

A Pathologist's Perspective

Curtis T. Thompson, M.D.

Medical Director, CTA Lab

Clinical (Affiliate) Professor of Dermatology and
Pathology

Oregon Health and Sciences University

Portland, Oregon, USA

Lecture Objective

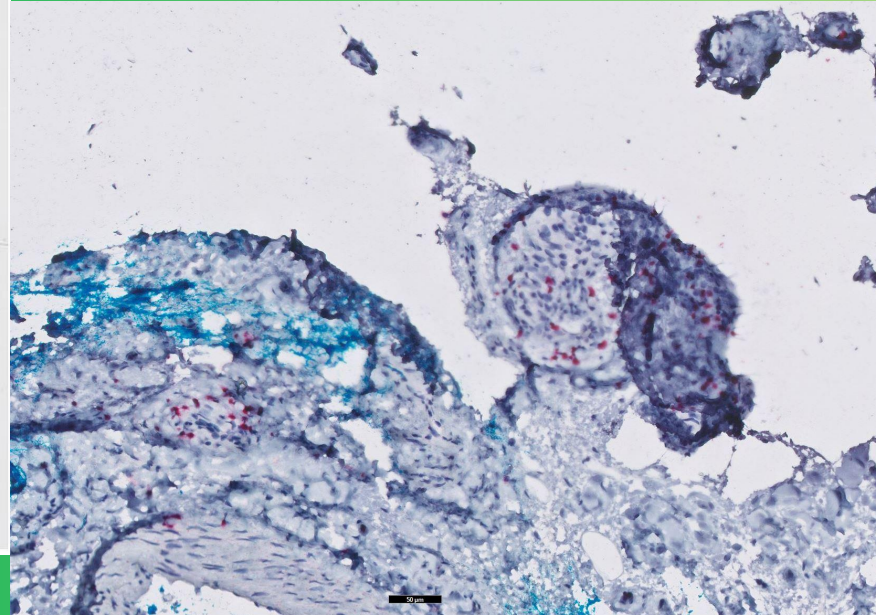
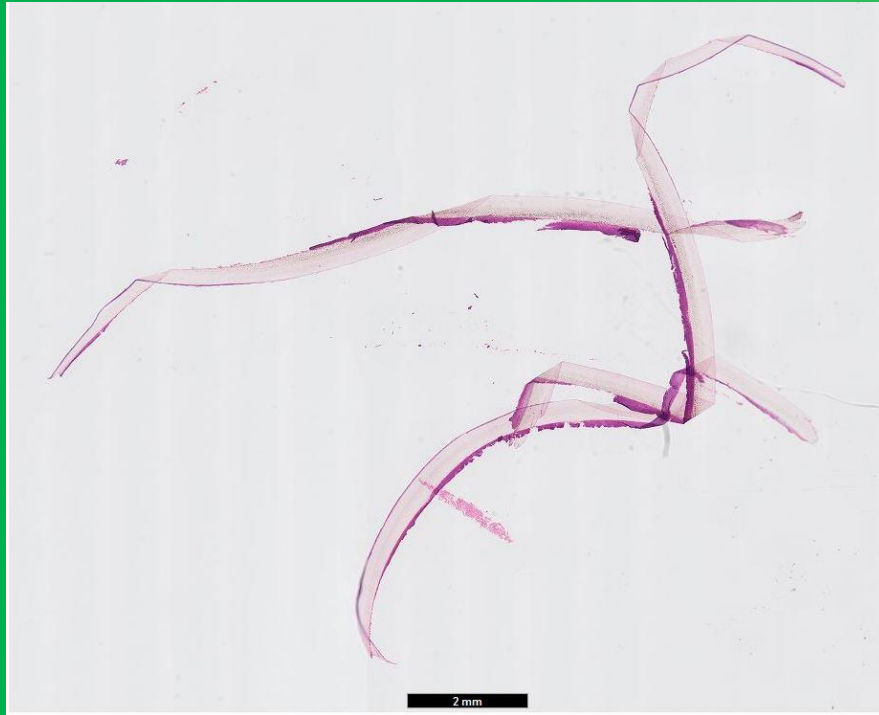
- Challenges of sampling and histologic processing
- Experience with pediatric melanocytic nail tumors
 - Benign vs. Atypical vs Malignant
- Clinical Monitoring vs. Biopsy vs. Excision

Lecture Objective

- Challenges of sampling and histologic processing
- Experience with pediatric melanocytic nail tumors
 - Benign vs. Atypical vs Malignant
- Clinical Monitoring vs. Biopsy vs. Excision

Nothing to disclose

Technical processing is difficult



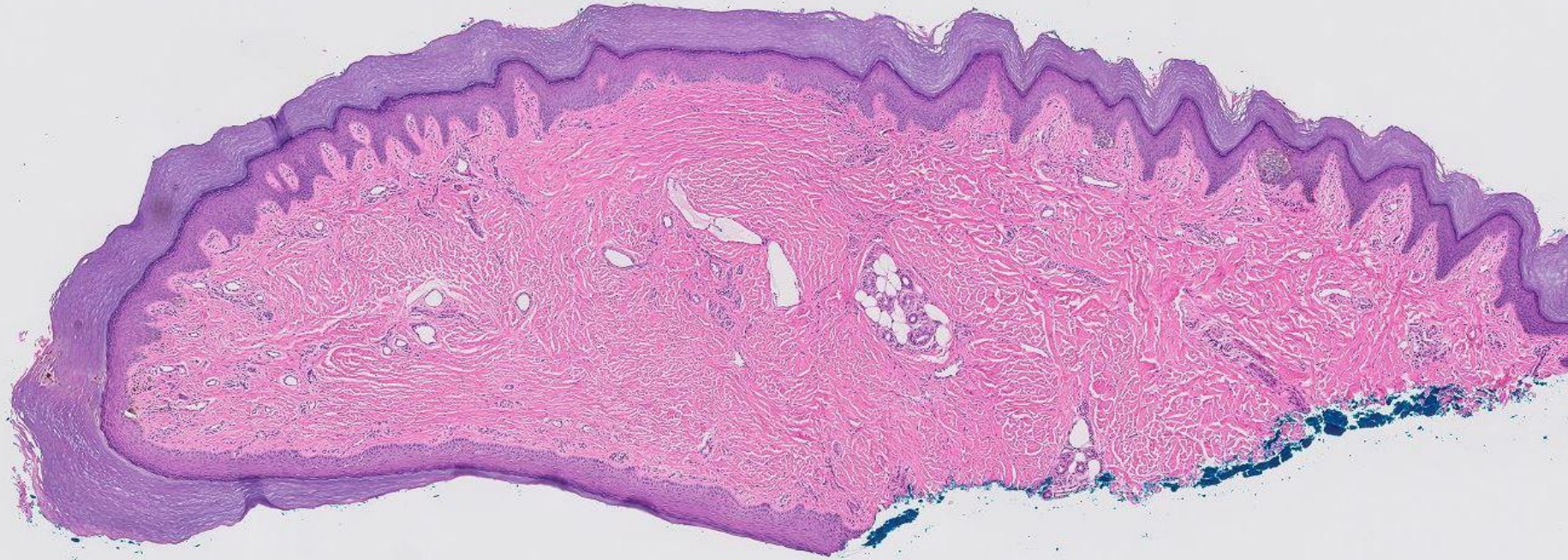
Pathologist experience limited

- Few pediatric melanocytic tumors sampled—nail experts do not sample
- Traditional criteria for benign vs atypical vs malignant do not apply

Sampling of pediatric pigmented lesions is often partial

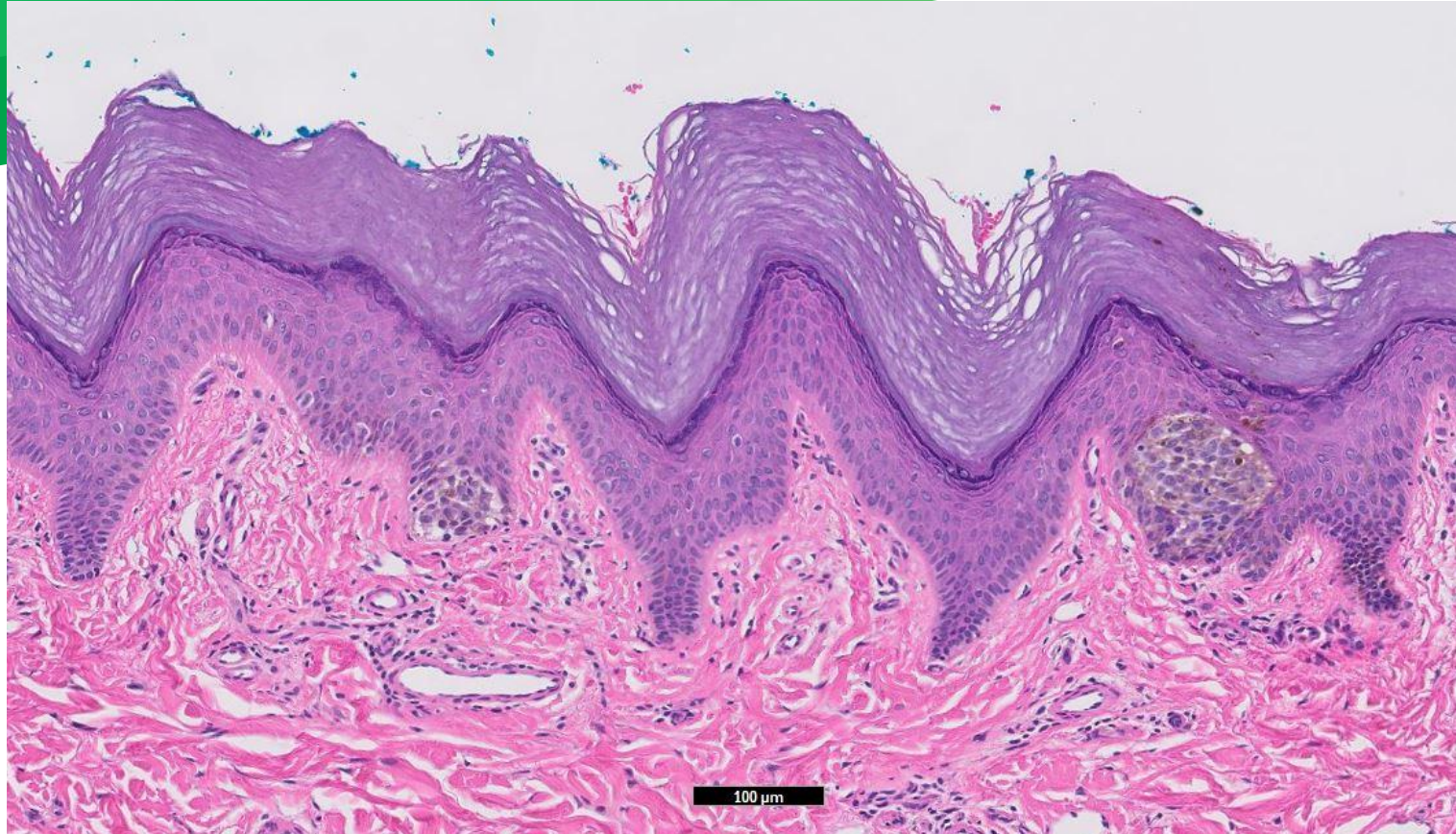
- Partial vs complete excision
important in melanocytic tumors
anatomically elsewhere
- Less of the lesion seen
- Worry about what lies beyond the edges

