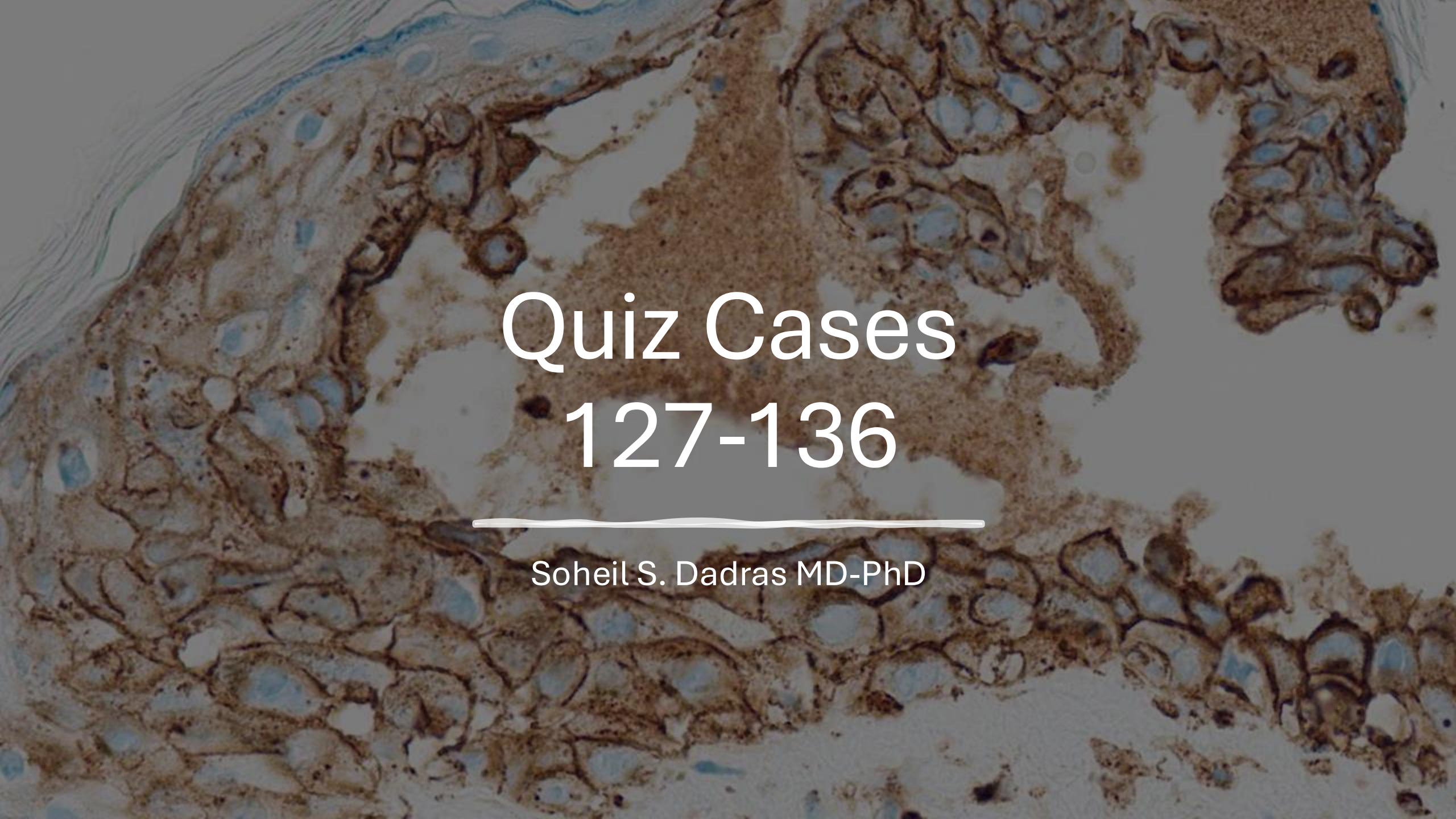




Quiz Cases 127-136

Soheil S. Dadras MD-PhD

Test your knowledge of diagnostic skin pathology



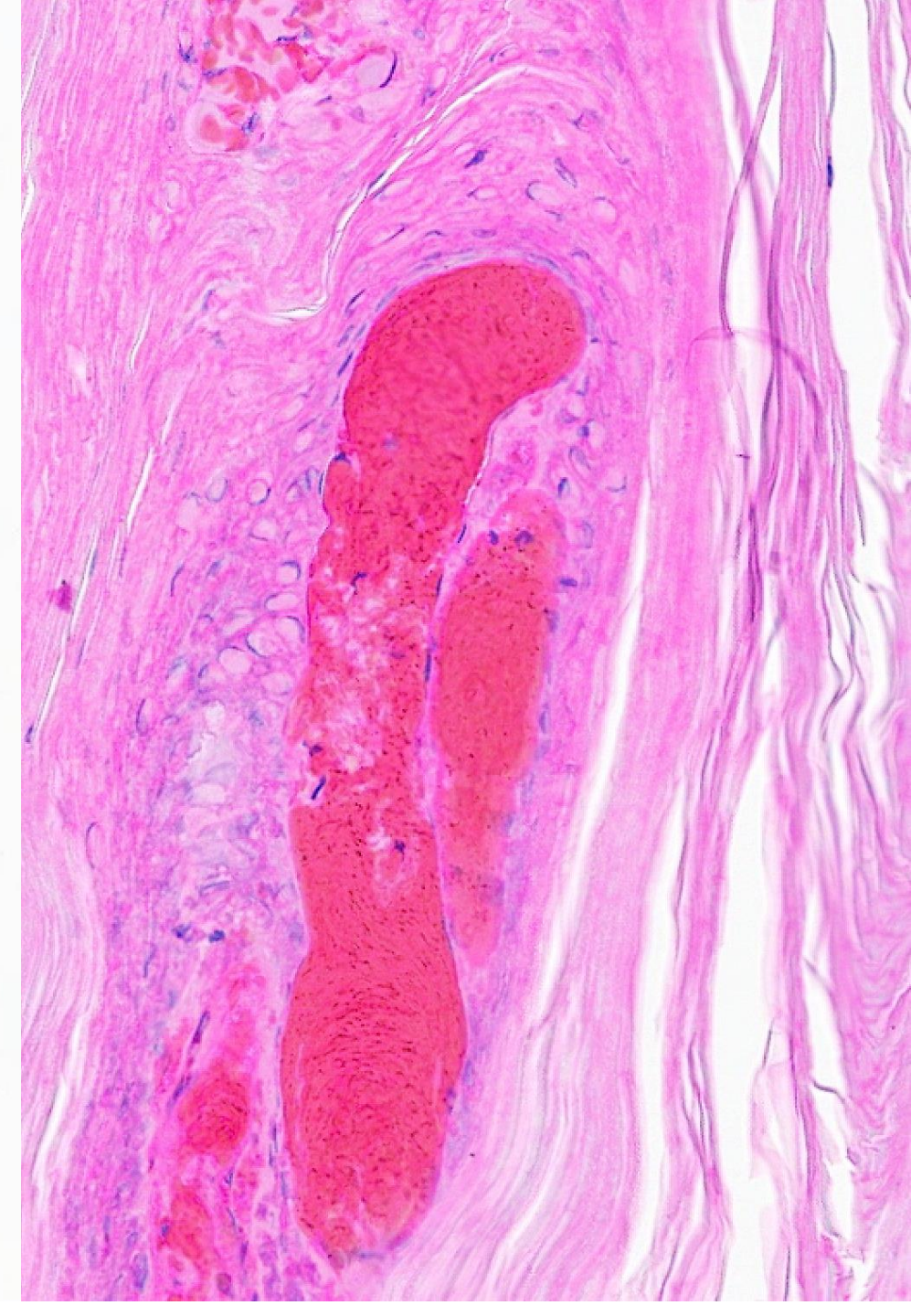
EXAMINE THE UNLABELED
IMAGES

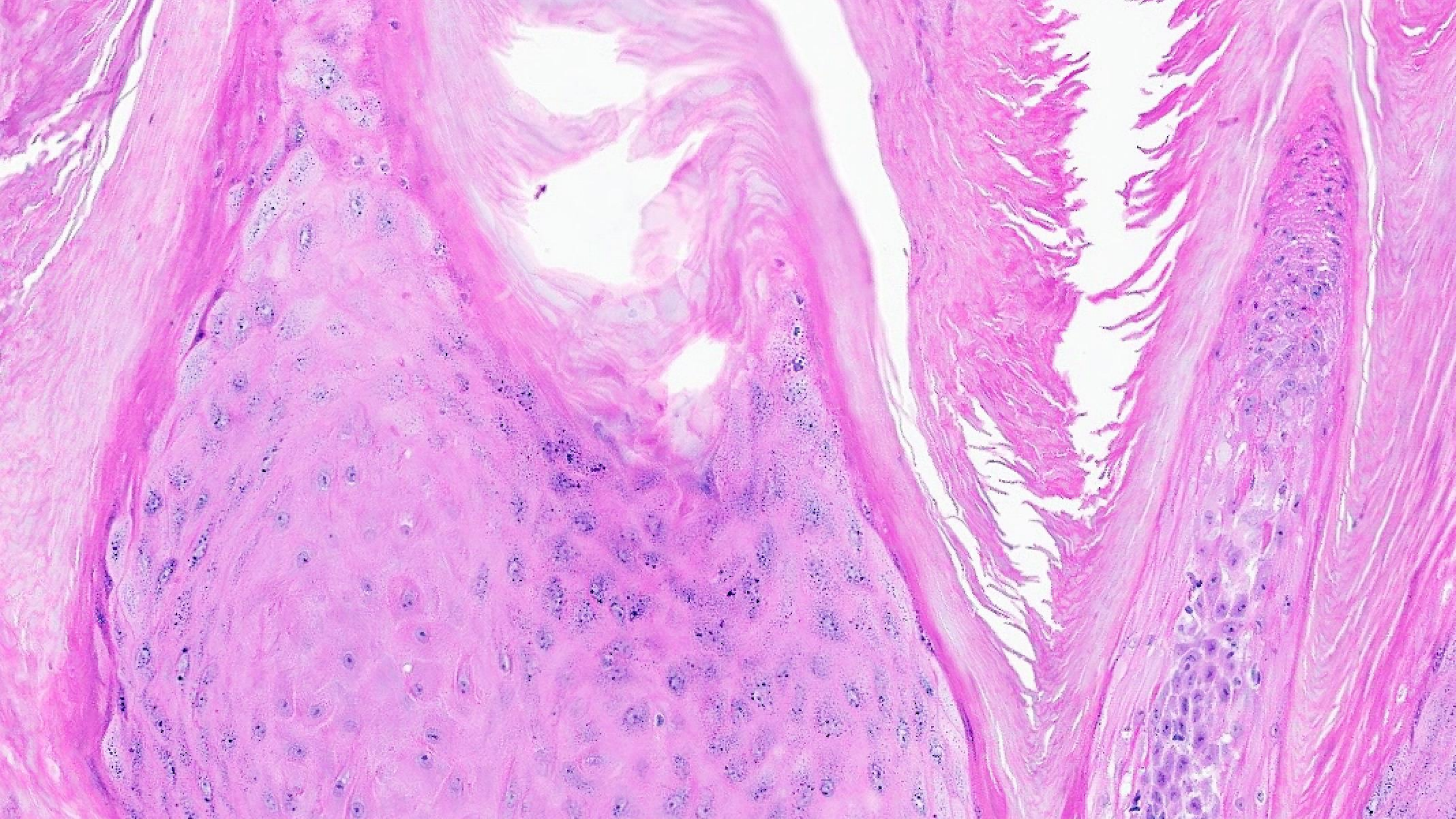


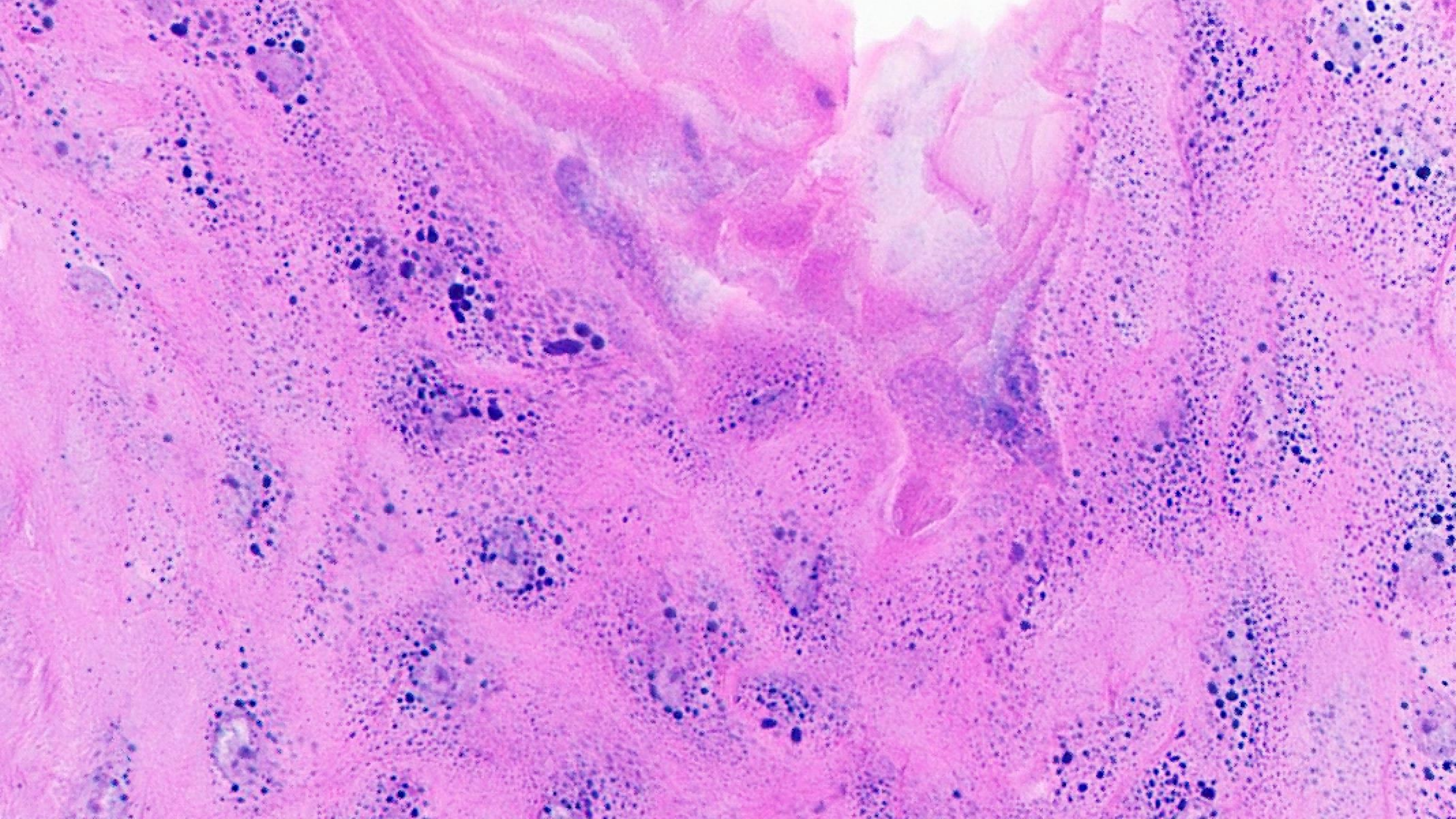
ANSWER THE QUESTIONS



FIND THE ANSWER KEY
AND SUMMARY







Case 127. 60F right thigh. Neoplasm of uncertain behavior (NUB). What is your diagnosis?

A. Squamous cell carcinoma arising in a wart

B. Verrucous carcinoma

C. Hypertrophic actinic keratosis

D. Seborrheic keratosis

E. Verruca vulgaris

Case 127. 60F right thigh. Neoplasm of uncertain behavior (NUB). What is your diagnosis?

