

# What's New in the Histopathology of Melanocytic Lesions

## 15 minutes!

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and

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# Objectives

- Update utility of immunohistochemistry in the diagnostics of pigmented nail lesions
- Case of a pigmented lesion with a Hutchinson's sign

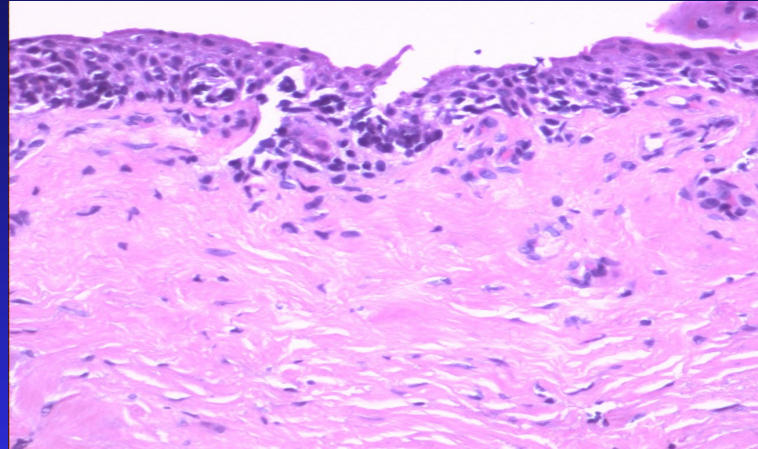
# Benign activation vs melanoma in-situ

- INSERT clinical PHOTOS OF bam AND MIS

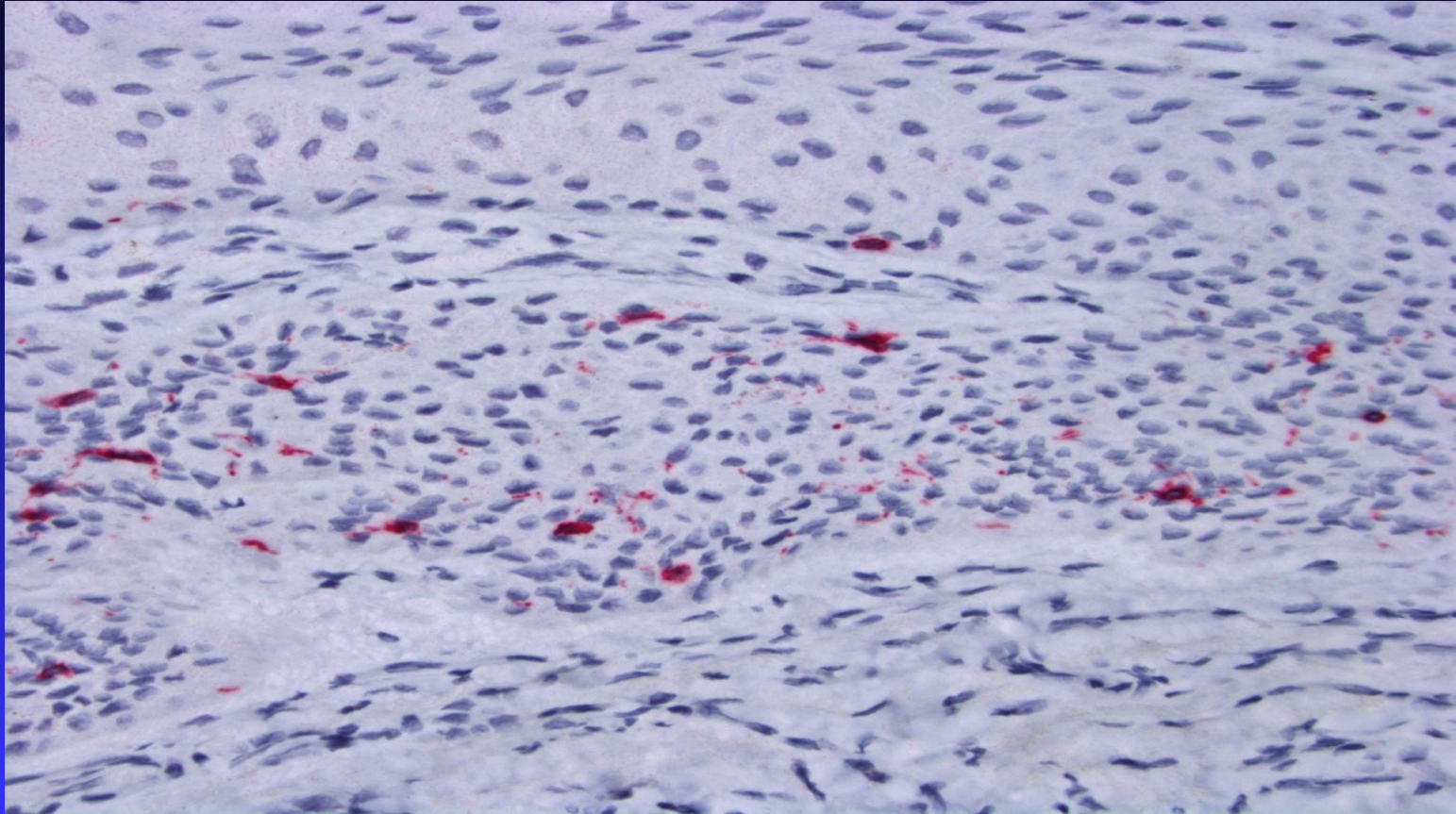


# Benign activation vs melanoma in-situ

- INSERT histo PHOTOS OF bam AND MIS



# Low cellularity in MIS



# Immunohistochemistry—An aid in diagnostic impasses

- **p16**
- **HMB45**
- **Ki-67/MelanA**

# Study—BAM vs MIS

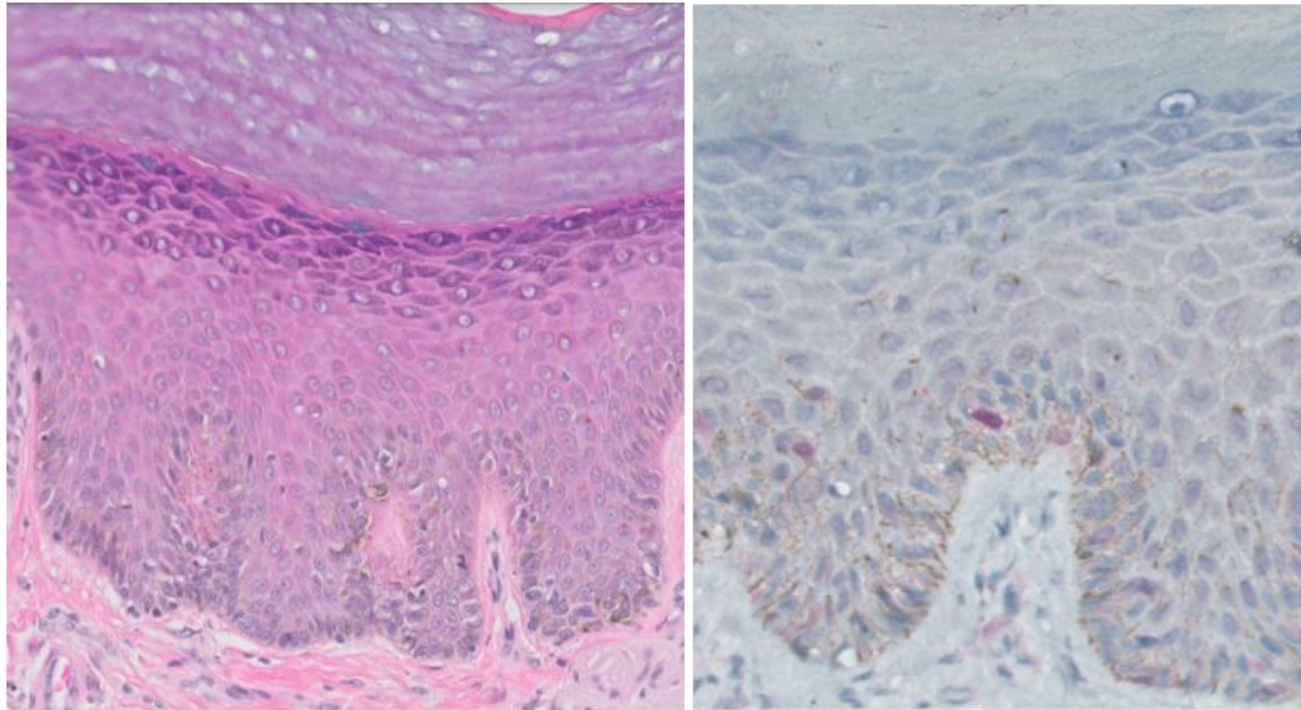
- **10 Cases BAM**
- **8 Cases MIS**
- **Review of archival slides, including MelanA and Fontana-Masson**

# Results—BAM vs MIS

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



Figure 1.



*Fig 1.* Melanoma in-situ of the nail unit involving nail fold epithelium. A) H&E section showing large, single atypical melanocytes with basilar pigmentation. B) p16 IHC study showing positive, mostly nuclear staining of a large, atypical melanocyte.