Case #1 10 y/o Left great toe

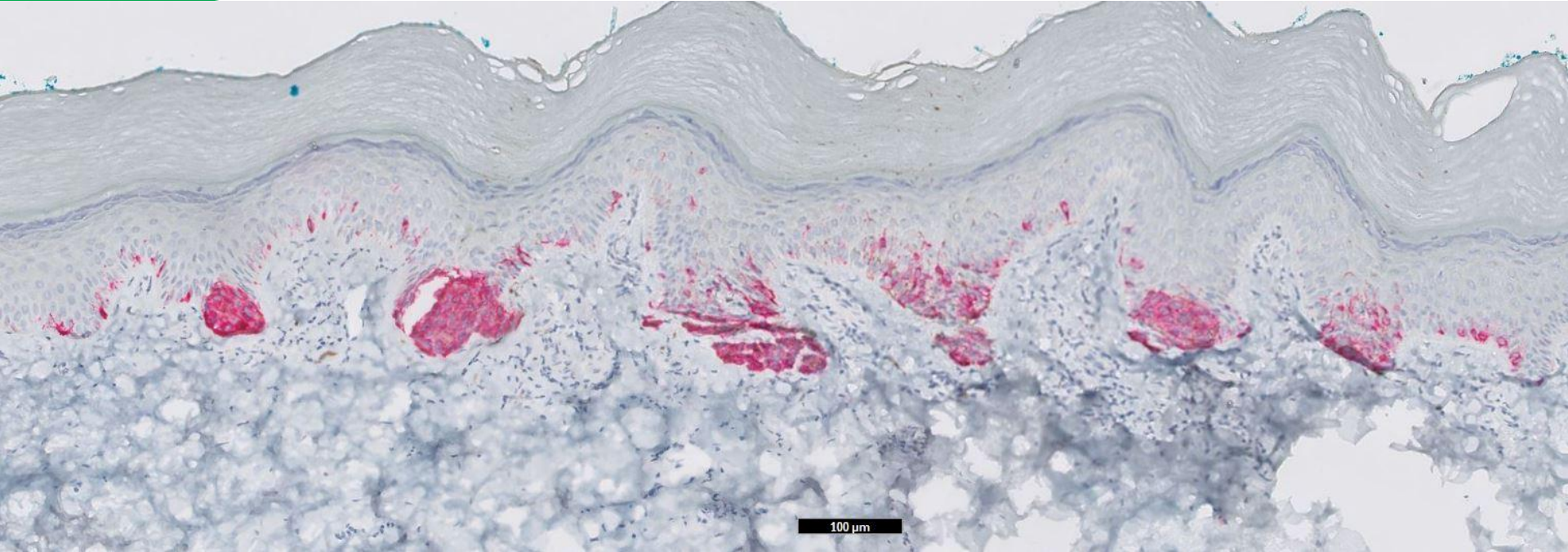


500 μm

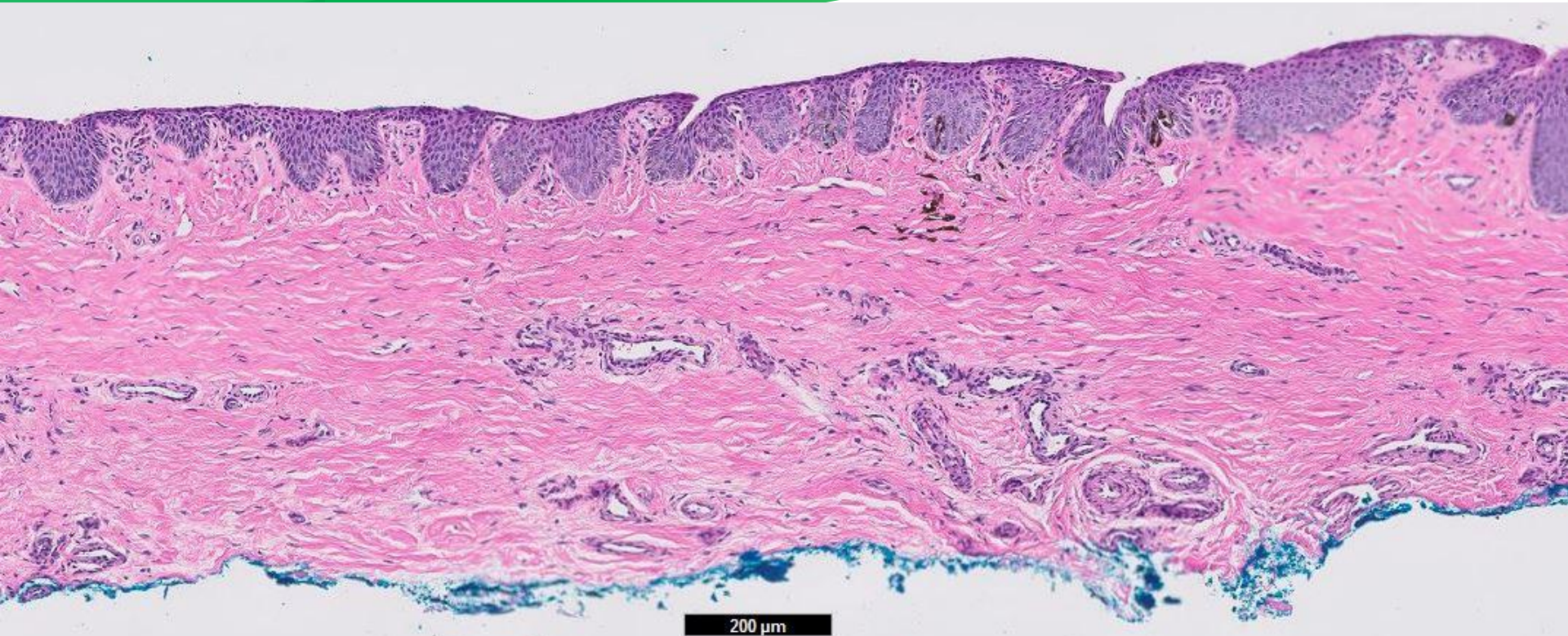
Case #1 Proximal nail fold



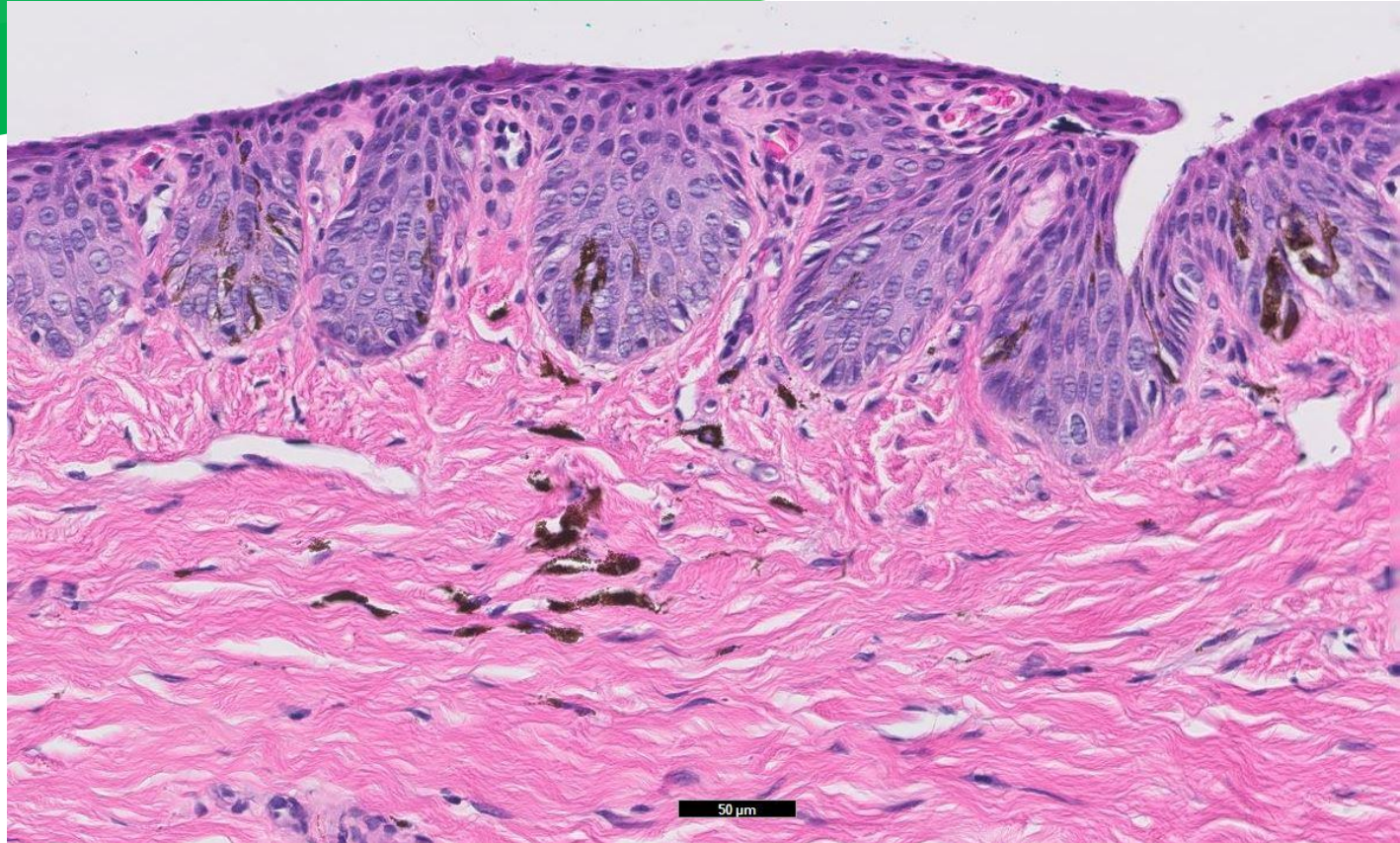
Case #1 Proximal nail fold



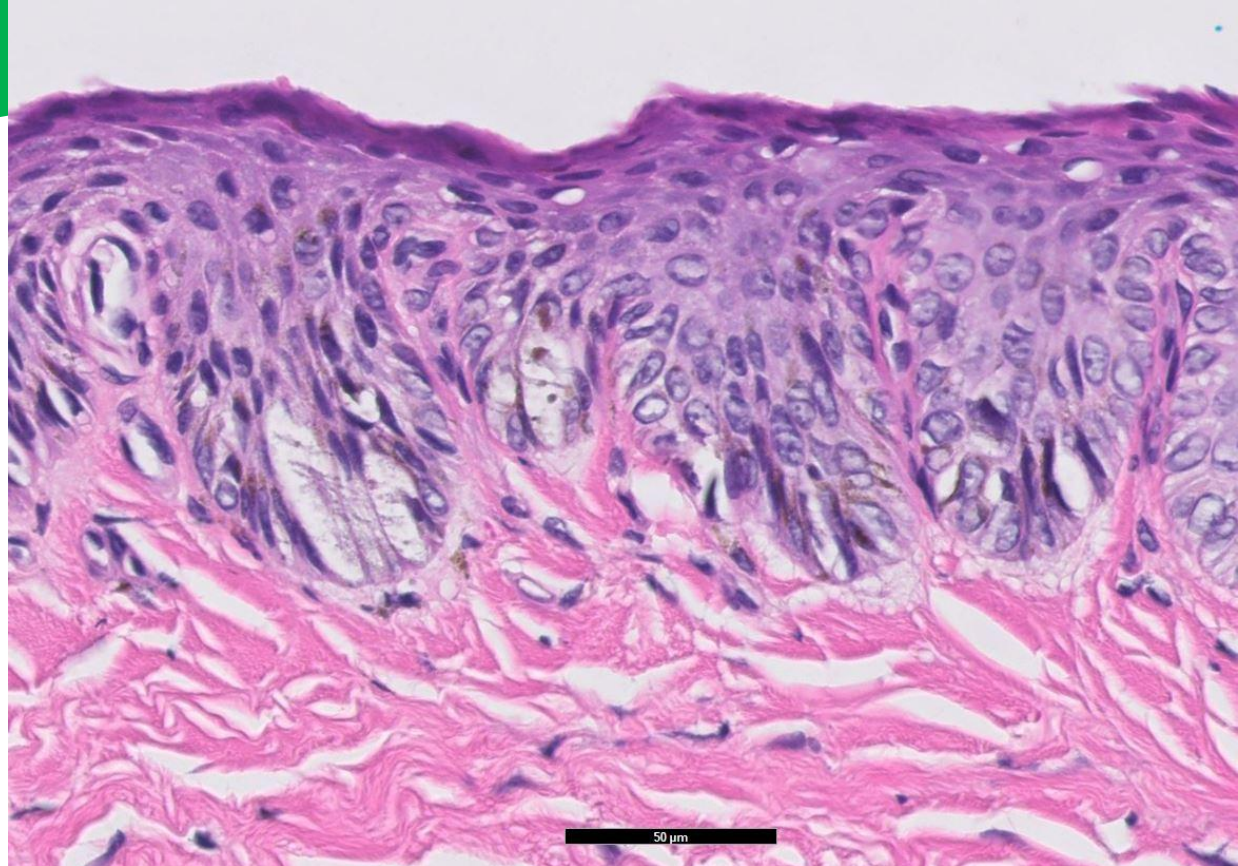
Case #1 Nail bed/matrix



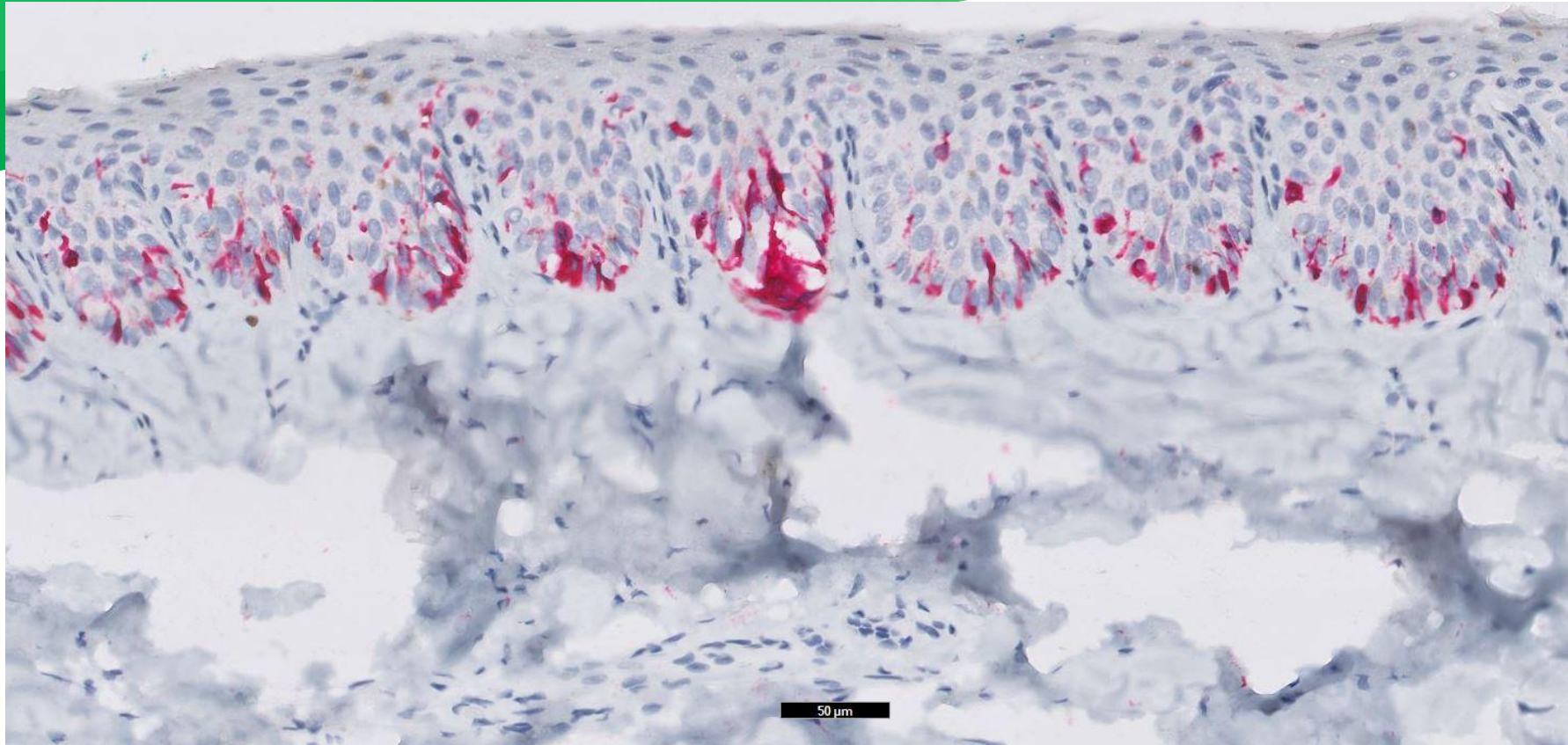