A. Squamous cell carcinoma arising in a wart

B. Verrucous carcinoma

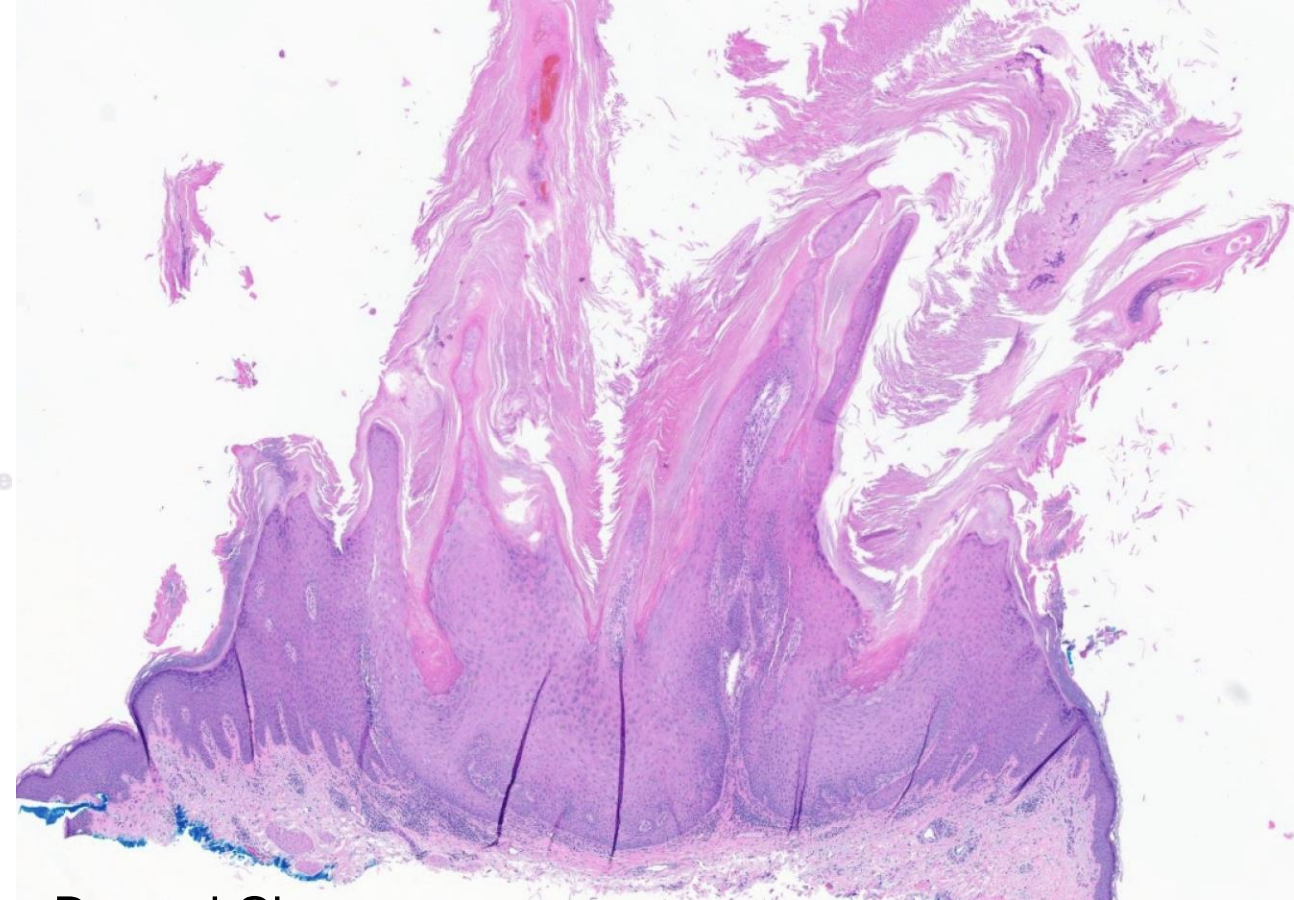
C. Hypertrophic actinic keratosis

D. Seborrheic keratosis

E. Verruca vulgaris

Key features: Verruca vulgaris

- Epidermal Changes:
 - Papillomatosis: Finger-like projections of thickened epidermis
 - Hyperkeratosis: Thickened stratum corneum (often parakeratosis)
 - Acanthosis: Epidermal thickening with elongated rete ridges
 - Koilocytosis: Pathognomonic vacuolated keratinocytes with:
 - Pyknotic, wrinkled nuclei
 - Perinuclear halos (clearing)
 - Binucleation
 - Vertical tiers of parakeratosis: Overlying dermal papillae
 - Clumped keratohyaline granules: In granular layer

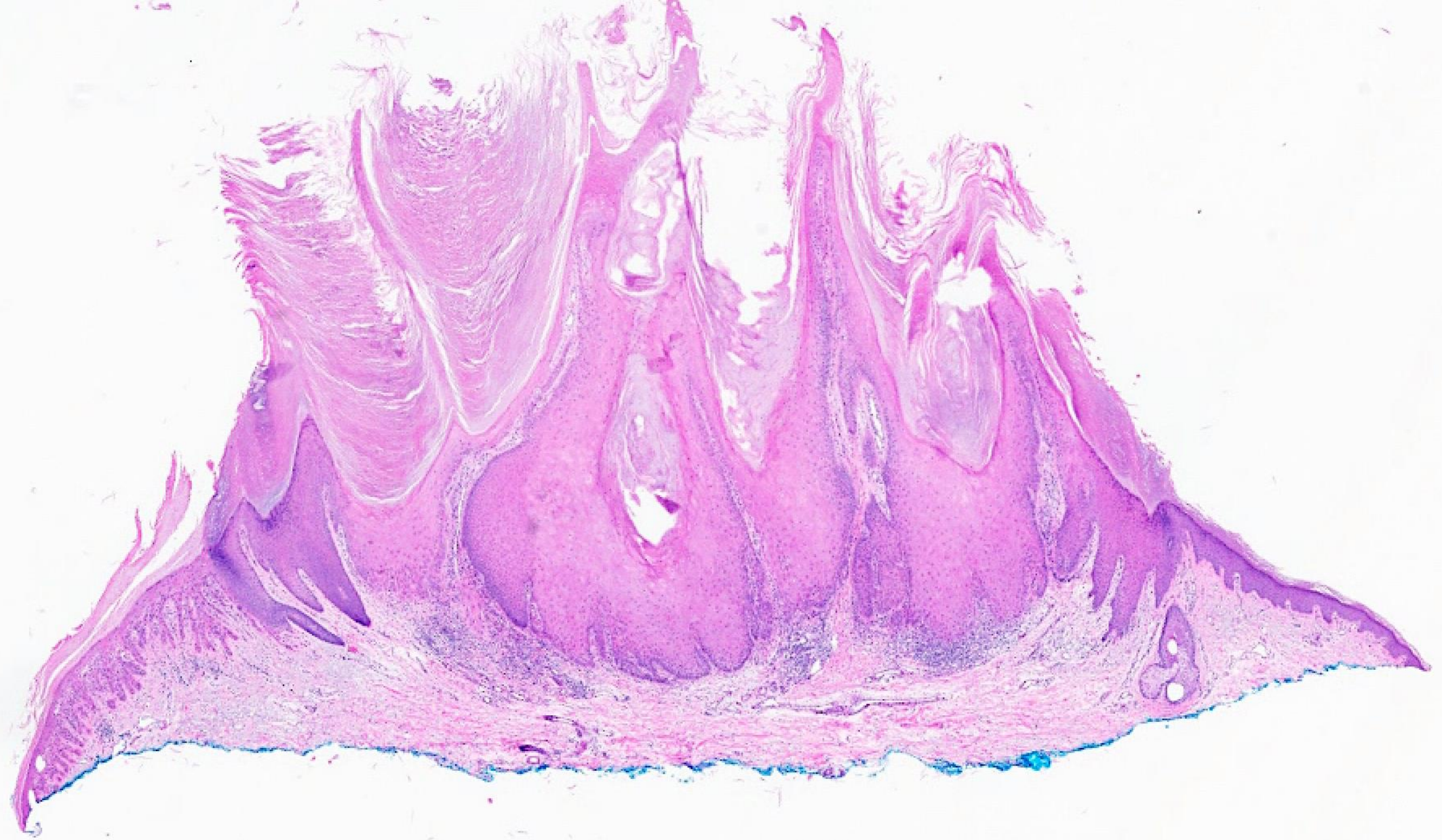


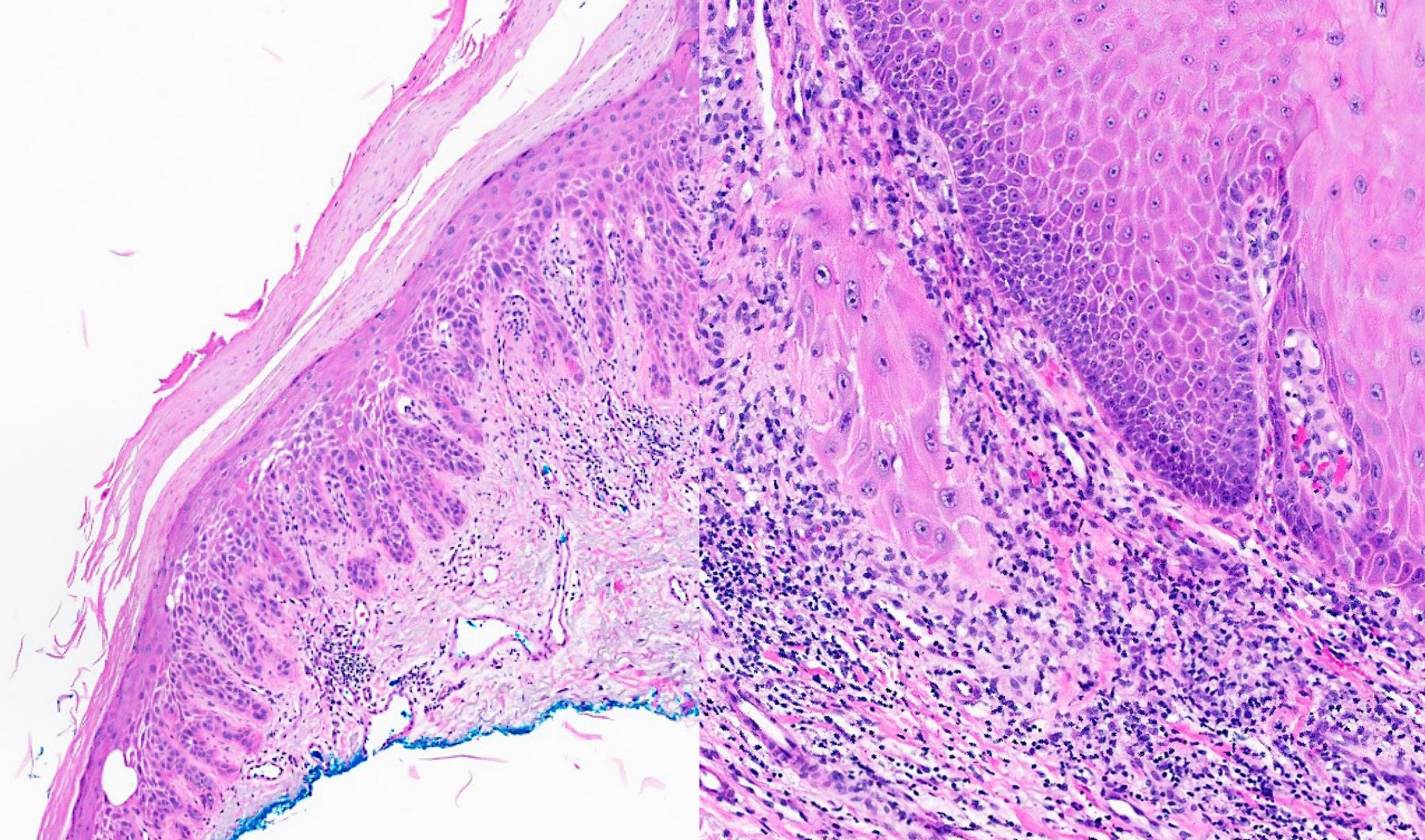
Dermal Changes:

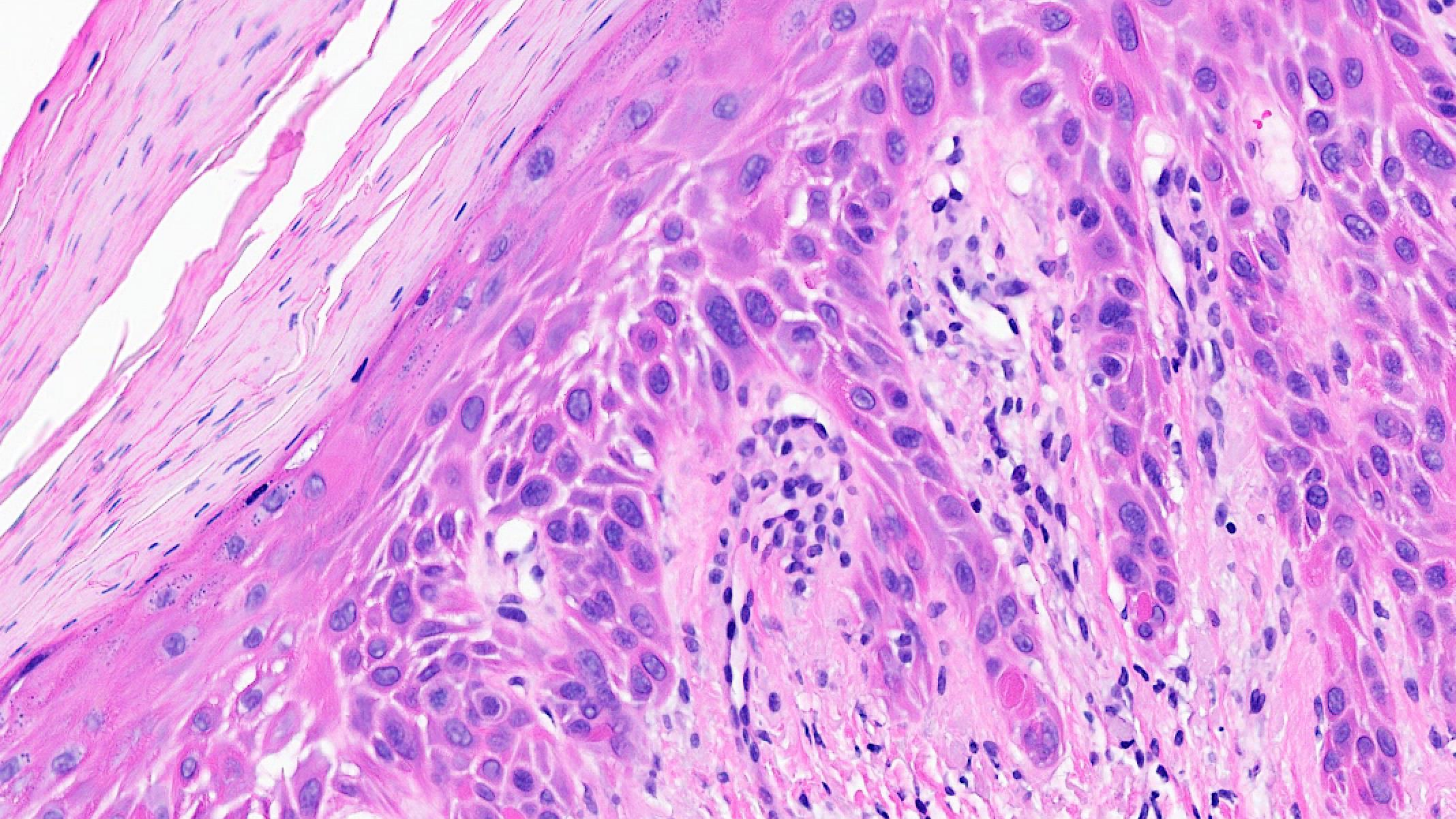
Dilated capillaries in dermal papillae
Mild chronic inflammatory infiltrate
No viral inclusions in dermis

HPV Cytopathic Effects:

Most prominent in upper spinous/granular layers
Nuclear enlargement and hyperchromasia







Case 128. 80M, right dorsal hand. Hyperkeratotic plaque; h/o SCC. What is your diagnosis?

A. Squamous cell carcinoma arising in a wart

B. Squamous cell carcinoma in situ

C. Hypertrophic actinic keratosis

D. Hypertrophic actinic keratosis and verruca vulgaris

E. Verruca vulgaris

Case 128. 80M, right dorsal hand. Hyperkeratotic plaque; h/o SCC. What is your diagnosis?

