Teaching cases:
Nail and Fingertips pathology

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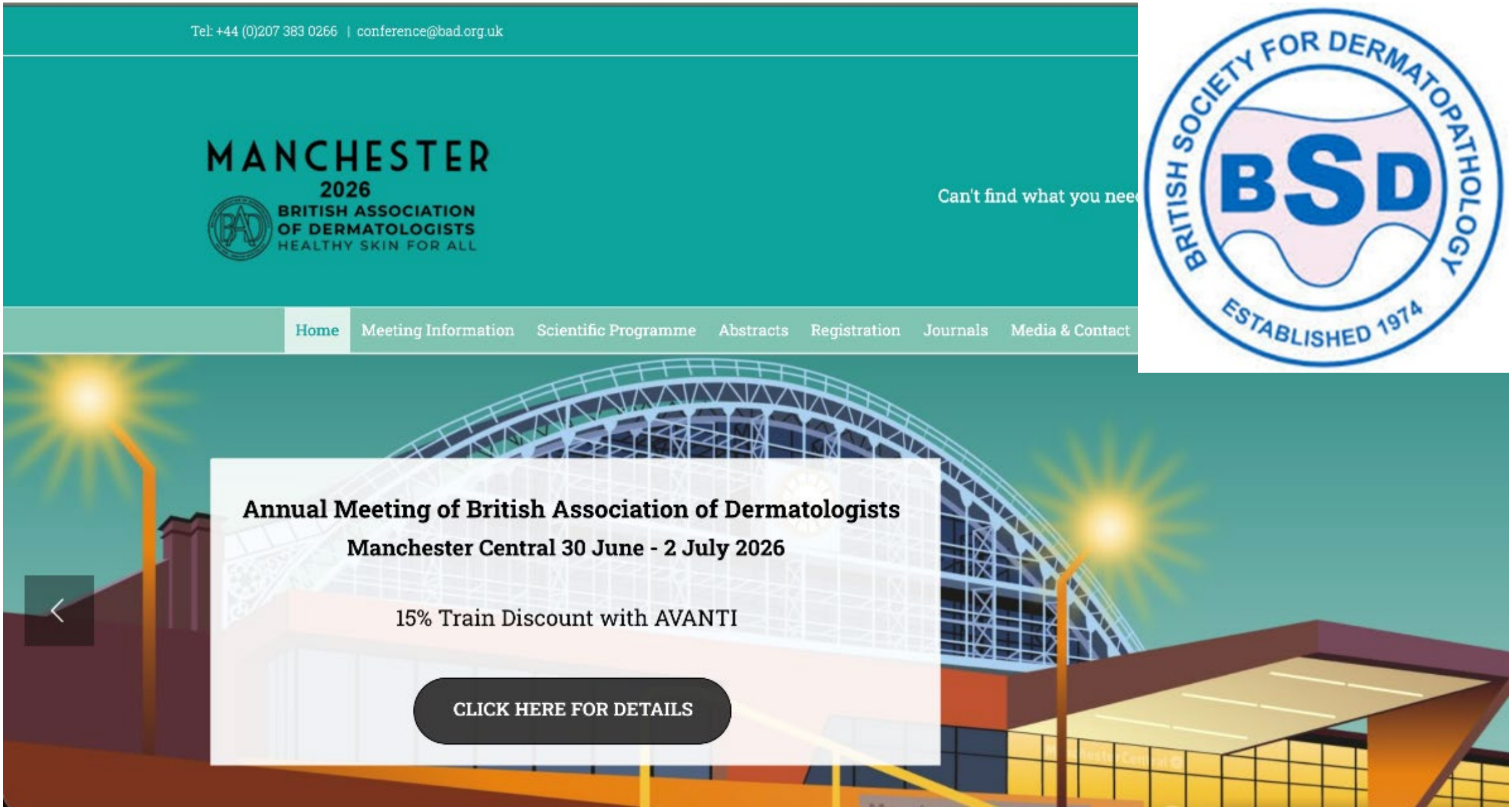

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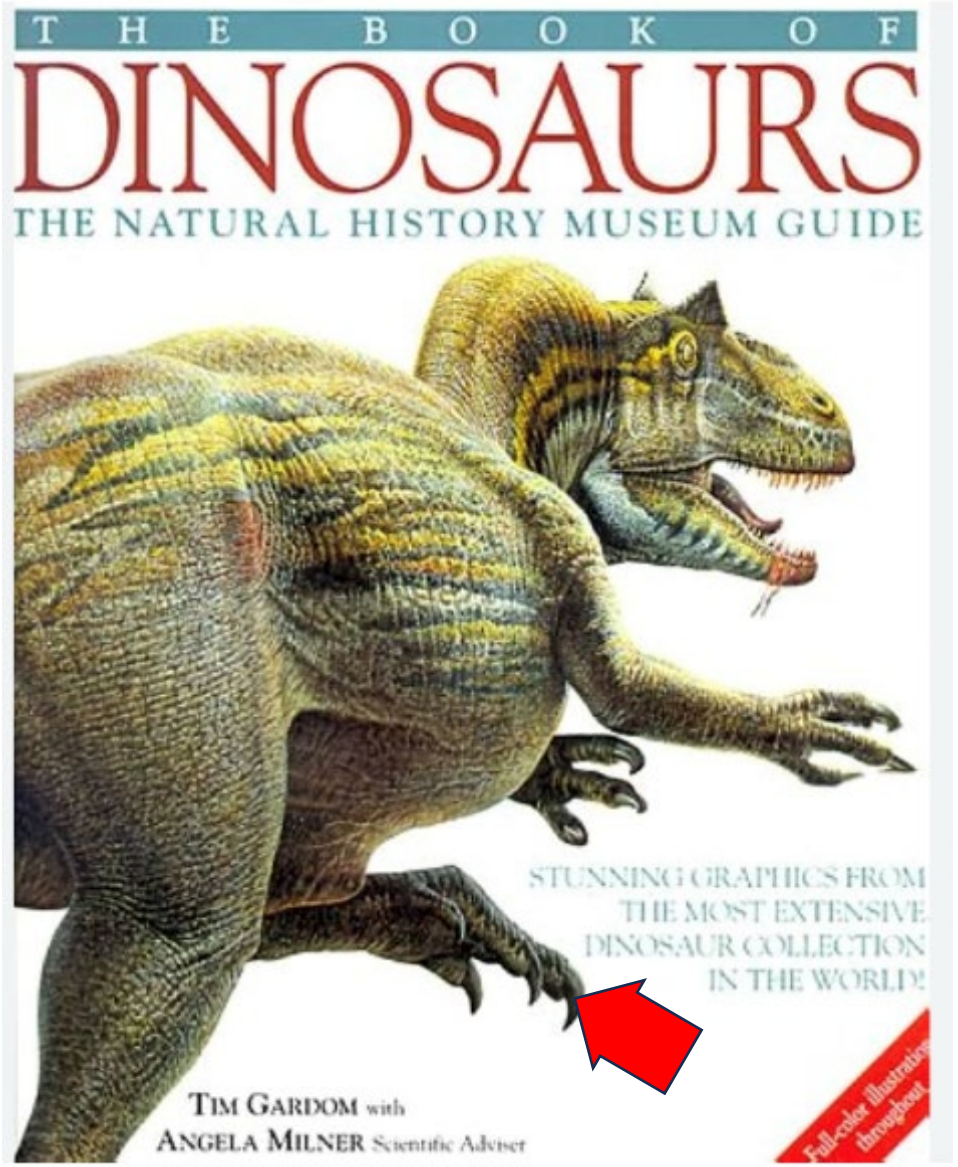
Neil Smith lecture

Maite Fernandez Figueras

Tyrannosaurus Rex
Natural History Museum, London, UK



NORMAL NAIL UNIT FUNCTIONAL LANDMARKS

ANATOMY

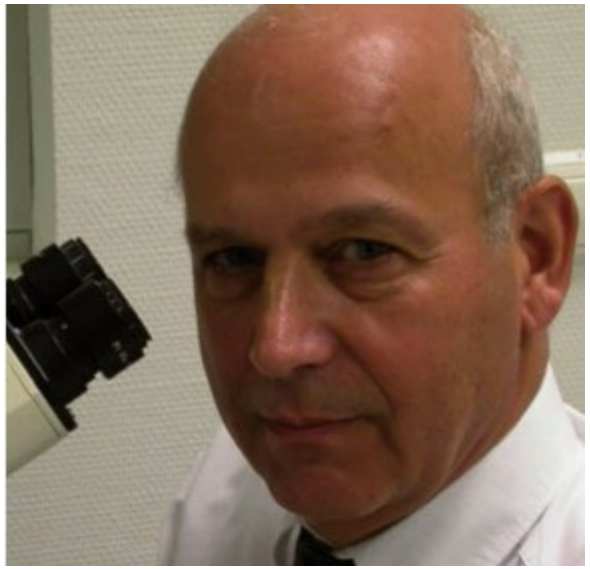
Key features

- Nail matrix → nail plate production
  - proximal matrix → dorsal nail plate
  - distal matrix (lunula) → ventral nail plate
- Proximal nail fold → nail matrix protection
- Nail bed and hyponychium → nail plate adhesion and distal detachment
- Nail growth rate: fingernails: 3 mm/month; toenails: 1 mm/month