Still most important function is to find the pigmentation

## Histopathology of benign activation

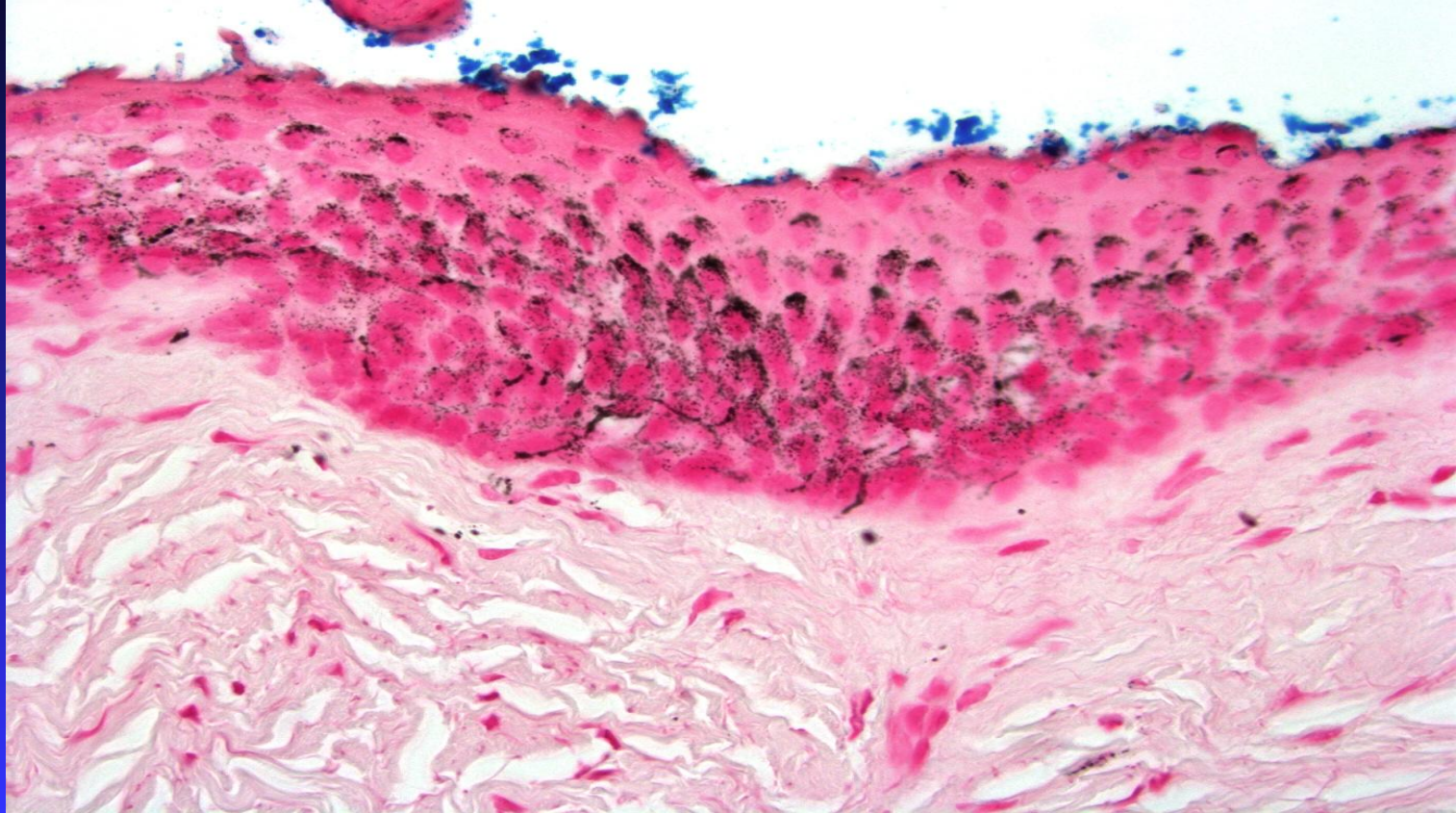
- Epithelial pigmentation
- Melanophages
- No or only a slight increase in melanocyte density



# Features of BAM can be subtle.

- H&E with initial levels
- MelanA IHC
- Fontana-Masson
- PAS fungus
- Unstained slides

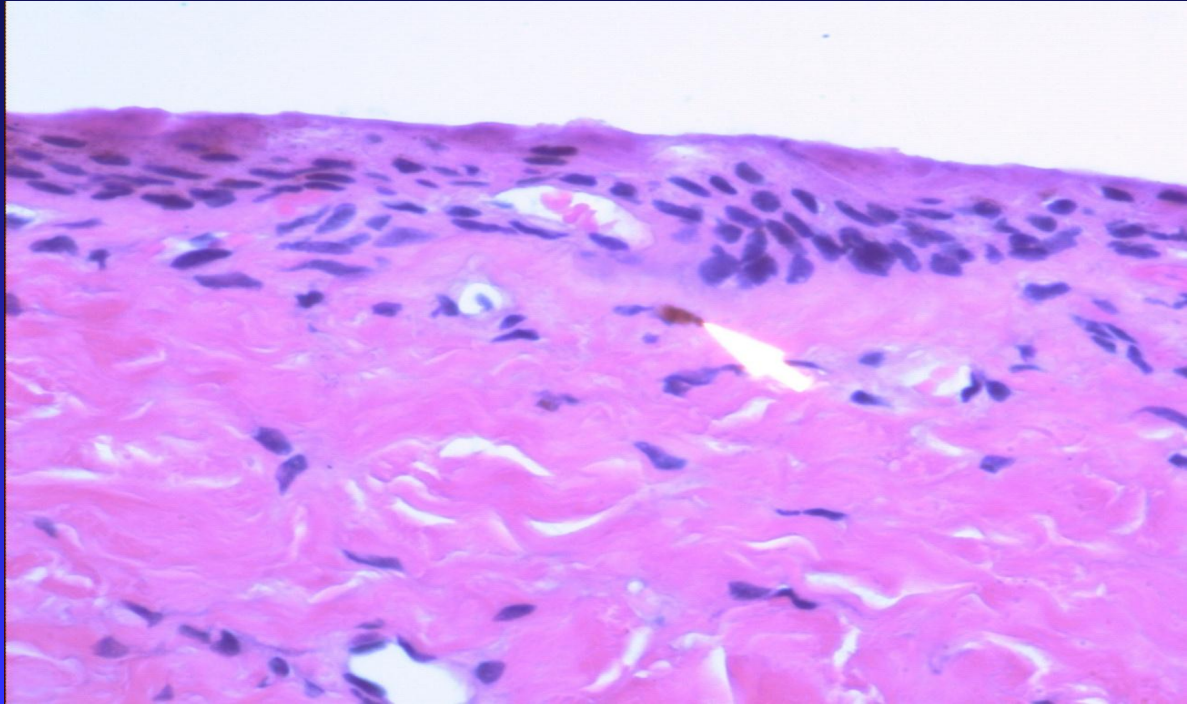
# Fontana-Masson for melanonychia



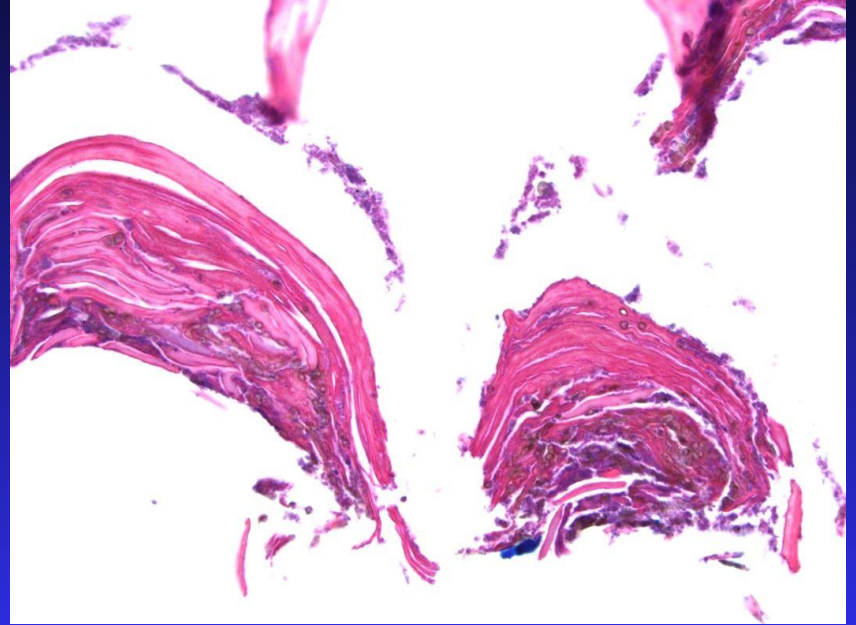


# Single melanophages

May be the only diagnostic findings in benign activation



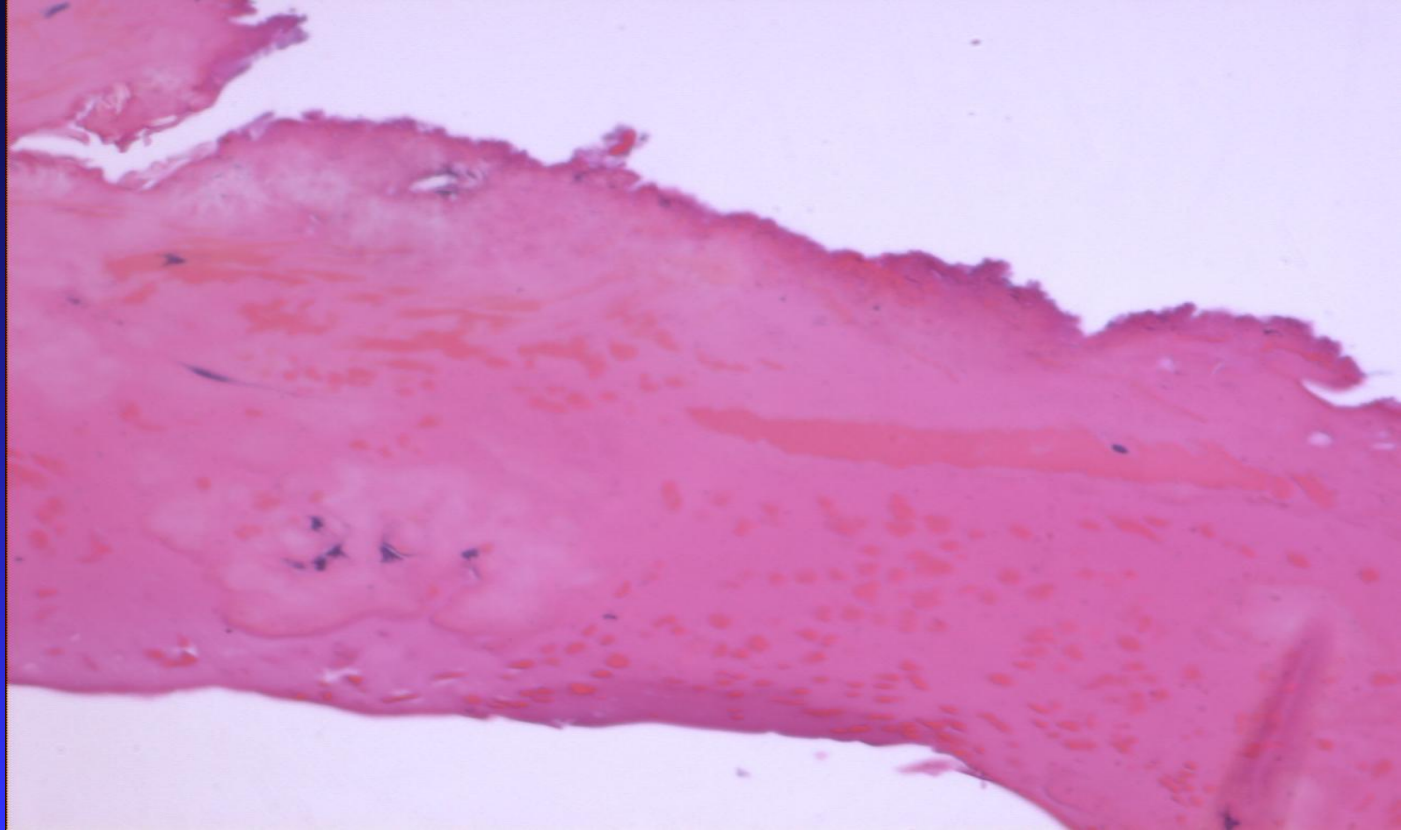
# Pigmented Fungus



# H&E for melanonychia

- H&E level sections
  - ◆ Blood
  - ◆ Exogenous material
  - ◆ Medication deposition

