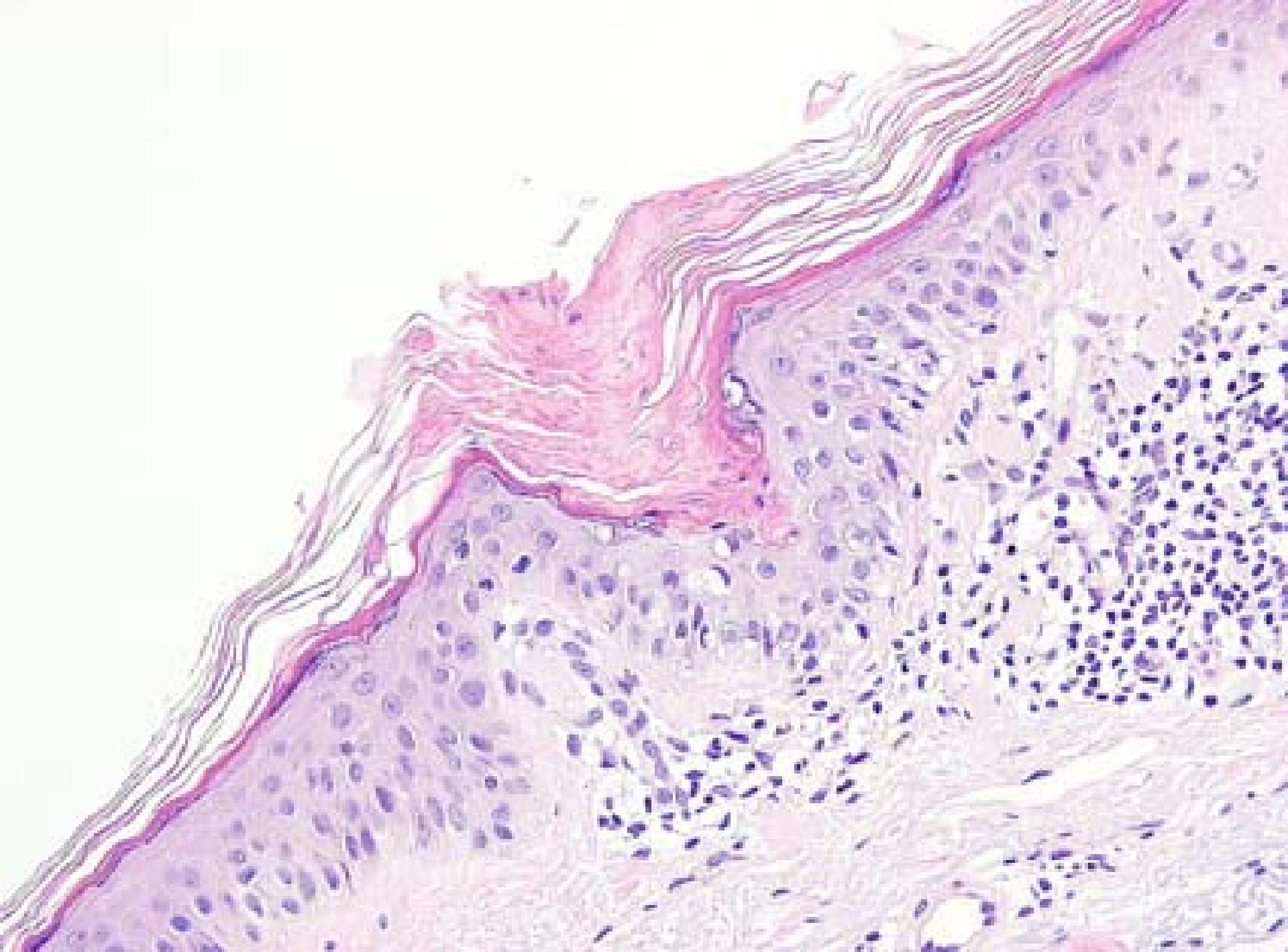
Verruca Vulgaris

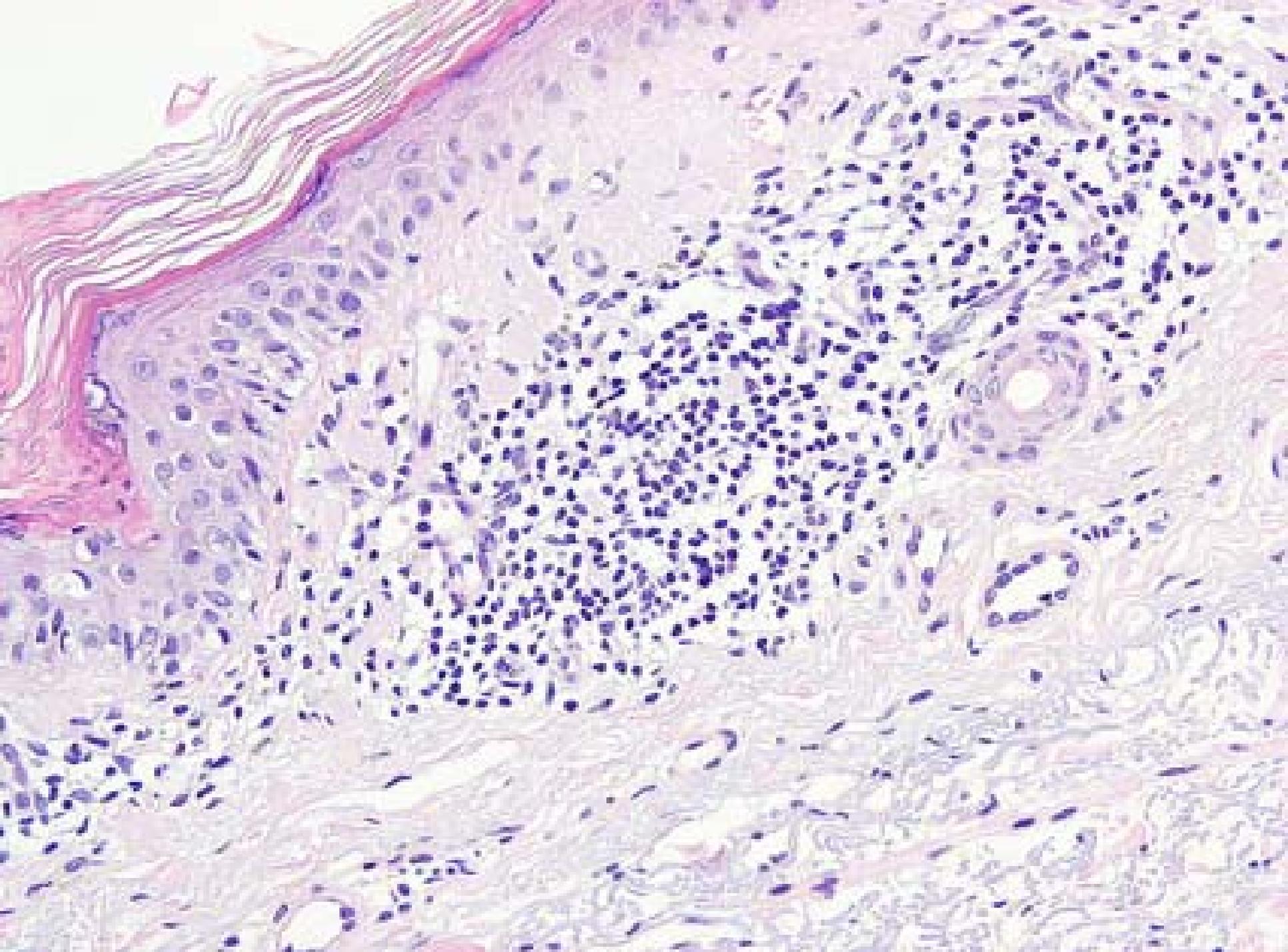