A. Squamous cell carcinoma arising in a wart

B. Squamous cell carcinoma in situ

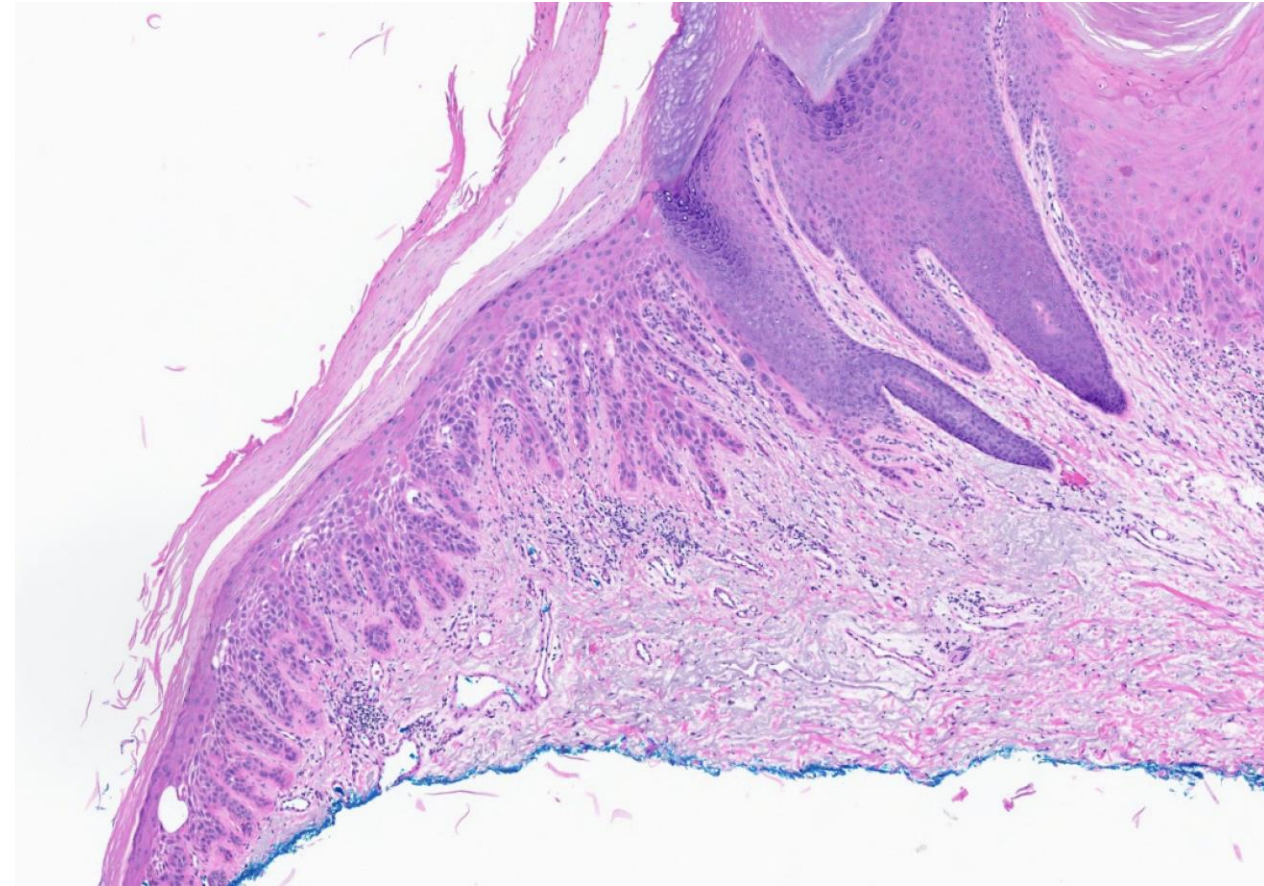
C. Hypertrophic actinic keratosis

D. Hypertrophic actinic keratosis and verruca vulgaris

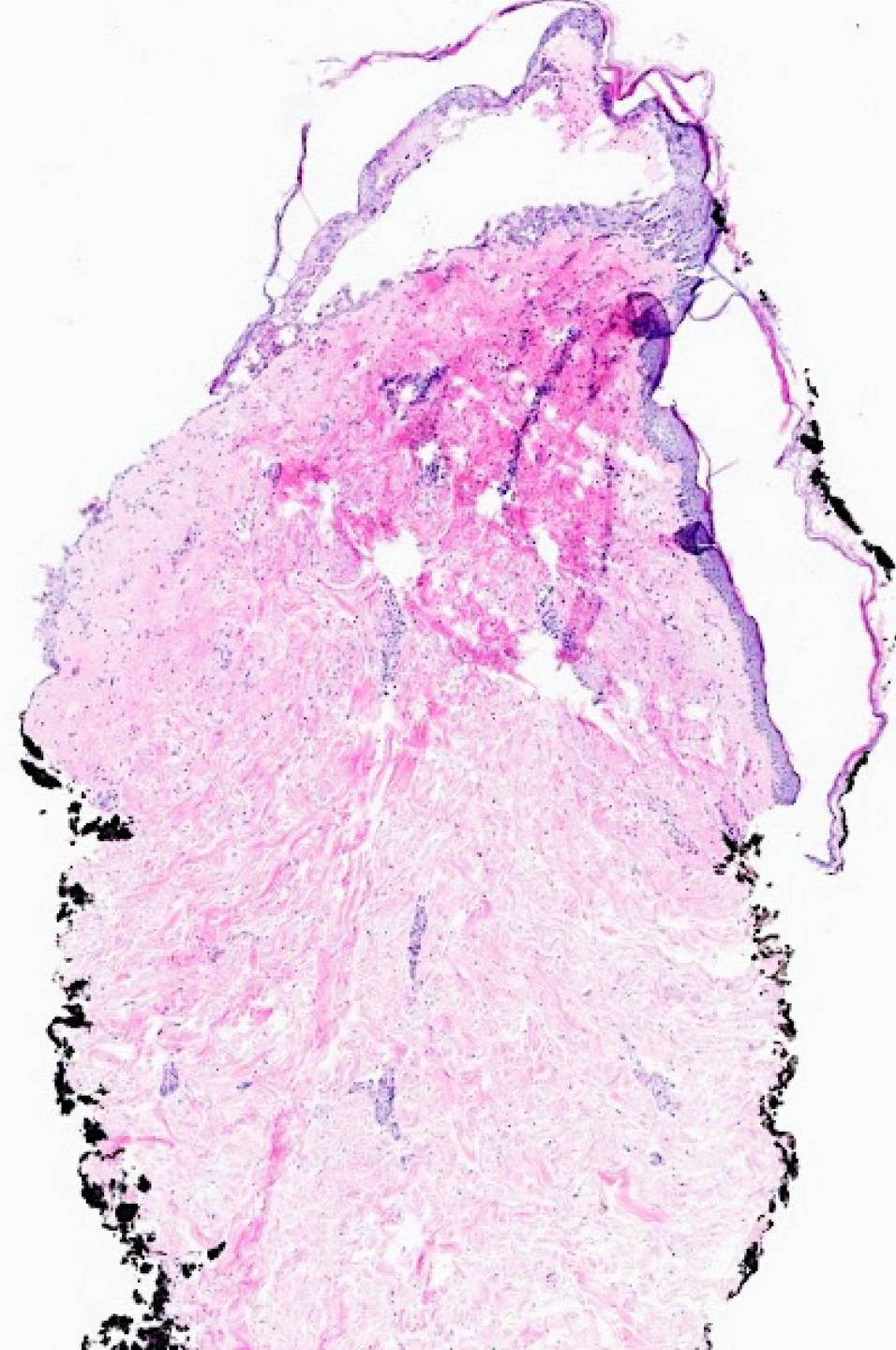
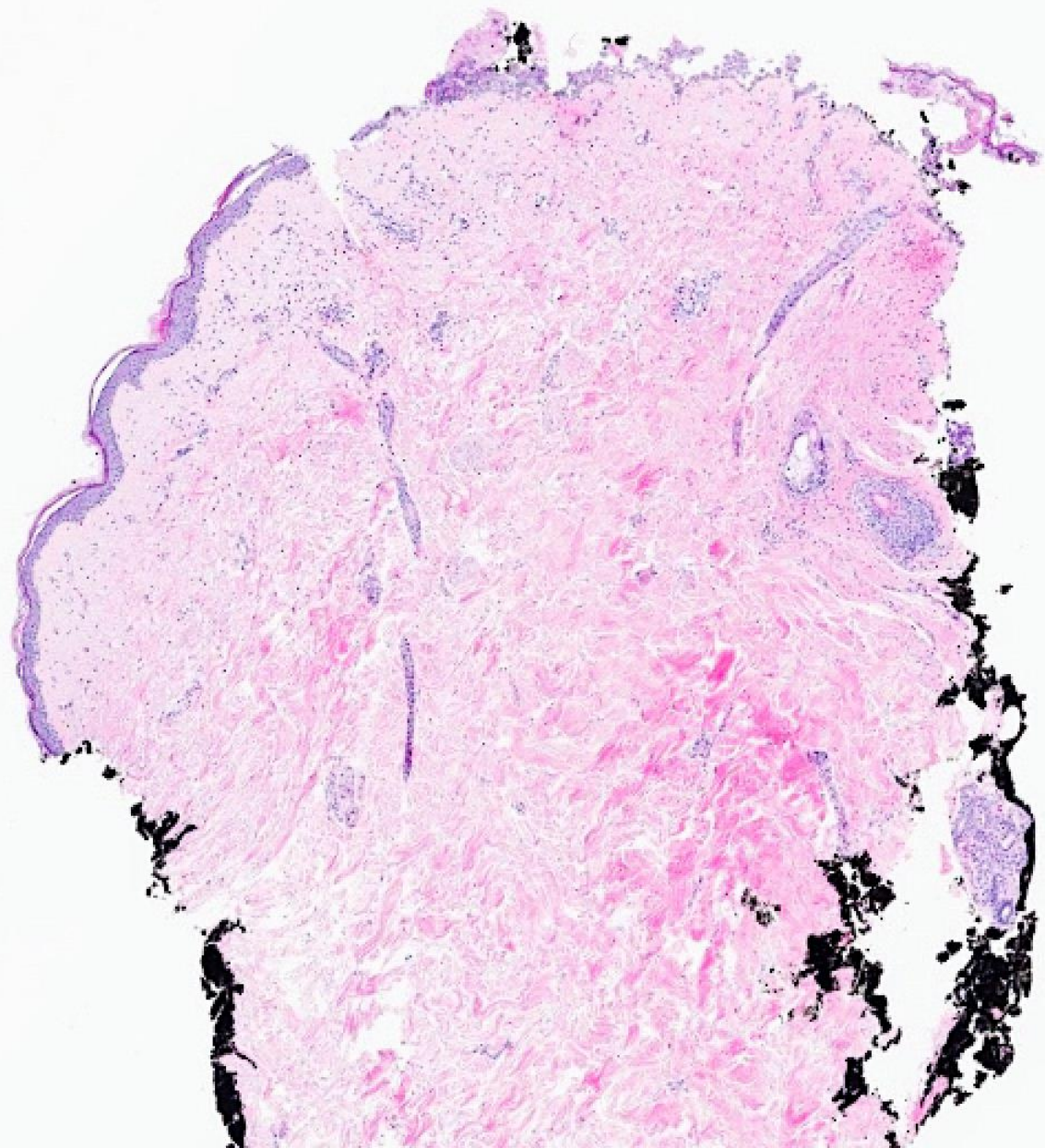
E. Verruca vulgaris

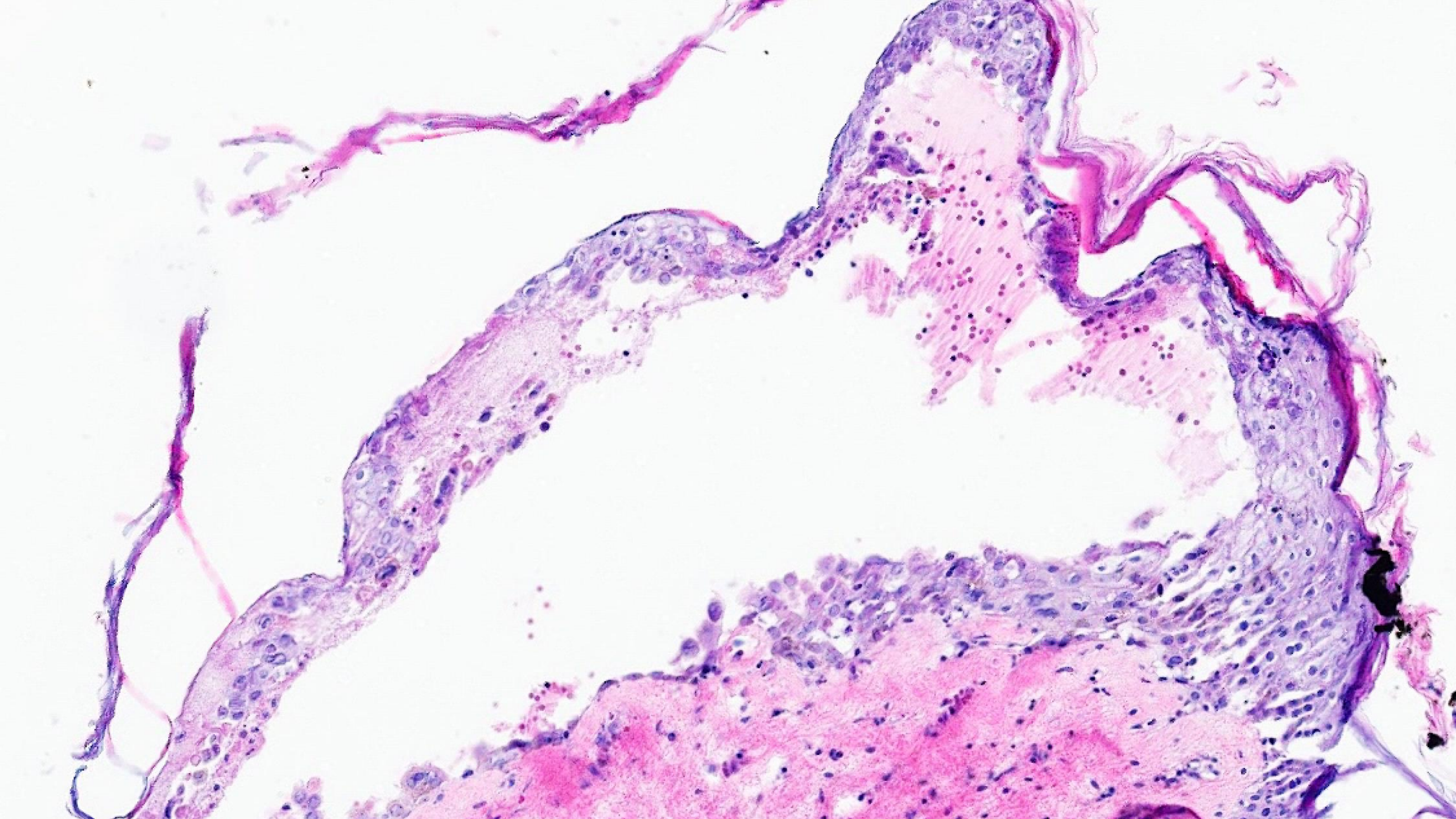
Key features: Hypertrophic actinic keratosis

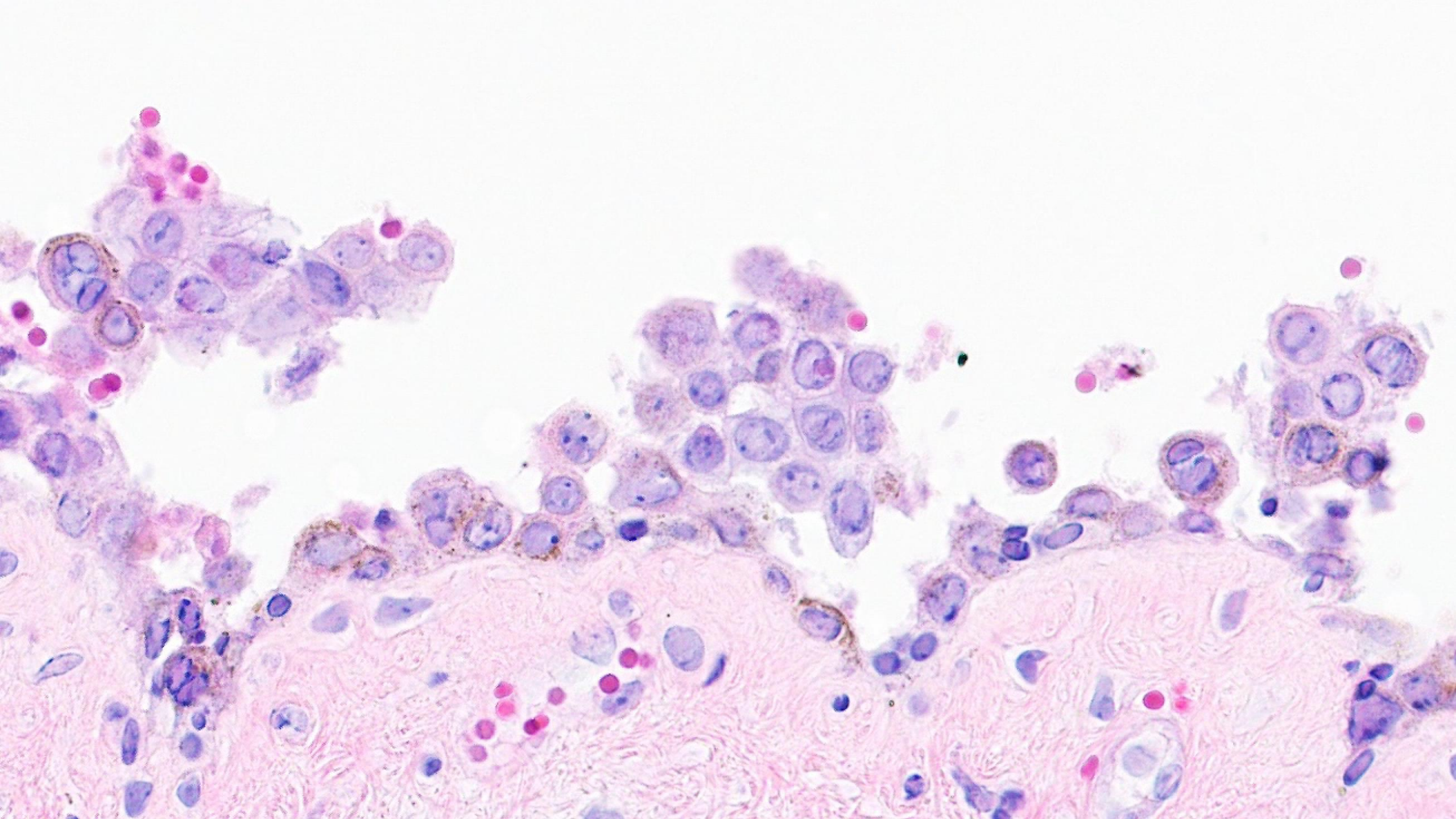
- Epidermal Changes:
 - Marked acanthosis (epidermal thickening)
 - Irregular epidermal hyperplasia with bulbous rete ridges
 - Hyperkeratosis (often with parakeratosis)
 - Cytologic atypia (most prominent in basal/suprabasal layers):
 - Nuclear enlargement
 - Hyperchromasia
 - Irregular nuclear contours
 - Increased mitoses (may be atypical)
 - Focal keratinocyte dysmaturation (disordered maturation)
- Stromal Changes:
 - Solar elastosis (dermal collagen degeneration)
 - Chronic inflammatory infiltrate (lymphocytes, plasma cells)
 - Dilated capillaries in superficial dermis



- Variants:
 - Proliferative type: Endophytic growth pattern
 - Warty type: Papillomatous surface changes
 - Acantholytic type: Suprabasal acantholysis







Case 129. 72M, abdomen, 6-day h/o pruritic tense bullae on the trunk after systemic antifungal treatment . What is your diagnosis?

A. Bullous erythema multiforme

B. Bullous drug reaction with acantholysis

C. Varicella-zoster virus infection

D. Coxsackievirus (Hand-Foot-and-Mouth Disease)

E. Herpes simplex virus infection

Case 129. 72M, abdomen, 6-day h/o pruritic tense bullae on the trunk after systemic antifungal treatment . What is your diagnosis?