# Blood in nail plate

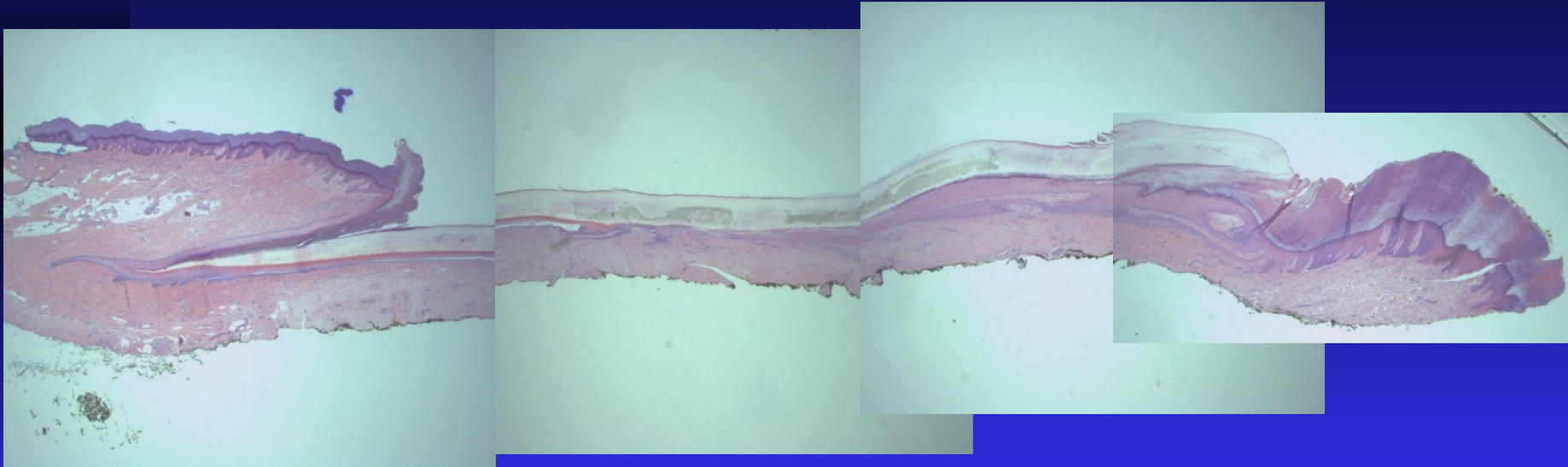




# Hutchinson's Sign



# Hutchinson's Sign



# Hutchinson's Sign

- J Am Acad Dermatol. 2001 Feb;44(2):305-7.
- **Two kinds of Hutchinson's sign, benign and malignant.**
- Kawabata YKawabata Y, Ohara KKawabata Y, Ohara K, Hino H, Tamaki K.
- Department of Dermatology, Faculty of Medicine, University of Tokyo, Japan. [KAWABATA-der@h.u-tokyo.ac.jp](mailto:KAWABATA-der@h.u-tokyo.ac.jp)
- We examined 6 subungual melanomas in situ and 18 melanocytic nevi and compared pigmentation of the nail plates and hyponychium with the use of a dermatoscope. Hutchinson's sign on the hyponychium was not always evidence of subungual melanoma because it can be seen in both diseases. However, there was a wide difference in their dermatoscopic features. We believe that observation of pigmentation on the hyponychium with the use of a dermatoscope contributes to the

# Dr. Rich's Differential Diagnosis

- Trauma pigment
- Nevus
- Lentigo
- R/O Melanoma

# Biopsy

- Nail plate reflected and matrix sampled
- Proximal nail fold sampled



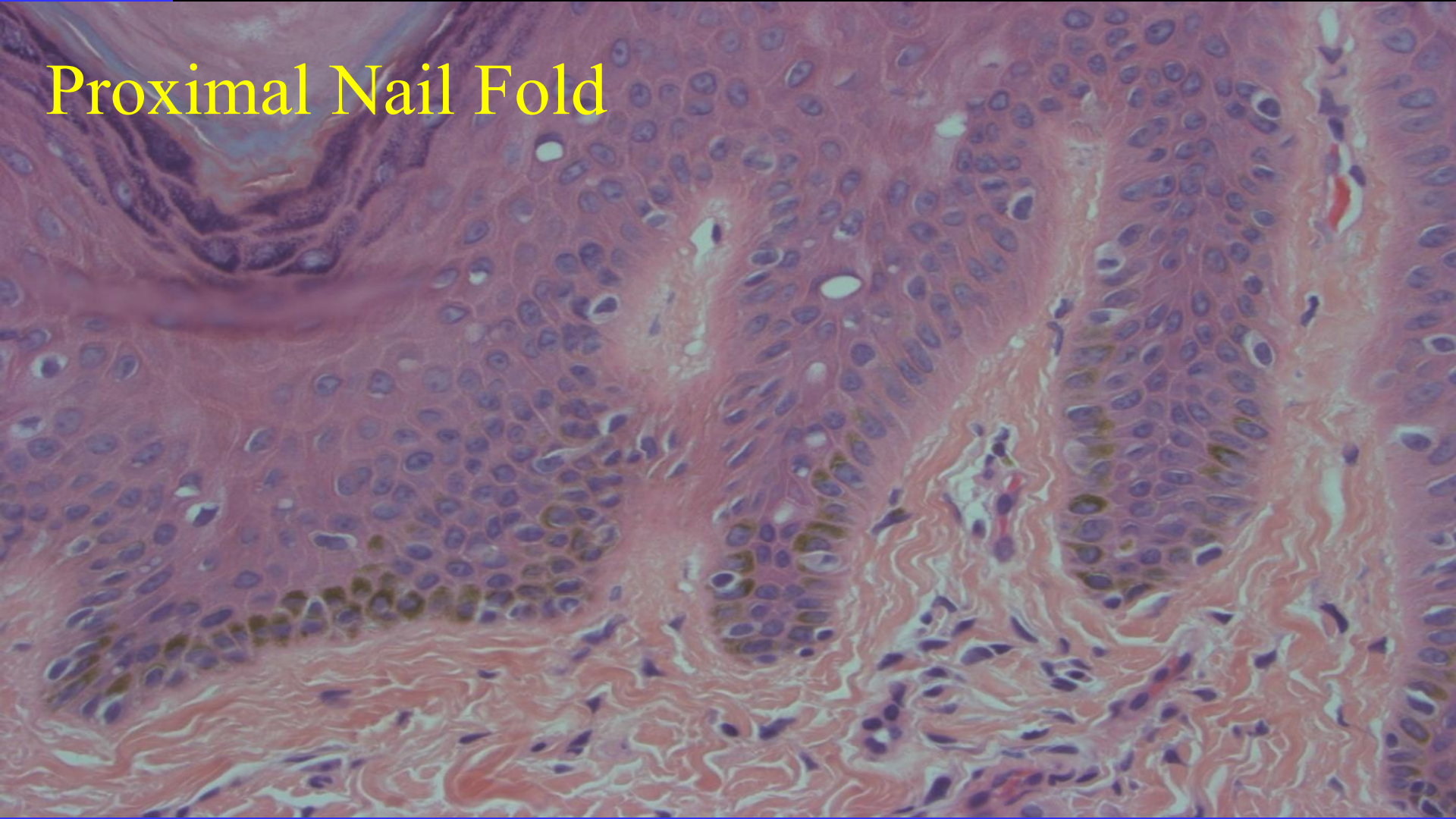
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# Proximal Nail Fold