Tosti et al
Jean
Bolognia
textbook

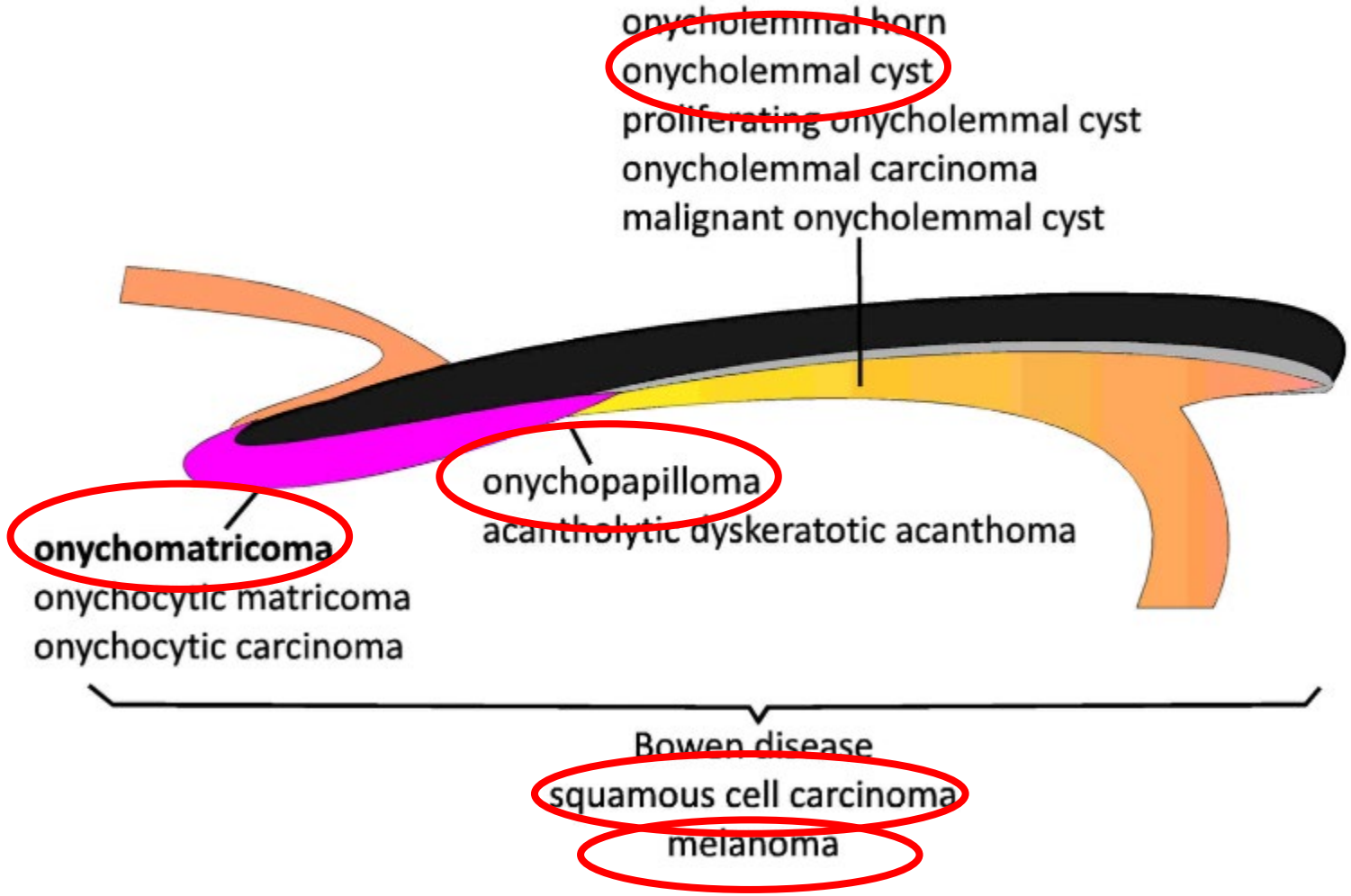
Nail Unit
&
Peri-ungual pathology

CLUB UNNA DARIER, PARIS 2023

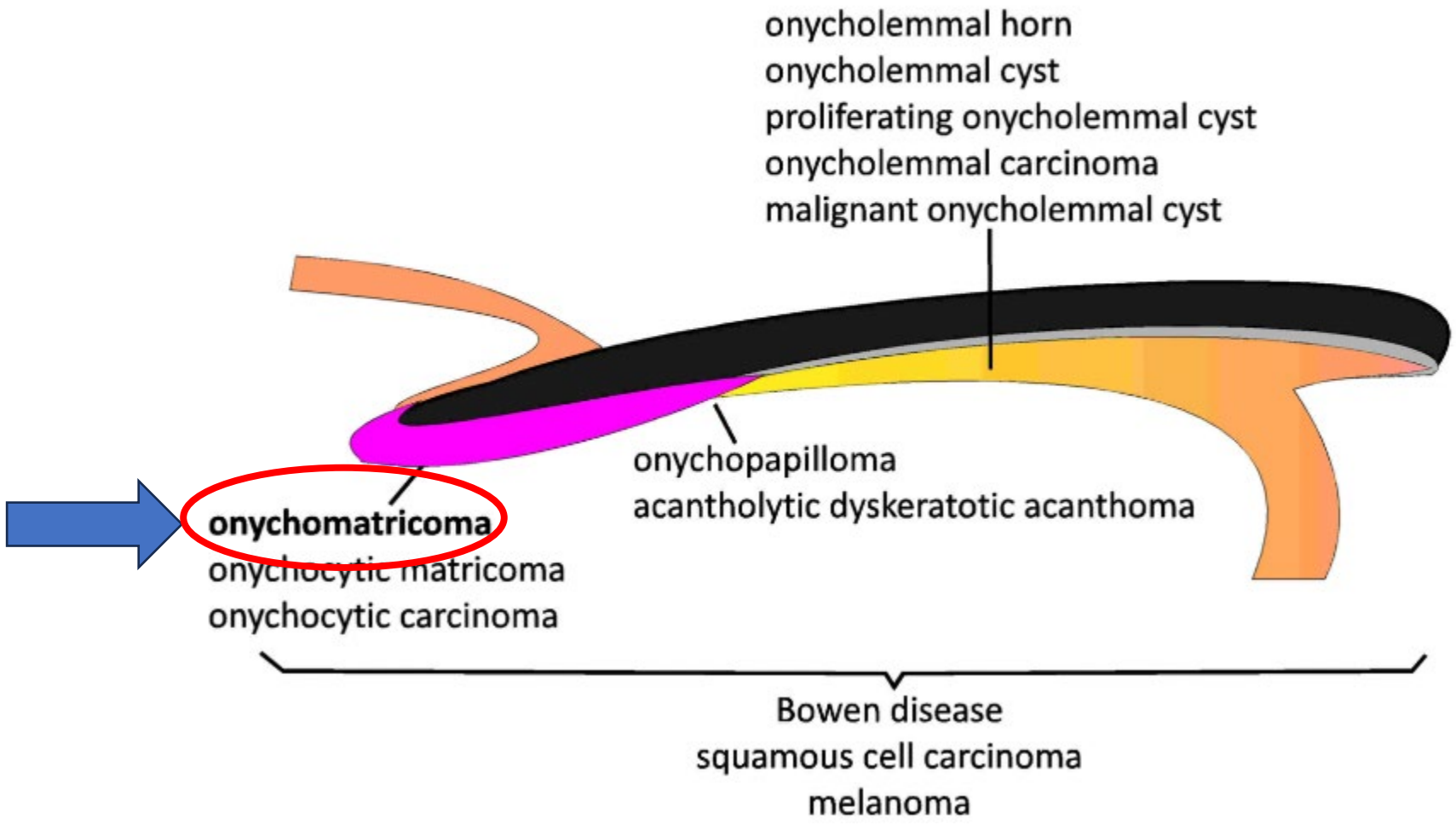


Prof. Eckart Haneke

Nail tumour origin



Nail tumour origin



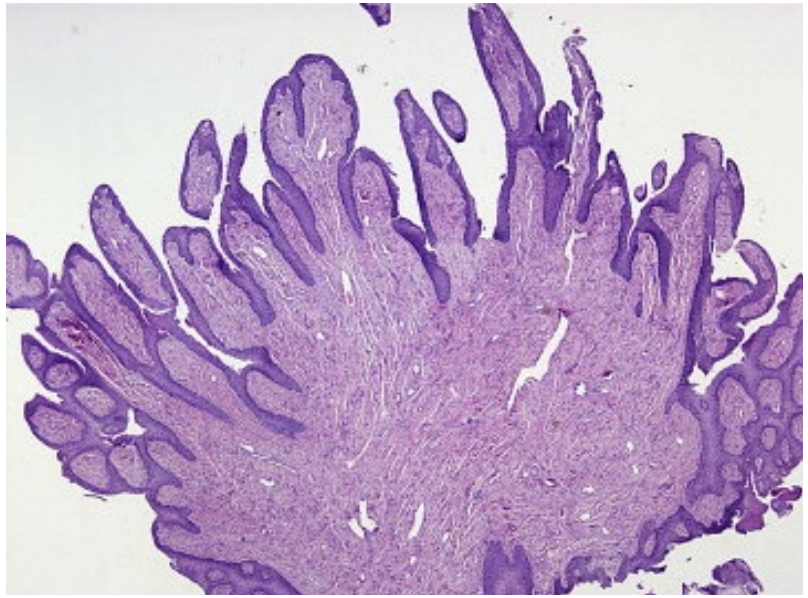
Onychomatricoma

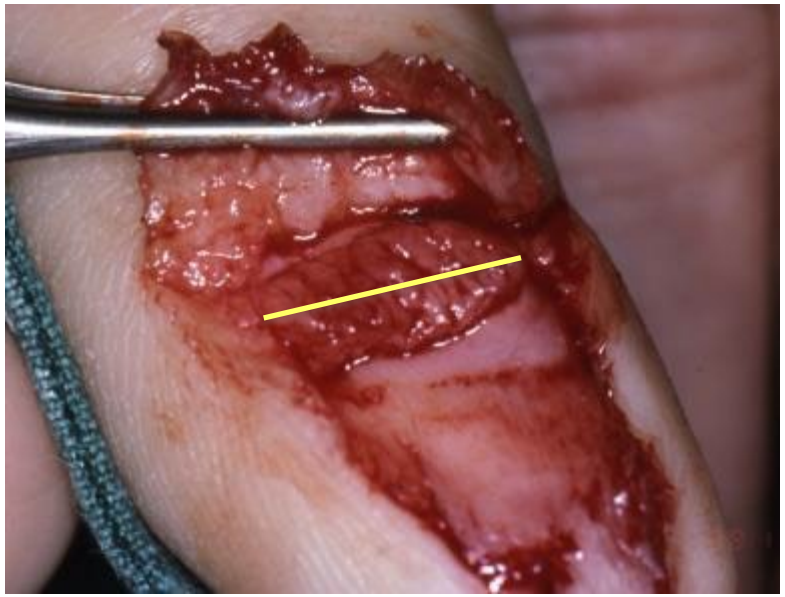
- Benign fibro-epithelial neoplasm of the nail matrix
- First described by Baran and Kint 1992
- Middle-aged Caucasians: fingers>toes
- Funnel-shaped, yellow-streaky, thickened nail, transverse curvature and splinter hemorrhages
- Pathology: papillomatous matrix epithelium with cell-rich stroma (CD10, CD34+); filiform (‘glove-finger’ digitations)
- Transverse sections of the nail: empty holes (tunnels) lined by matrix epithelium