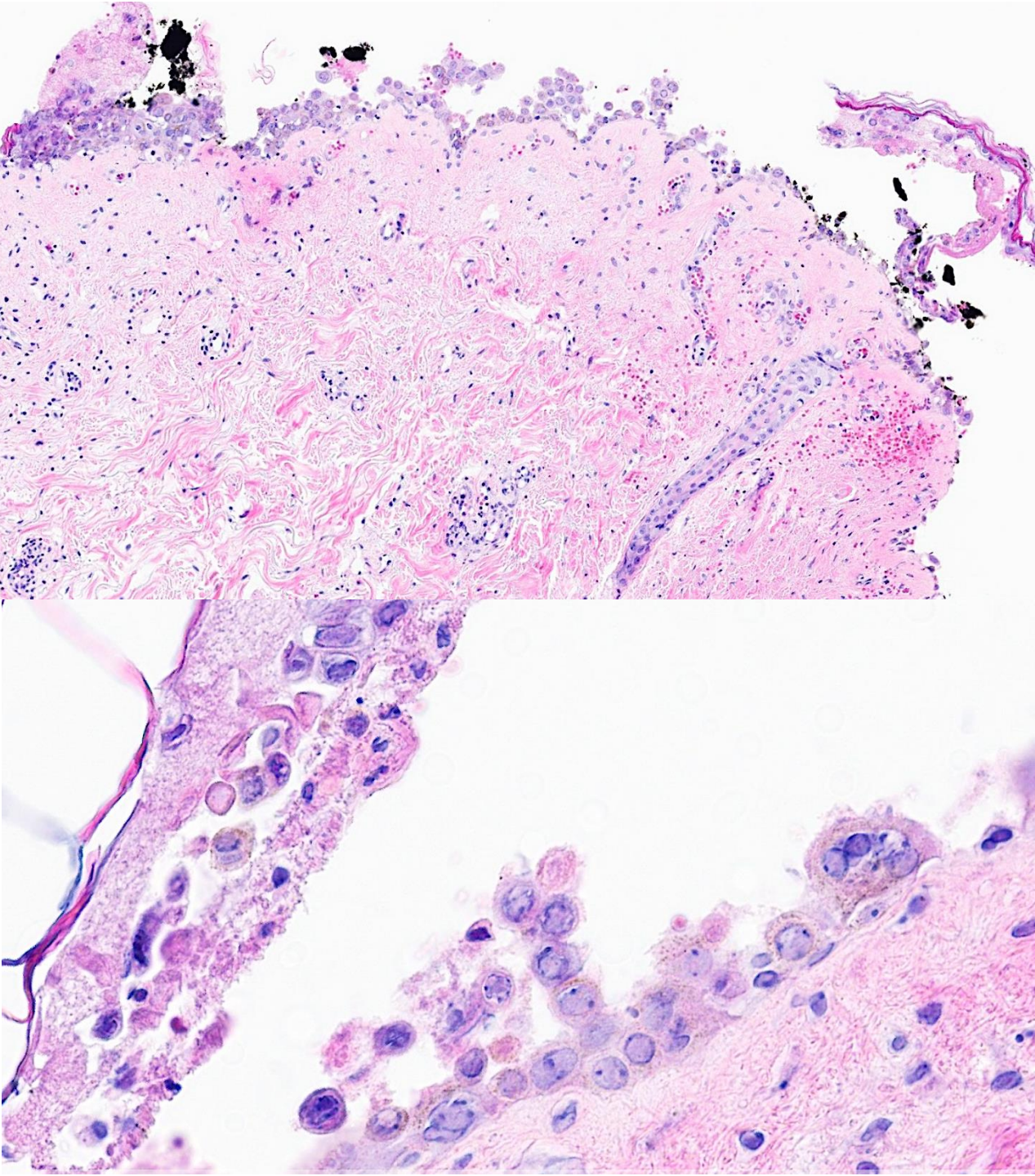
A. Bullous erythema multiforme

B. Bullous drug reaction with acantholysis

C. Varicella-zoster virus infection

D. Coxsackievirus (Hand-Foot-and-Mouth Disease)

E. Herpes simplex virus infection



Key features: VZV

Epidermal Changes:

Ballooning degeneration of keratinocytes (swollen, pale cytoplasm).

Intranuclear eosinophilic inclusions (Cowdry type A).

Multinucleated giant cells (syncytial formation due to viral cytopathic effect).

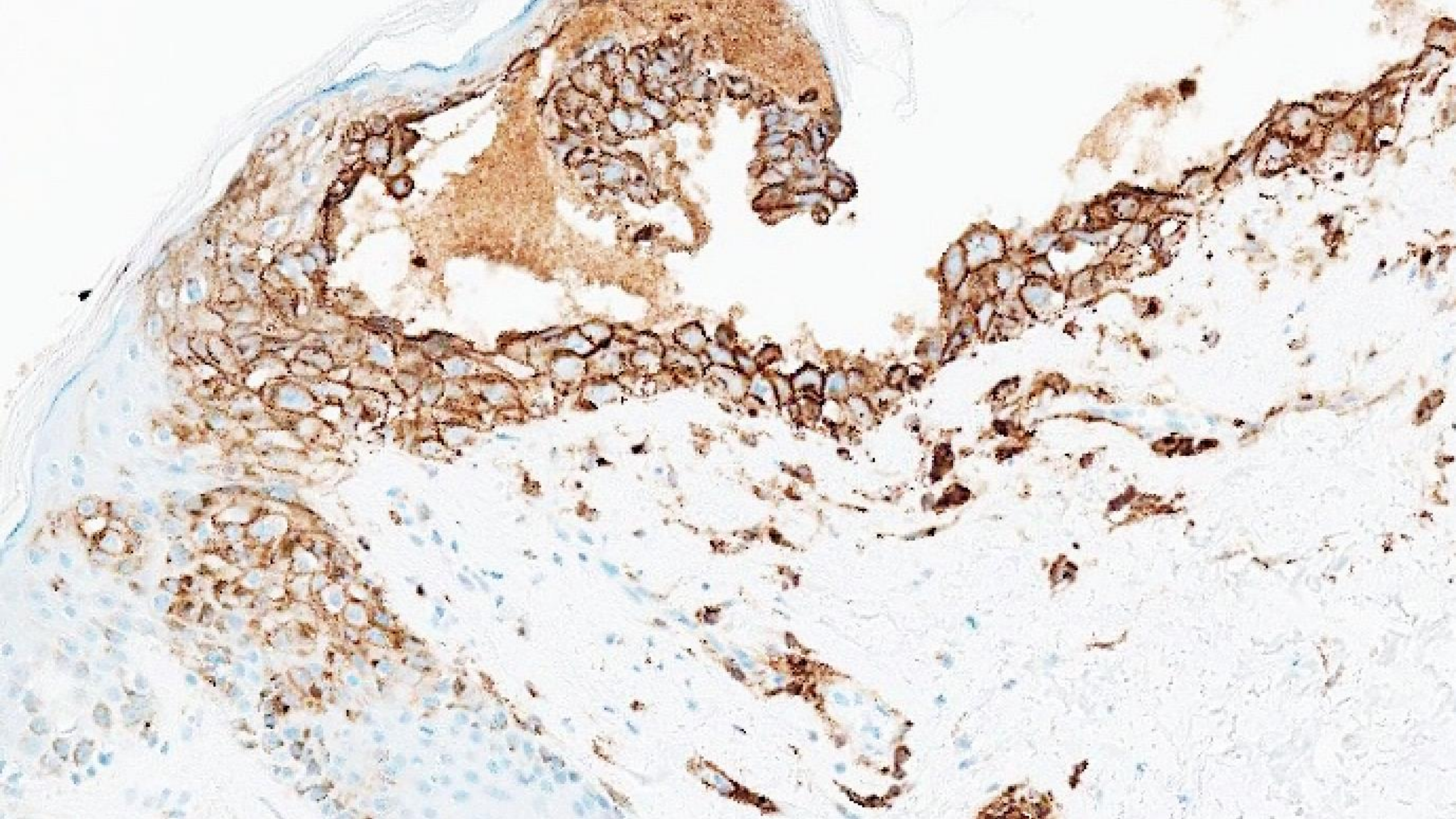
Vesicle formation (intraepidermal or subepidermal).

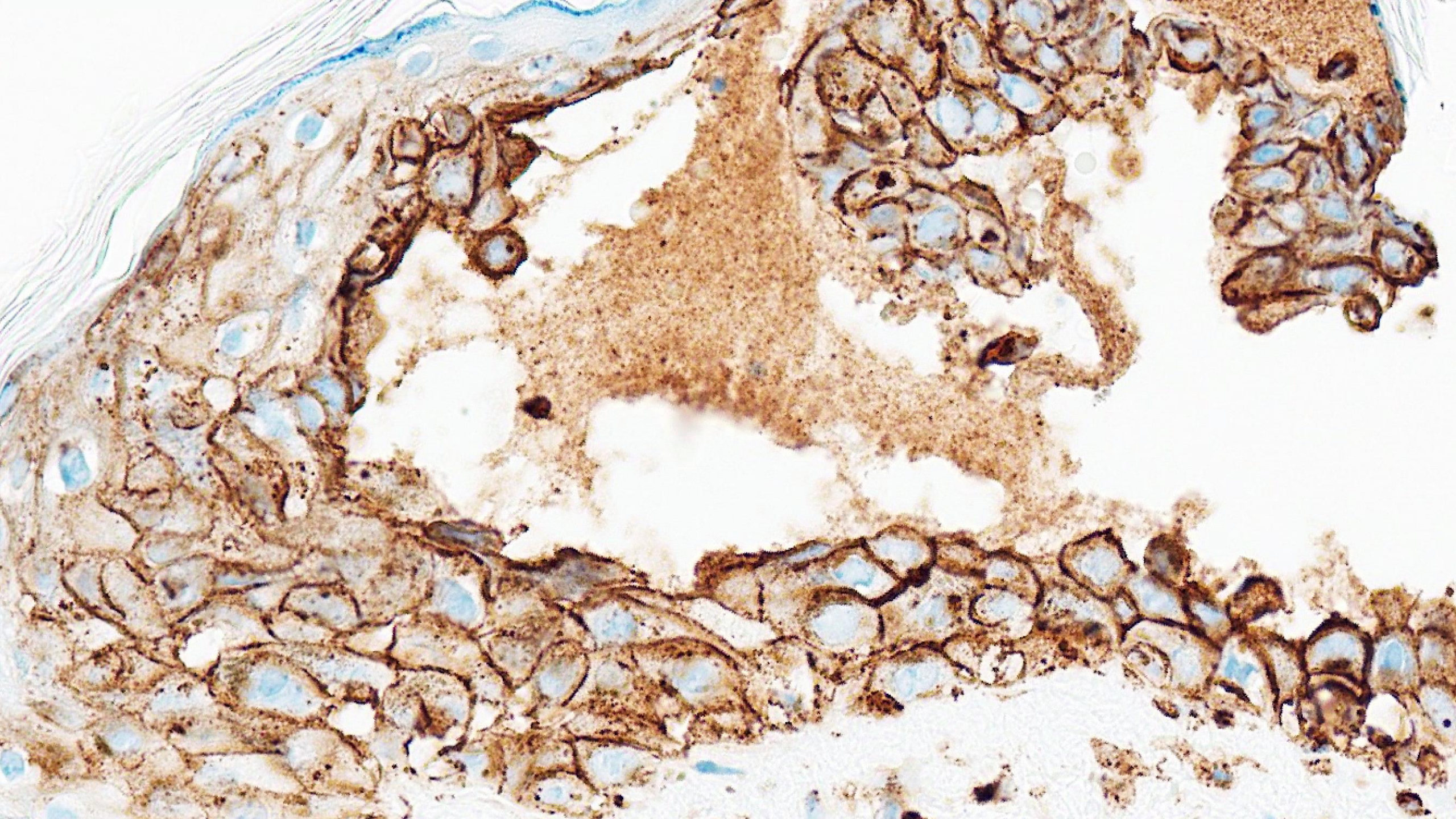
Dermal Changes:

Lymphocytic infiltrate (perivascular and interstitial).

Leukocytoclastic vasculitis (in severe cases).

Necrosis (in immunocompromised hosts).





Case 130. Which immunohistochemistry test is most specific in confirming the diagnosis for case no. 129?

A. HSV1

B. HSV2

C. VZV

D. Spirochetal antigen

E. HHV-8

Case 130. Which immunohistochemistry test is most specific in confirming the diagnosis for case no. 129?