# Proximal Nail Fold

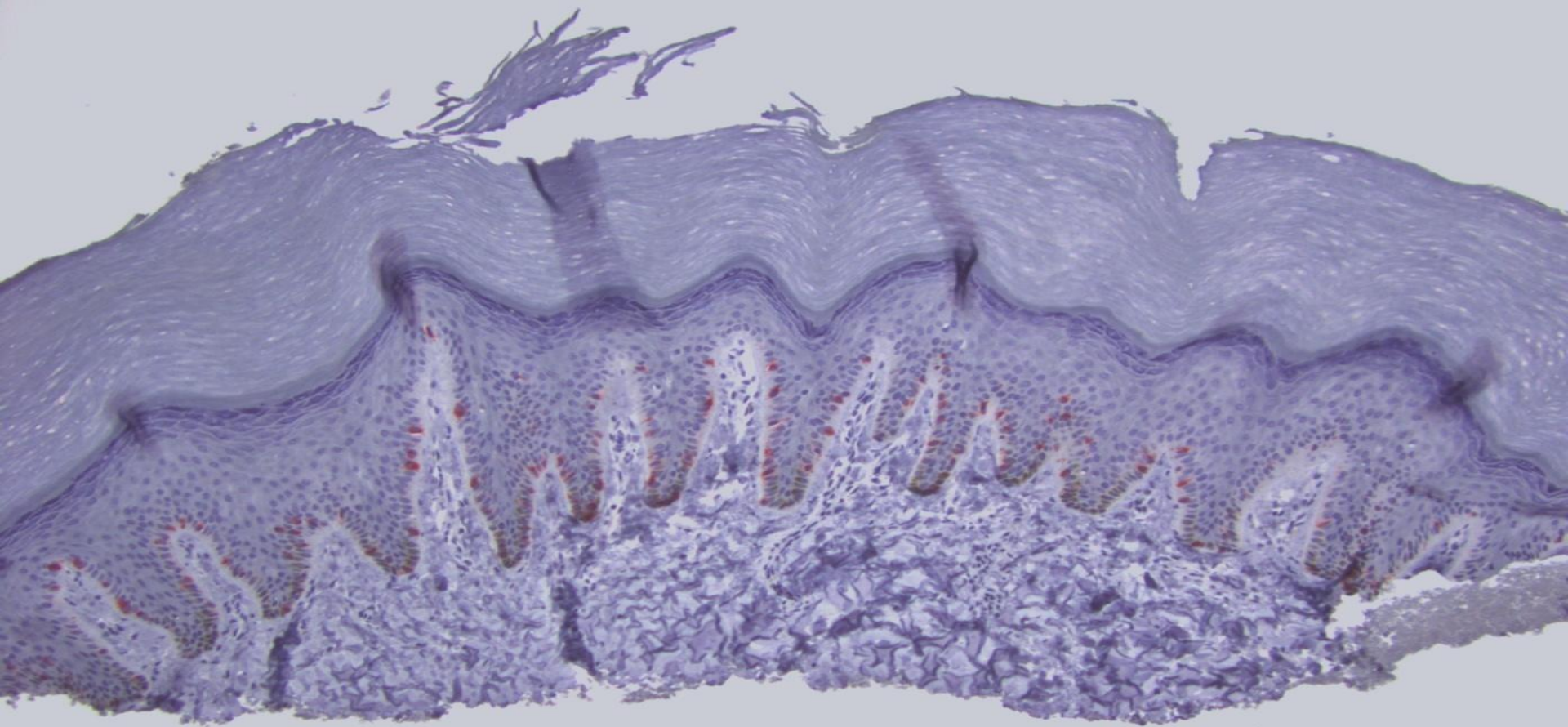




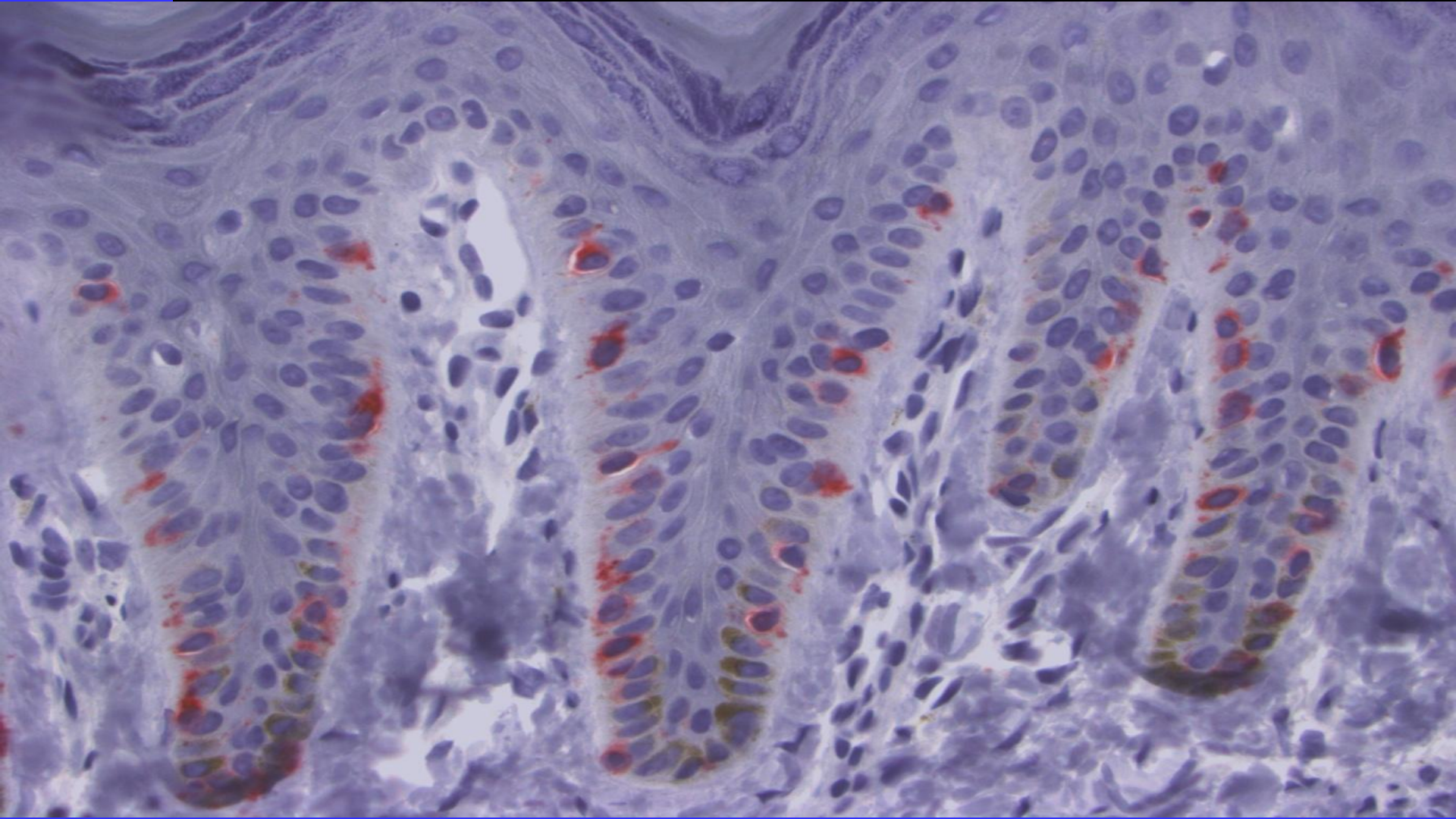


Fontana-Masson Stain



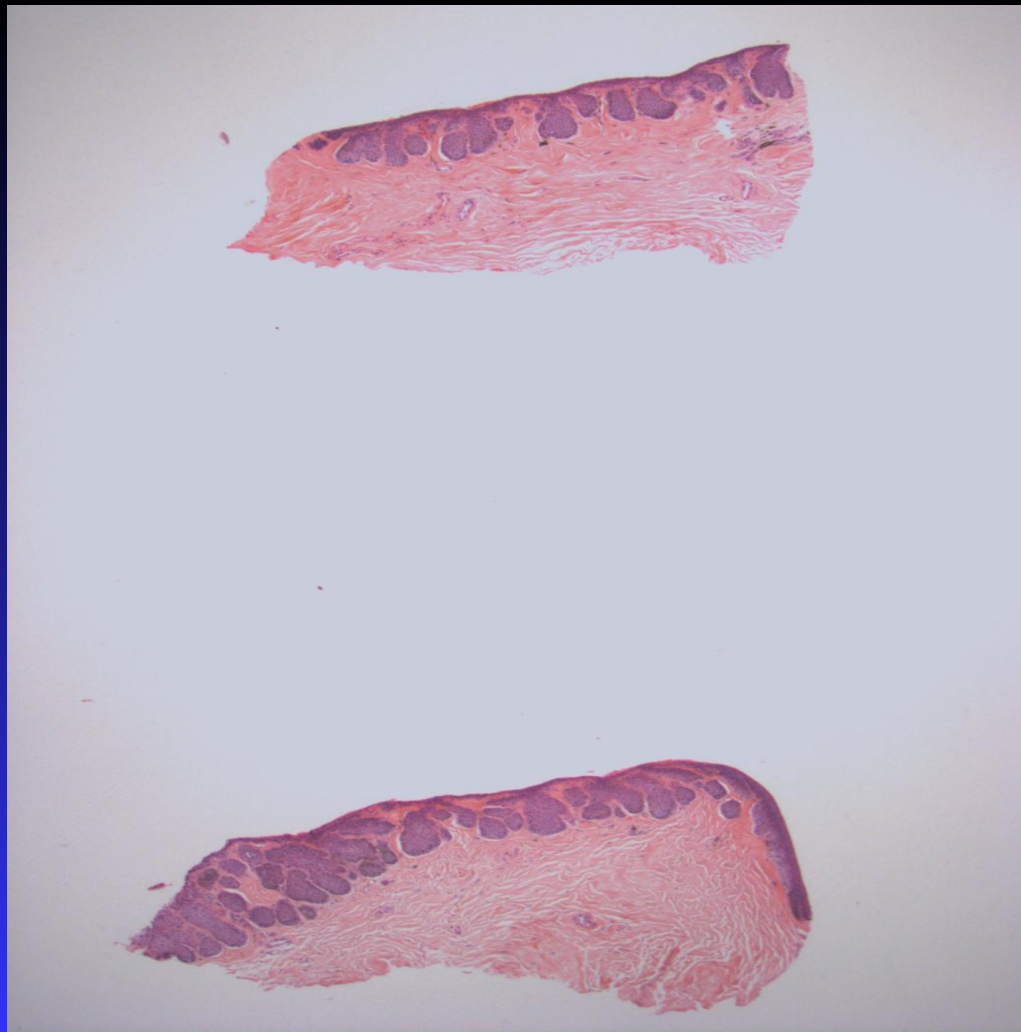


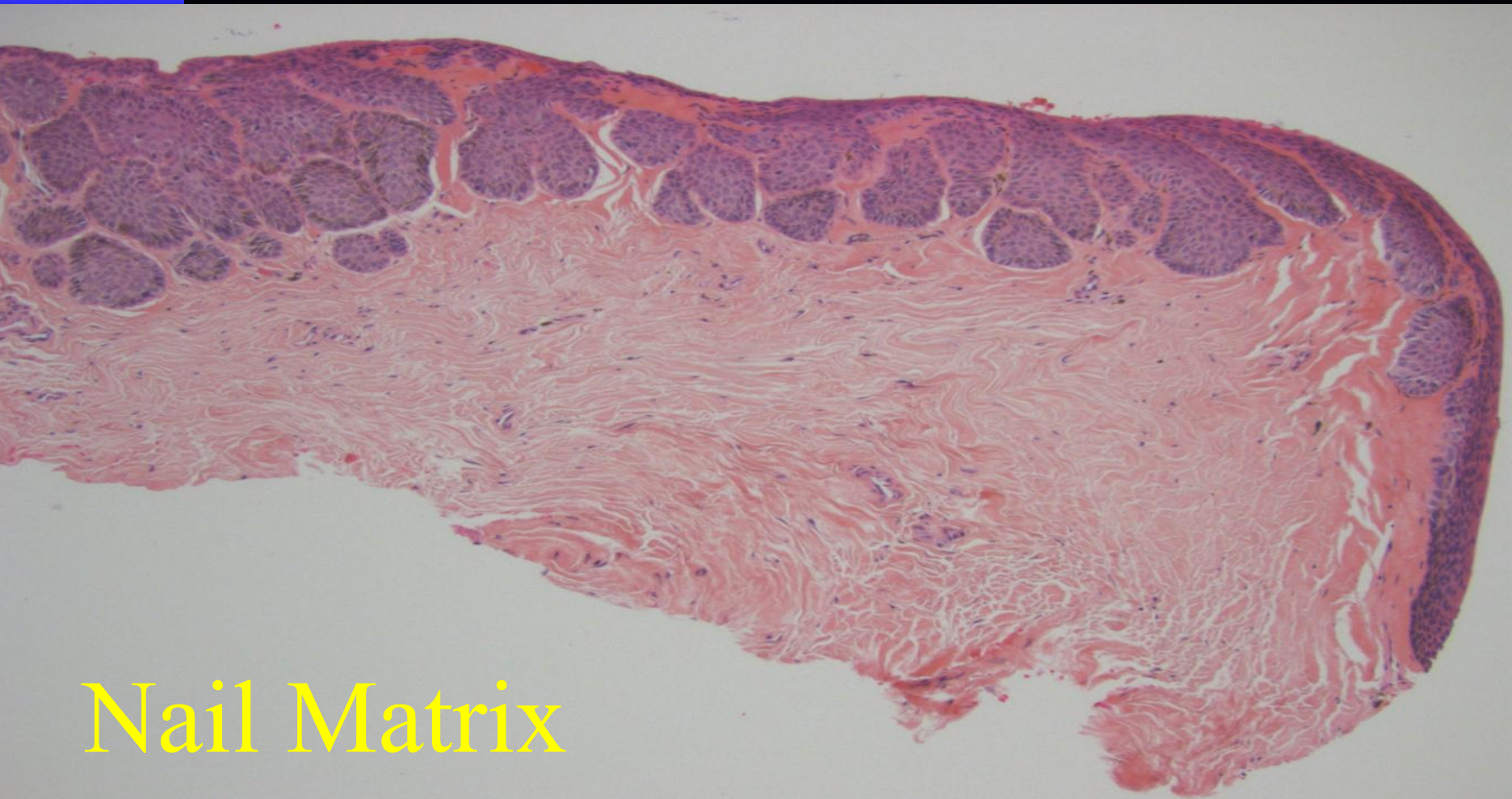
MelanA IHC Study





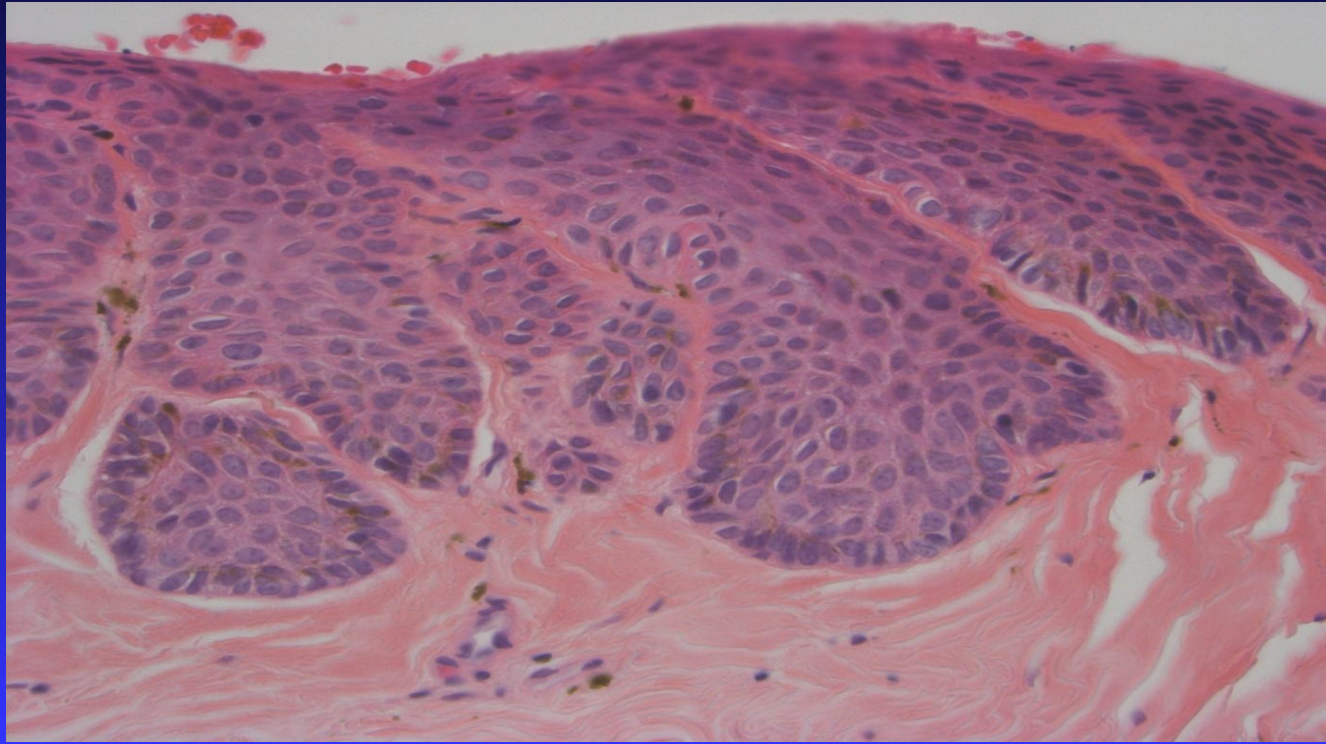
# Nail Matrix



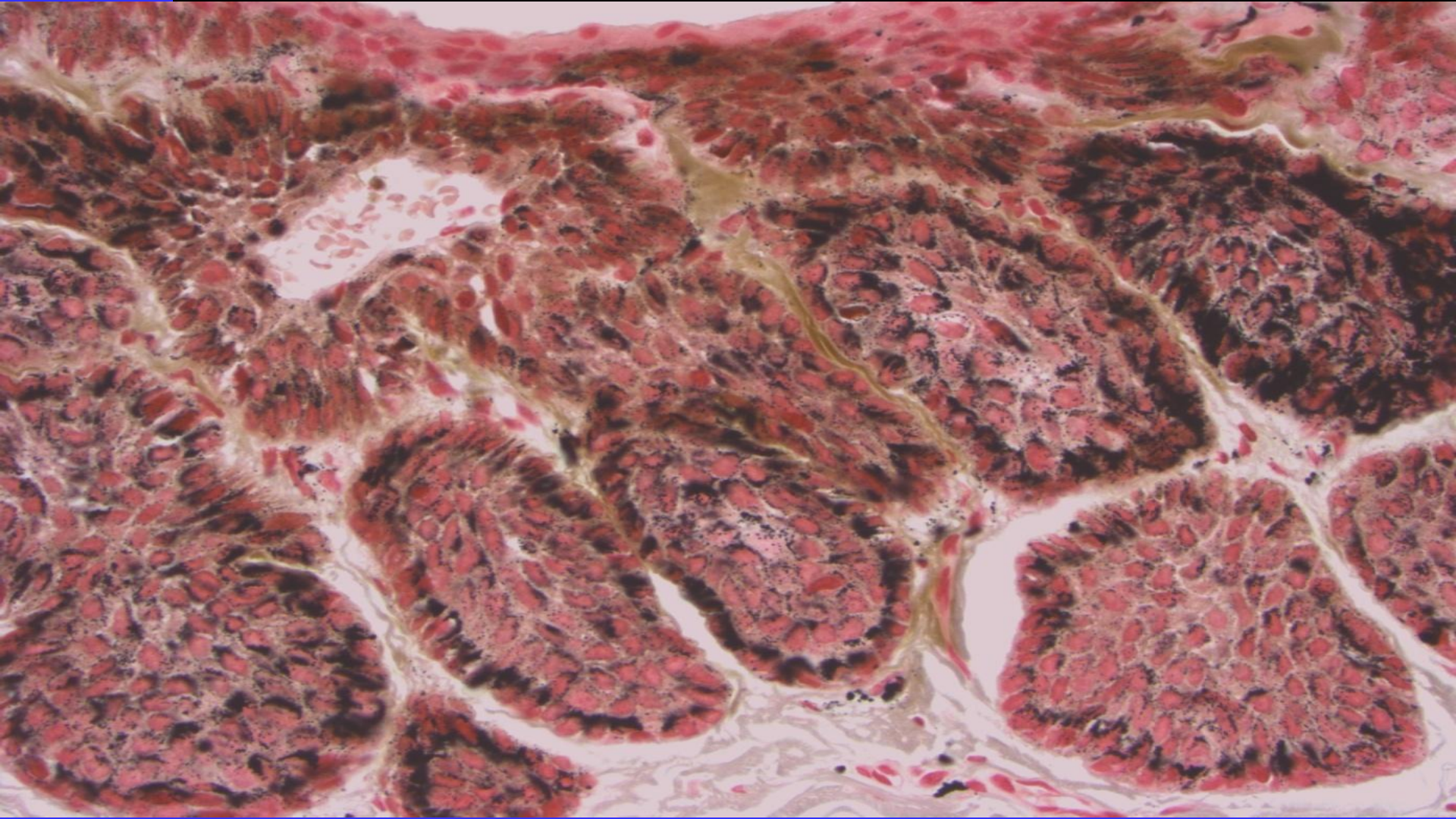


Nail Matrix

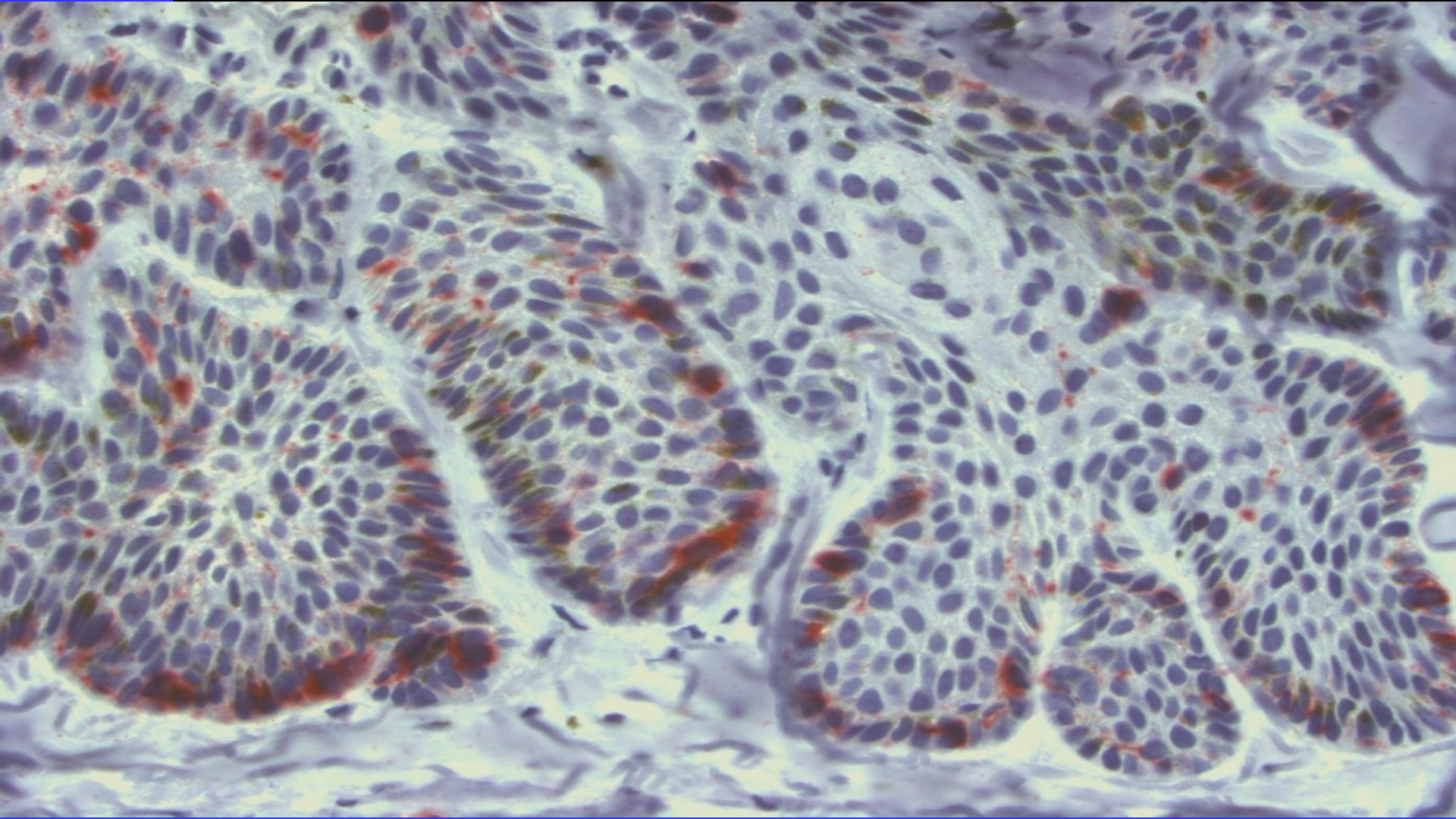
# Onychocytic matricoma with a Hutchinson's sign



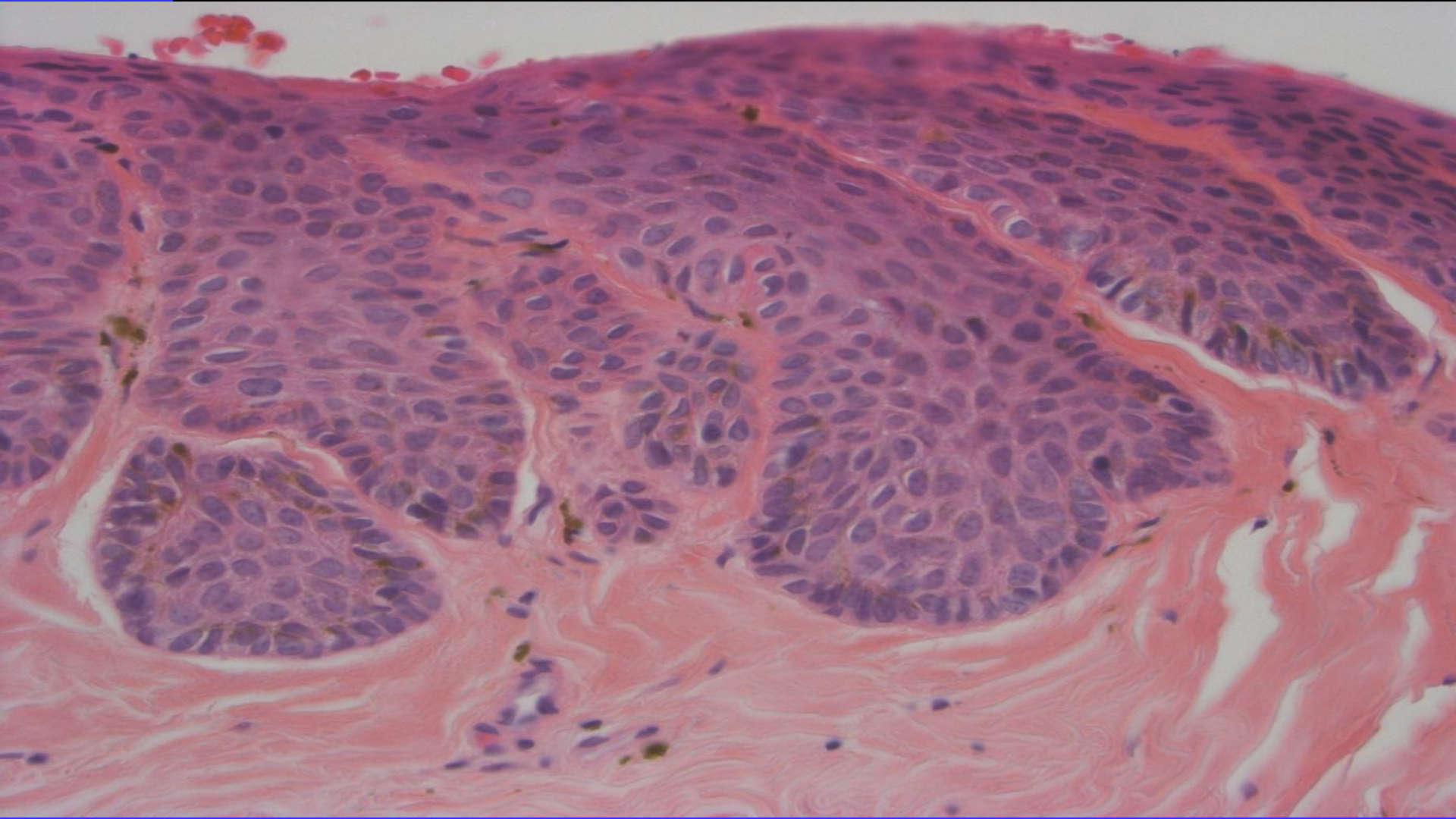














# Onychocytic Matricoma

*Am J Dermatopathol.* 2012 Feb;34(1):54-9. doi: 10.1097/DAD.0b013e31822c3d8b.

## **Onychocytic matricoma presenting as pachymelanonychia longitudinal. A new entity (report of five cases).**

Perrin C<sup>1</sup>, Cannata GE, Bossard C, Grill JM, Ambrossetti D, Michiels JF.

### **Author information**

### **Abstract**

Among the tumors of the epidermal appendages, only rare tumors have been proved as differentiating in