Case #1 Nail bed/matrix



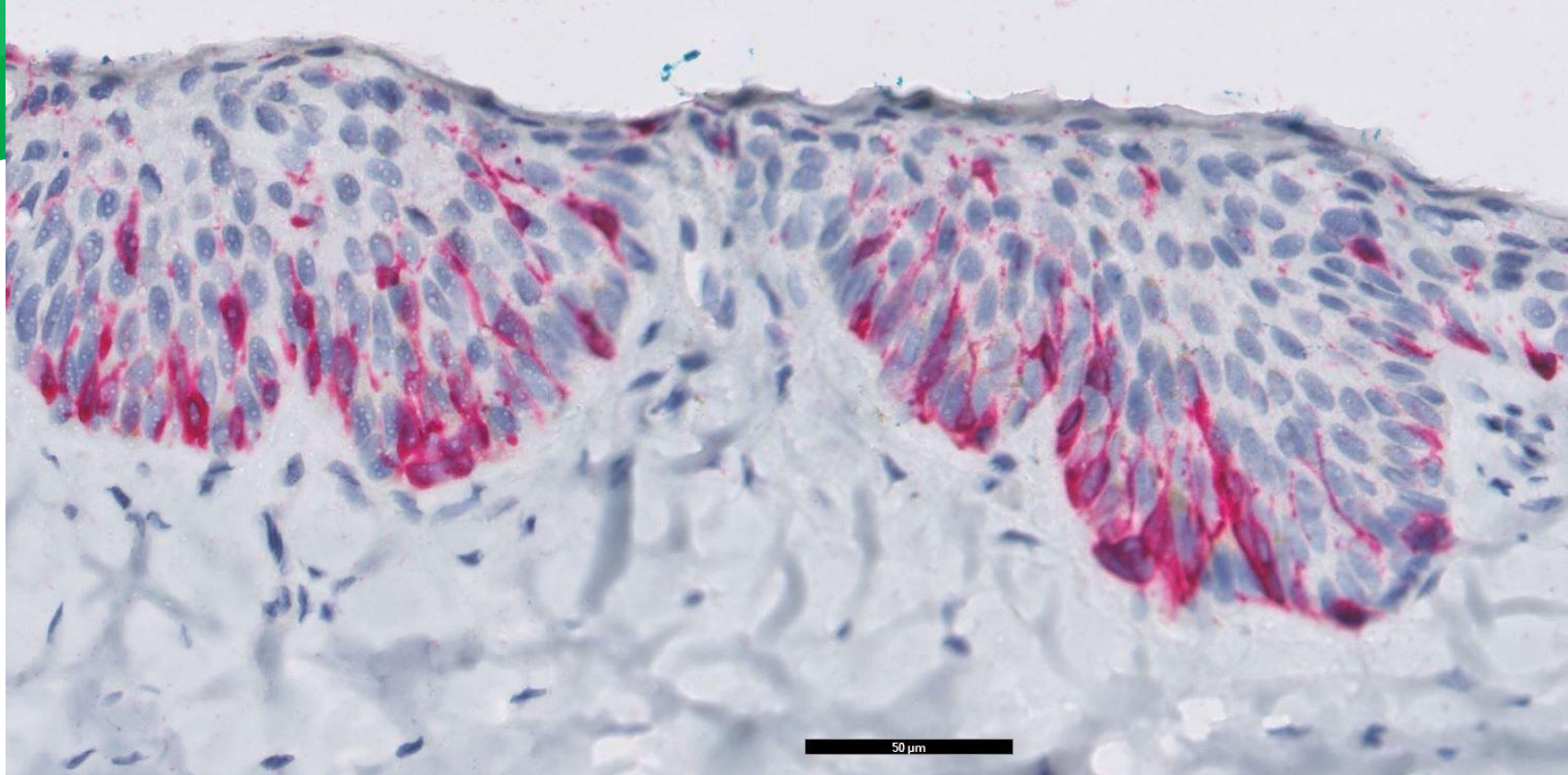
Case #1 Nail bed/matrix



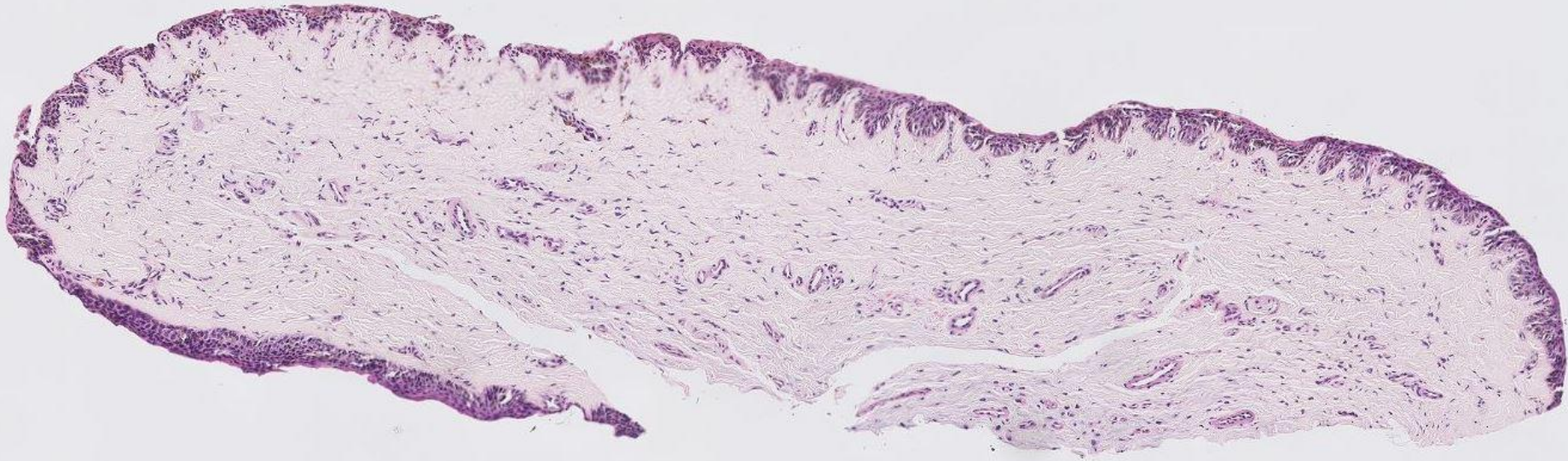
Case #1 Nail bed/matrix



Case #1 Nail bed/matrix

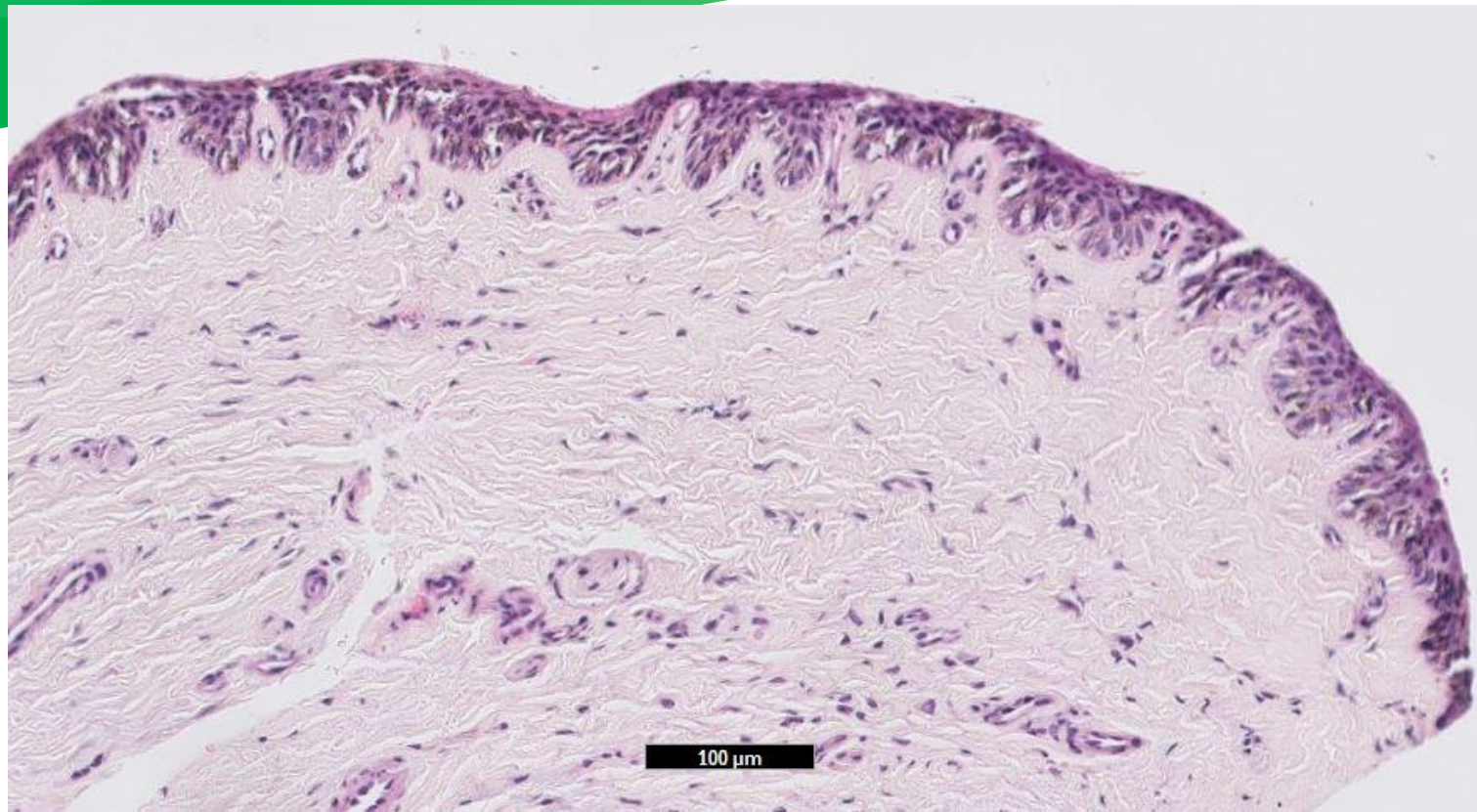


Case #2 13 y/o Left index finger

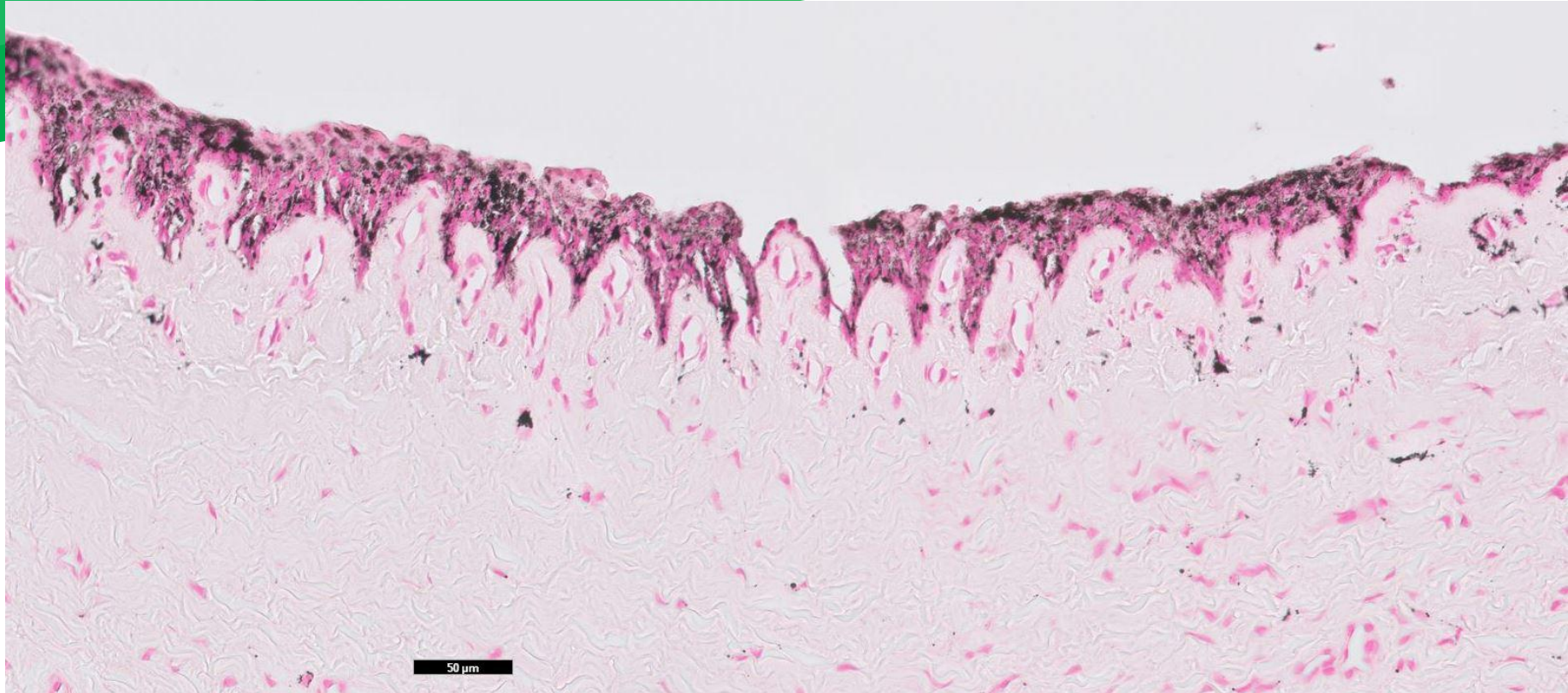


200 μ m