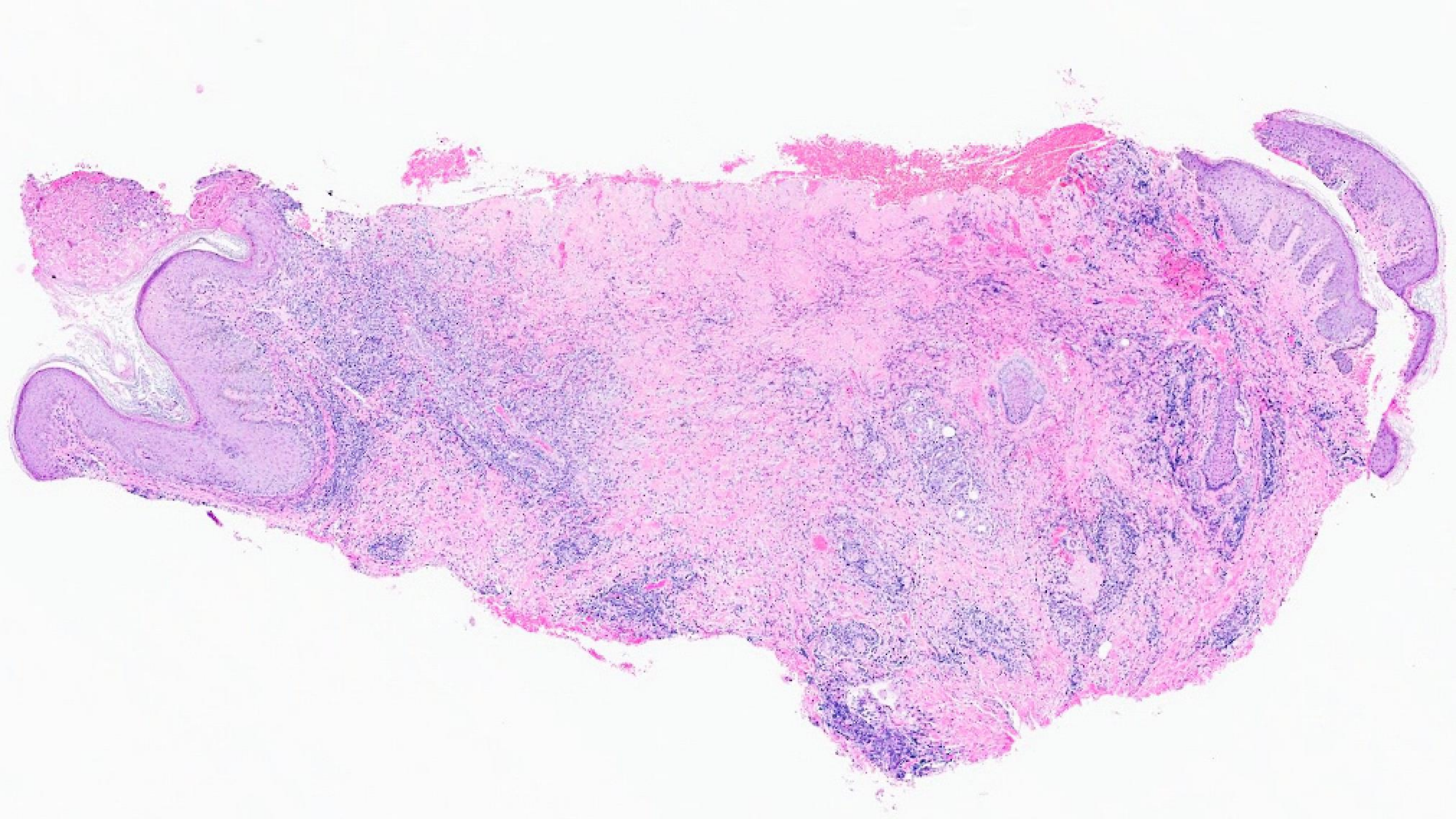
A. HSV1

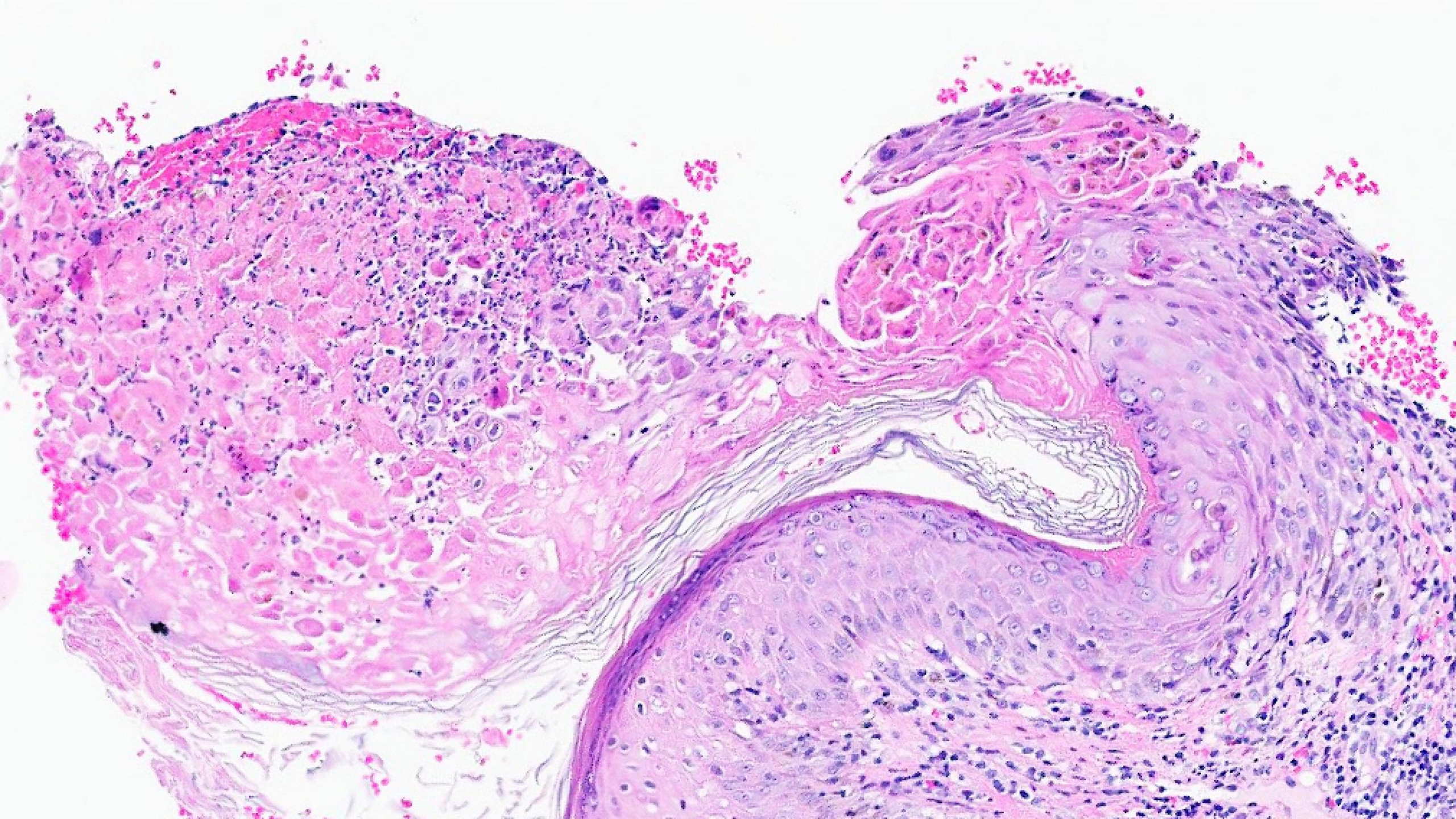
B. HSV2

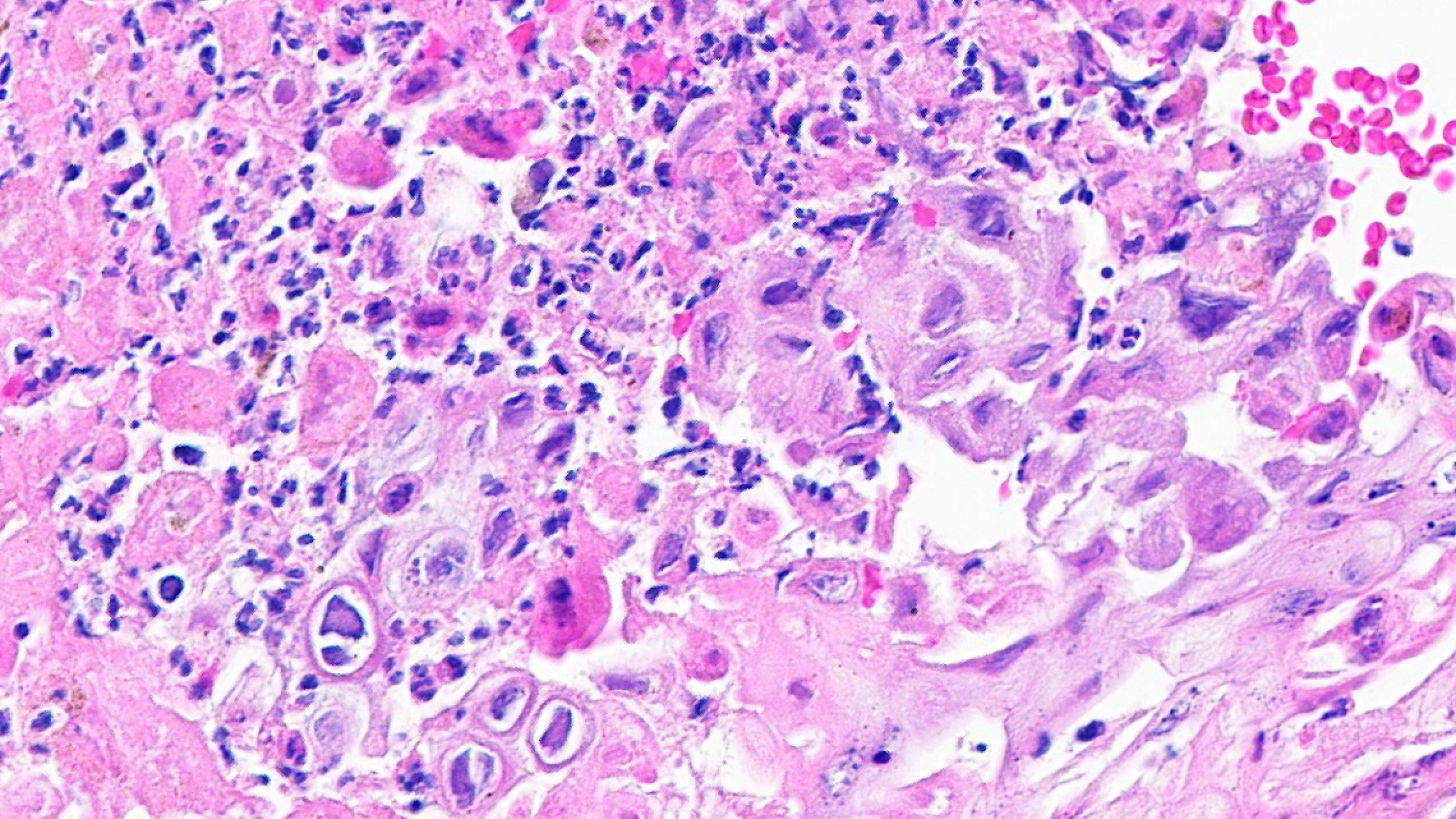
C. VZV

D. Spirochetal antigen

E. HHV-8







Case 131. 52F, vulva. Lump. What is your diagnosis?

A. Zoon's vulvitis

B. Bechet's disease

C. Varicella-zoster virus infection

D. Herpes genitalis

E. Primary chancre syphilis

Case 131. 52F, vulva. Lump. What is your diagnosis?

A. Zoon's vulvitis

B. Bechet's disease

C. Varicella-zoster virus infection

D. Herpes genitalis

E. Primary chancre syphilis

Key features: Herpes genitalis

Follow-up IHC results for case no. 131:

Negative: HSV1, HSV2, and spirochetal antigen

IHC can be negative (viral loads)

Cross-Reactivity?

Rare nonspecific staining (technical artifacts)

True cross-reactivity: minimal

VZV-Specific IHC:

Antibodies targeting VZV glycoprotein E: stains VZV-infected cells but not HSV-1/2.

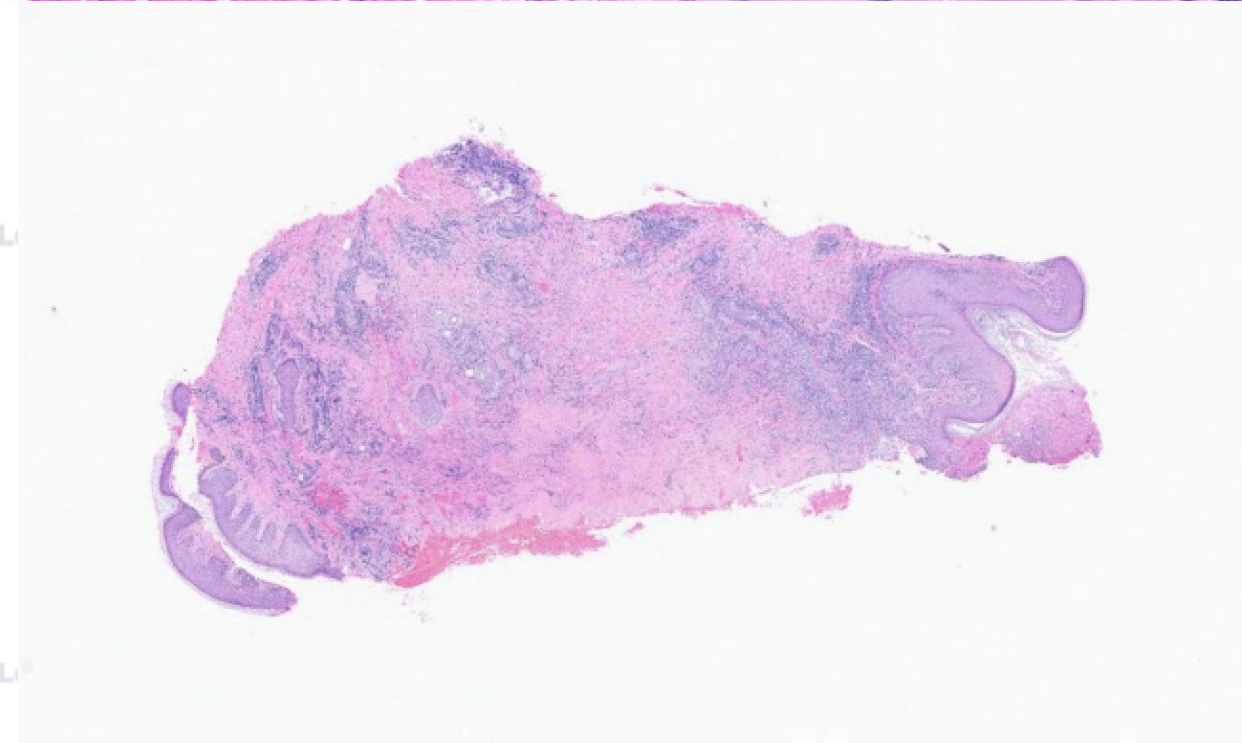
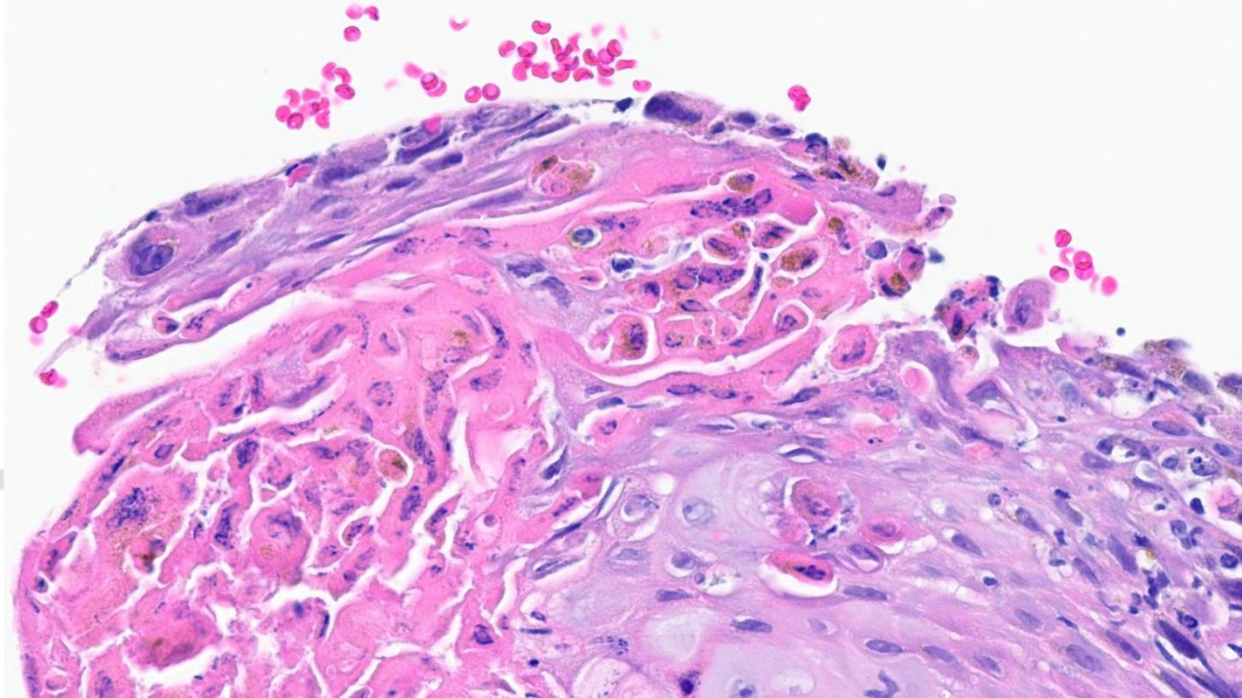
HSV-Specific IHC:

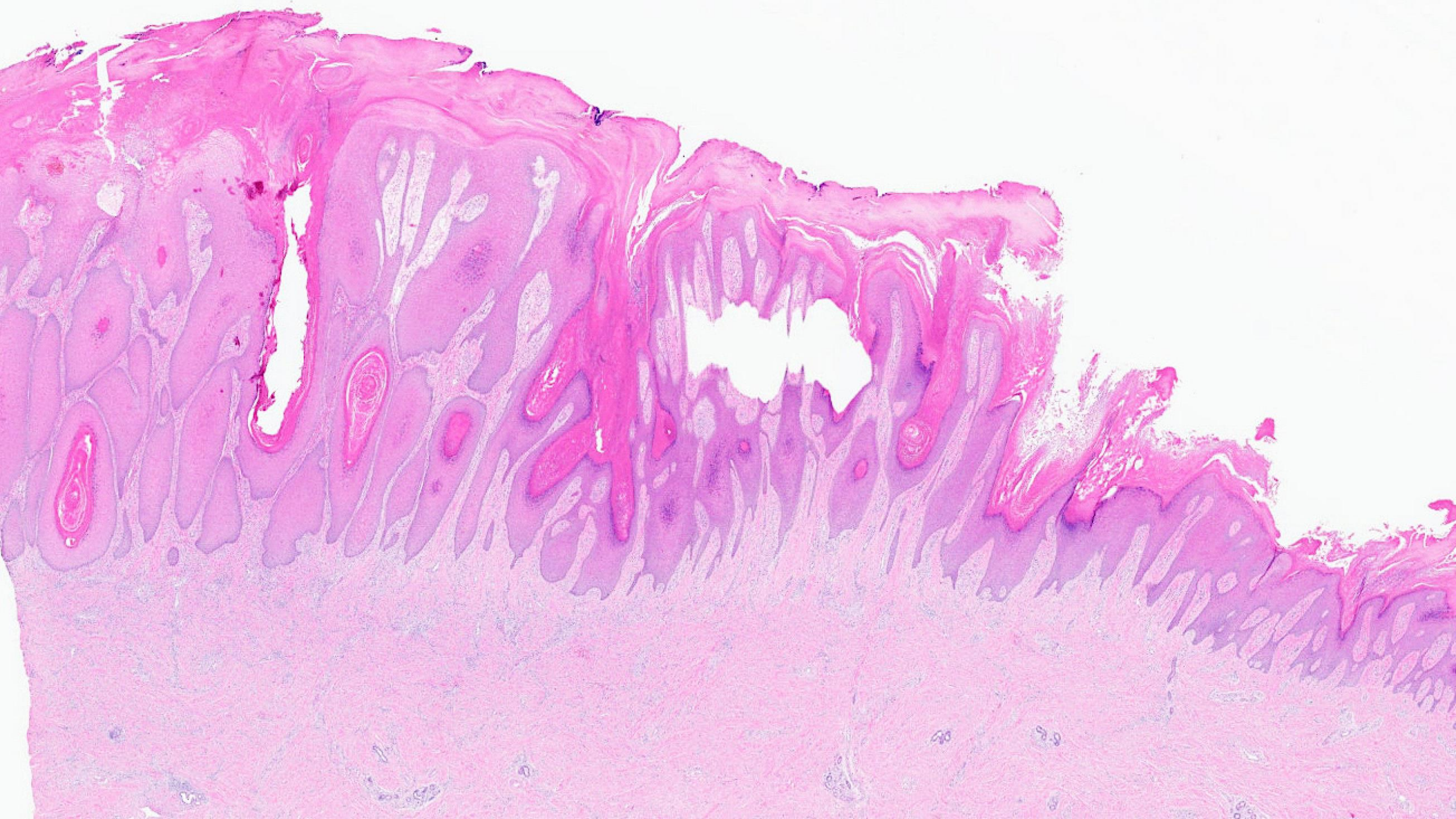
Antibodies targeting HSV-1/2 glycoprotein G: stains HSV-infected cells but not VZV.

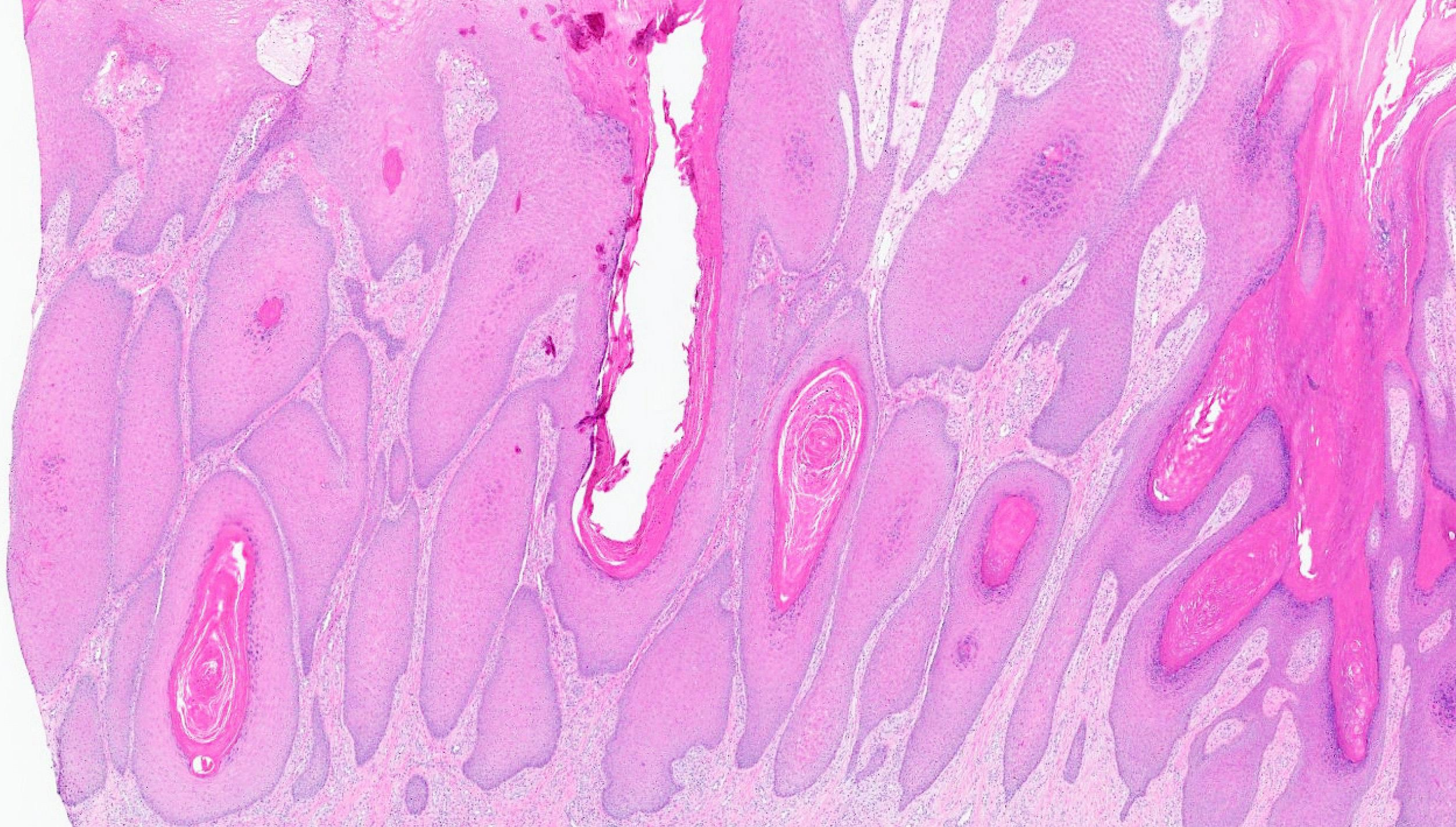
HSV histology = ballooning cells + Cowdry A inclusions + multinucleation.