Onychomatricoma

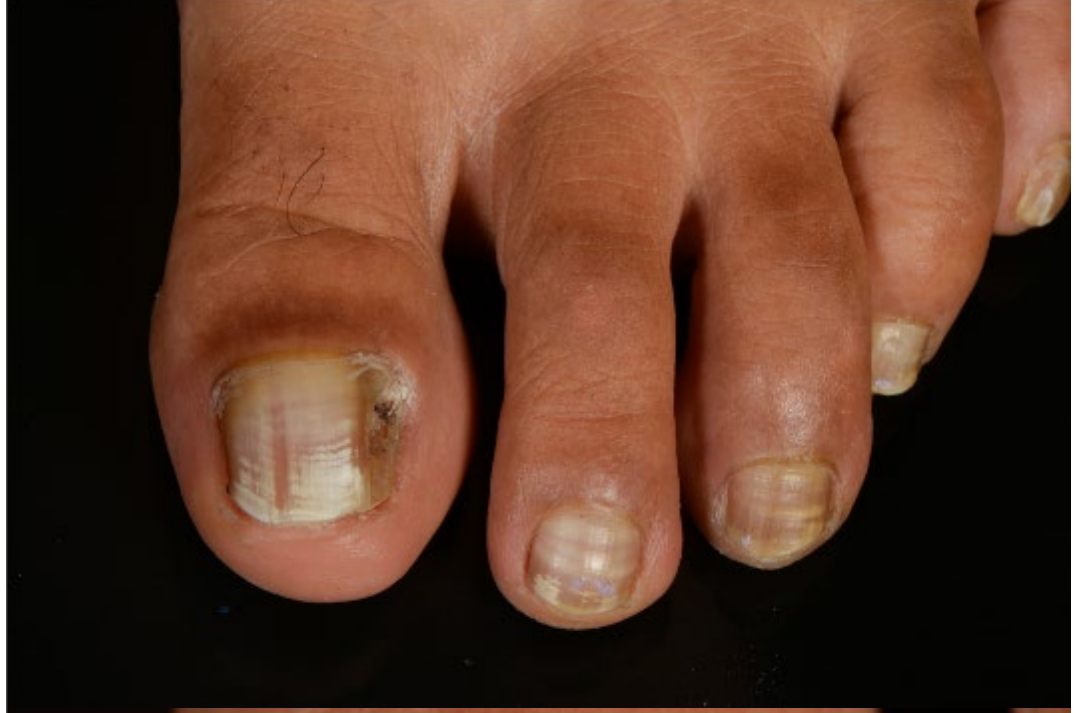
Histology

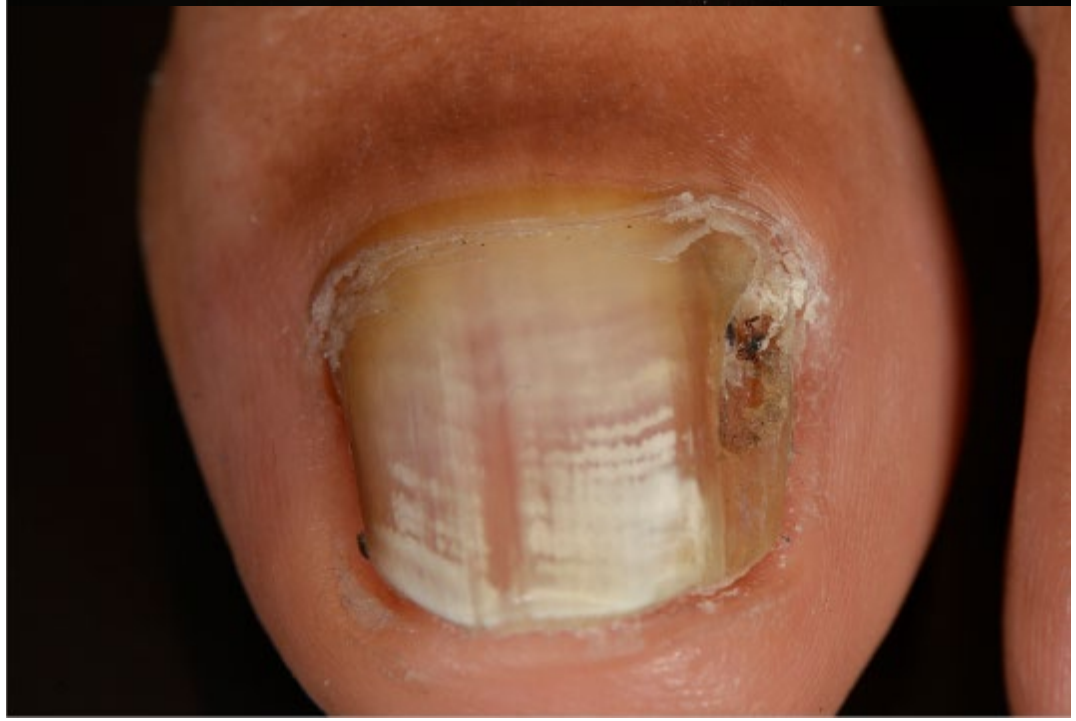
- Dermal tumour
- Fibrillar stroma
- Multiple ‘glove finger’ digitations lined with matrix epithelium: transverse section





Images courtesy of Bertrand Richert, Brussels



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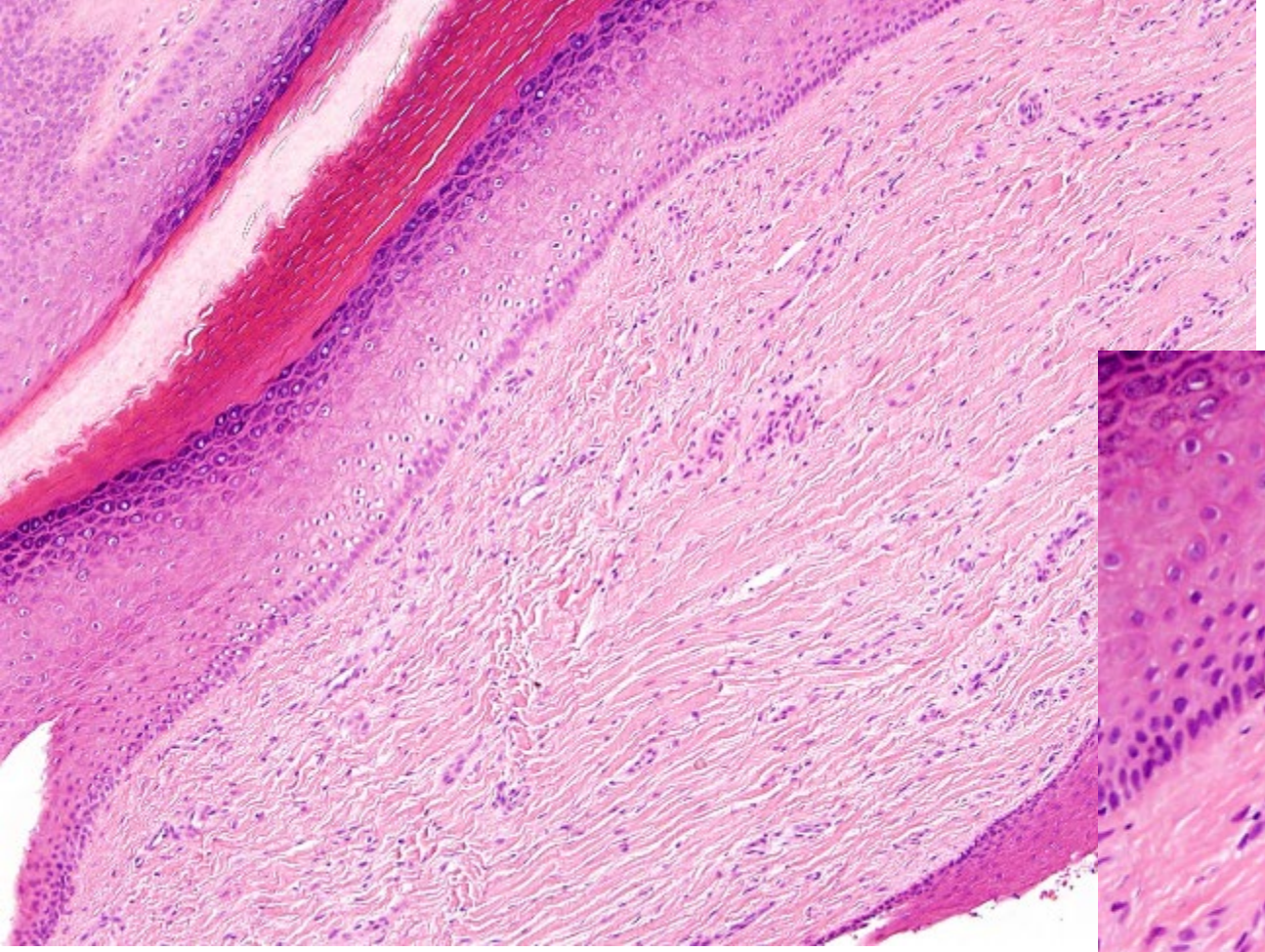
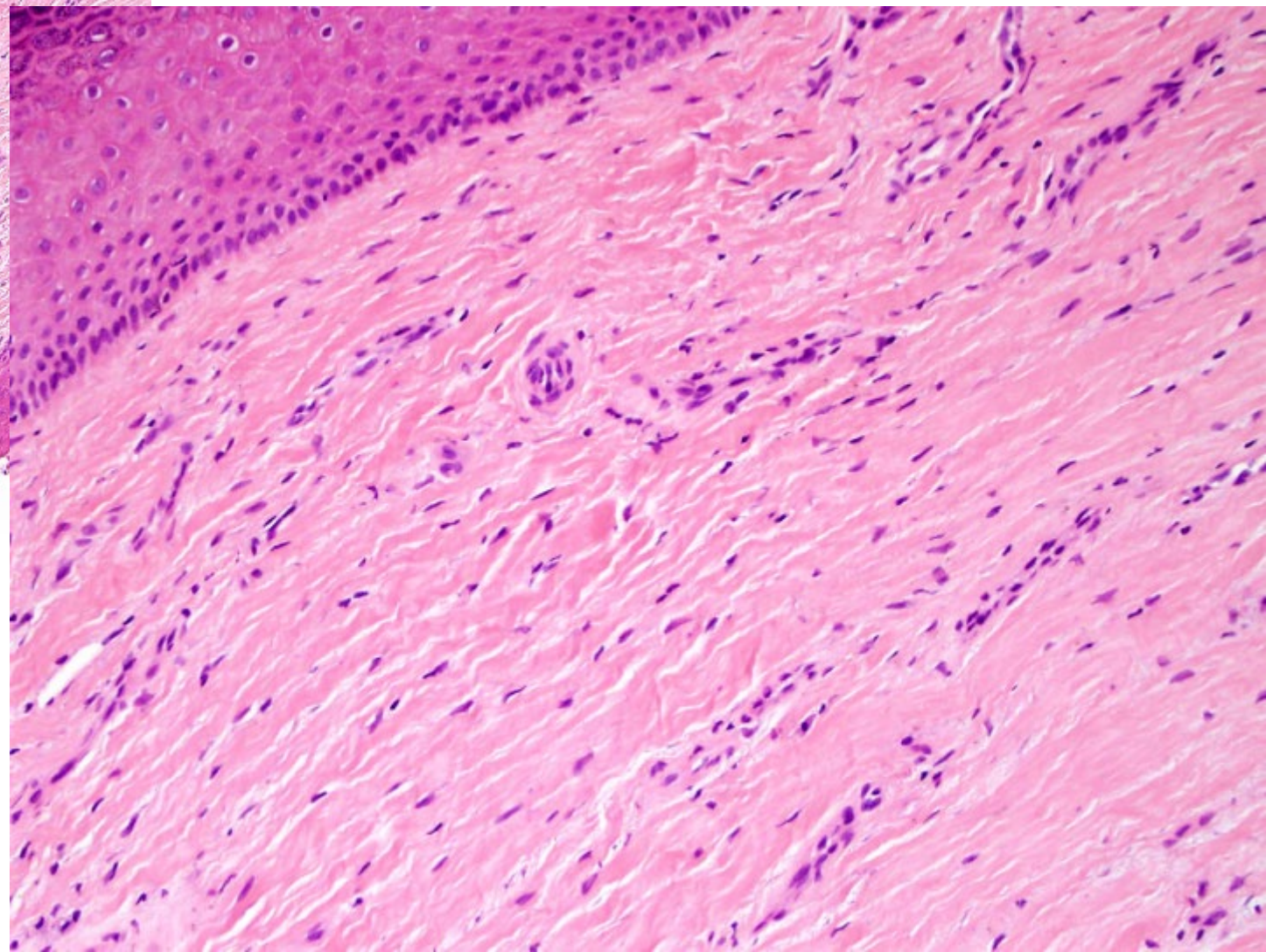
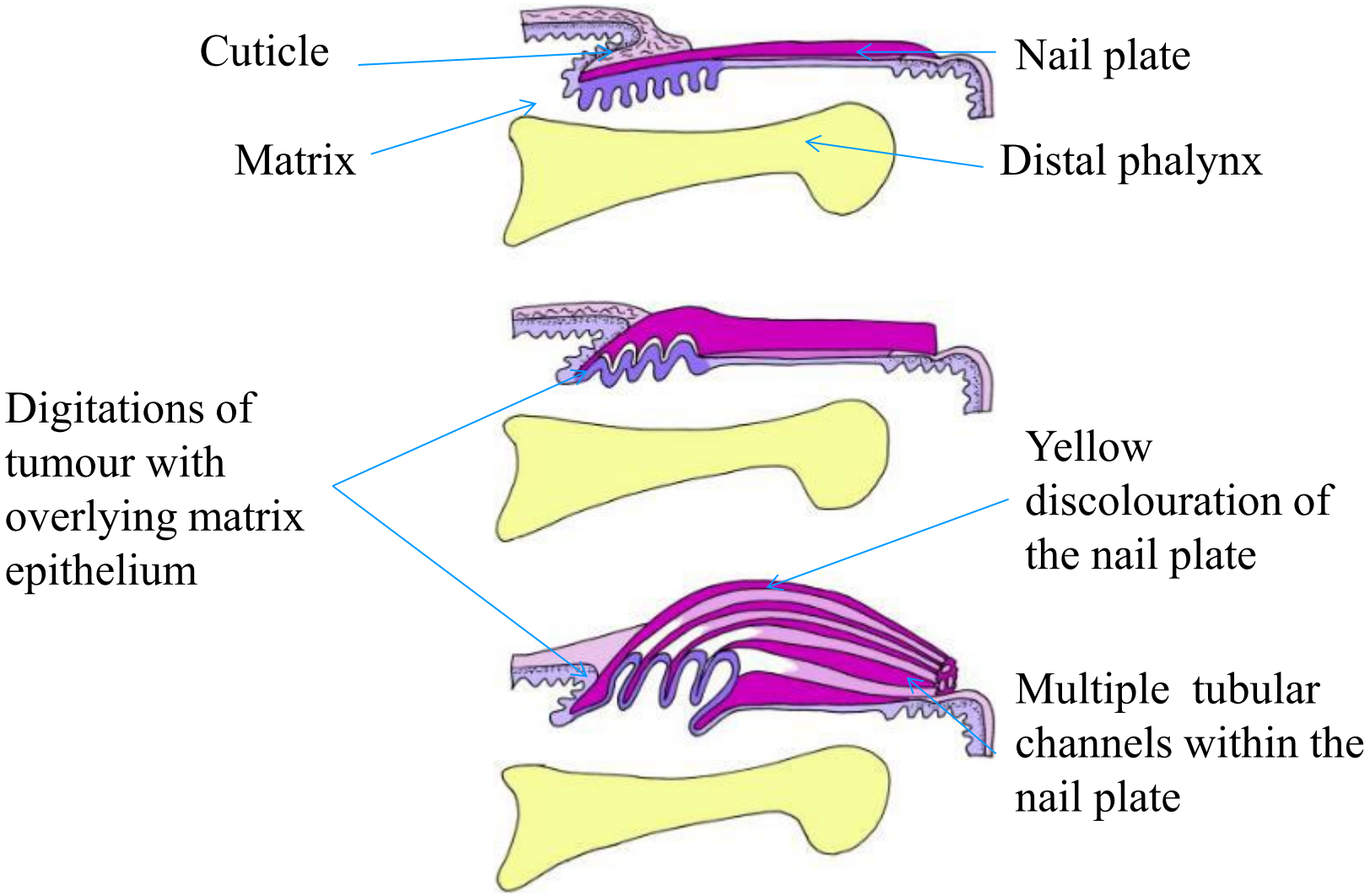
Glove finger digitations