the direction of the nail. Beside onychomatricoma, we report a new matrical tumor of the nail: onychocytic matricoma (acanthoma of the nail matrix producing onychocytes). The main differential diagnosis of onychocytic matricoma is seborrheic keratosis. However, if attention is paid to the nature of the different layers of the tumor and the peculiar microanatomy of the nail matrix, the differentiation is not difficult. Onychocytic matricoma is a localized (monodactylous) longitudinal melanonychia which is slightly raised. The term pachymelanonychia is used to define the 2 clinical features of the tumor. Pachyonychia indicate a localized thickening of the nail plate, and melanonychia indicate its longitudinal pigmented band. Onychocytic matricoma is composed of a basal compartment with a varying admixture of prekeratogenous cells and keratogenous cells. Endokeratinization originating in the deep portion of the tumor and nests of prekeratogenous and keratogenous cells in concentric arrangement are a characteristic feature. Three major patterns can be identified as follows: acanthotic, papillomatous, keratogenous type with retarded maturation. Given the peculiar thickening of the nail plate observed both in pigmented onychomatricoma and onychocytic matricoma, the term pachymelanonychia longitudinal could be proposed to specify clinically these 2 lesions, which the clinician sometimes mistakes for melanoma.

# Onychocytic Matricoma

<http://archderm.jamanetwork.com/article.aspx?articleid=197141>

Observation | March 2014

## Onychocytic Matricoma: A New, Important Nail-Unit Tumor Mistaken for a Foreign Body FREE

Karolyn A. Wanat, MD<sup>1</sup>; Erika Reid, MD<sup>1</sup>; Adam I. Rubin, MD<sup>1</sup>

<sup>1</sup>Department of Dermatology at the Hospital of the University of Pennsylvania, Philadelphia

*JAMA Dermatol.* 2014;150(3):335-337. doi:10.1001/jamadermatol.2013.6358.