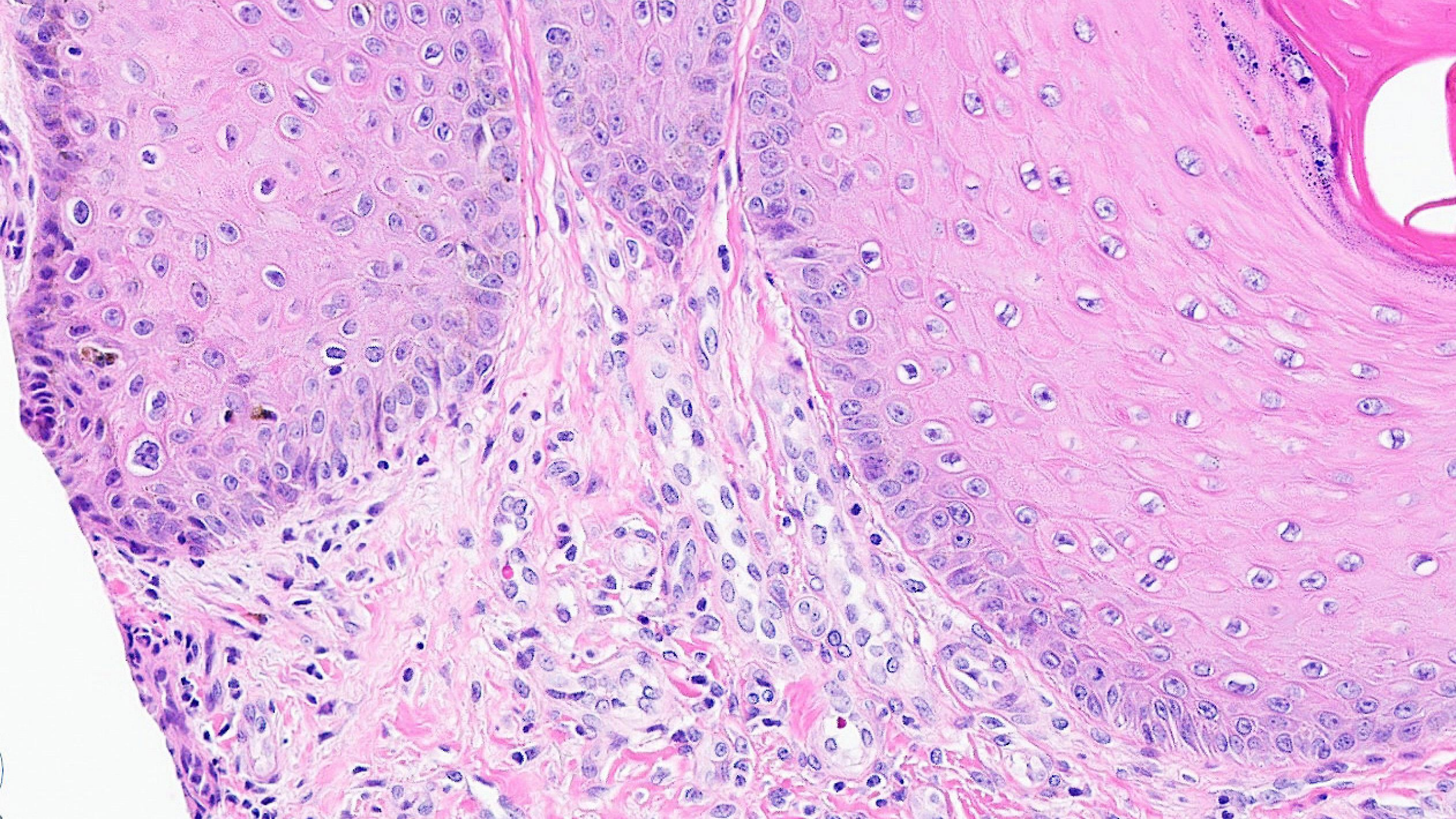
Top DDx: VZV (indistinguishable without testing), syphilis, Behçet.

Always rule out VZV in genital ulcers (HIV+ patients).









Case 132. 66F with left lower leg mass. What is your diagnosis?

A. Verrucous carcinoma

B. Verruca Vulgaris

C. Condyloma Acuminatum

D. Hypertrophic Lichen Planus

E. Keratoacanthoma

Case 132. 66F with left lower leg mass. What is your diagnosis?