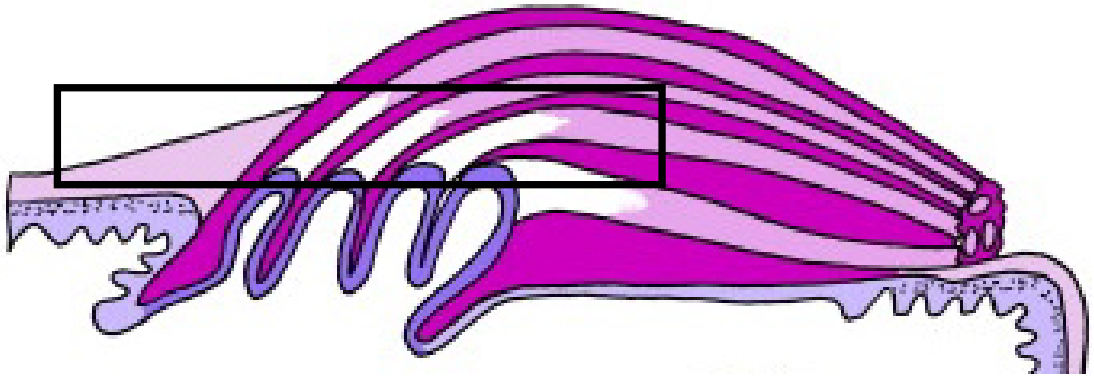


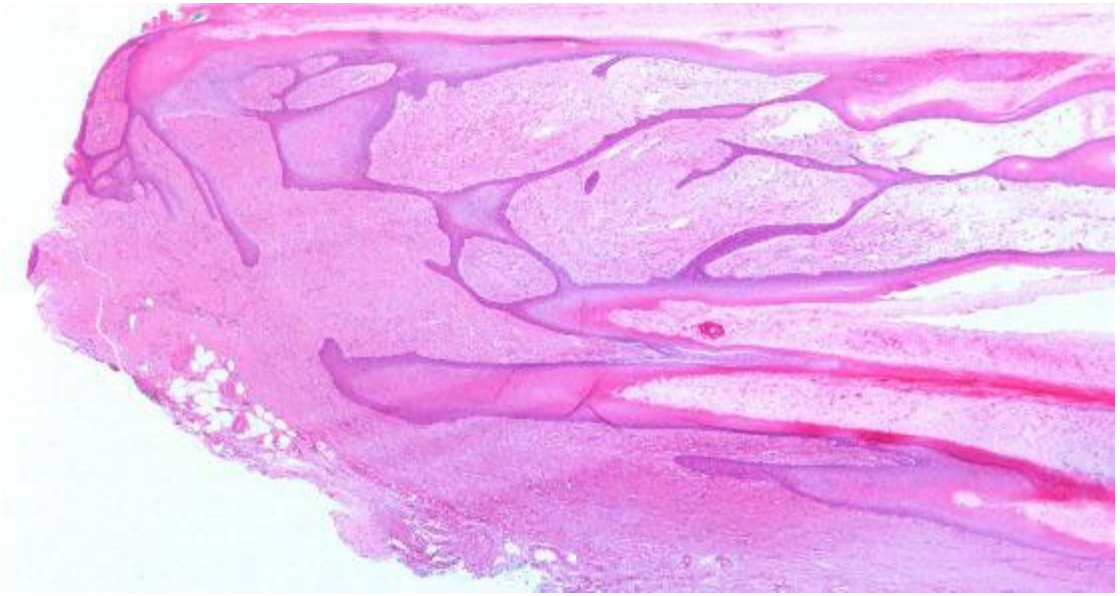


Onychomatricoma



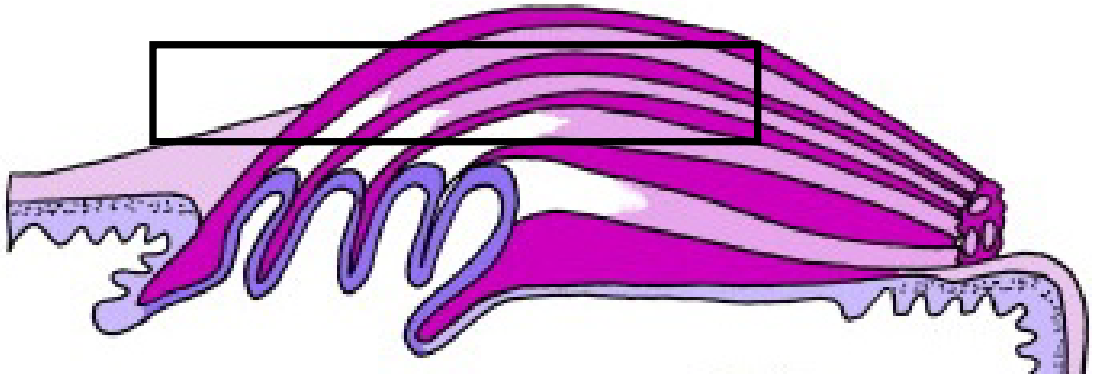
Courtesy Drs P Craig, C Wlodek, D De Berker

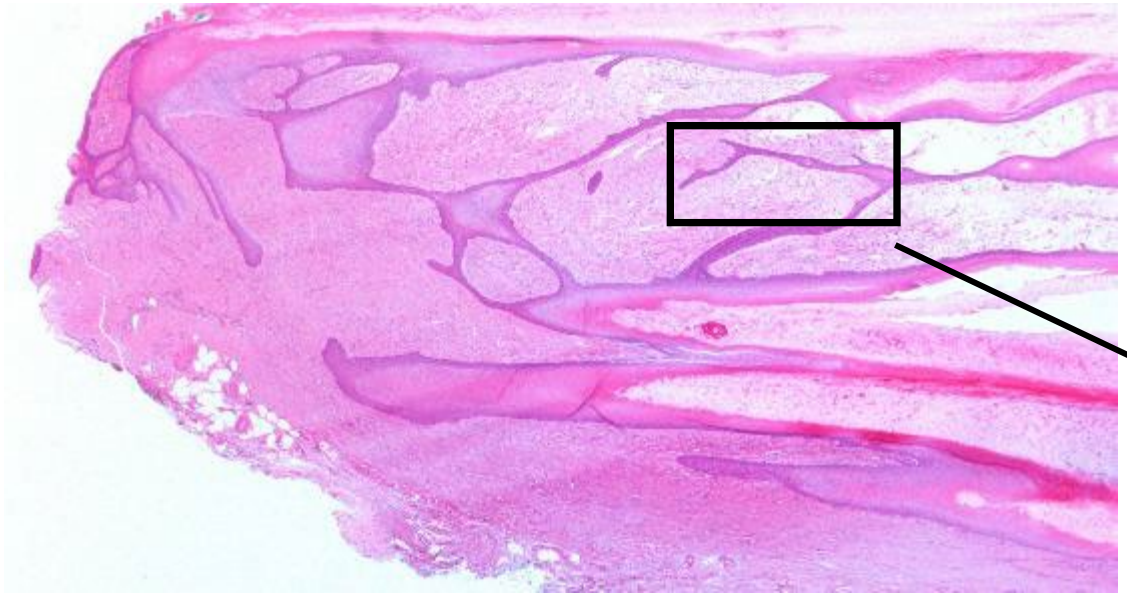




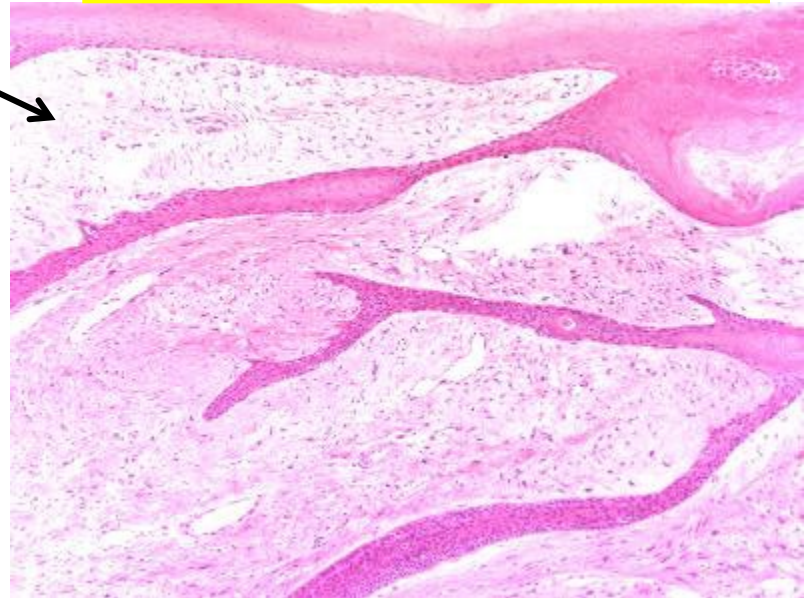
Longitudinal section proximally:
Multiple ‘glove finger’ digitations lined with matrix epithelium