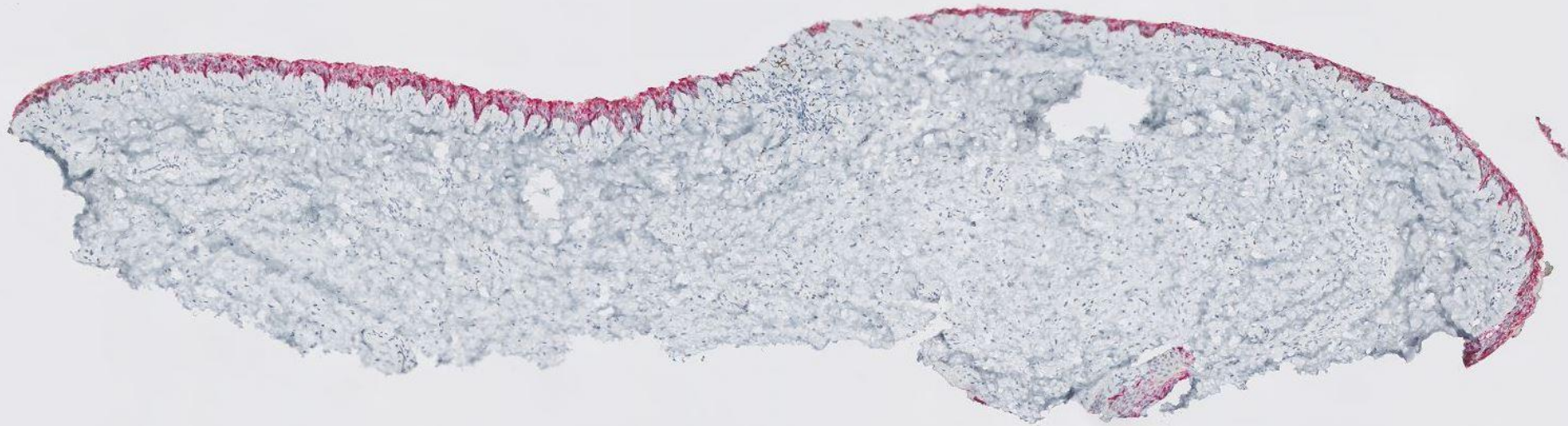
Case #2



Case #2

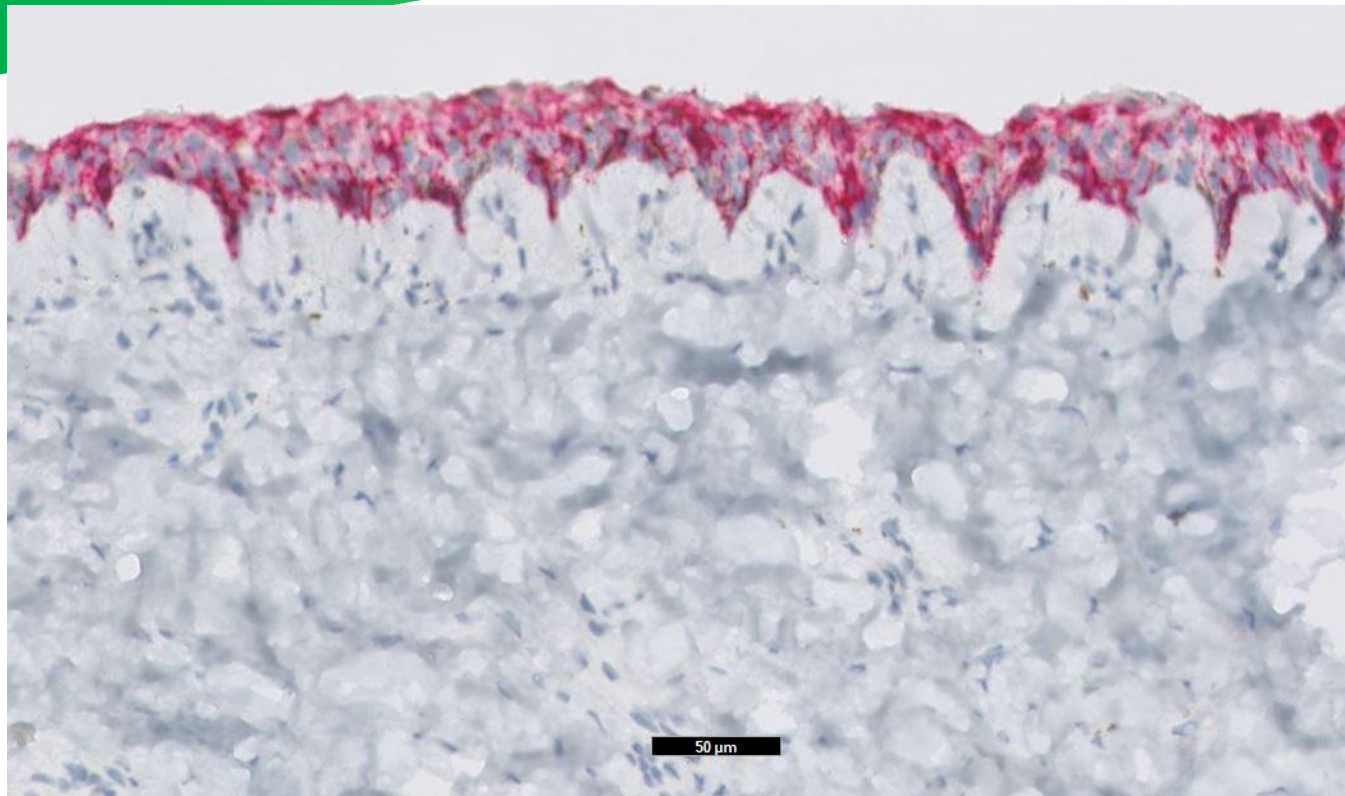


Case #2

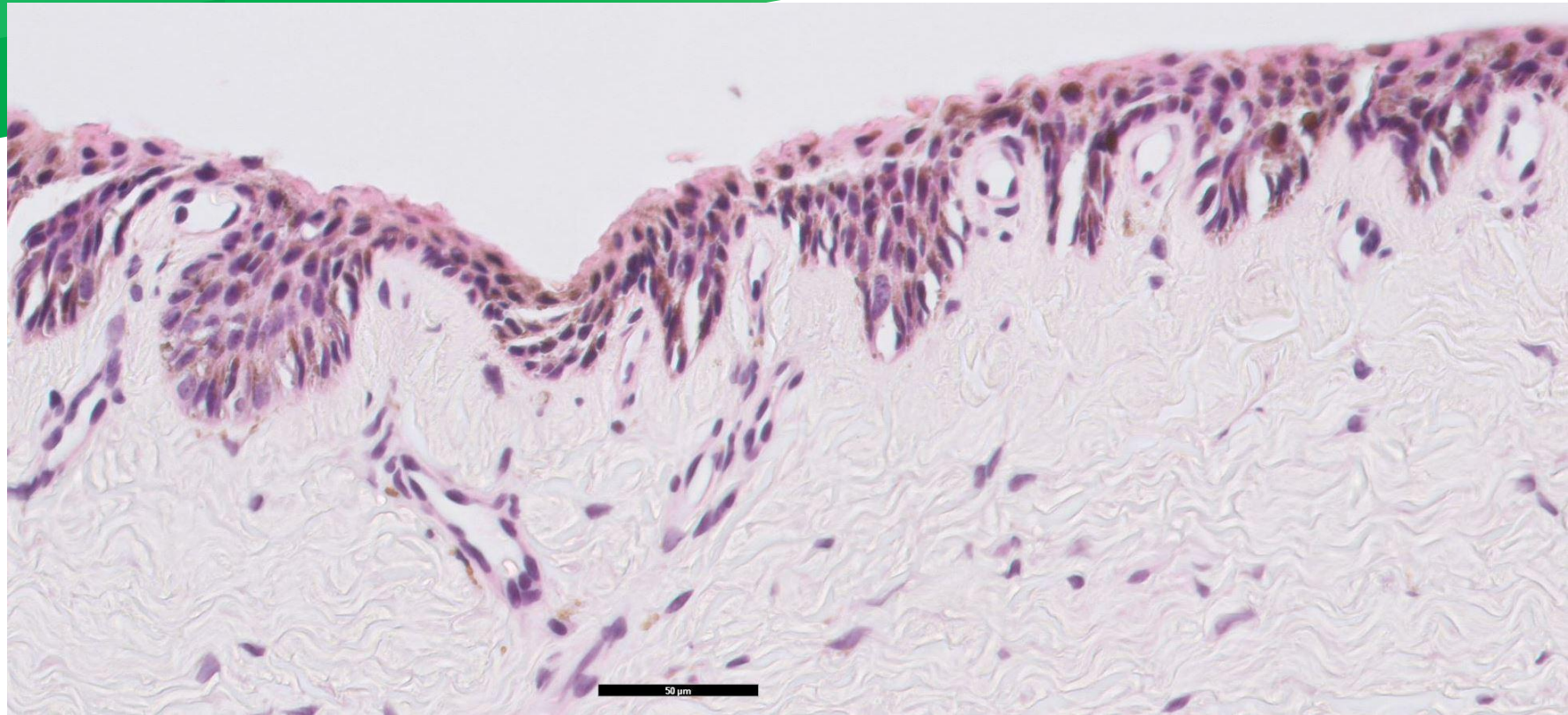


200 μ m

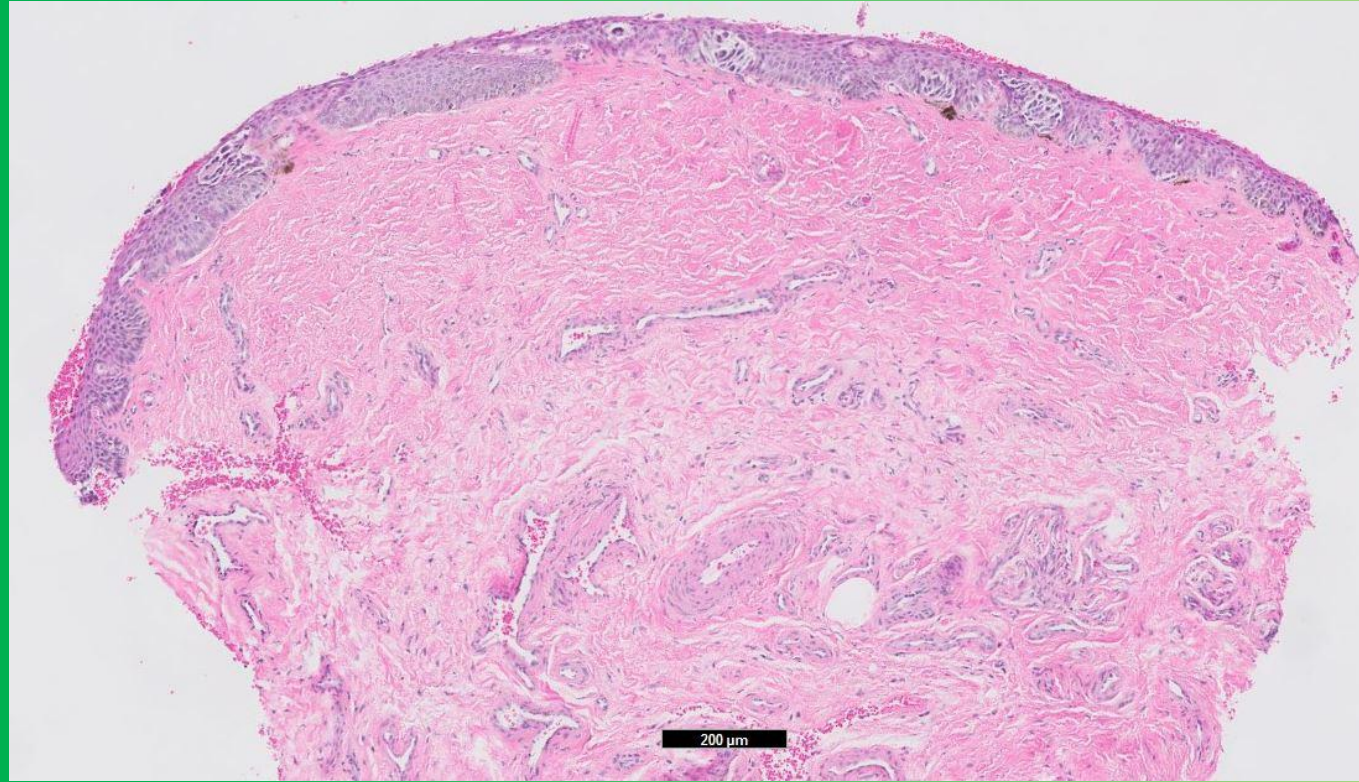
Case #2



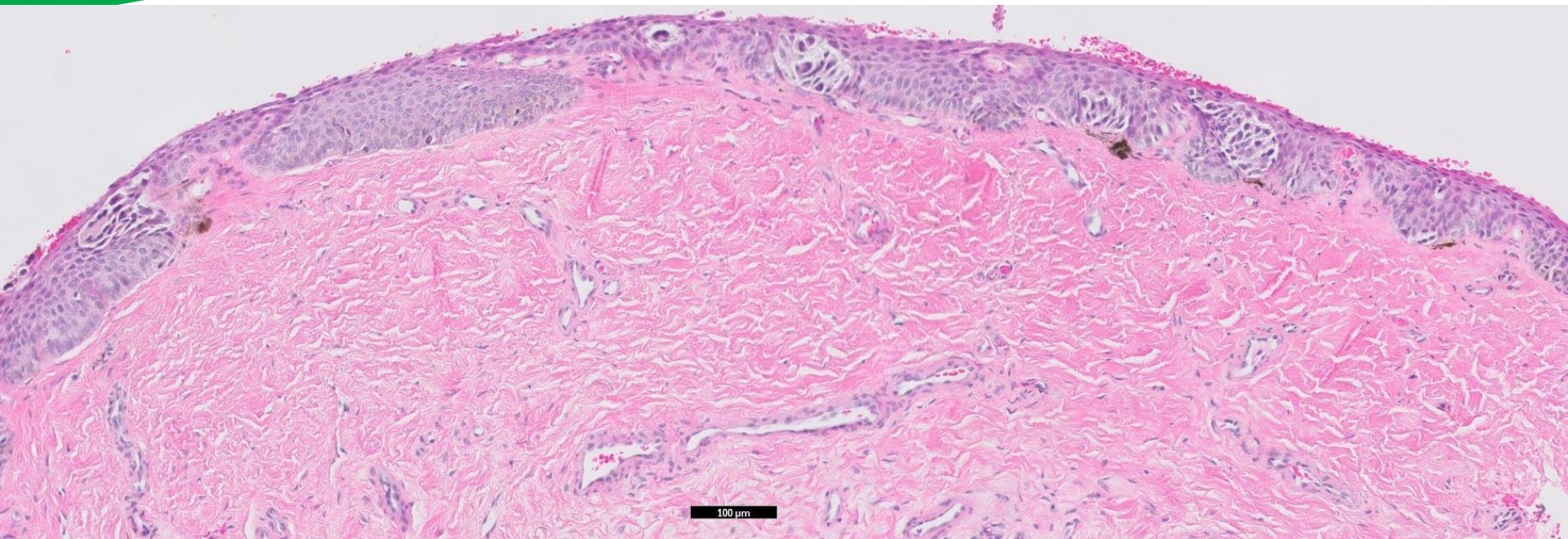
Case #2



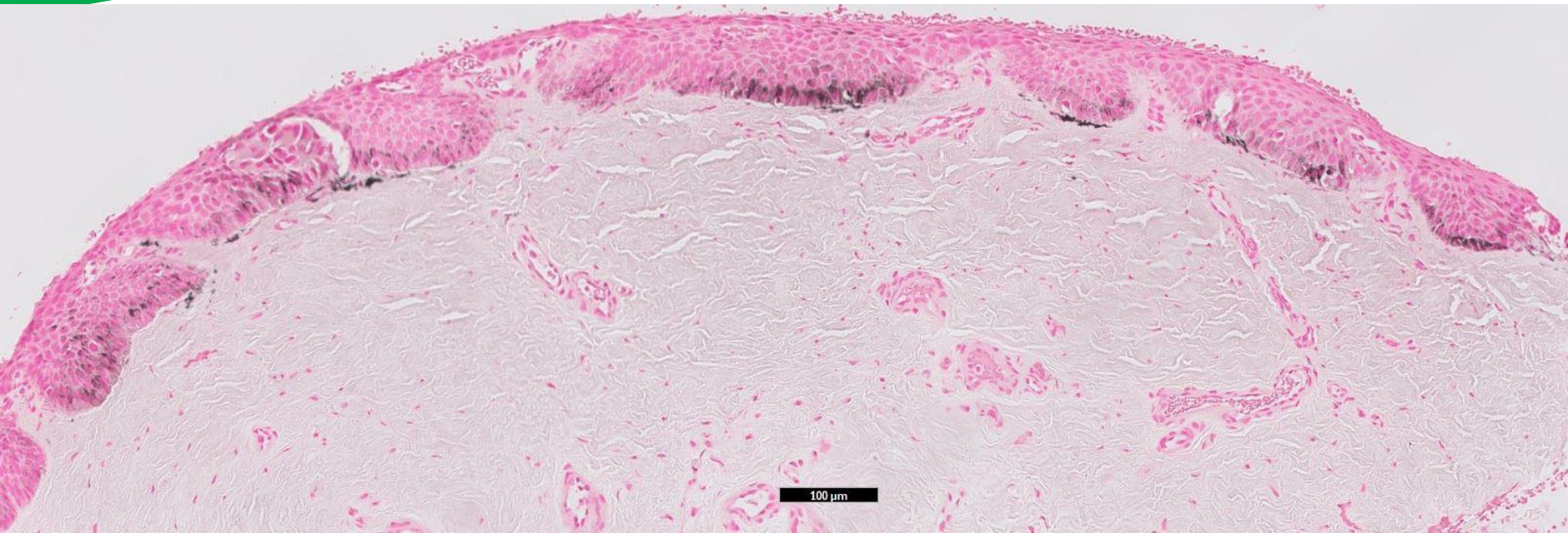
Case #3 18 y/o Right 4th finger