A. Verrucous carcinoma

B. Verruca Vulgaris

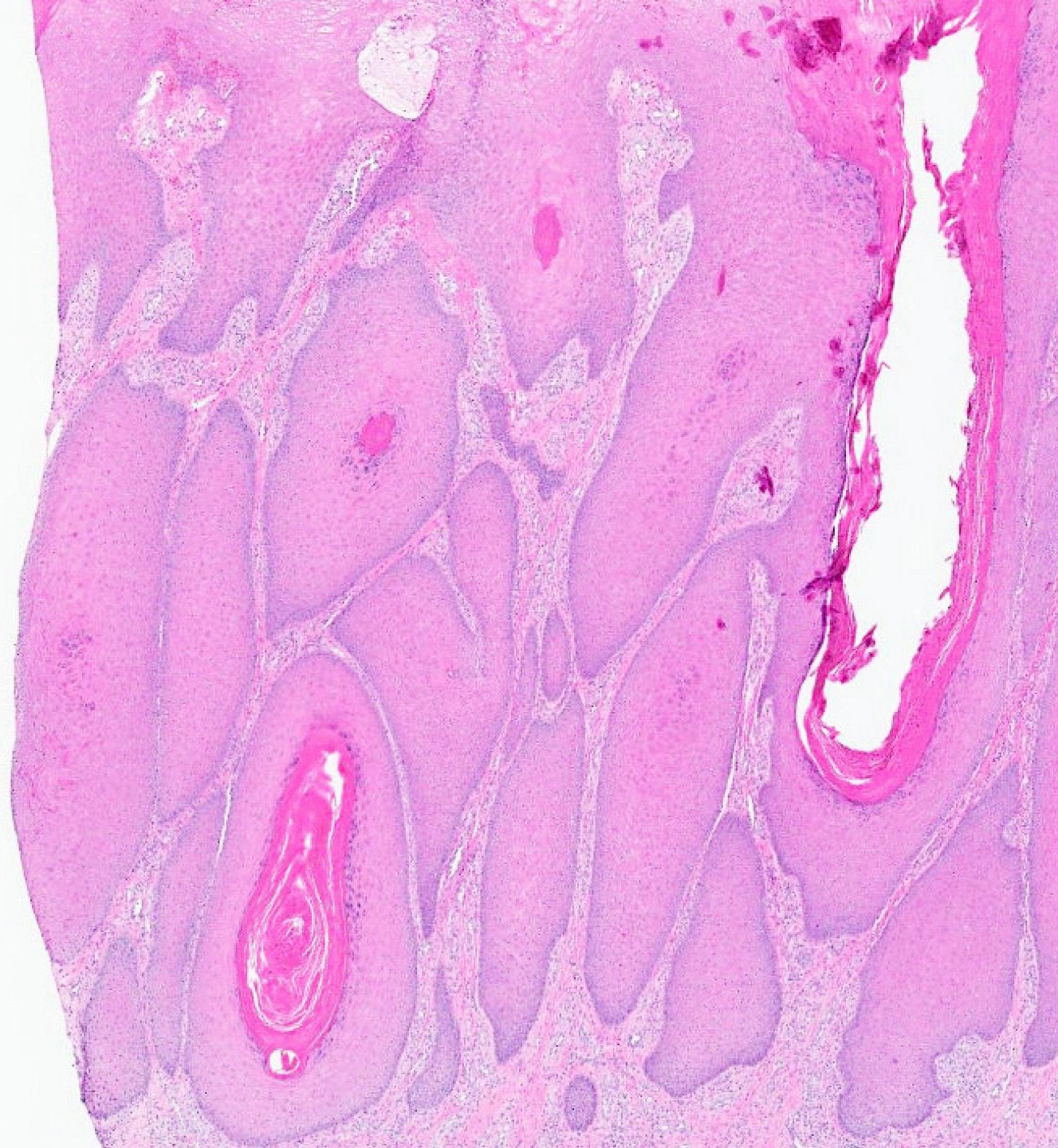
C. Condyloma Acuminatum

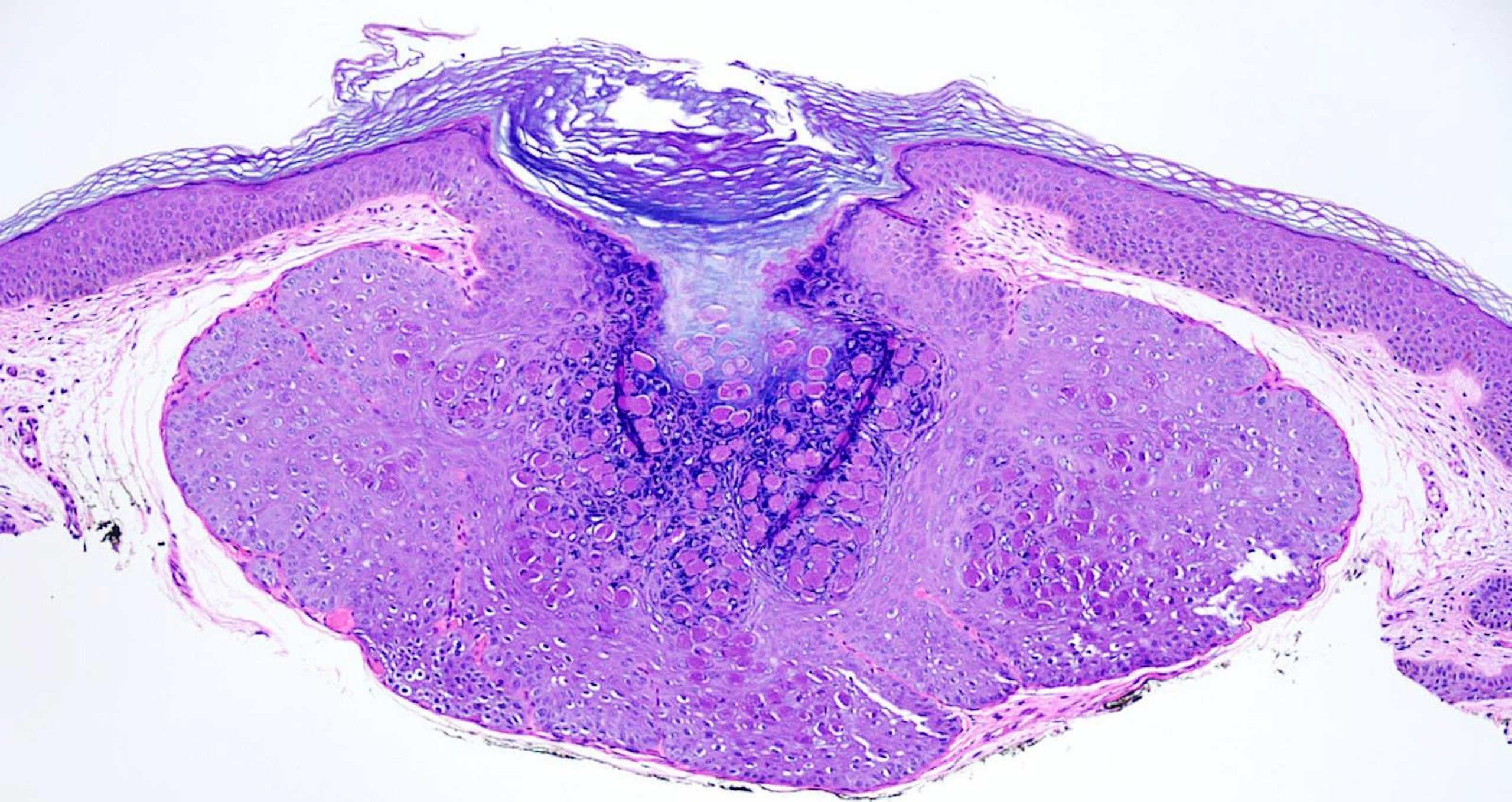
D. Hypertrophic Lichen Planus

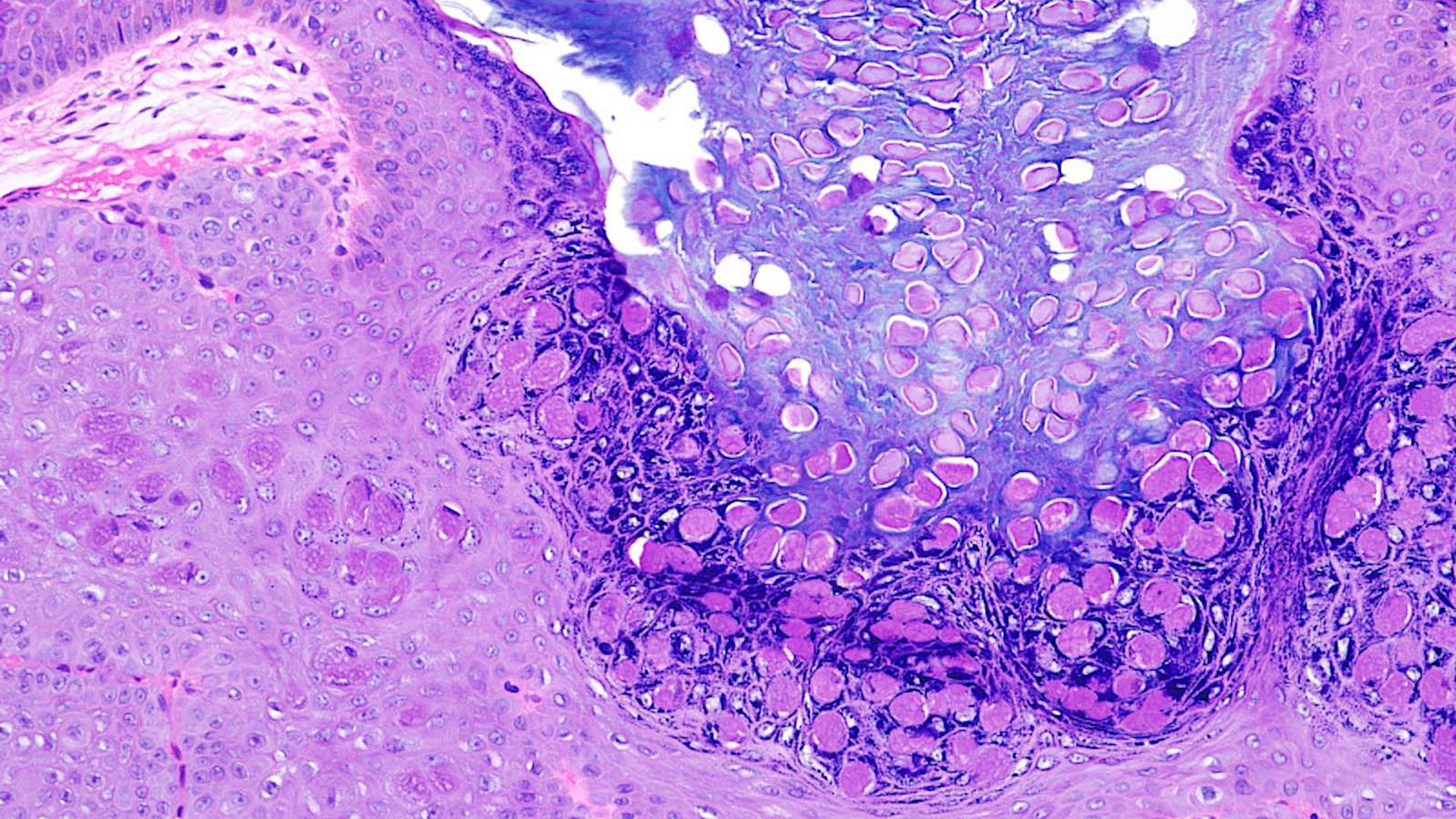
E. Keratoacanthoma

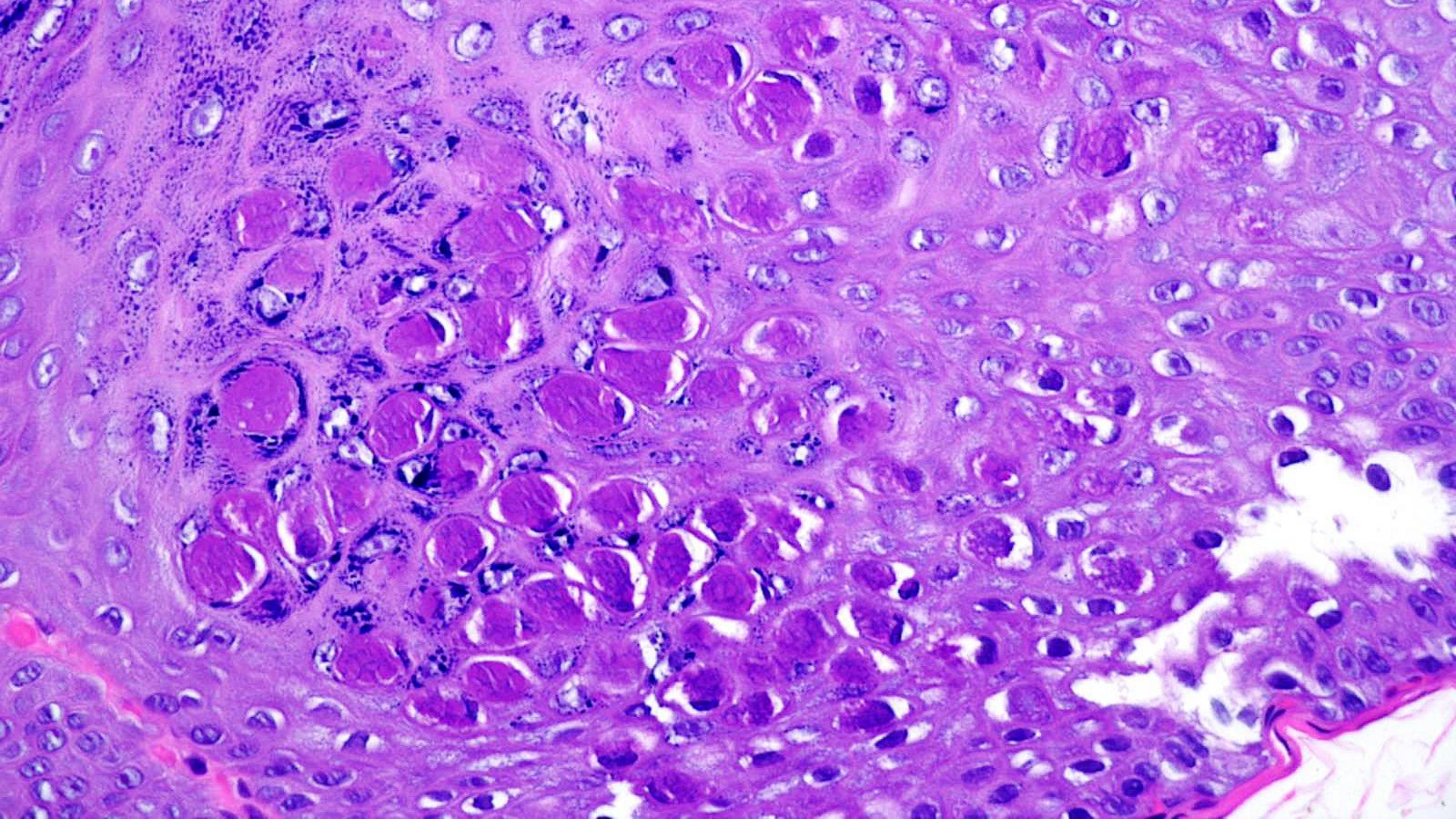
Key features: Verrucous carcinoma

- Architectural Pattern:
 - Exophytic, papillary growth with hyperkeratosis and parakeratosis.
 - Broad, pushing rete ridges with a "bulldozing" border (infiltrates stroma without destructive invasion).
- Cytologic Features:
 - Minimal atypia: Keratinocytes show mild pleomorphism and retained maturation.
 - Koilocytic changes (HPV-related cases) may be present but are not prominent.
 - Absence of true stromal invasion (no single-cell infiltration or desmoplasia).
- Stromal Response:
 - No desmoplasia (distinguishes from conventional squamous cell carcinoma).
- HPV Association:
 - HPV-negative or low-risk types (e.g., HPV-6, 11).









Case 133. 13M, with clustered skin-colored papules in the groin and medial thighs. What is your diagnosis?

A. Sebaceous hyperplasia

B. Histoplasmosis

C. Cryptococcosis

D. Verruca vulgaris

E. Molluscum contagiosum

Case 133. 13M, with clustered skin-colored papules in the groin and medial thighs. What is your diagnosis?

A. Sebaceous hyperplasia

B. Histoplasmosis

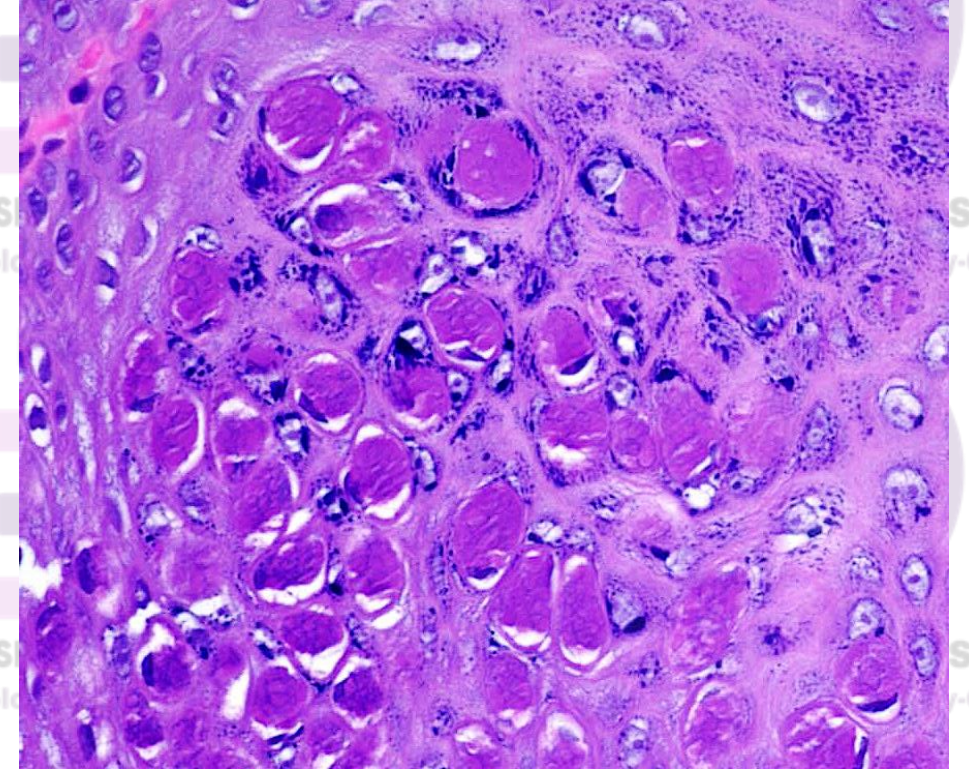
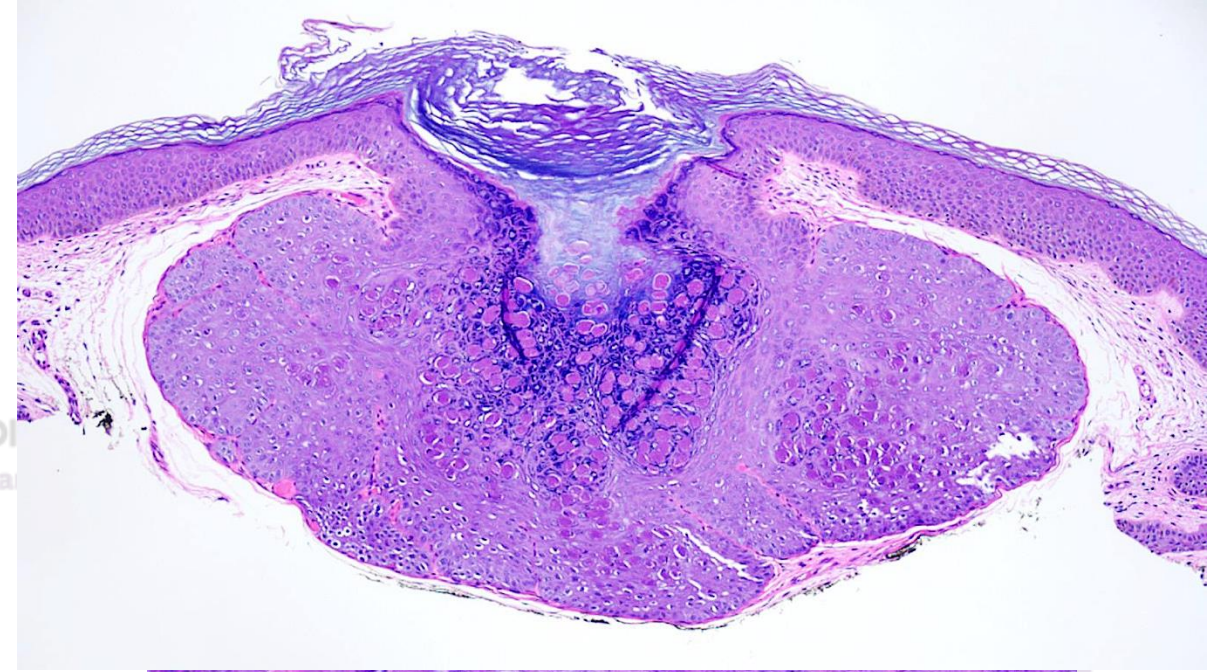
C. Cryptococcosis