Courtesy Drs P Craig, C Wlodek, D De Berker





Longitudinal section
Proximally:
Multiple ‘glove finger’ digitations lined with matrix epithelium, with fibrillar stroma



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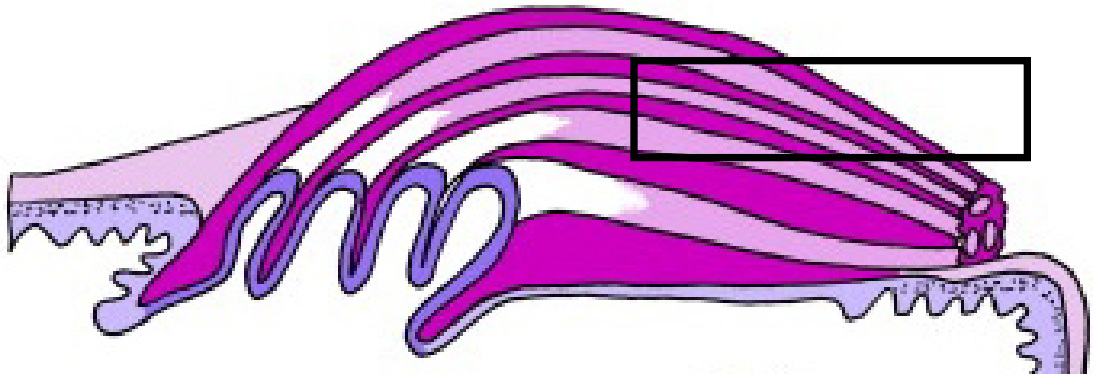
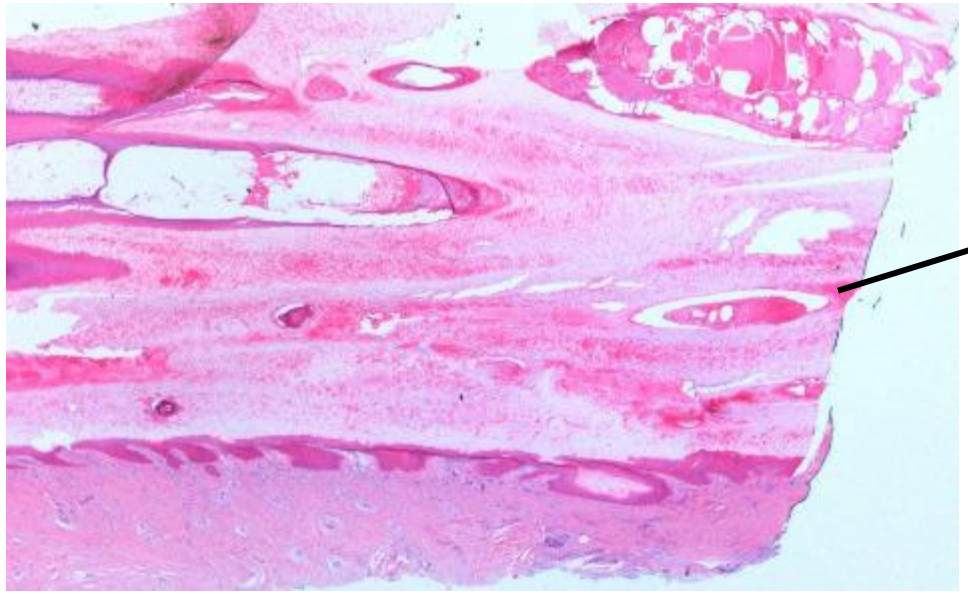
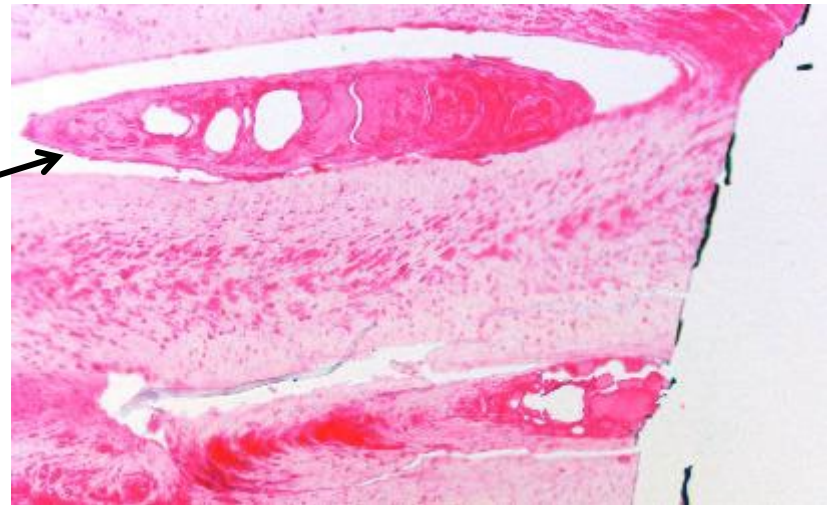


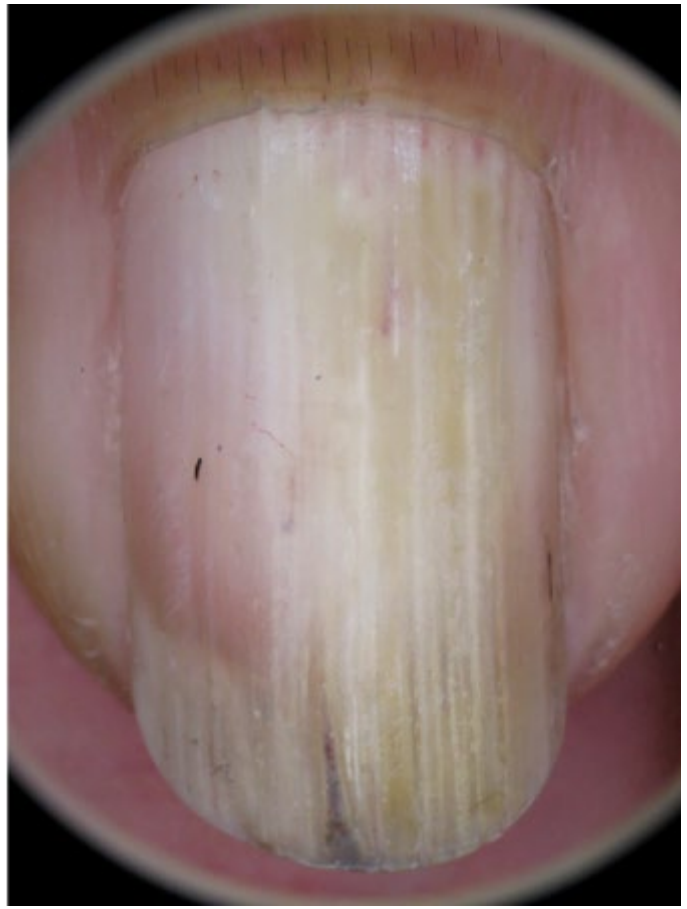
Longitudinal section distally:
cavitations filled with serous material