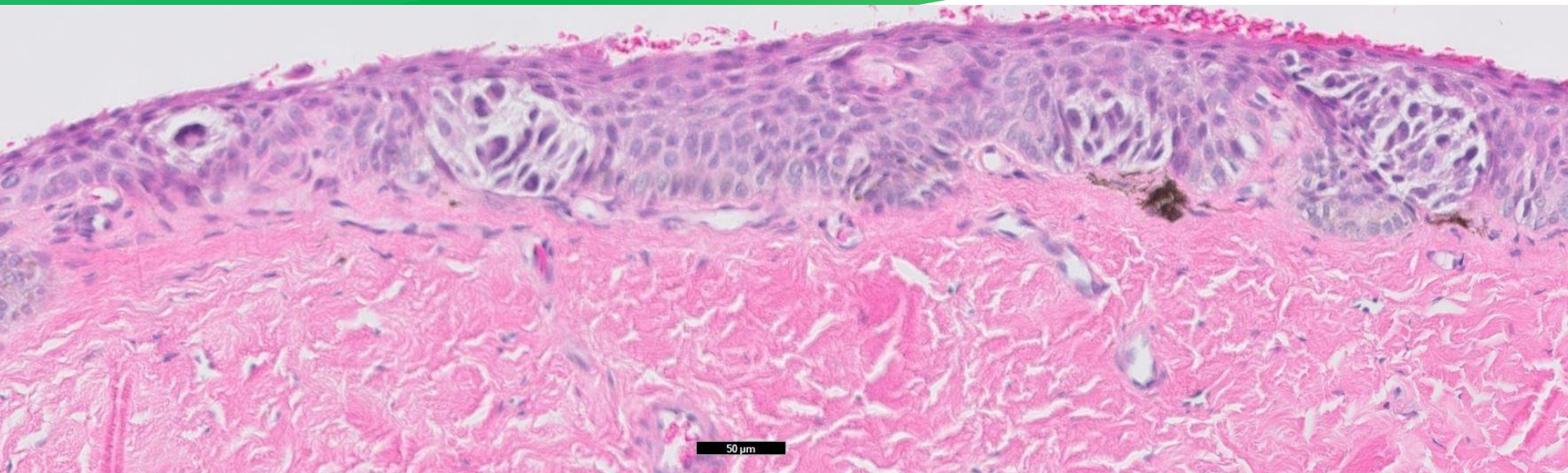
Case #3



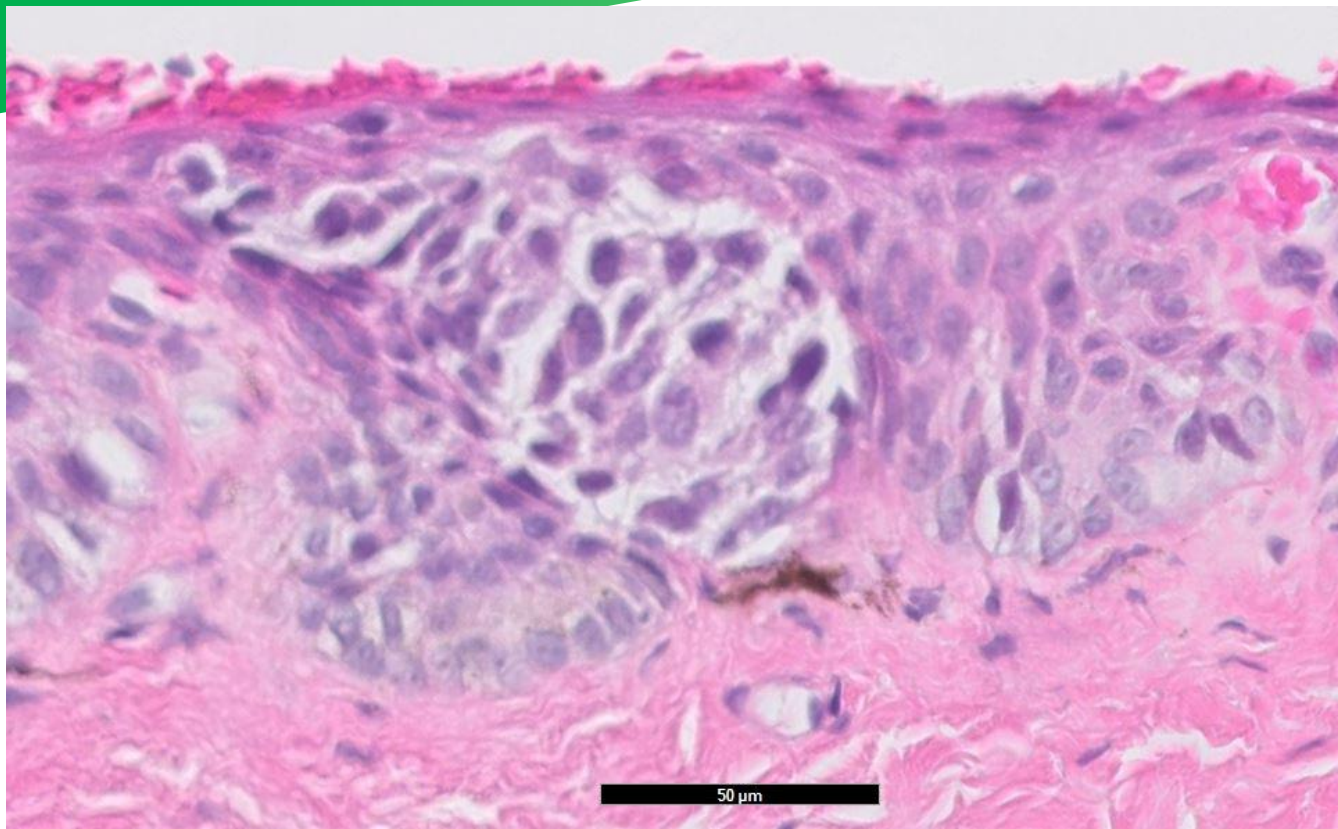
Case #3



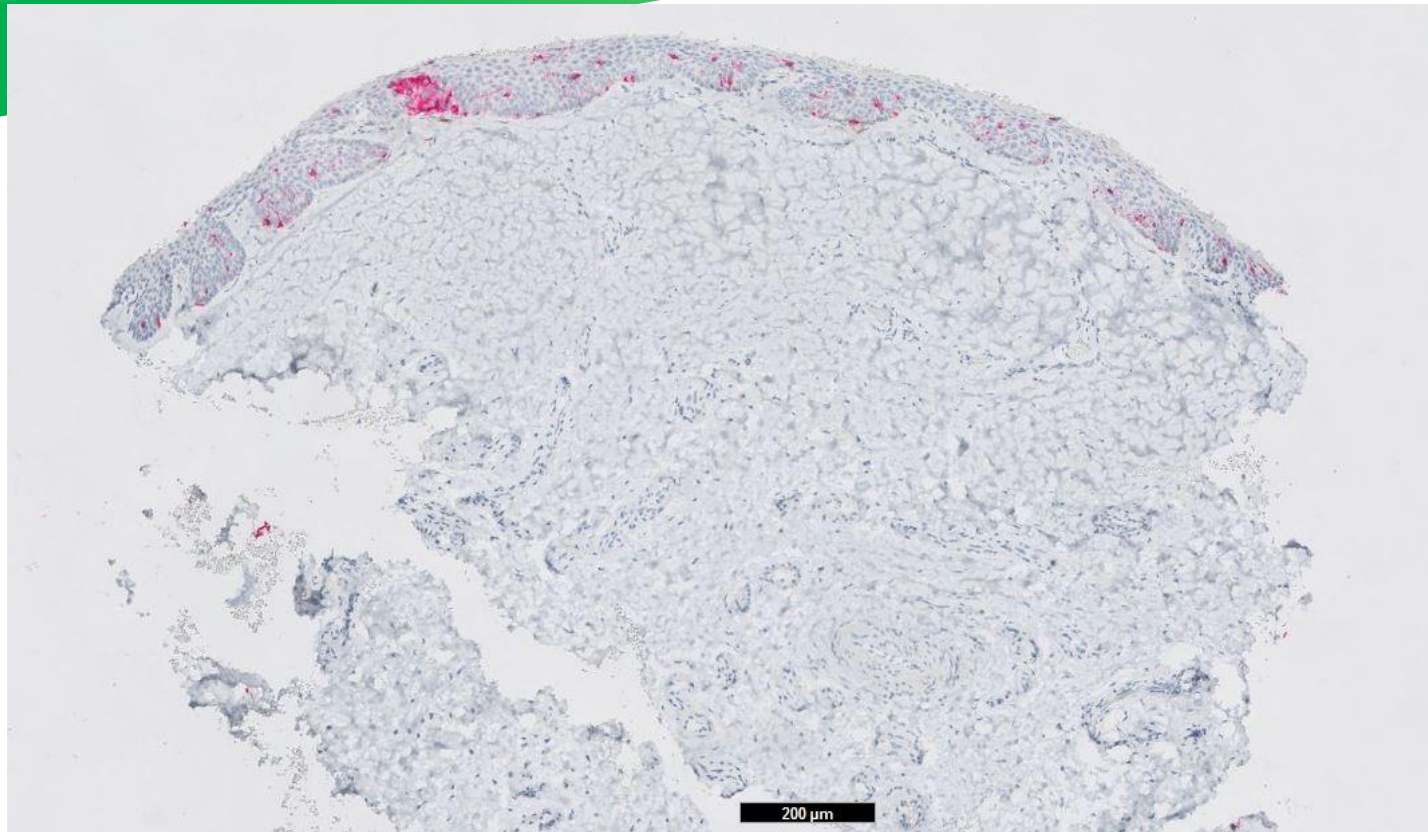
Case #3



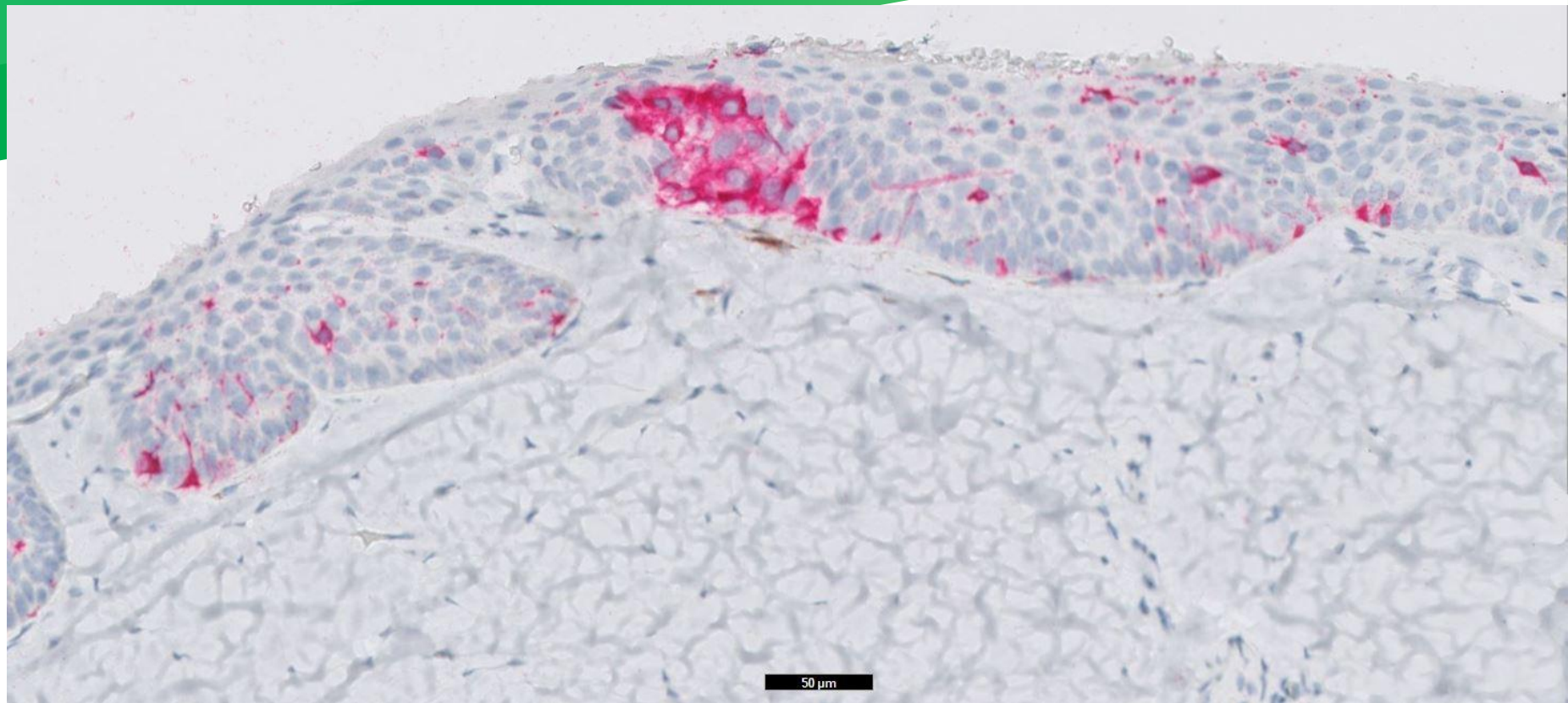
Case #3



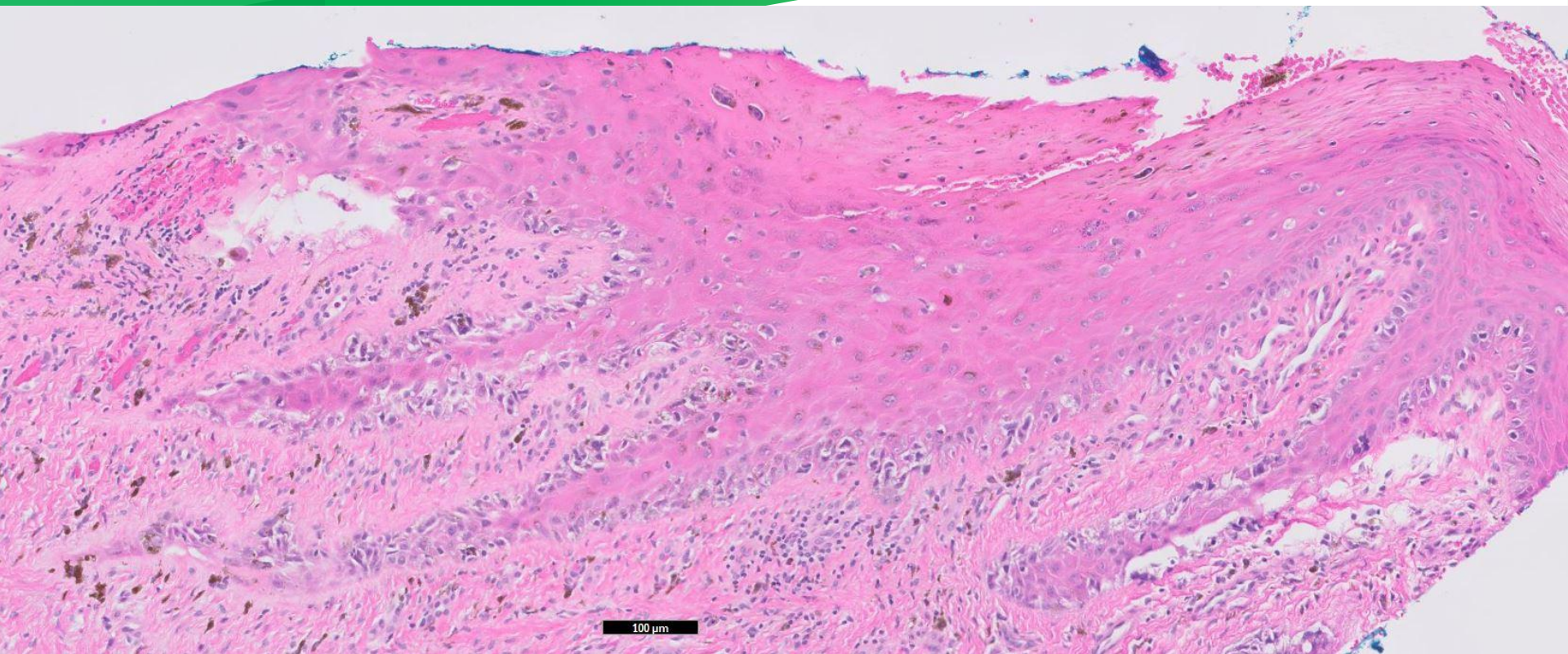
Case #3



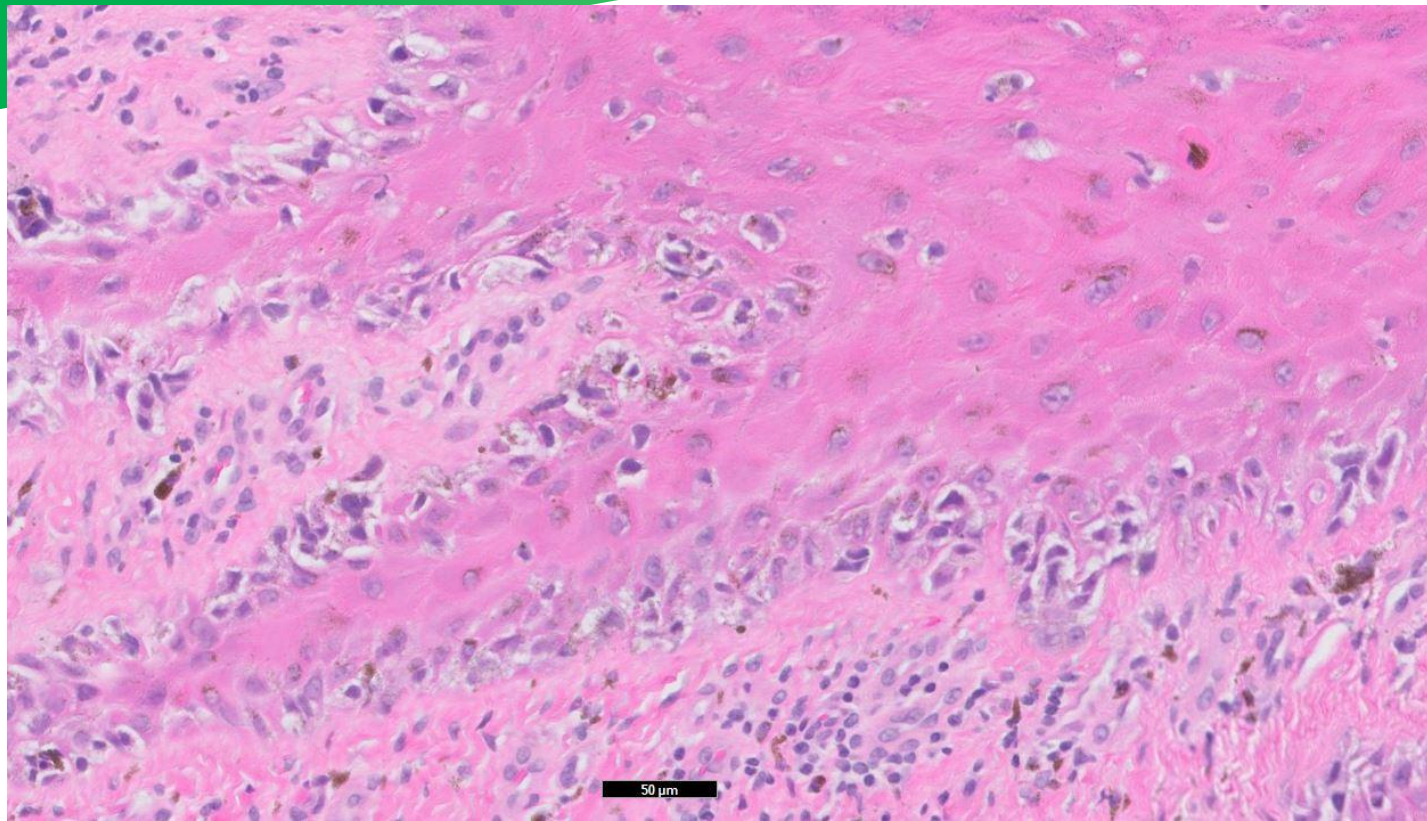
Case #3