Histopathology

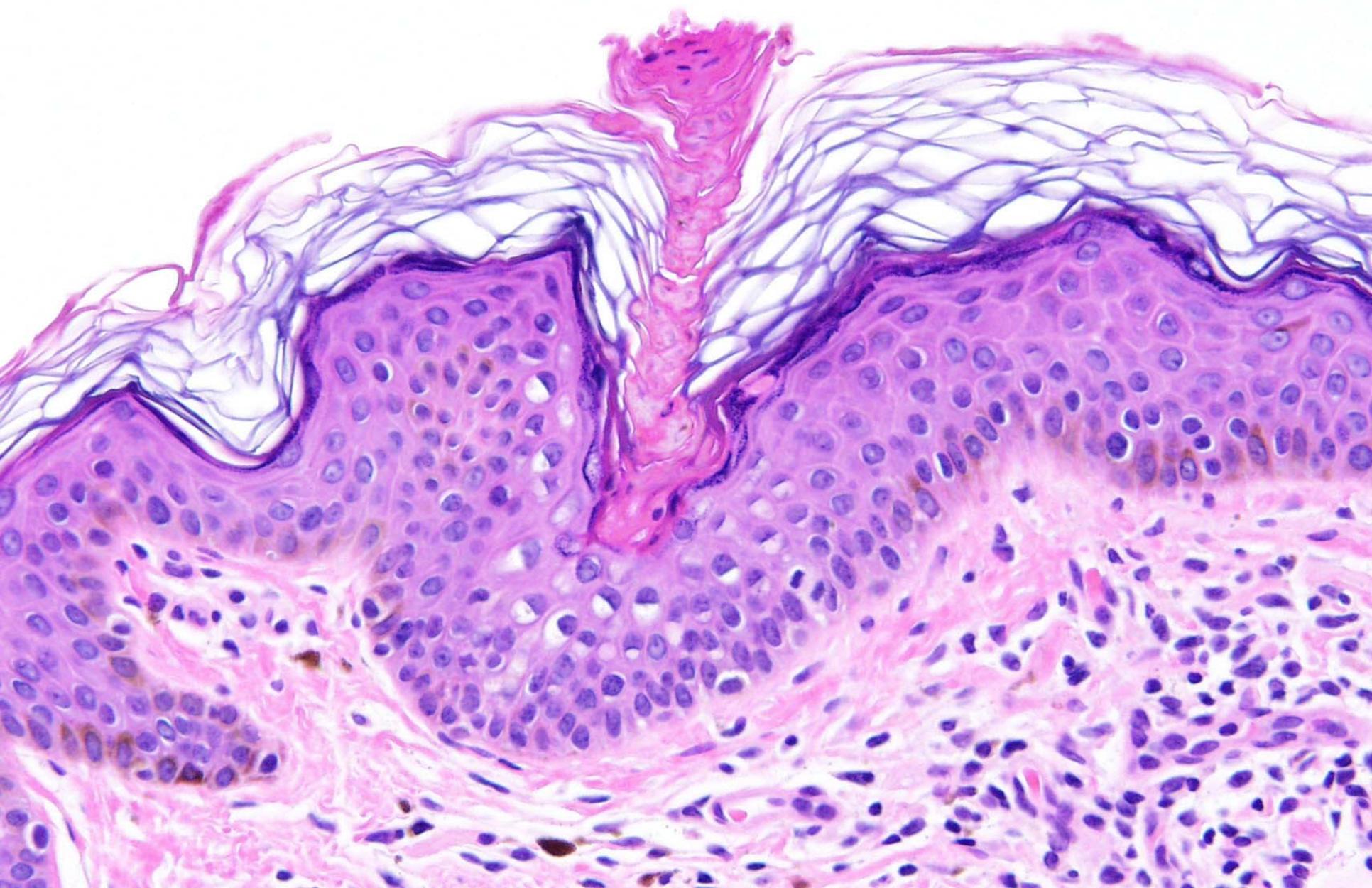


- Epidermal hyperplasia with papillomatosis
- Inward bending of rete ridges
- Vascular telangiectasia
- Superficial koilocytes