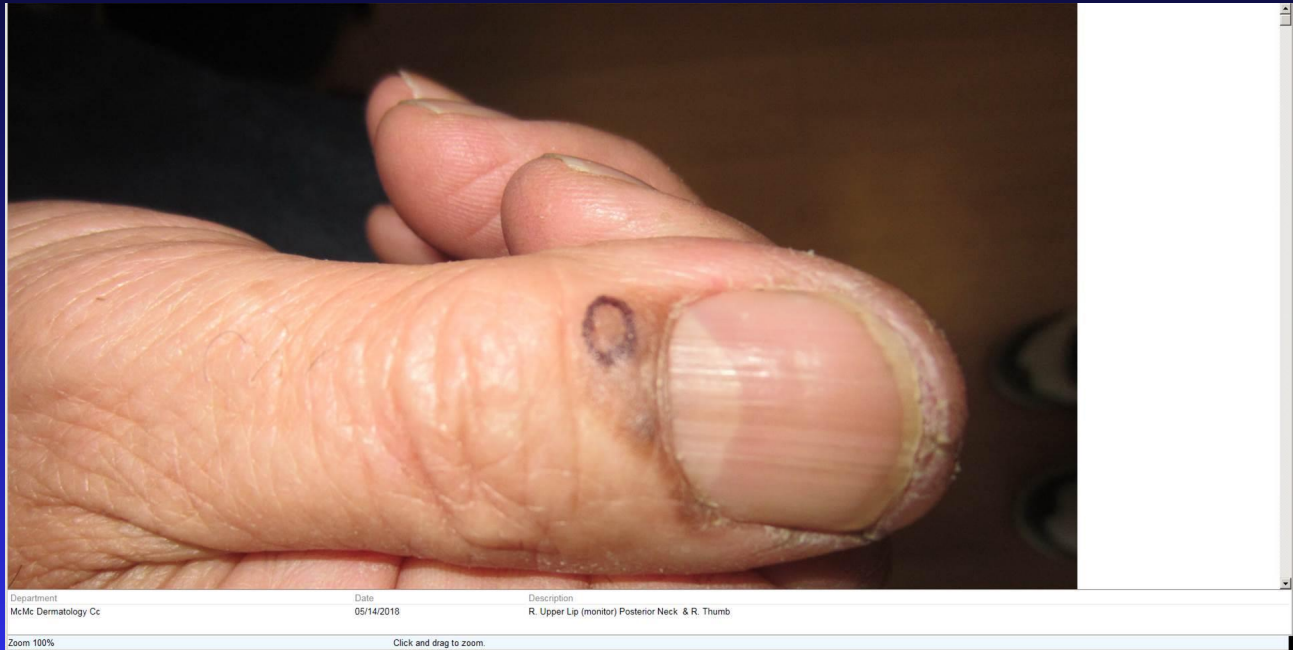
Onychocytic matricoma (OCM) is a benign acanthoma of the nail unit that presents with localized thickening of the nail plate and melanonychia.<sup>1</sup> This newly described entity has suggestive clinical features and distinctive histopathologic changes.

### REPORT OF A CASE

A man in his 40s presented with a history of traumatic injury to the nail unit, after which he noted a dark line under the nail, which he assumed to be a splinter. It persisted for 3 years without any notable change. The patient reported removing portions of it when he would clip the nail back.

Physical examination demonstrated a 2-mm-wide black longitudinal streak extending to the distal lunula with localized nail plate thickening on the right second digit (Figure 1A and B). Dermatoscopic findings were consistent with a foreign body under the nail (Figure 1C and D). Nail clippings of the nail plate were performed to sample the distal portion of the lesion and demonstrated parakeratosis associated with pigmentation.