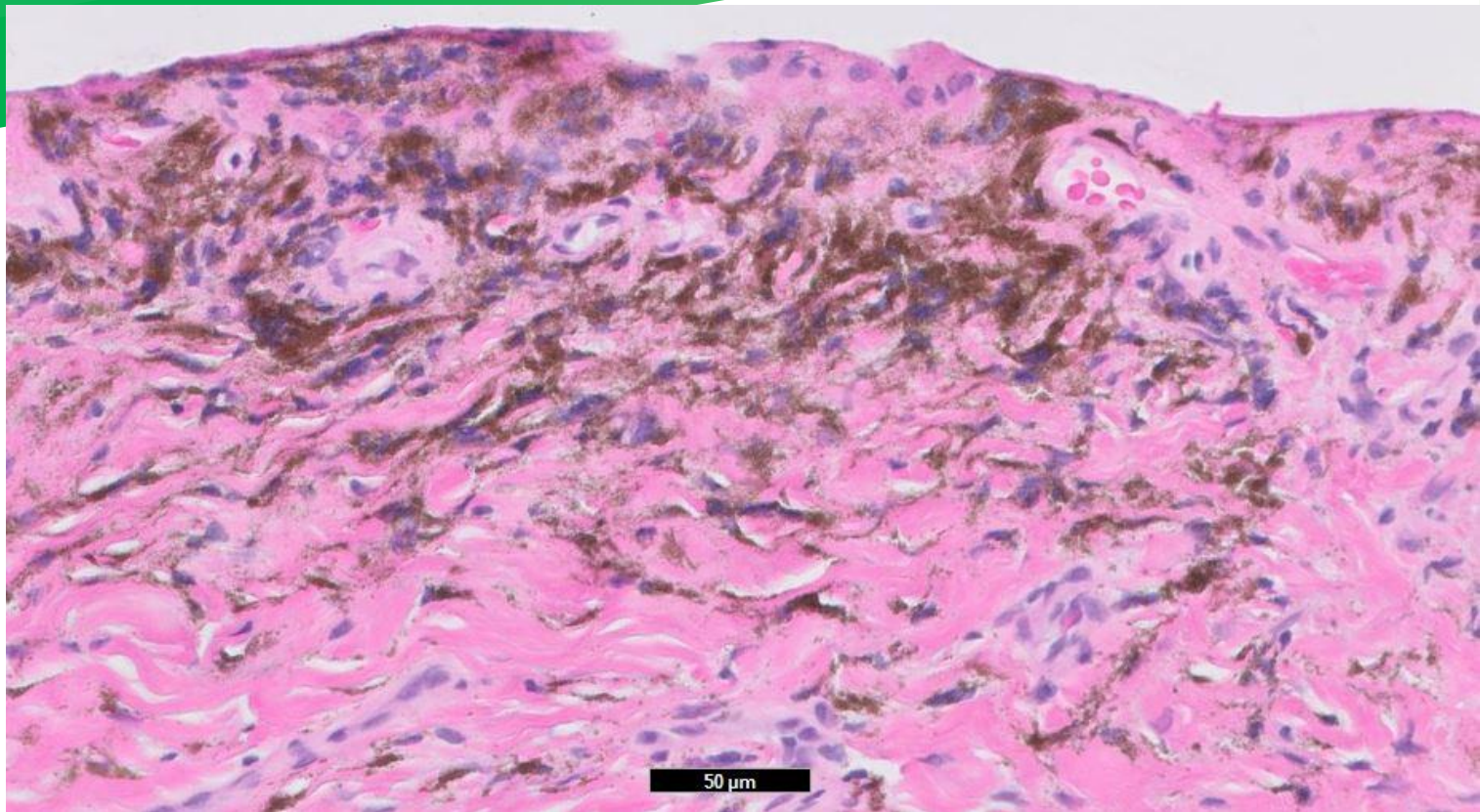
Case #4



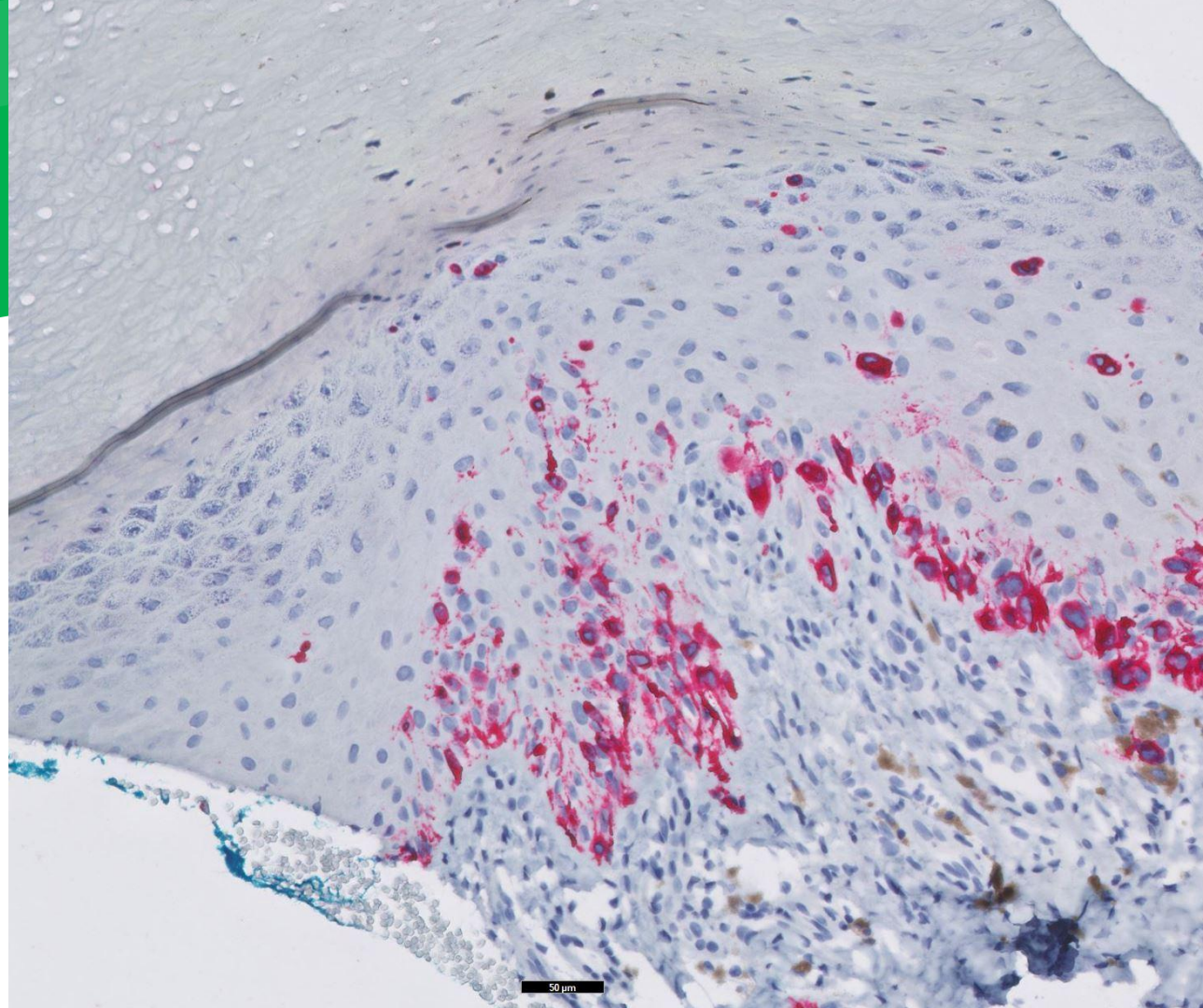
Case #4



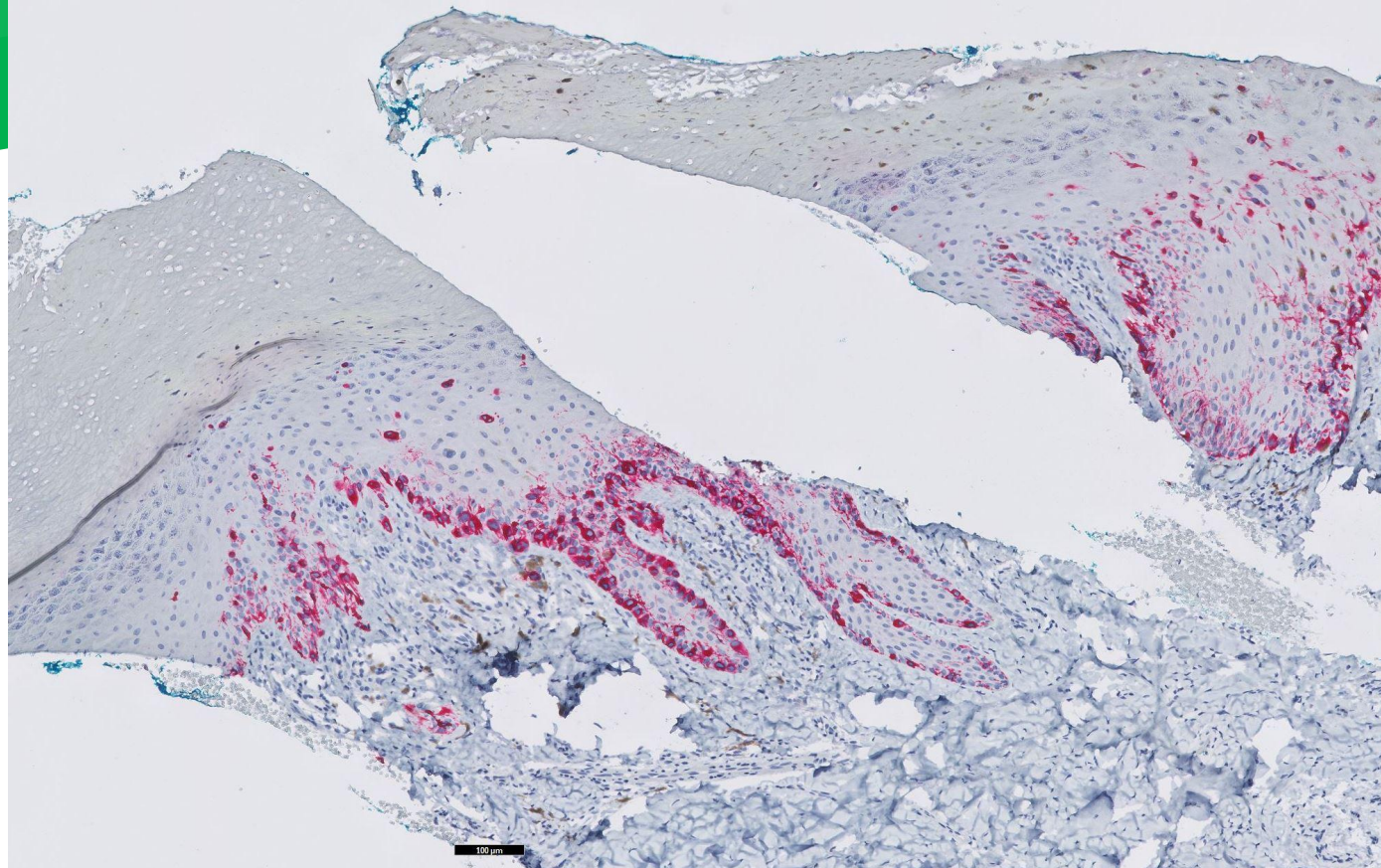
Case #4



Case #4



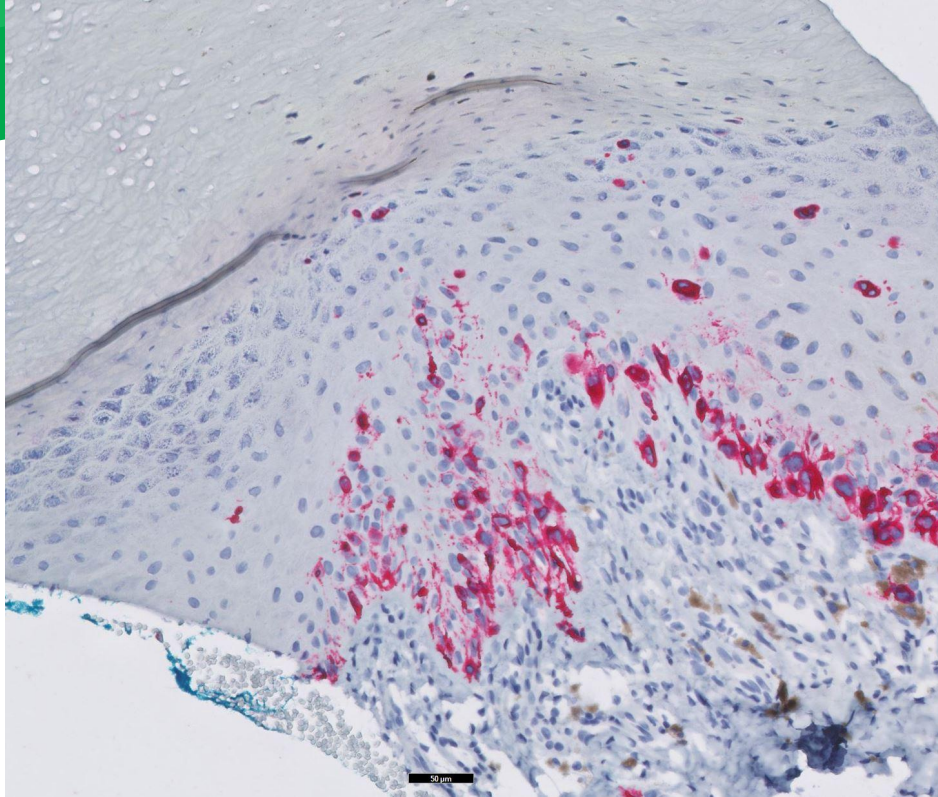
Case #4



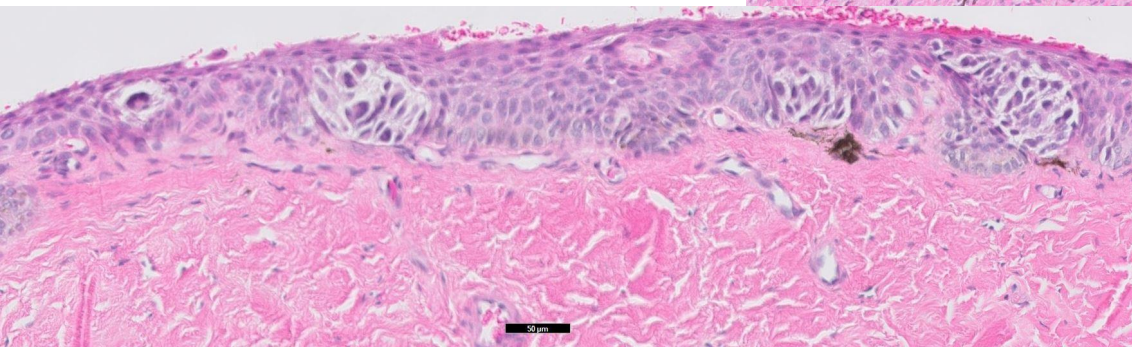
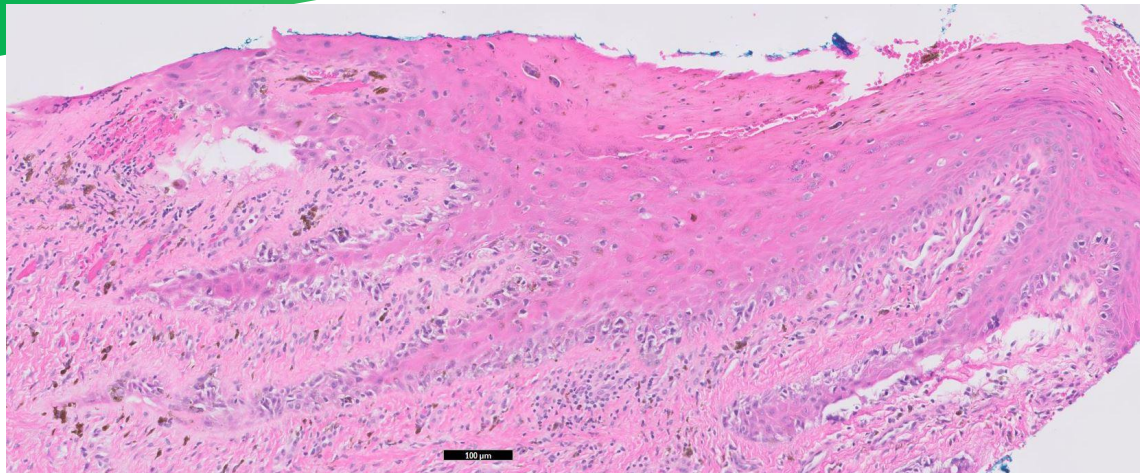
Case #4 60 y/o Left thumbnail