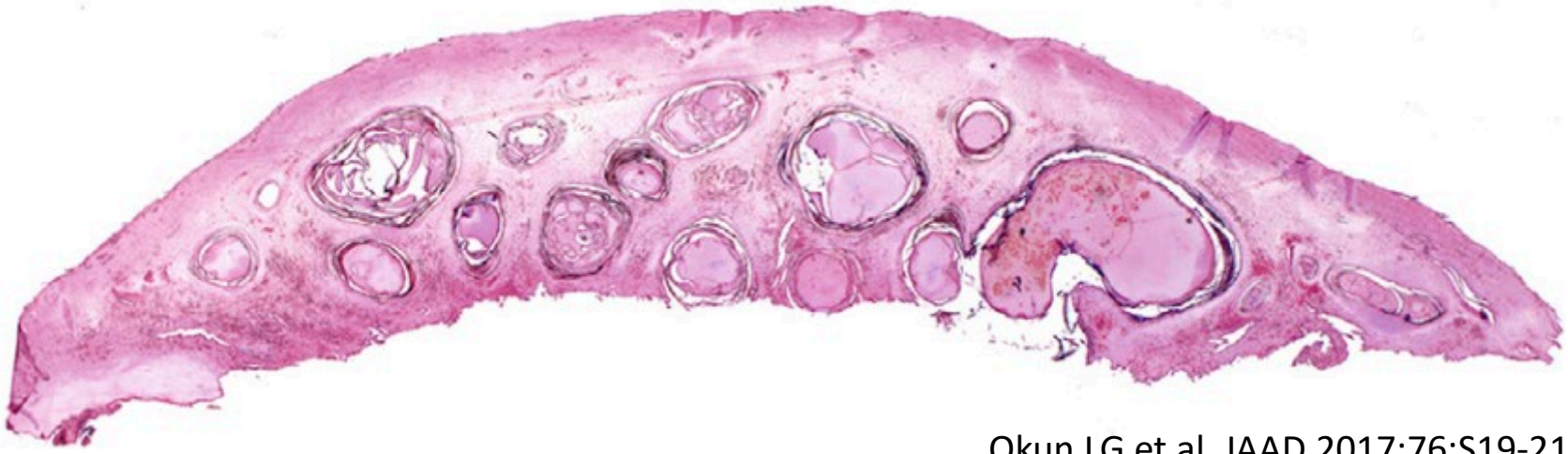




Courtesy Drs P Craig, C Wlodek, D De Berker

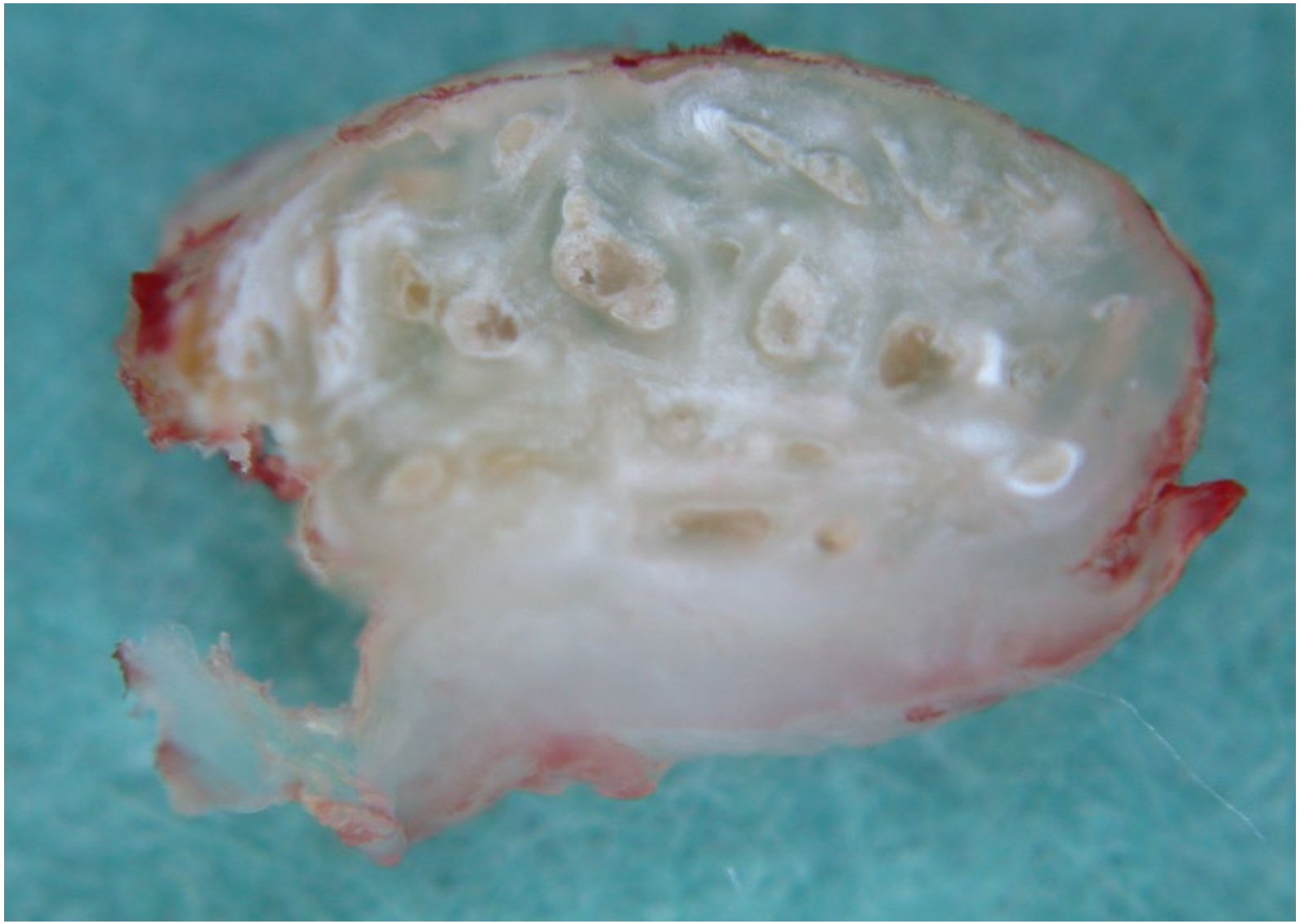
FREE EDGE DERMOSCOPY AND NAIL CLIPPING HISTOPATHOLOGY





Okun LG et al. JAAD 2017;76:S19-21

Nail surgery



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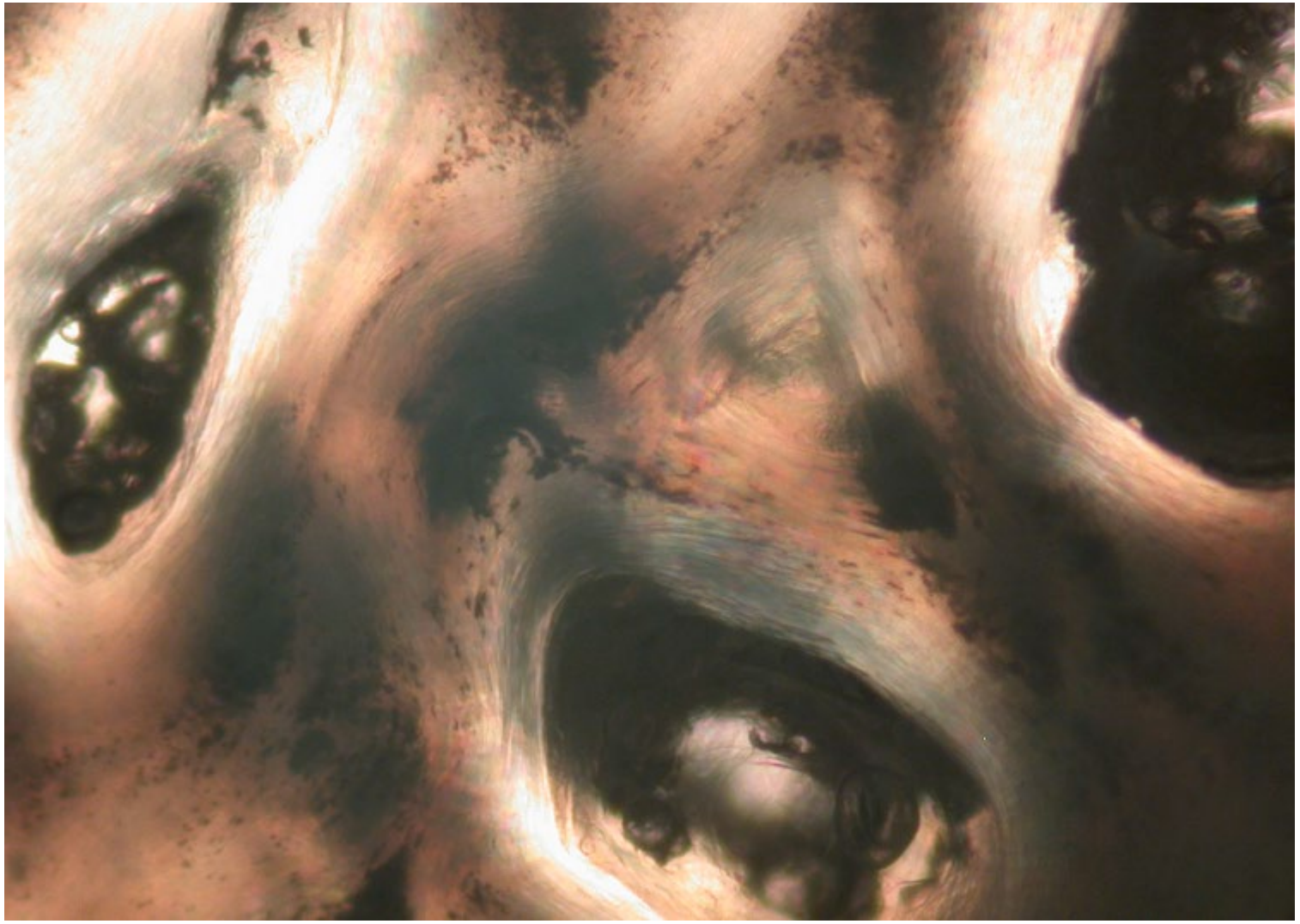
Cross polarised light microscopy



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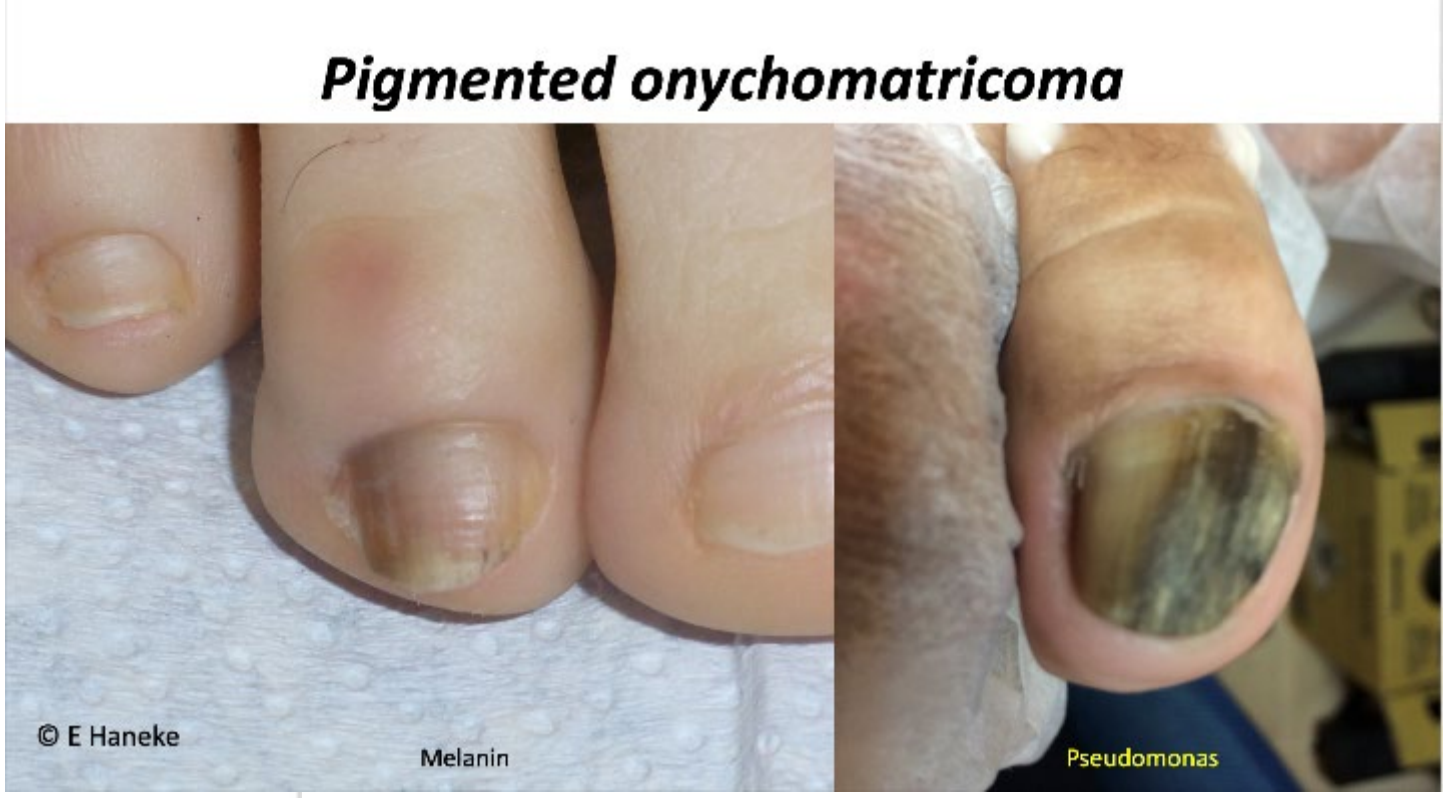
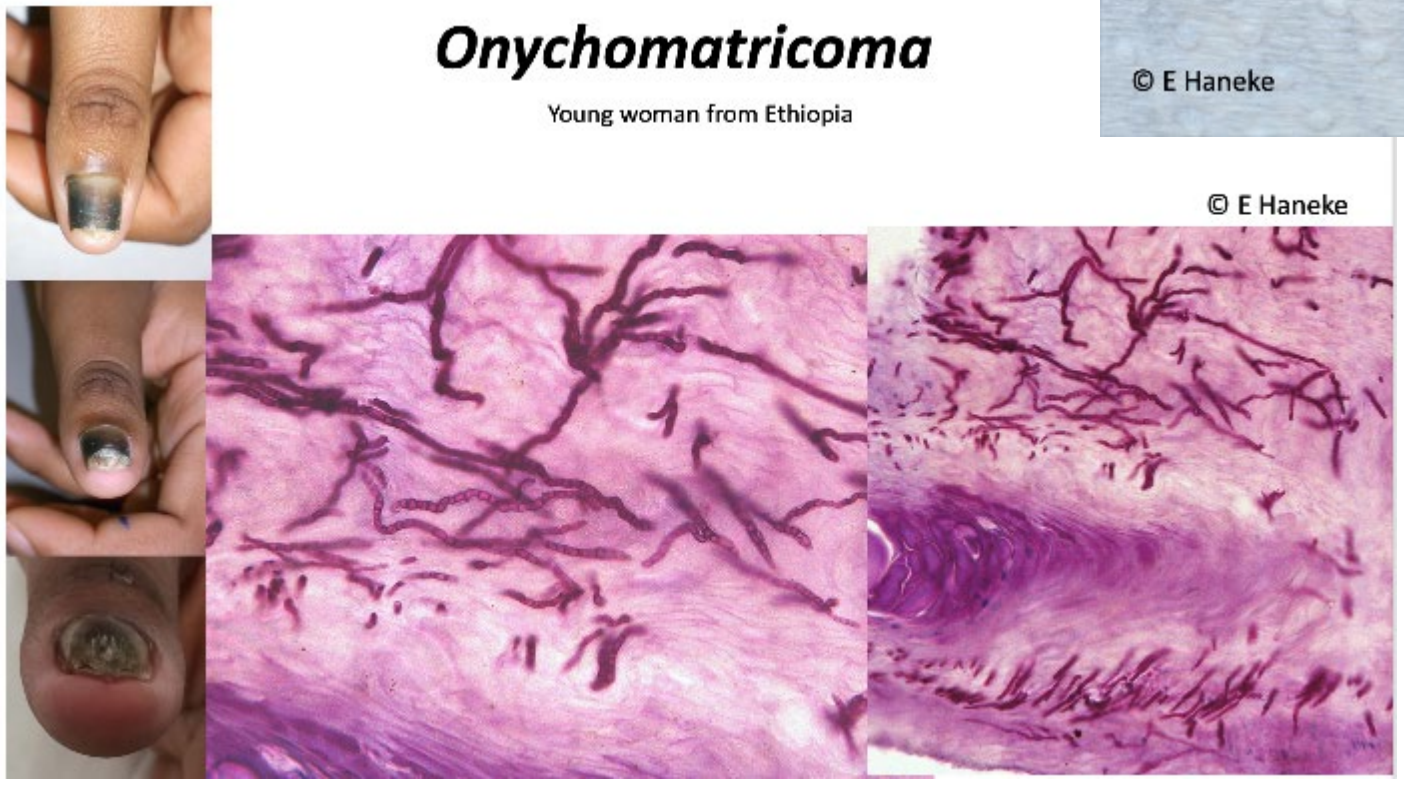
ONYCHOMATRICOMA
Frequent fungal infection