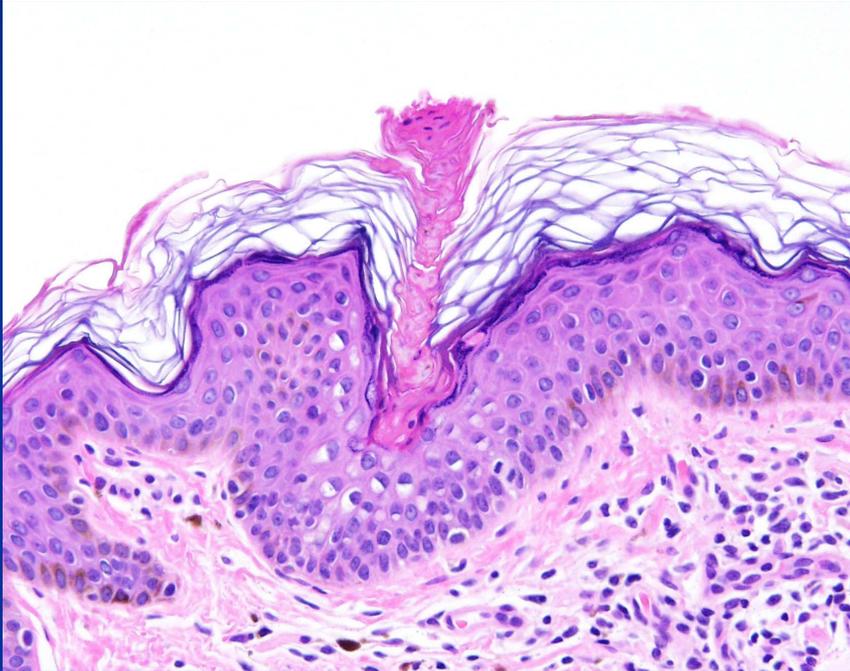






Porokeratosis

Histopathology



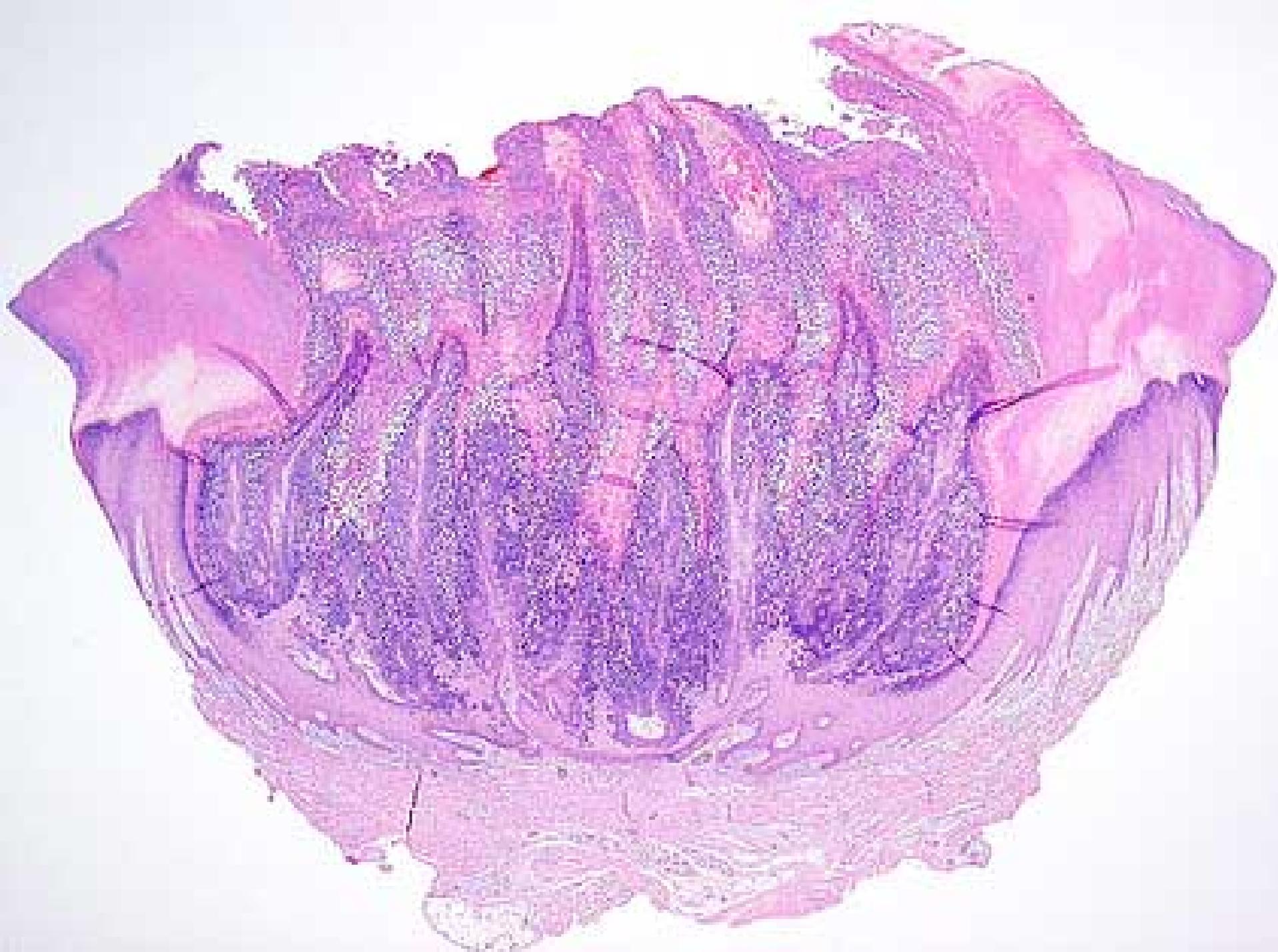
- Cornoid lamellae
- Epidermal thinning in center of lesion
- Lichenoid dermatitis
- Risk of malignancy estimated at 7.5%