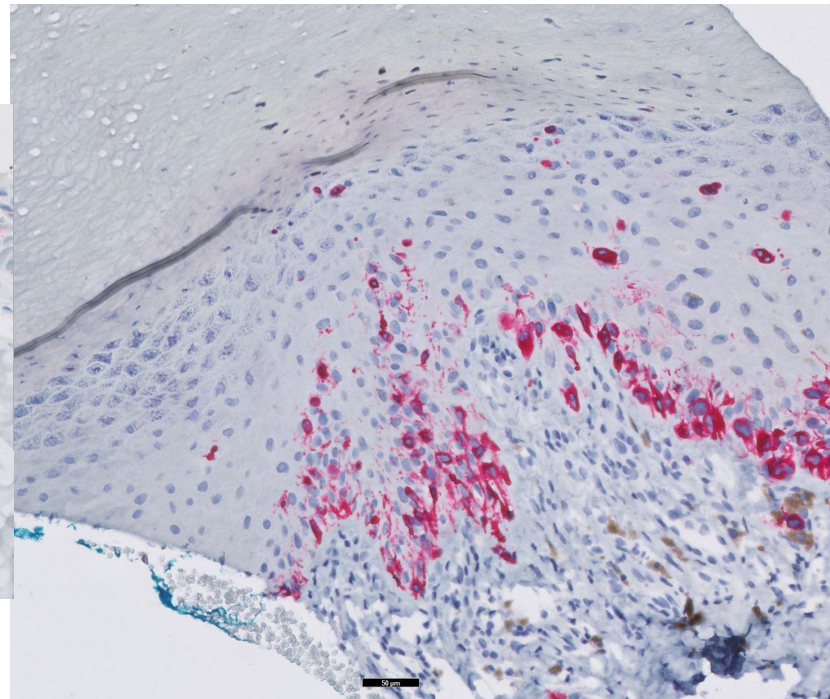
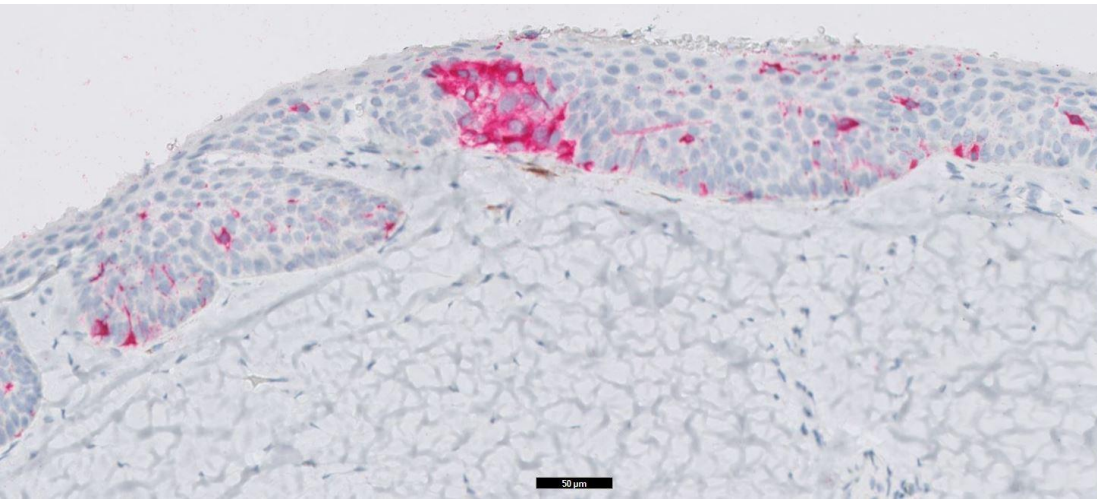
Case #4 Melanoma in-situ



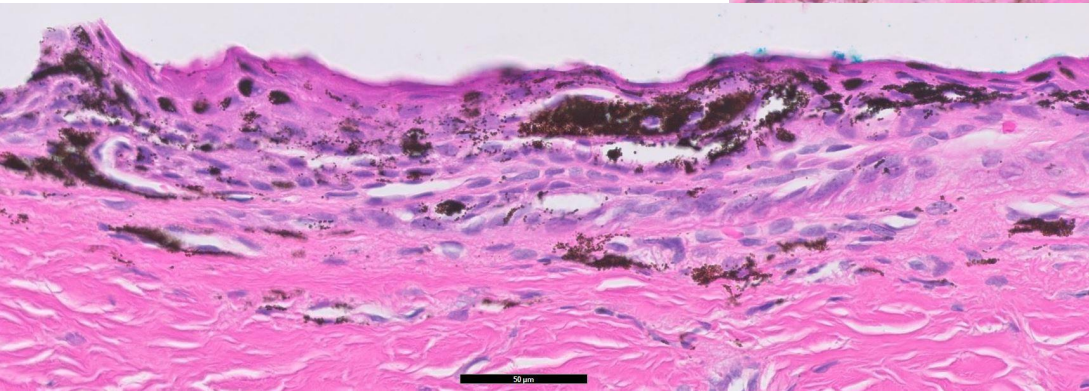
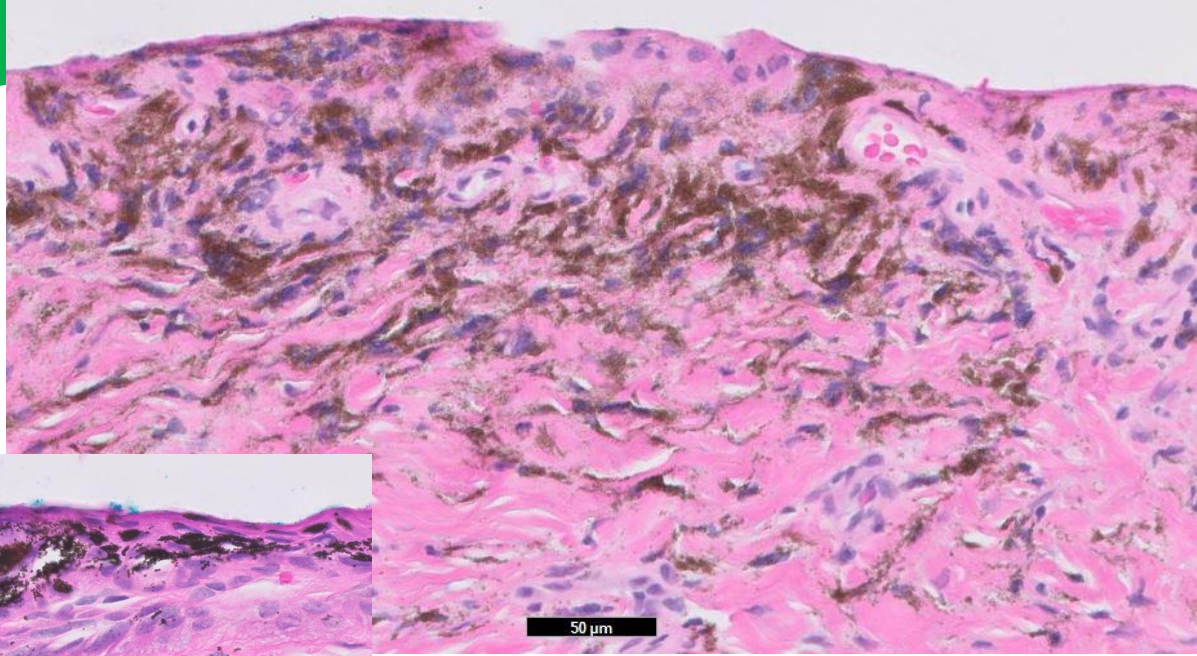
Benign? Atypical? Malignant?



Benign? Atypical? Malignant?

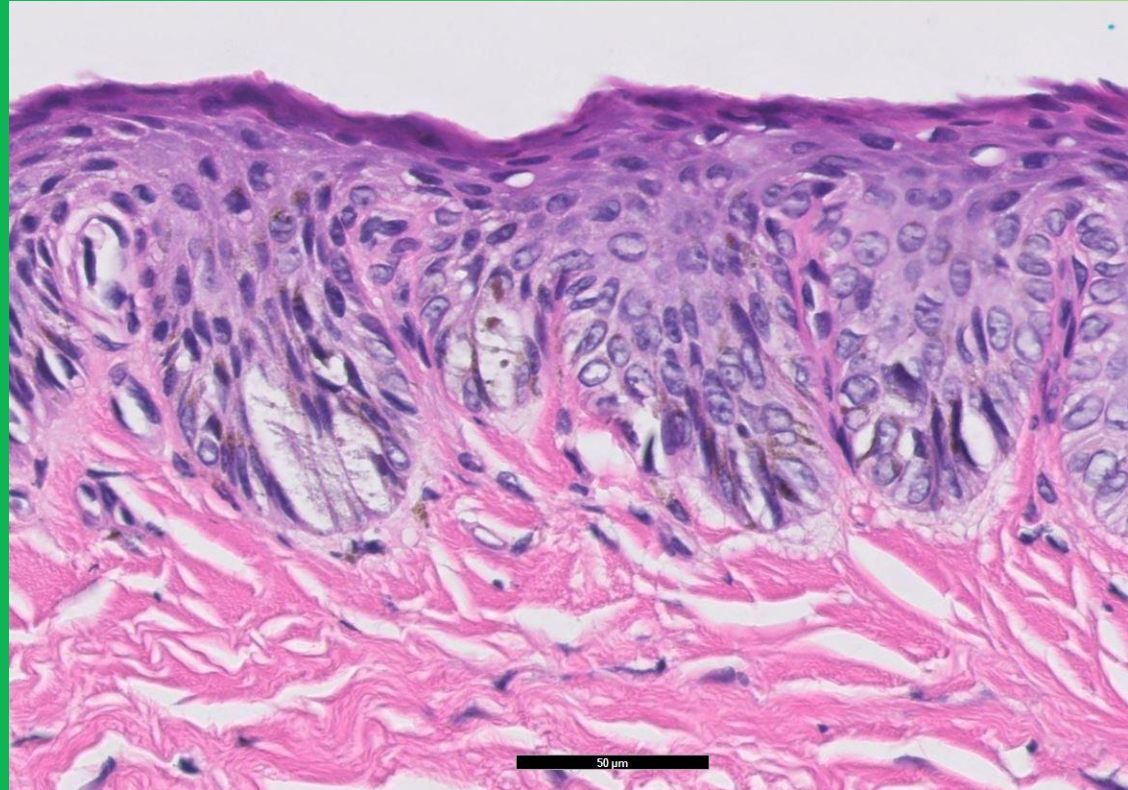


Benign? Atypical? Malignant?



■ Benign pediatric nevus

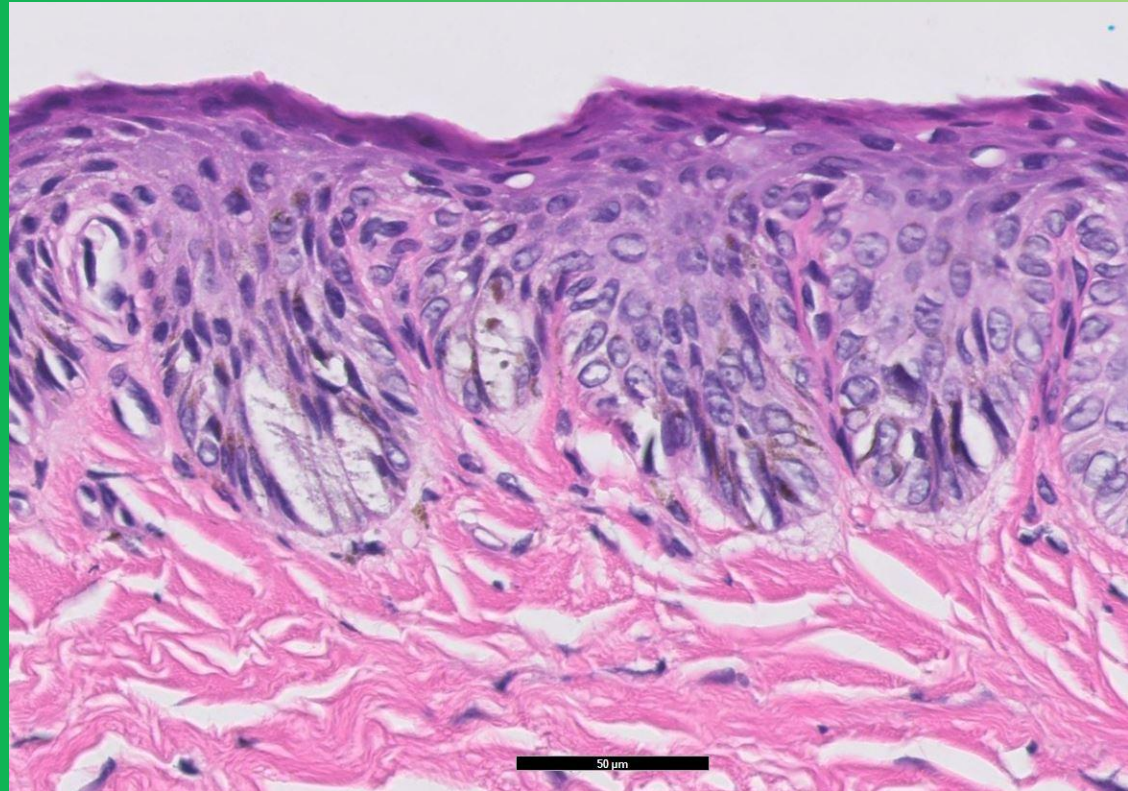
Single, large melanocytes scattered irregularly across the junction.



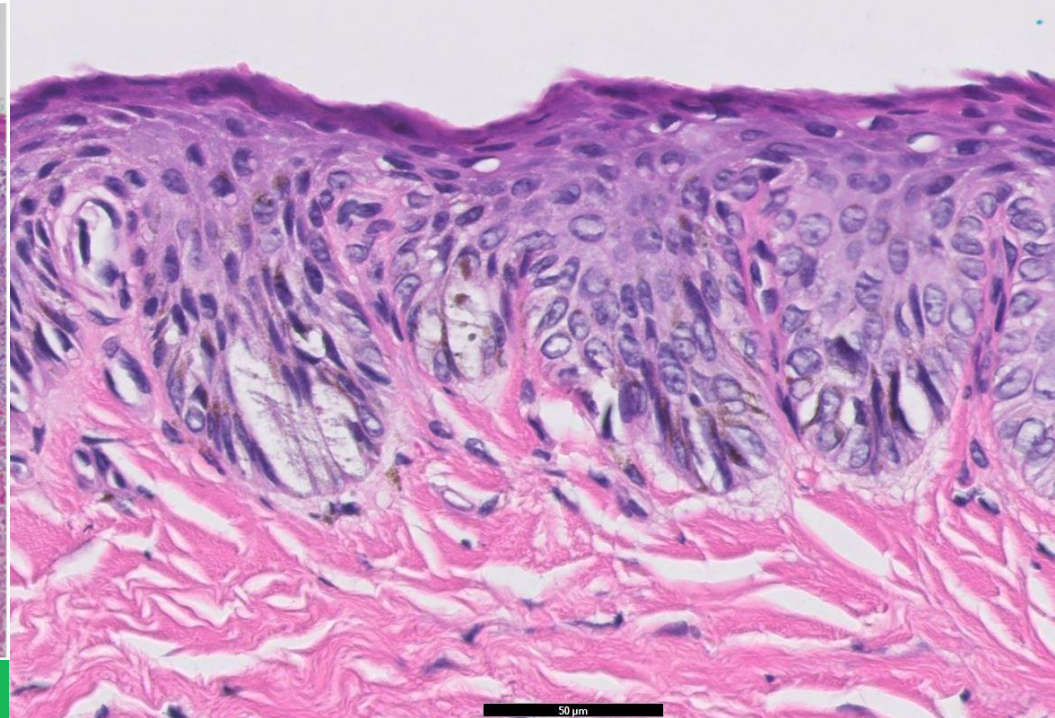
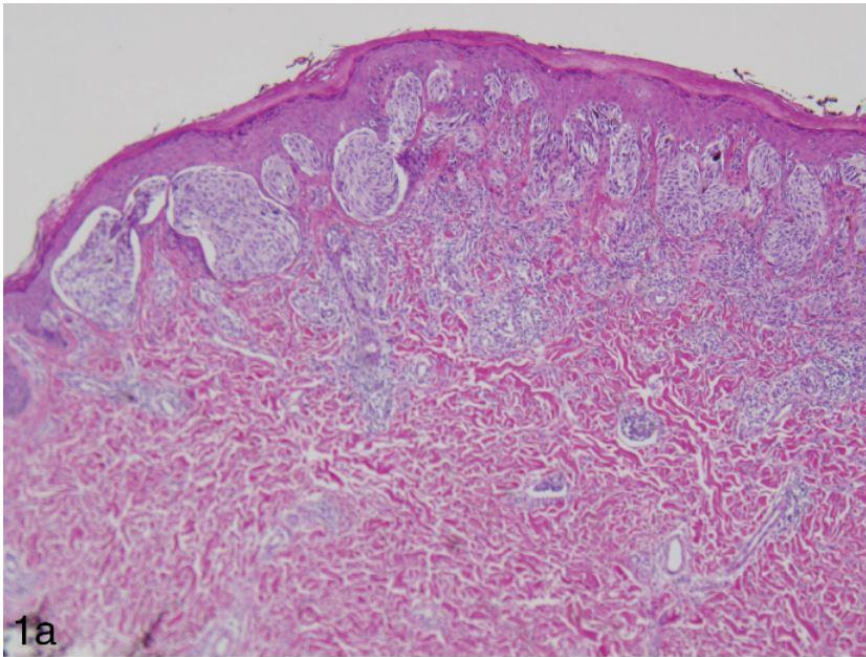
■ Benign pediatric nevus

Single, large melanocytes scattered irregularly across the junction.