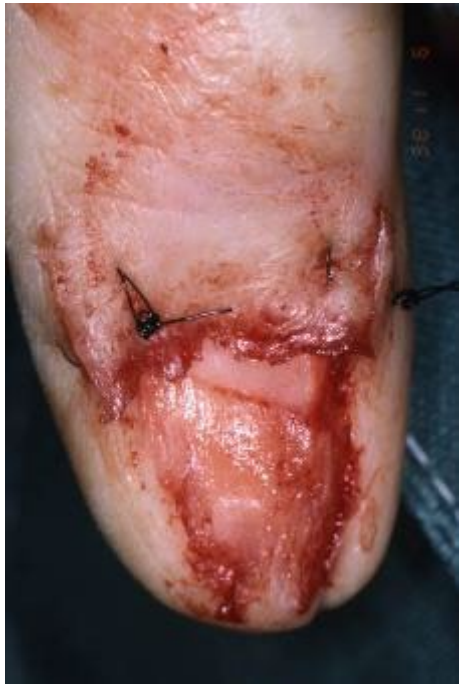


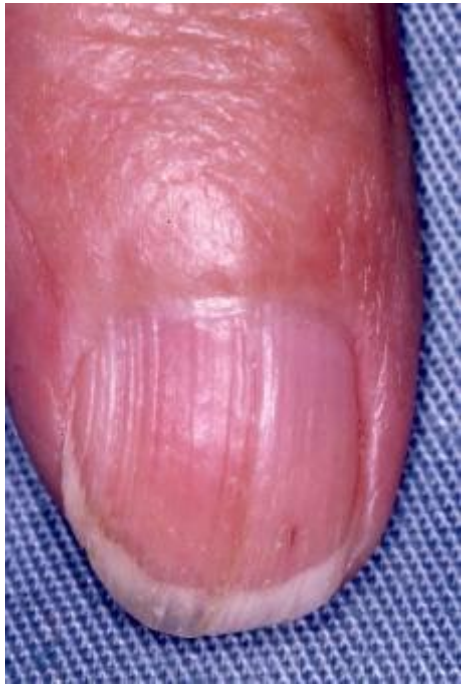
ASDP 2022

Onychomatricoma

Management options

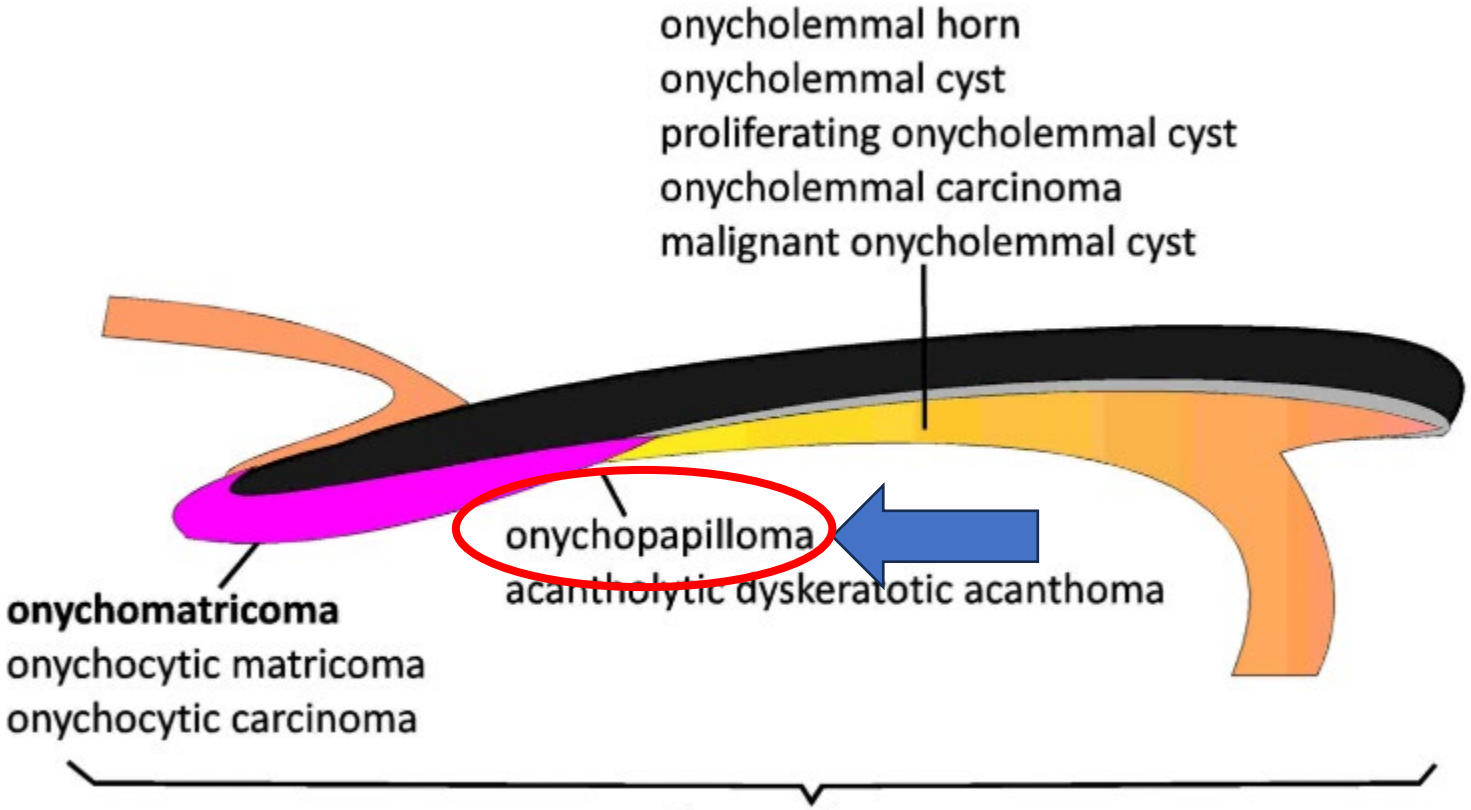
1. Do nothing
2. Surgical excision





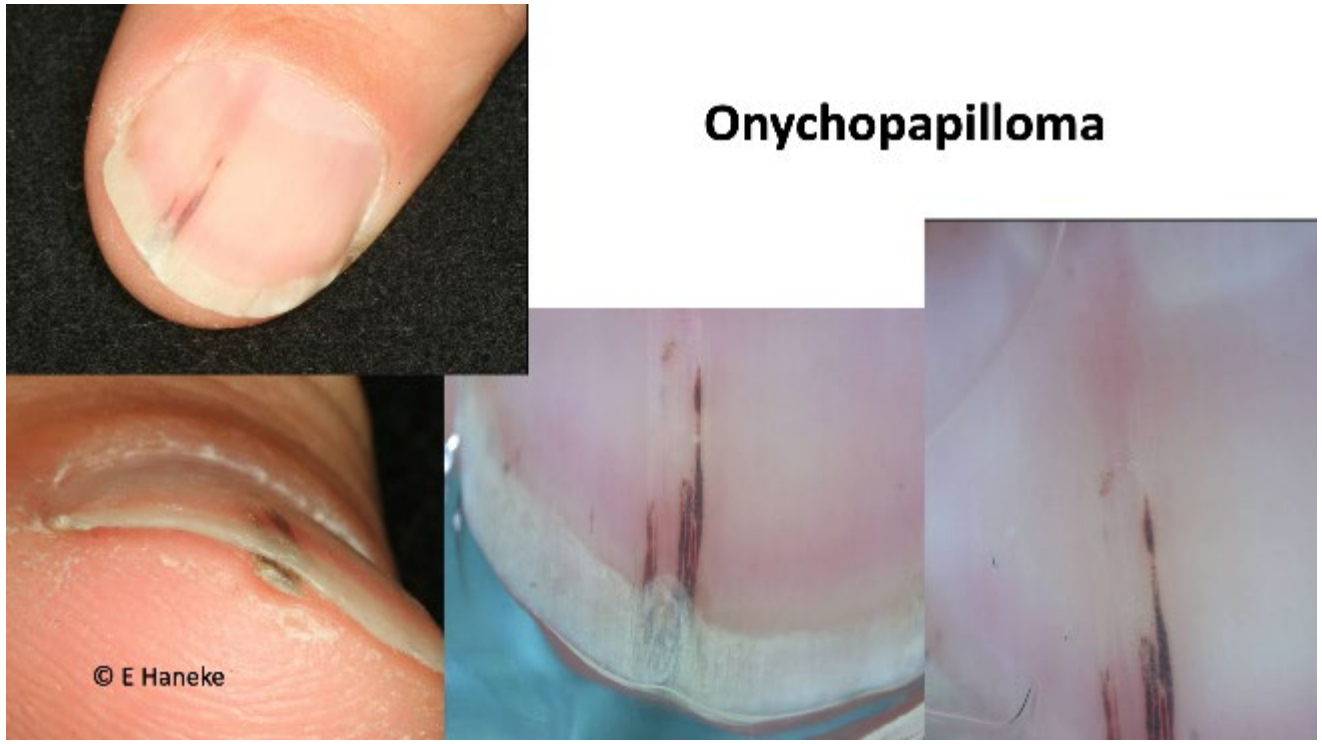
Images courtesy of Bertrand Richert, Brussels