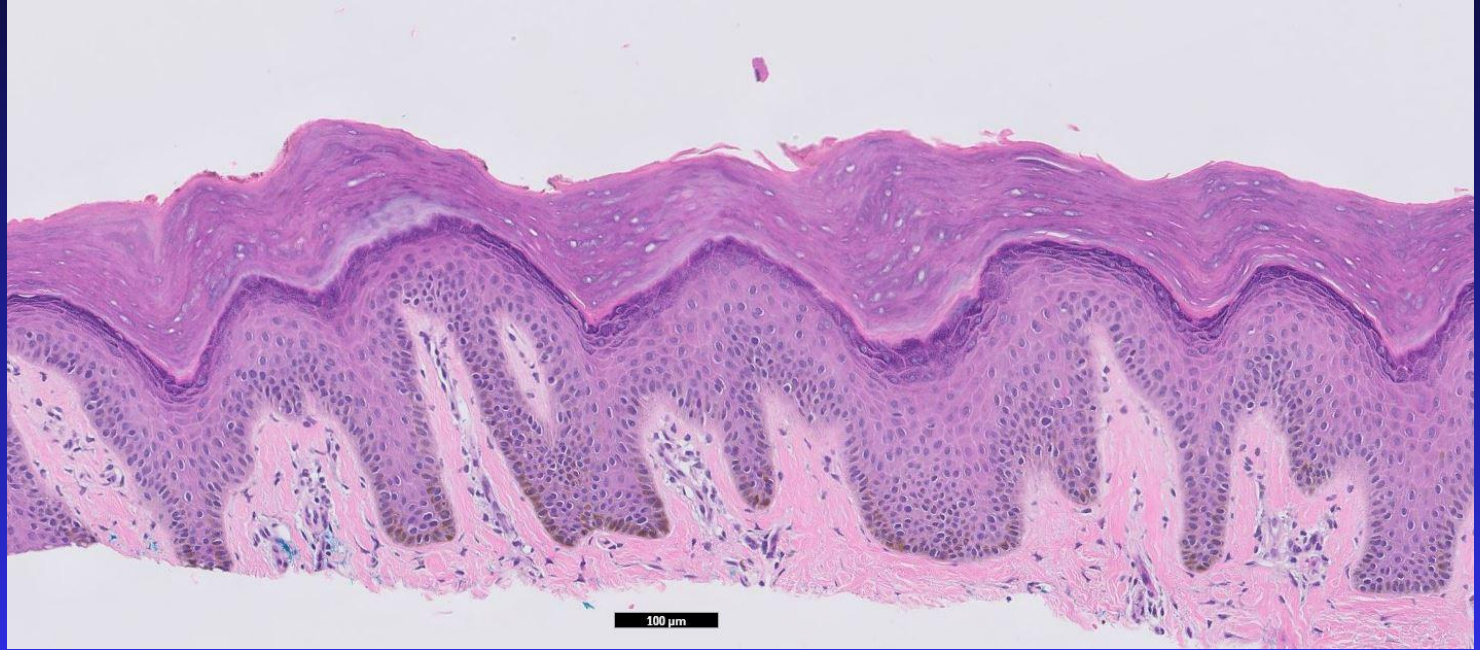
# Insert follow up of case with mis

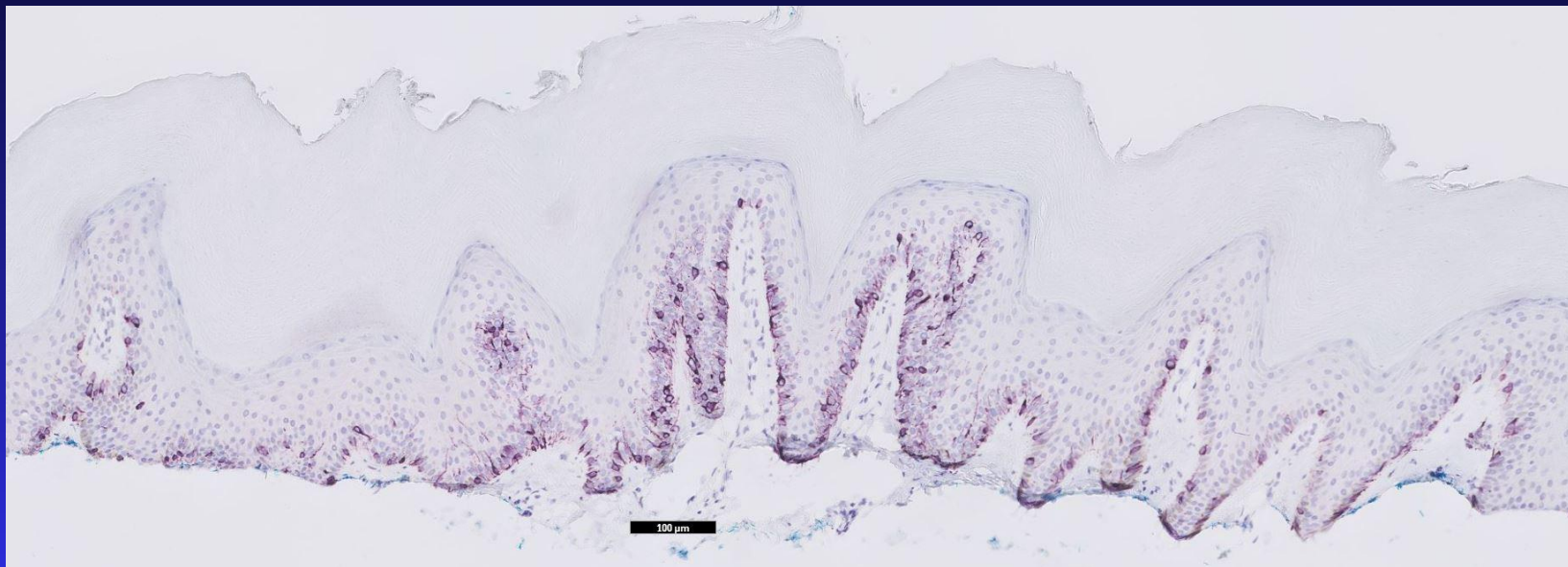


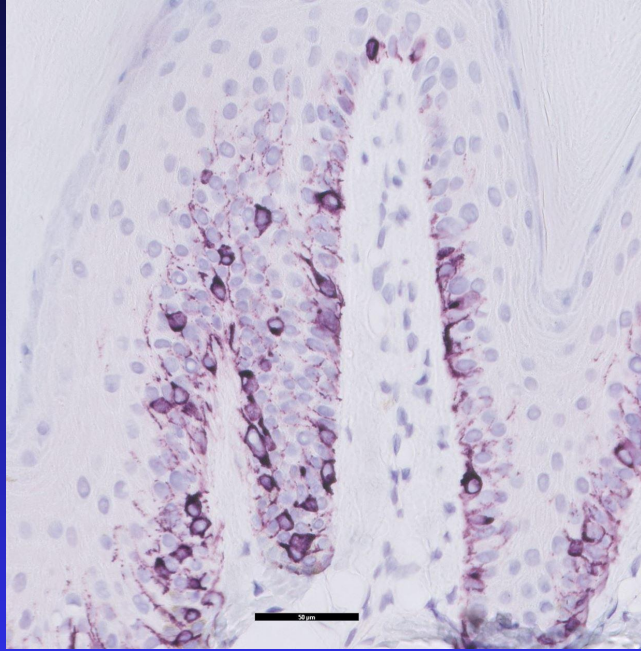
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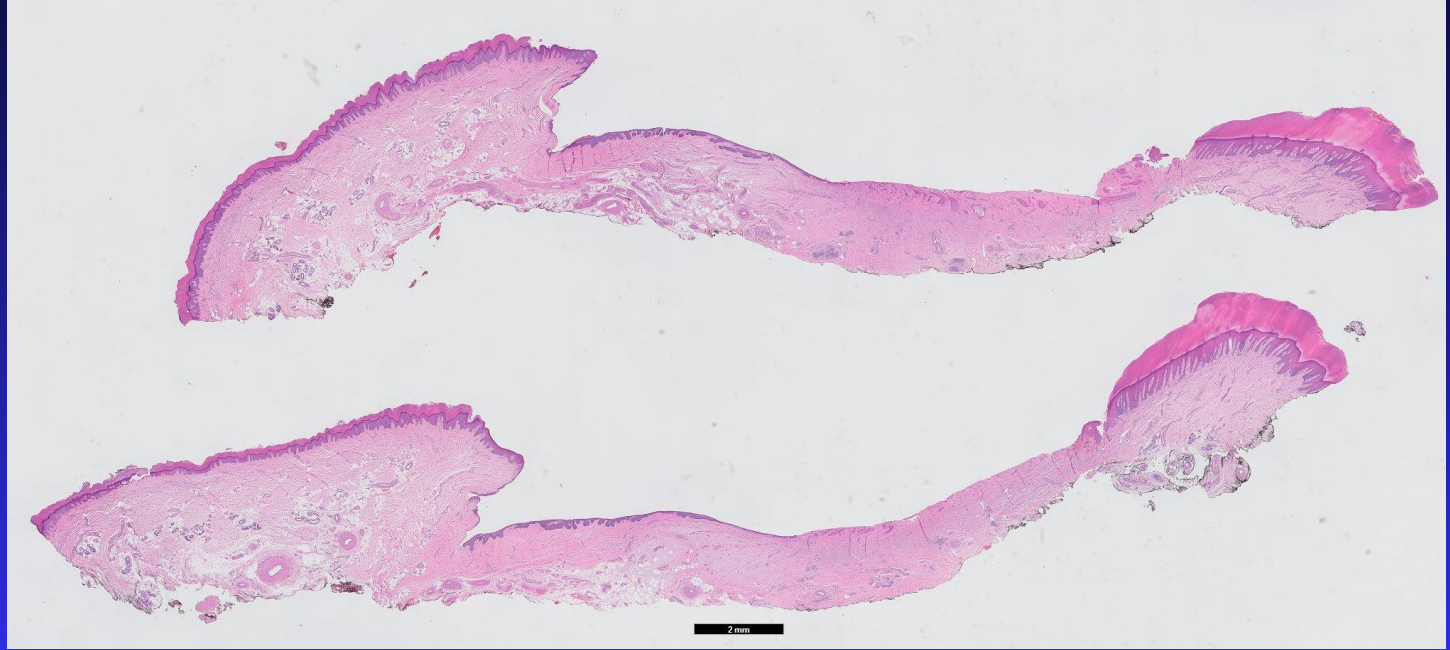












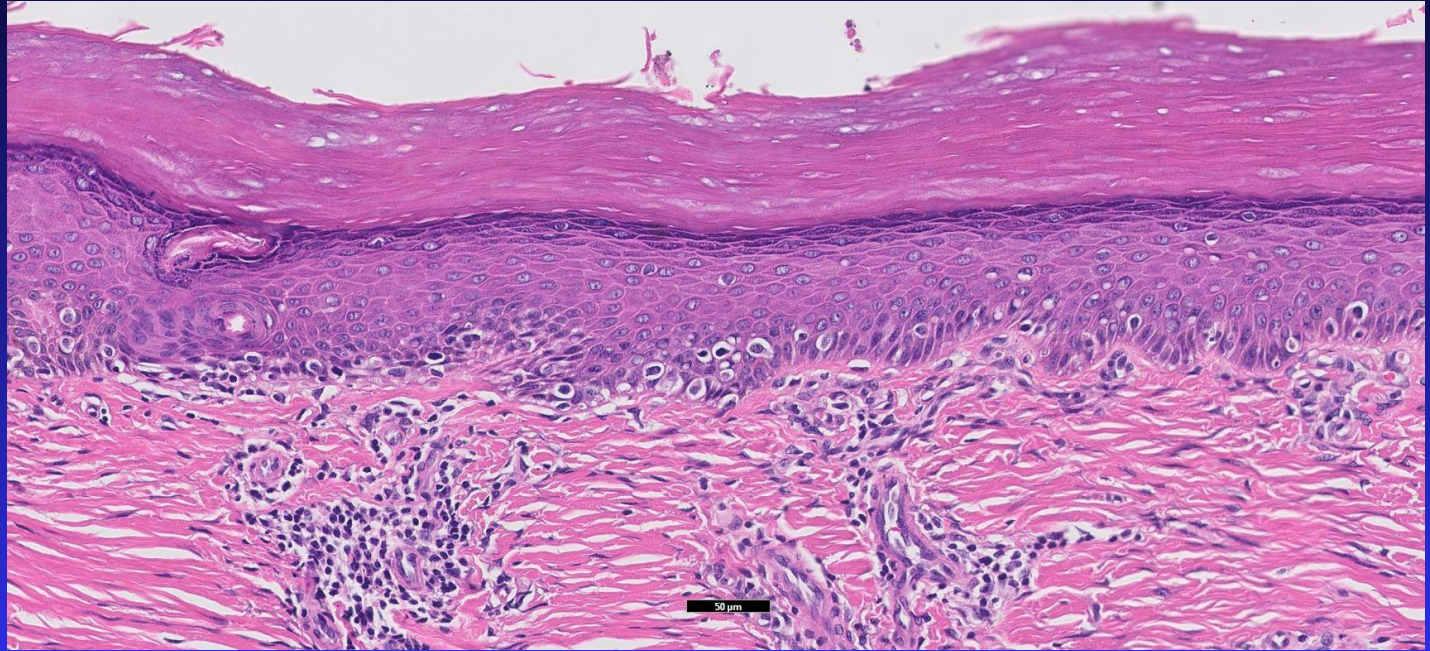


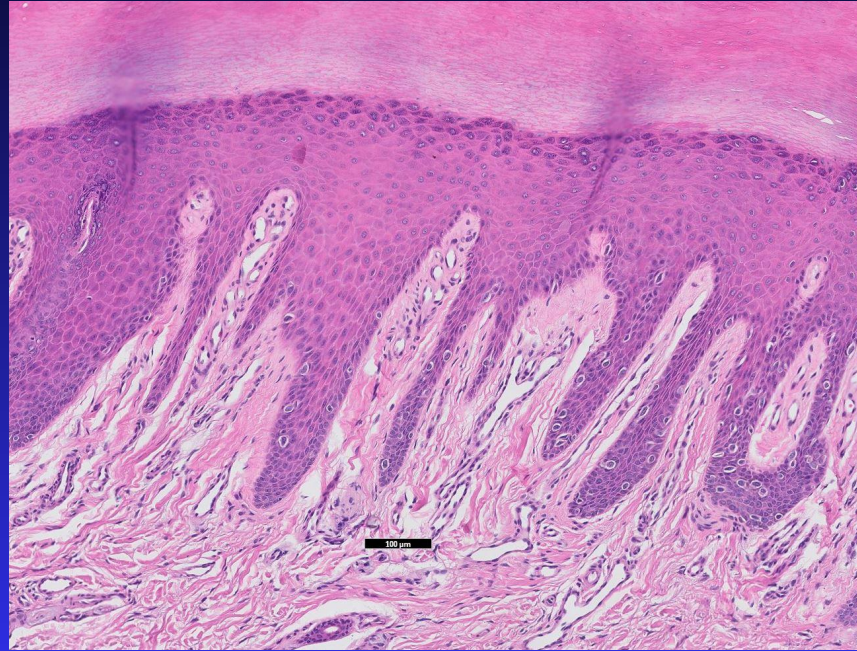


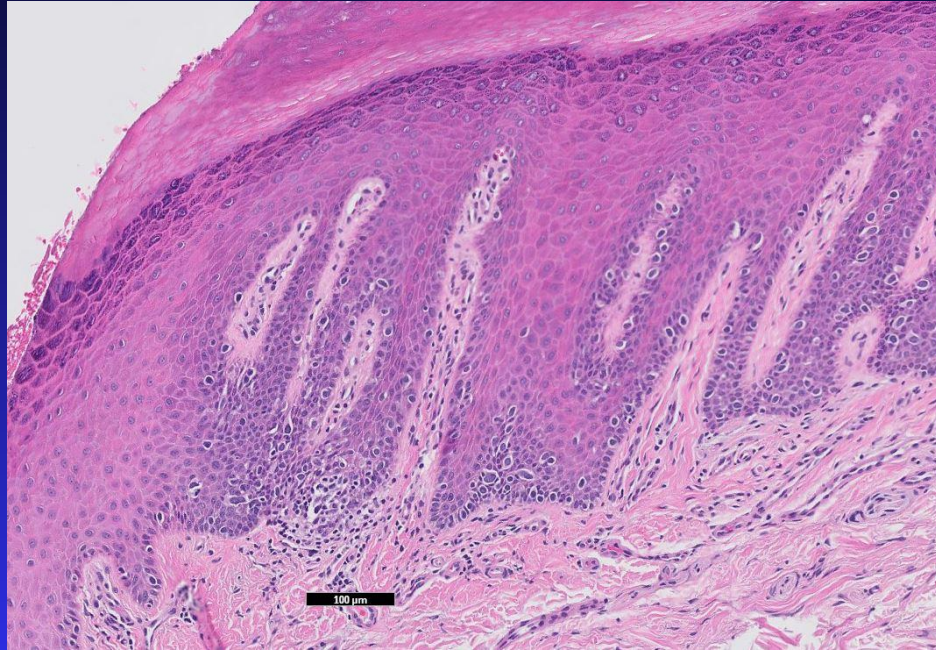
















# Summary MIS and OM

# Onychocytic matricoma vs Nail unit seborrheic keratosis

- Semantic difference
- Seborrheic keratosis is very common
- More important is to make sure this is not subtle, pigmented squamous cell carcinoma
- Onychocytic matricoma is a difficult name

# Acknowledgements

- Phoebe Rich, Antonella Tosti and Martin Zaiac
- Josette André and Bertrand Richert—Brussels
- Alex Chu—Medical Student

# Thanks!

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