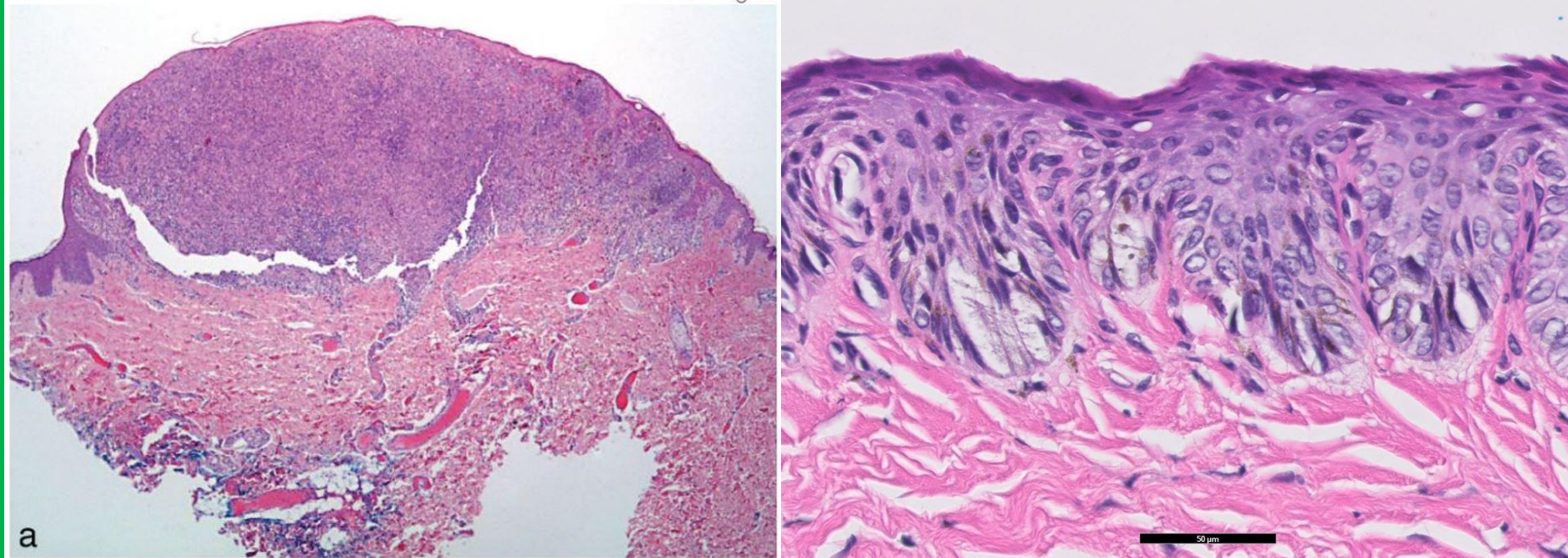
Is this atypical?



- **Cytologically a pediatric nail nevus is close to a Spitz's nevus**



■ Pediatric melanoma is not the superficial spreading type

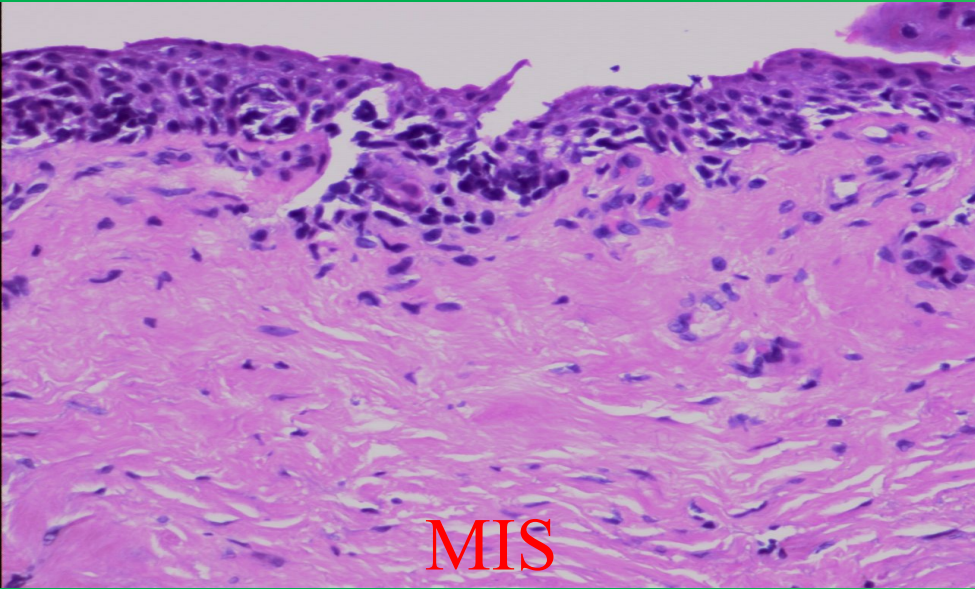


Prieto VG et al. Melanoma in children. Arch Pathol Lab Med 135:307-16, 2011)

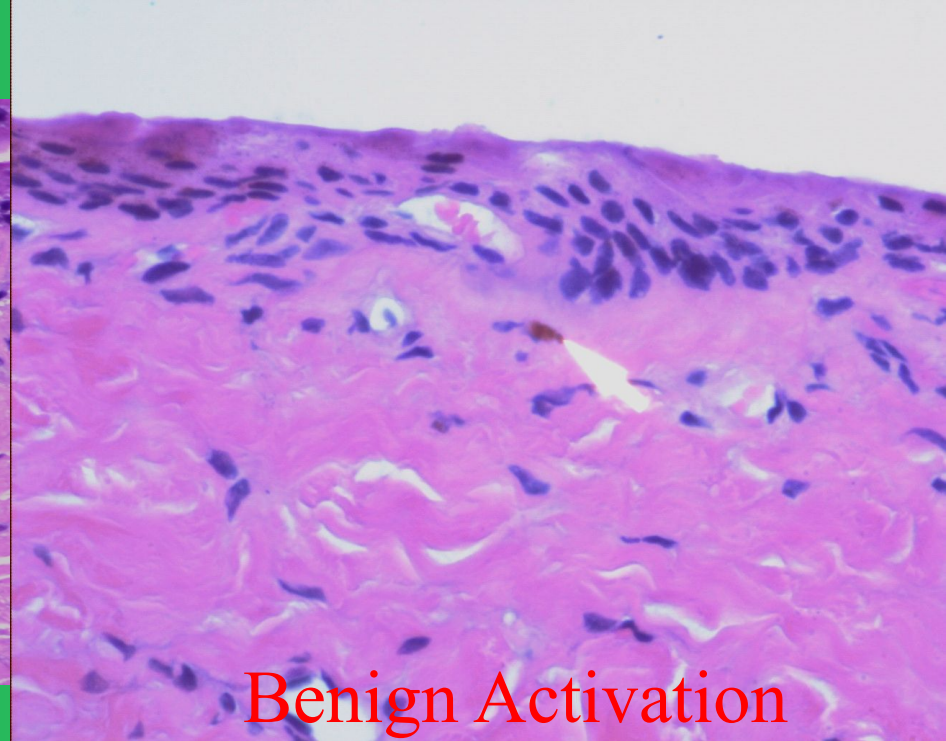
Immunohistochemistry—An aid for diagnostic impasses?

- p16
- HMB45
- Ki-67/MelanA

Benign activation vs melanoma in-situ

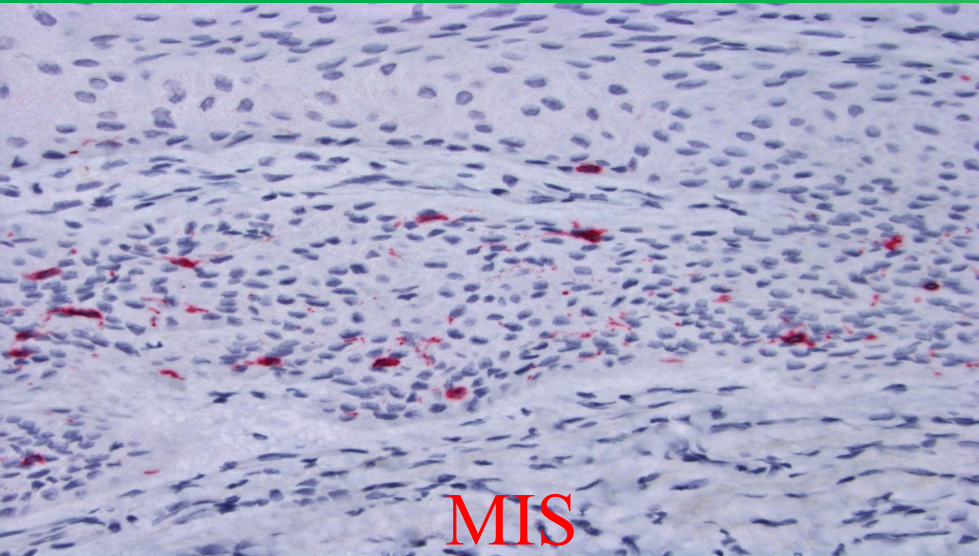


MIS

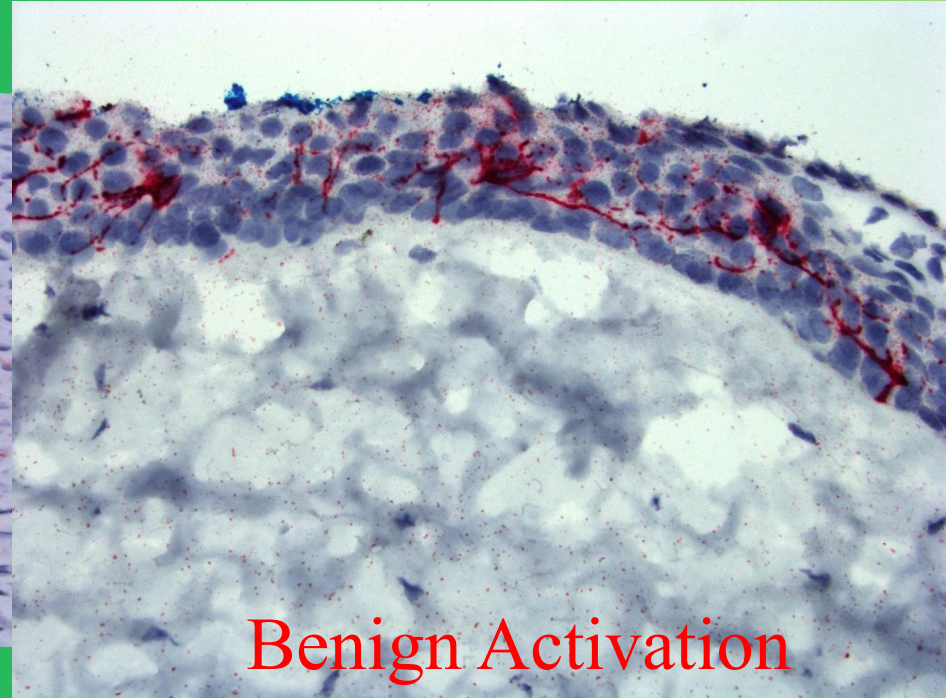


Benign Activation

Similar cellularity in B9 Activation and MIS



MIS



Benign Activation

Benign activation vs MIS

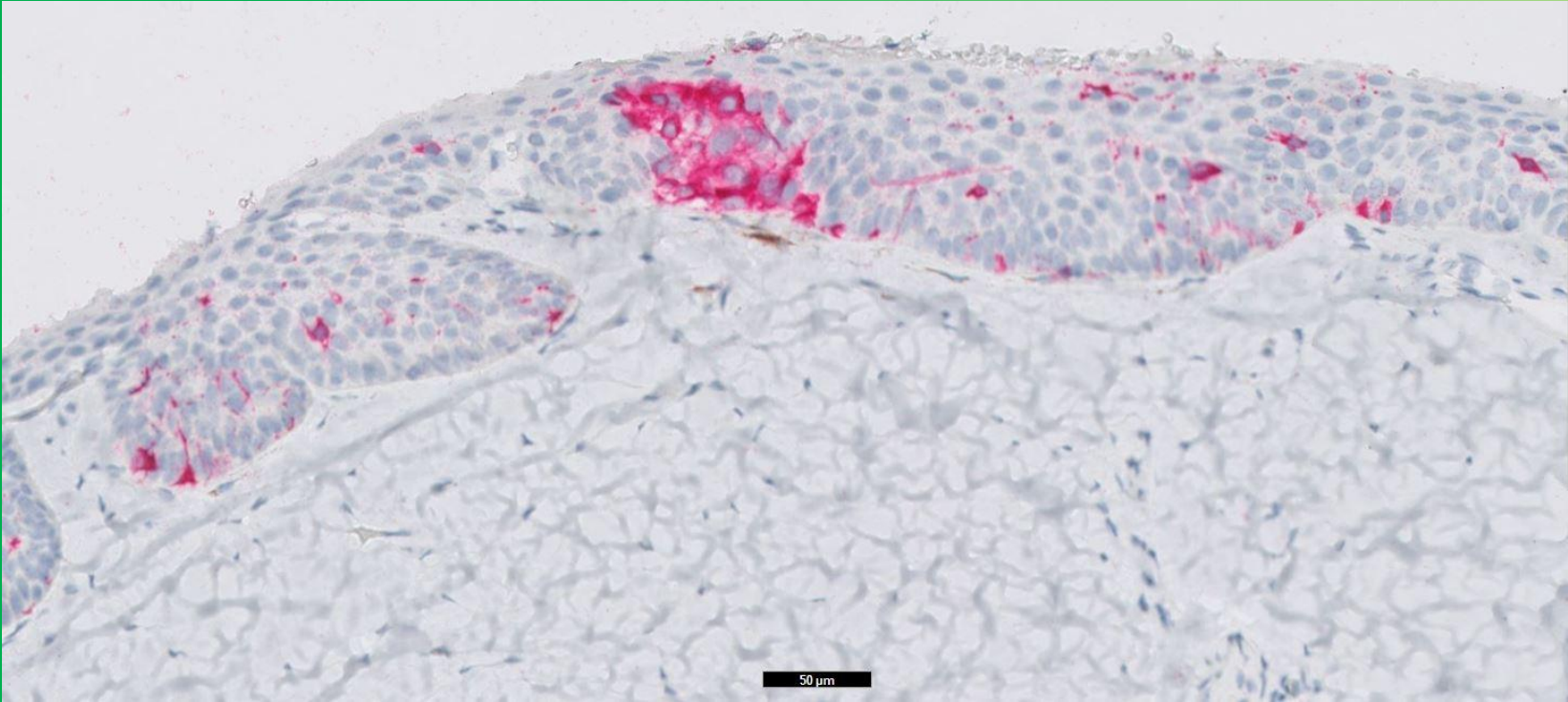
- p16 Negative
 - All cases of benign activation
 - 8 of 10 cases of MIS
- HMB45—Positive in all cases BAM and MIS
- Ki-67/MelanA—Limited by proliferative state of nail unit epithelium.

Results—Benign activation vs MIS

- p16 Negative
 - All cases of benign activation
 - 8 of 10 cases of MIS
- HMB45—Positive in all cases BAM and MIS
- Ki-67/MelanA—Limited by proliferative state of nail unit epithelium.

Tested antibodies fail to make a distinction

- **Immunohistochemistry—Currently only highlights melanocytes**



Current histopathologic assessment is of limited utility.

- **H&E**
- **Immunohistochemistry**
- **Genetic analysis—not yet possible**

Summary—Factors driving an atypical diagnosis.

- Partial sampling
- Large, Spitzoid cytology with single cells.
- Pathologist inexperience and fear
- In the U.S., there is a financial incentive to perform more surgery

Summary—Pediatric Melanocytic Tumors

- Avoid pediatric biopsies
- Biopsy to treat rather than to diagnose
- Completely excise at the start
- Need an experienced nail pathologist

Thanks!
curtisinportland@gmail.com