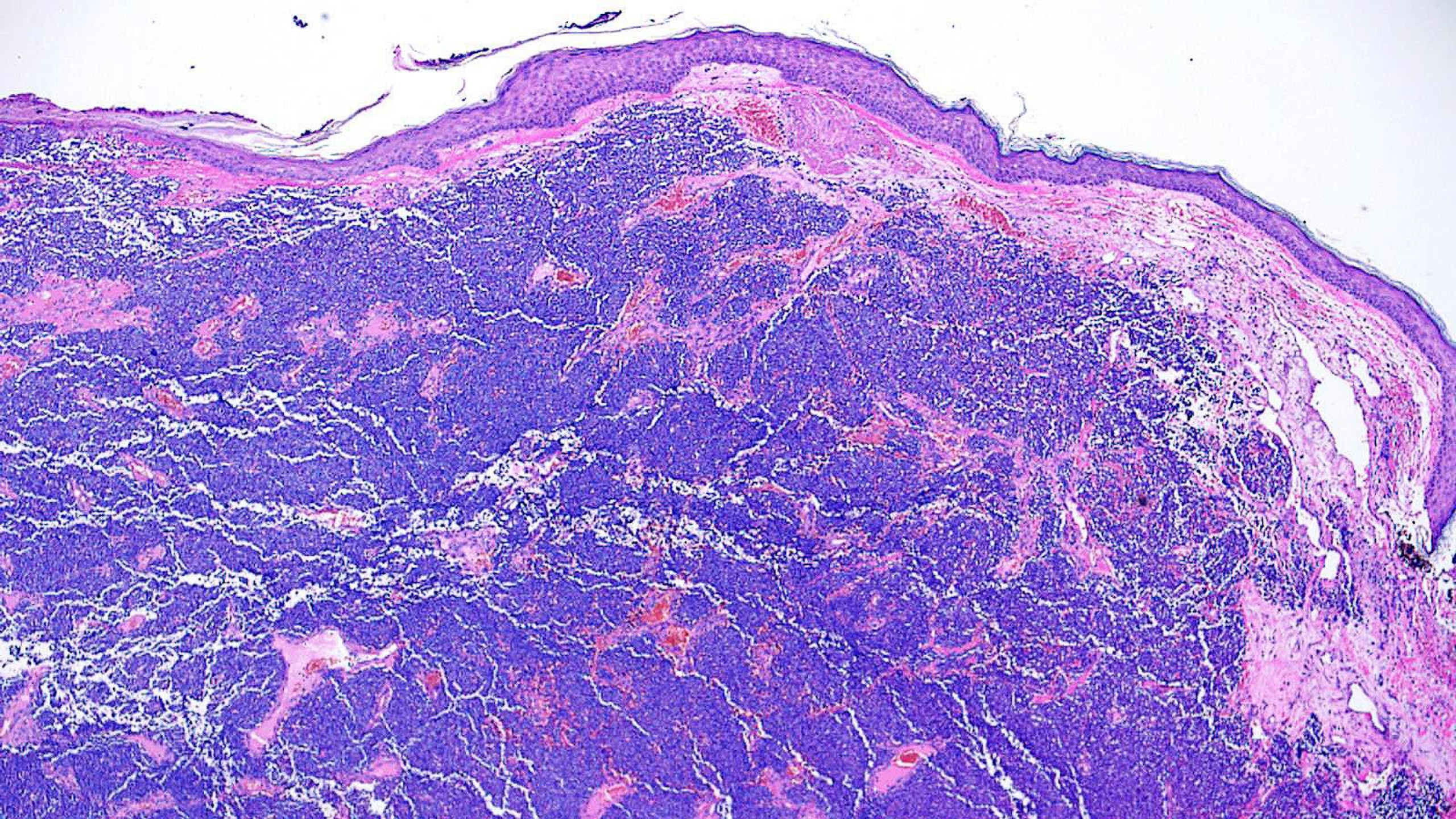
D. Verruca vulgaris

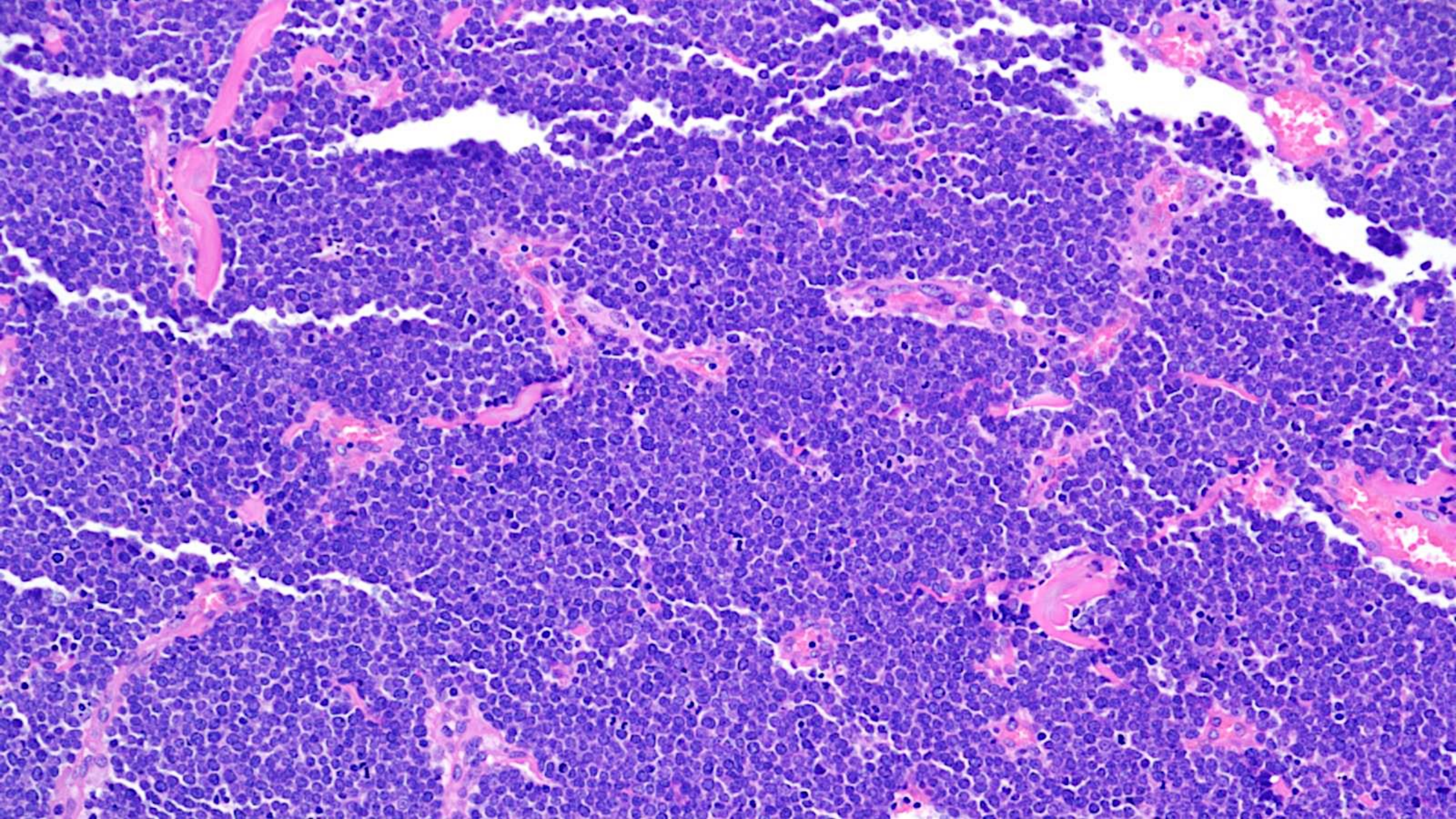
E. Molluscum contagiosum

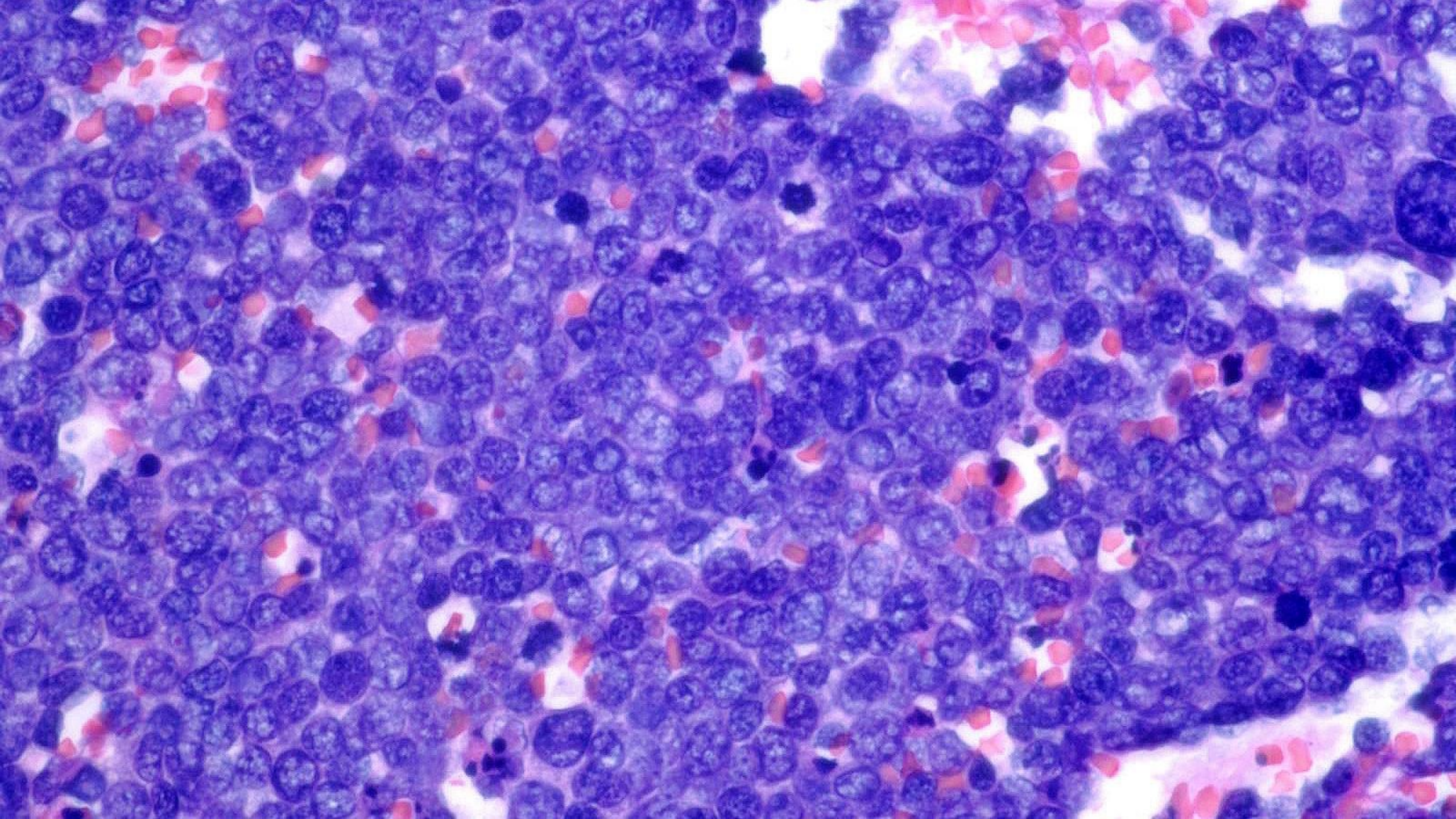
Key features: Molluscum contagiosum

- Epidermal Changes:
 - Inverted lobular hyperplasia: Cup-shaped invaginations.
 - Molluscum bodies (Henderson-Patterson bodies):
 - Basophilic cytoplasmic inclusions in upper epidermis (granular layer).
 - Begin as eosinophilic granules in the stratum spinosum, becoming larger and basophilic as they move superficially.
 - Central pore (umbilication): Contains keratin and viral debris.
- Advanced/Regressing Lesions:
 - Ruptured molluscum bodies → granulomatous or suppurative inflammation.
 - Foreign-body giant cells (if contents spill into dermis).









A. Diffuse large B-cell lymphoma

B Small lung carcinoma metastatic

C. Merkel cell carcinoma

Learn Histologic Diagnosis Case By Case

F Ewing sarcoma

Case 134. 81/F anterior left shoulder. Nodule x2 months. What is your diagnosis?

A. Diffuse large B-cell lymphoma

B. Small lung carcinoma, metastatic

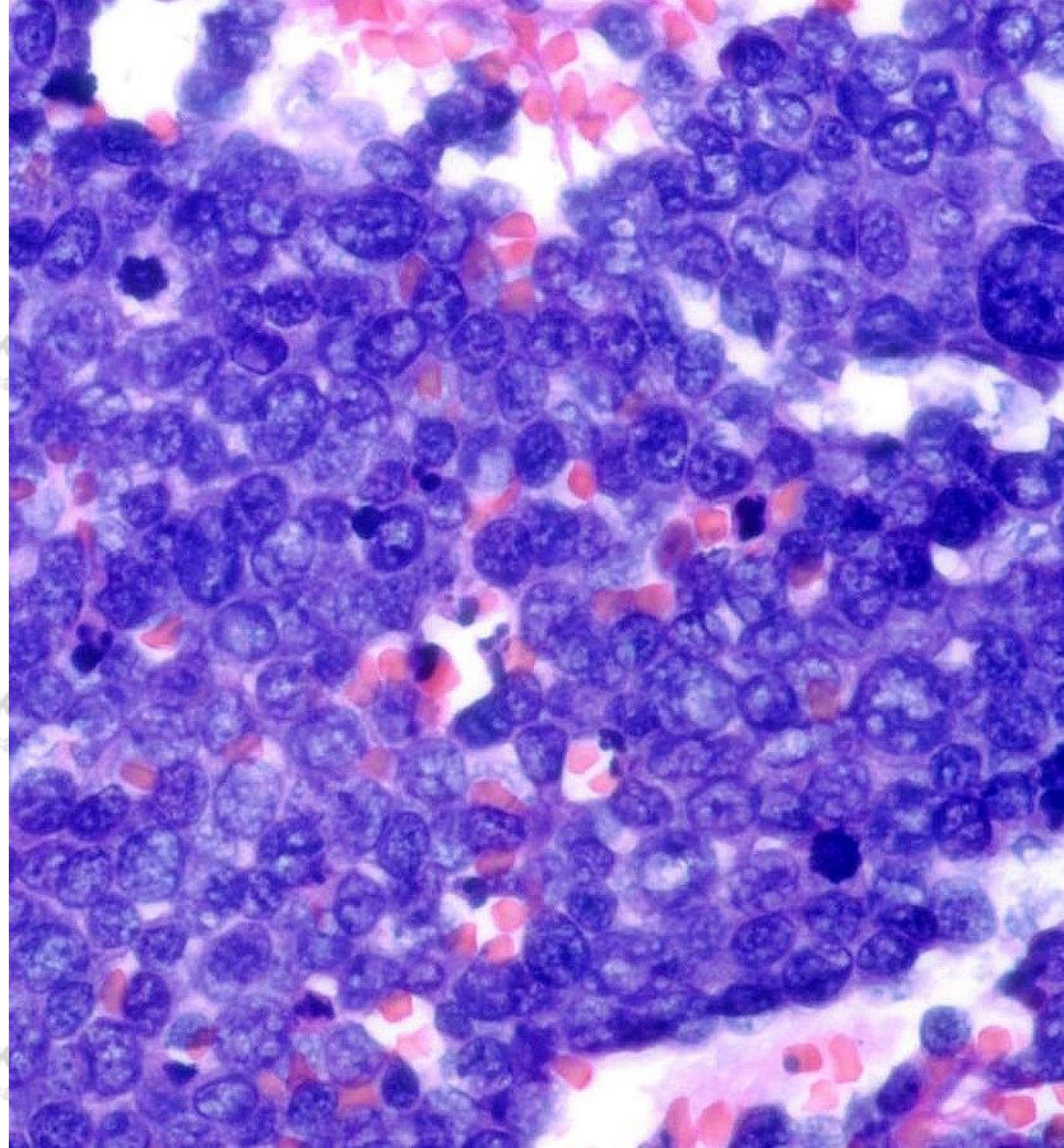
C. Merkel cell carcinoma

D. Metastatic neuroblastoma

E. Ewing sarcoma

Key features: Merkel cell carcinoma

- Small Cell Lung Carcinoma (Metastatic):
 - Identical morphology but TTF-1+, CK20–.
- Cutaneous Neuroendocrine Tumor (Other):
 - Rare; may resemble MCC but lacks MCPyV+ status.
- Lymphoma (e.g., DLBCL, Burkitt):
 - LCA (CD45)+, synaptophysin–, CK–.
 - More discohesive cells.
- Ewing Sarcoma/PNET:
 - CD99+ (membranous), FLI-1+, NKX2.2+.
 - EWSR1 rearrangement (FISH+).
- Metastatic Neuroblastoma:
 - Homer Wright rosettes, NB84+, CK20–.
- Basal Cell Carcinoma:
 - Peripheral palisading, Ber-EP4+, neuroendocrine markers–.
- Melanoma (Small Cell Variant):
 - S100+, SOX10+, HMB-45/Melan-A+, CK20–.
- Metastatic Small Cell Melanoma:
 - Rare; requires melanoma markers + clinical history.



Case 135. What is the expected panel of immunohistochemical results to confirm your diagnosis in case no. 134?

A. TTF-1-/CK20+/CD99-/CD45-/FLI-1-/S100-/CK5/6-

B. TTF-1+/CK20-/CD99-/CD45-/FLI-1-/S100-/CK5/6-

C. TTF-1-/CK20+/CD99+/CD45-/FLI-1+/S100-/CK5/6-

D. TTF-1-/CK20-/CD99-/CD45-/FLI-1-/S100+/CK5/6-

E. TTF-1-/CK20/CD99-/CD45-/FLI-1-/S100-/CK5/6+

Case 135. What is the expected panel of immunohistochemical results to confirm your diagnosis in case no. 134?

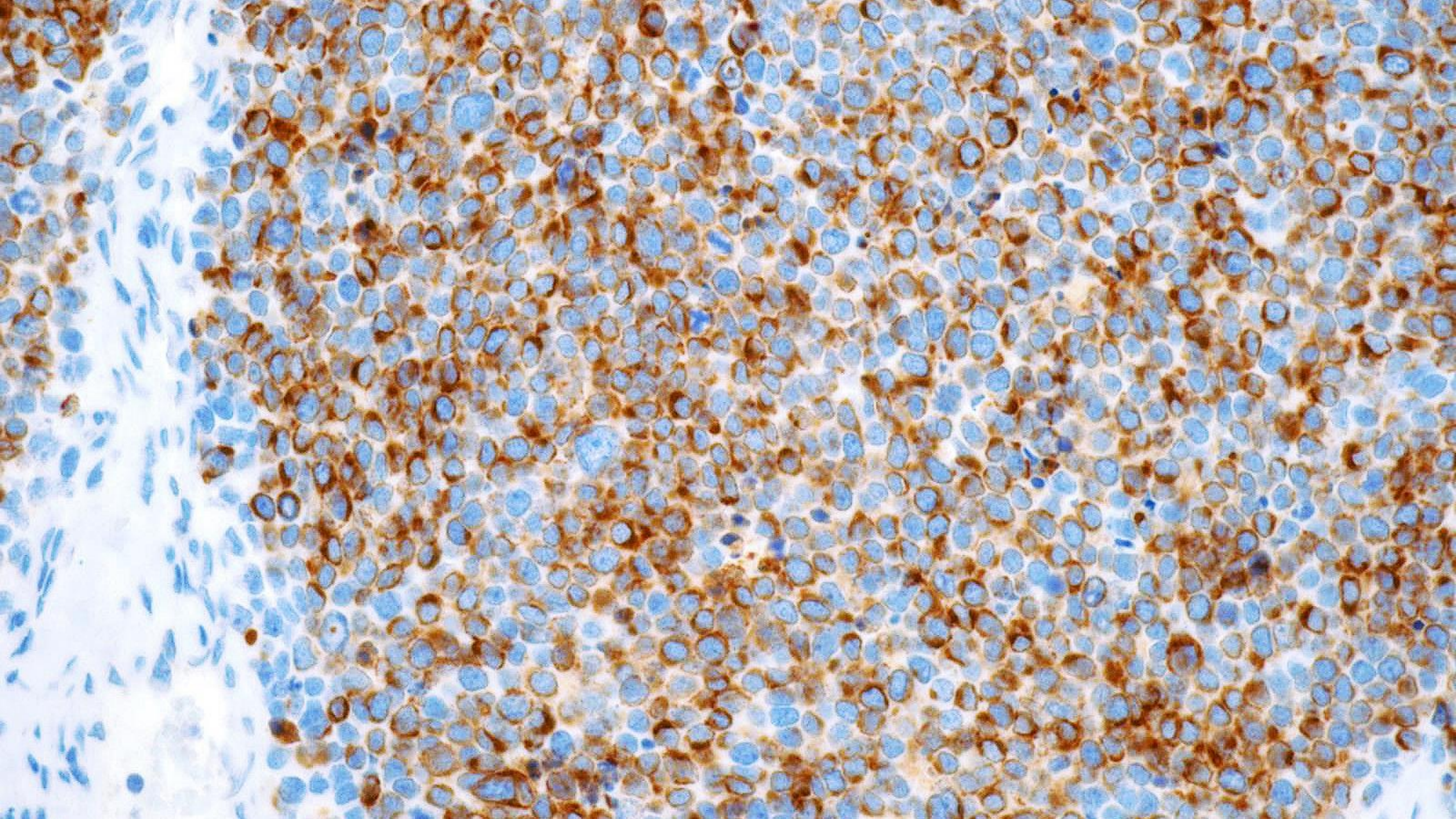
A. TTF-1-/CK20+/CD99-/CD45-/FLI-1-/S100-/CK5/6-

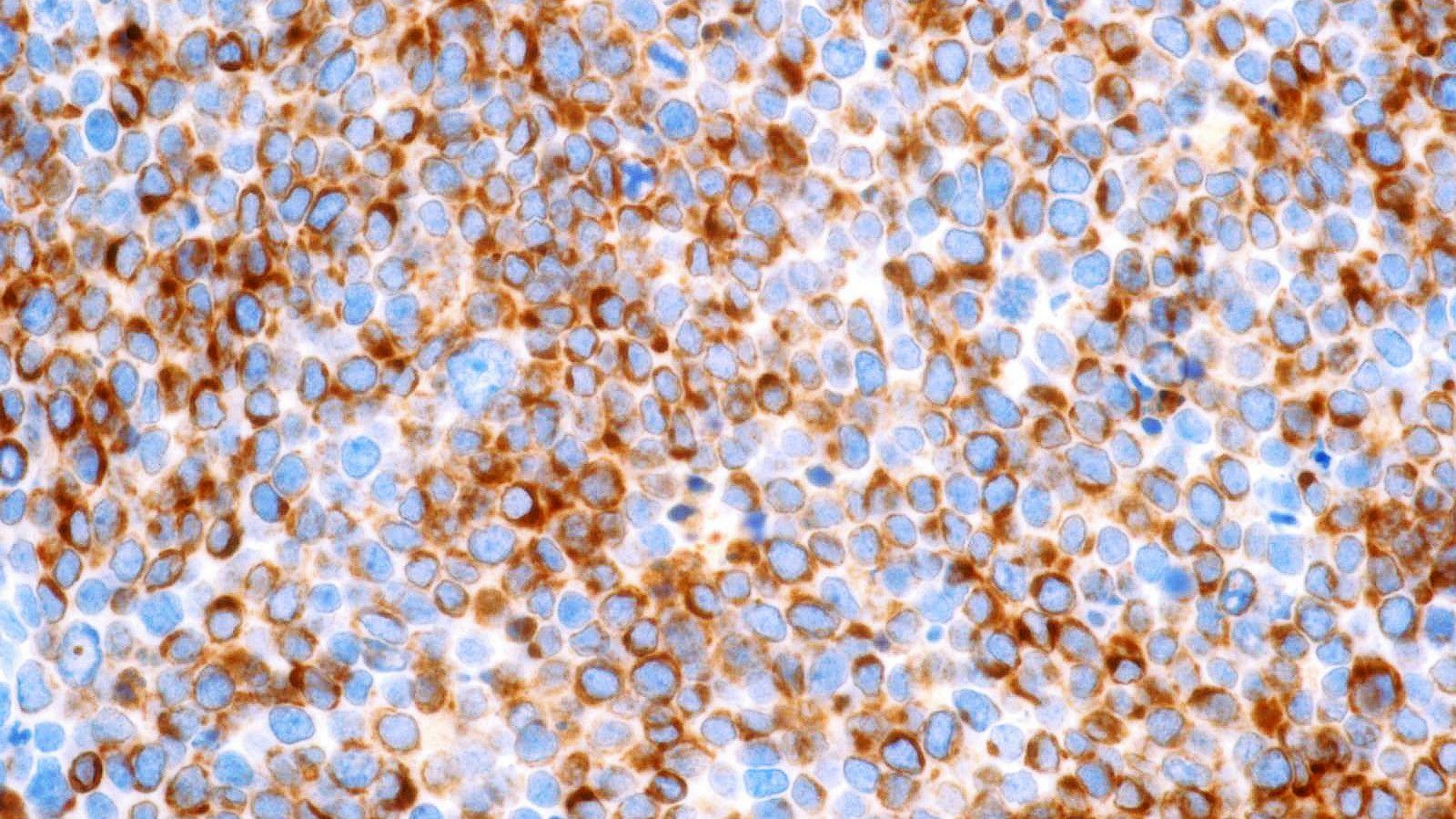
B. TTF-1+/CK20-/CD99-/CD45-/FLI-1-/S100-/CK5/6-

C. TTF-1-/CK20+/CD99+/CD45-/FLI-1+/S100-/CK5/6-

D. TTF-1-/CK20-/CD99-/CD45-/FLI-1-/S100+/CK5/6-

E. TTF-1-/CK20/CD99-/CD45-/FLI-1-/S100-/CK5/6+





Case 136. Which cytokeratin IHC marker will produce a specific perinuclear dot-like pattern in case no. 134?

A. CK7

B. CK903 (HMWCK)

C. CK5/6

D. CK20

Case 136. Which cytokeratin IHC marker will produce a specific perinuclear dot-like pattern in case no. 134?

A. CK7

B. CK903 (HMWCK)

C. CK5/6

D. CK20

Key features: Merkel Cell Carcinoma

CK20 (Highly Specific for MCC)

Pattern: Perinuclear dot-like positivity

Sensitivity: ~95% of MCCs.

Specificity: Negative in most small cell lung carcinomas (SCLC) and melanomas.

CAM5.2 (Low-Molecular-Weight CK)

Pattern: Dot-like or diffuse cytoplasmic staining.

Sensitivity: ~90% of MCCs.

AE1/AE3 (Pan-Cytokeratin)

Pattern: Diffuse cytoplasmic staining.

Sensitivity: ~85–90% of MCCs.

CK7 (Usually Negative in MCC)

Key Point: MCC is typically CK7– (helps rule out lung/breast metastases).

CK5/6 & CK34 β E12 (High-Molecular-Weight CKs)

Negative (Ruling out squamous cell carcinoma (SCC) in combined MCC-SCC tumors).