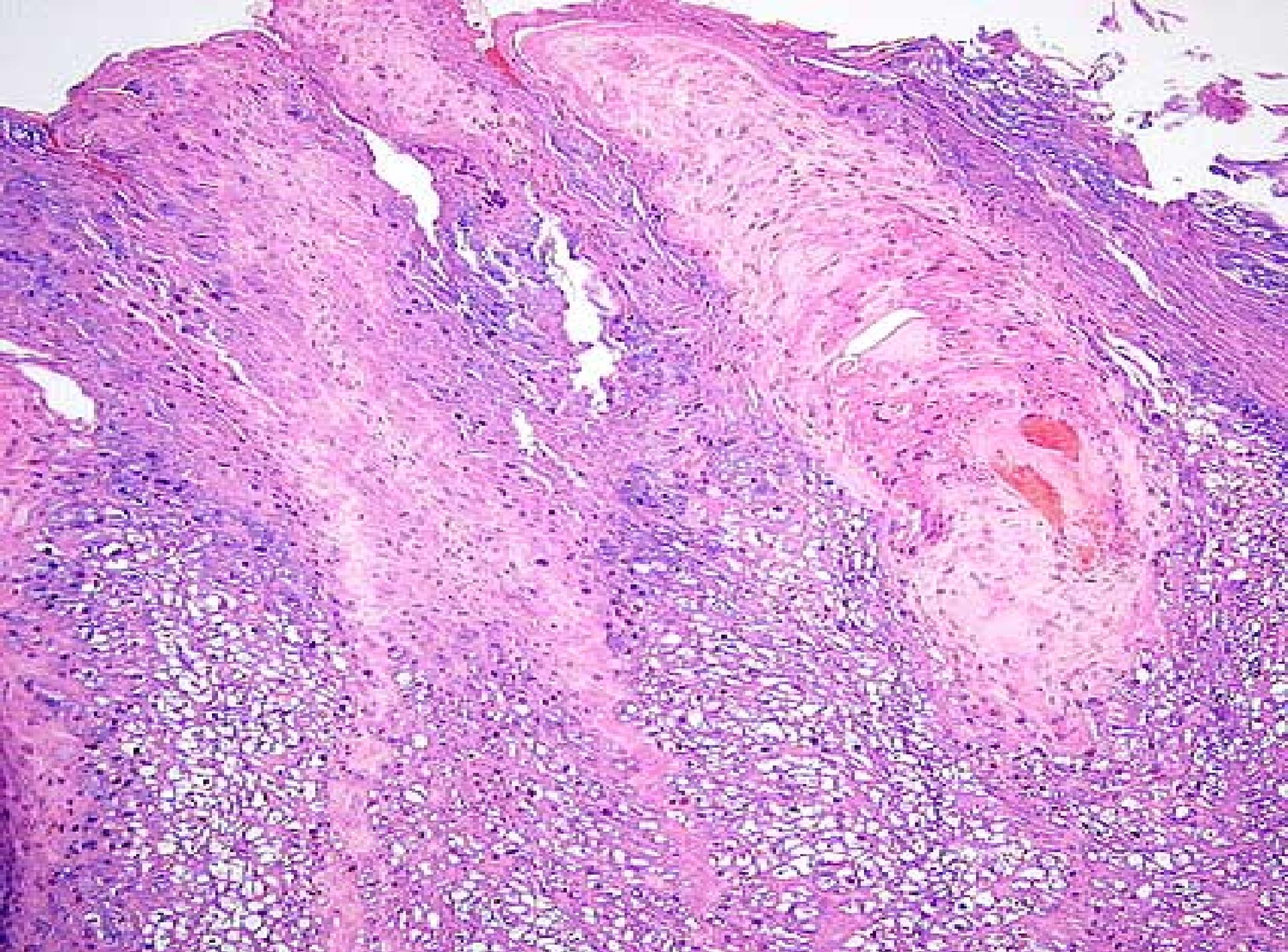
**Which histopathologic variants
are more frequently associated
with malignant transformation?**

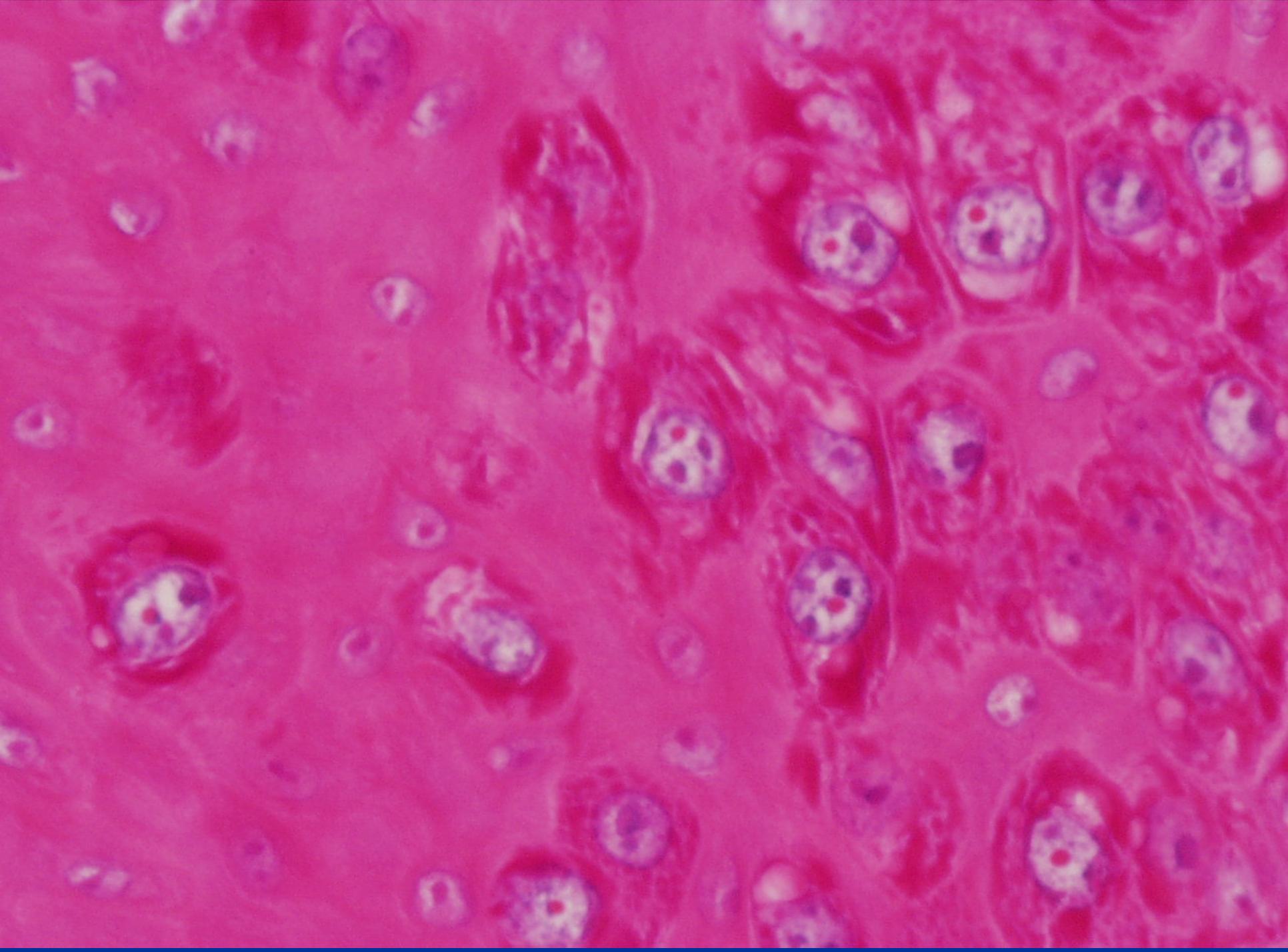
Porokeratosis Variants and Malignancy

- Squamous cell carcinoma
 - Linear and giant types of porokeratosis

- Basal Cell carcinoma
 - DSAP, Porokeratosis palmaris et plantaris disseminata (PPPD), linear

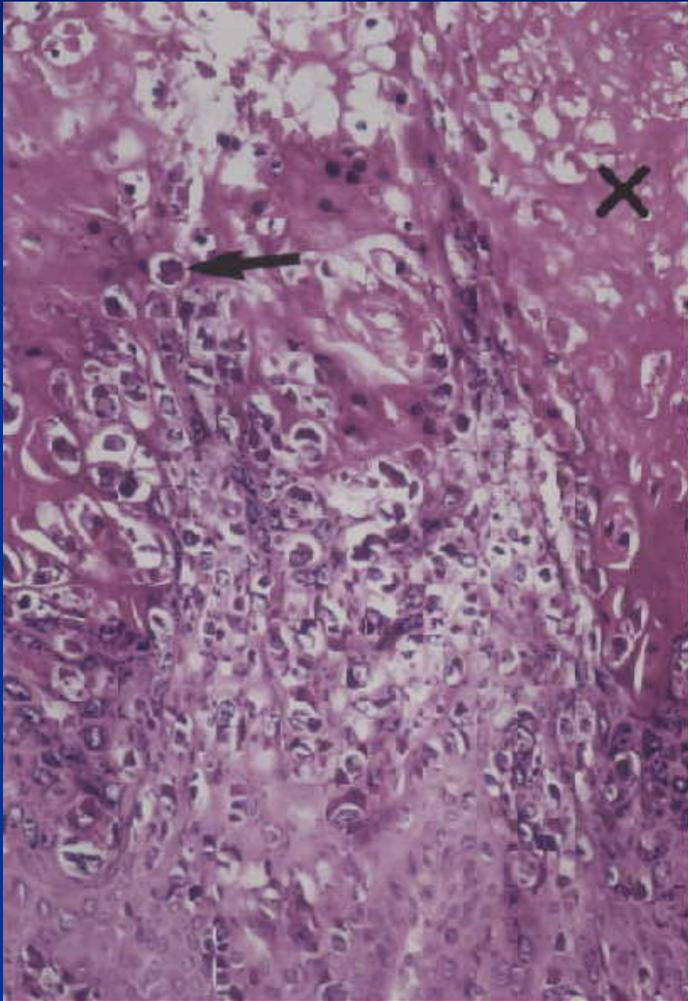






Verruca Plantaris (Myrmecia)

Histopathology



- Endo-exophytic papillary proliferation
- Viral inclusion bodies throughout most of epidermis

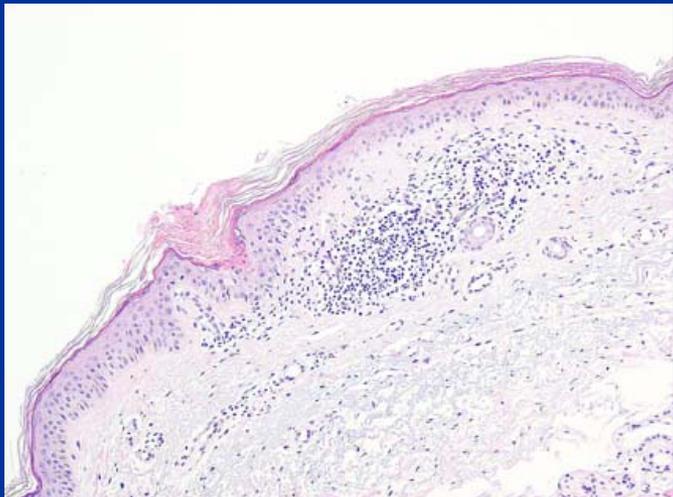
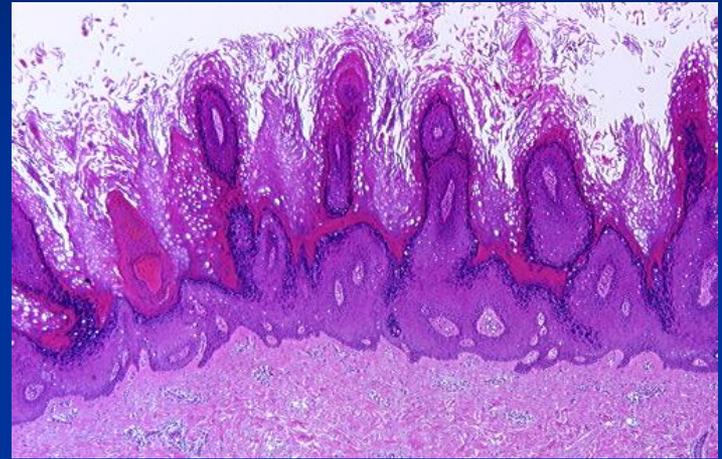
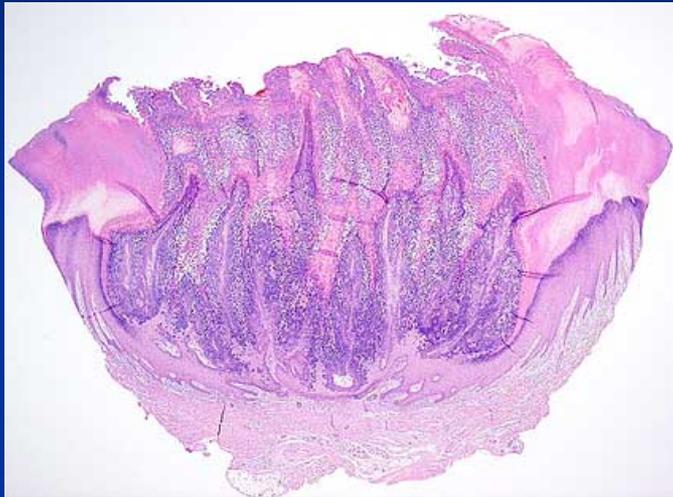
What HPV viral types are commonly associated with the following?

- *Verruca vulgaris*
- *Verruca plana*
- Plantar warts
- *Epidermodysplasia verruciformis*
- Condyloma

HPV Associations

- *Verruca vulgaris*
 - HPV 1, 2, 4, 7, 26, 29, 57
- *Verruca plana*
 - HPV 1, 2, 3, 10, 28
- Plantar warts
 - HPV 1, 2, 4, 60, or 63
- *Epidermodysplasia verruciformis*
 - HPV 5, 8
- Condyloma
 - HPV 6, 11-low risk
 - HPV16, 18, 31, 33-high risk

Papillomatosis DDX



Dermatopathology

Slide Review

Part 3

Paul K. Shitabata, M.D.

Dermatopathology Institute