Nail tumour origin

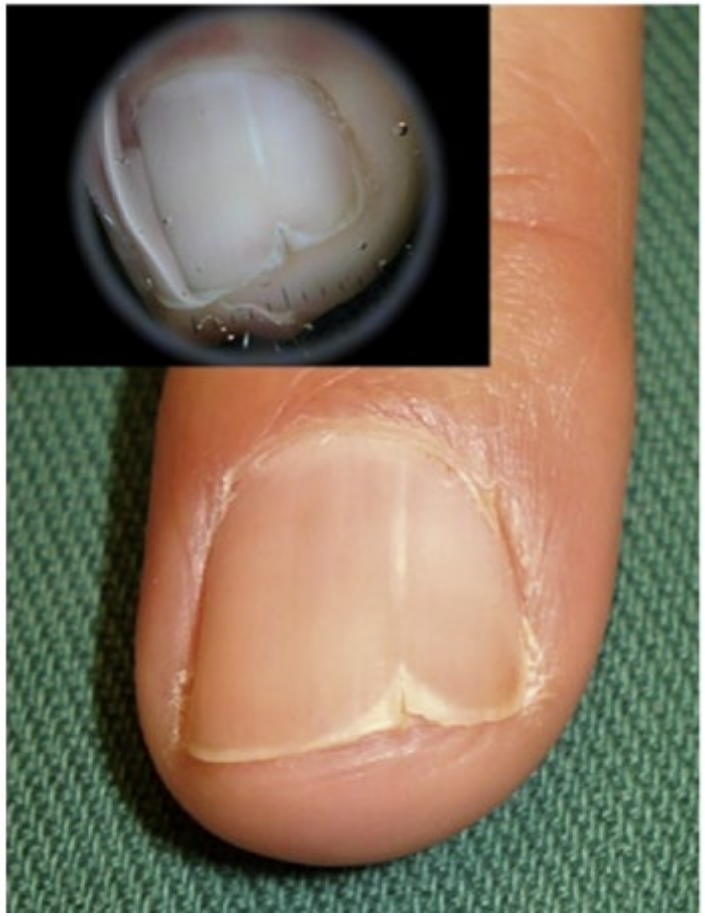


Onychopapilloma

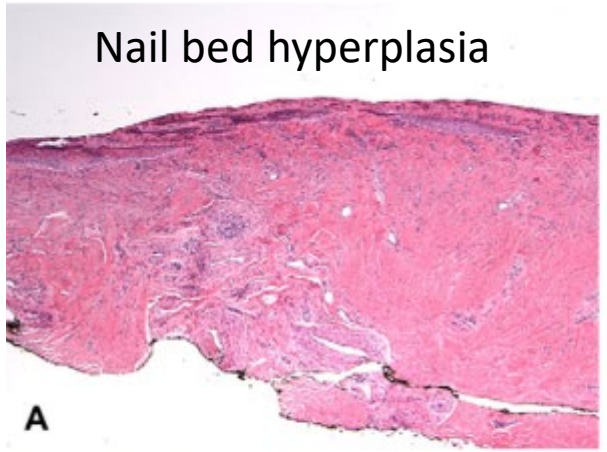
- Benign nail tumour of distal matrix and proximal nail bed
- First reported by Barran and Perrin (1995; 2000)
- Classical presentation: longitudinal erythronychia
- Other presentations: longitudinal leukonychia, melanonychia, splinter hemorrhages, xanthonychia, onycholysis
- Pathogenesis: unknown
- Mean age: 54.4 years
- Hyponychium: hyperkeratosis and ‘V’-shaped distal nicking

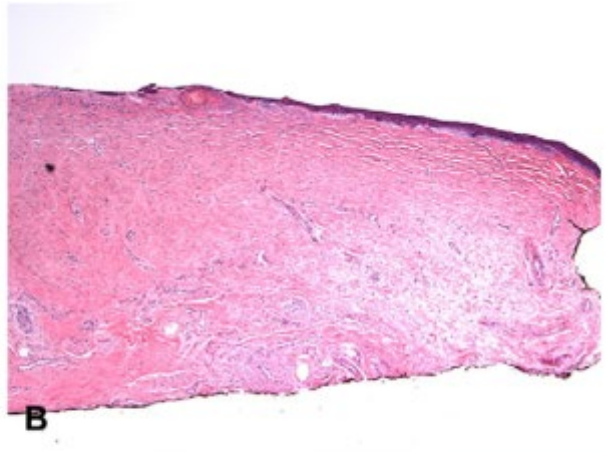


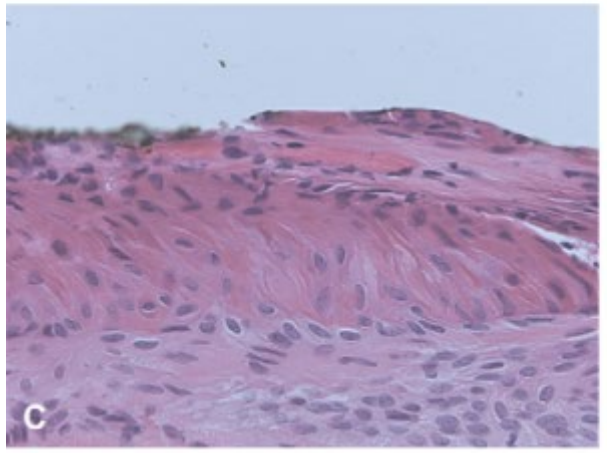
Onychopapilloma with longitudinal leukonychia



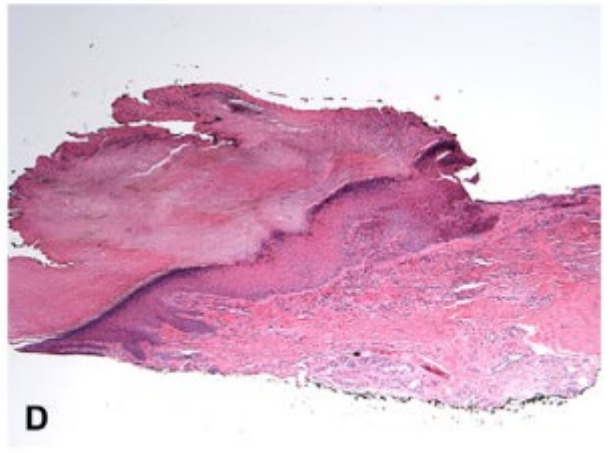
Criscione et al J AM ACAD DERMATOL 2010; 63, (3)541





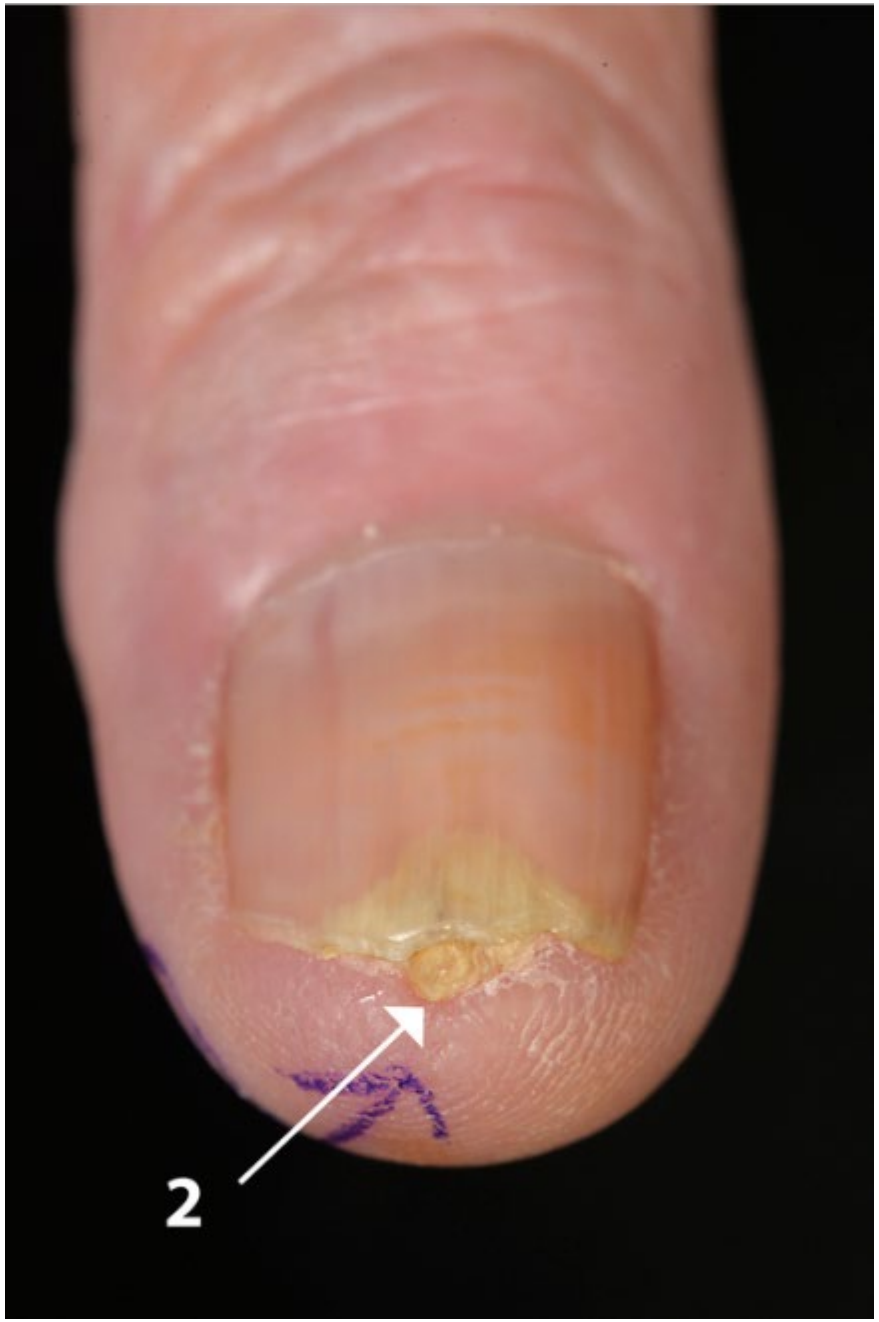


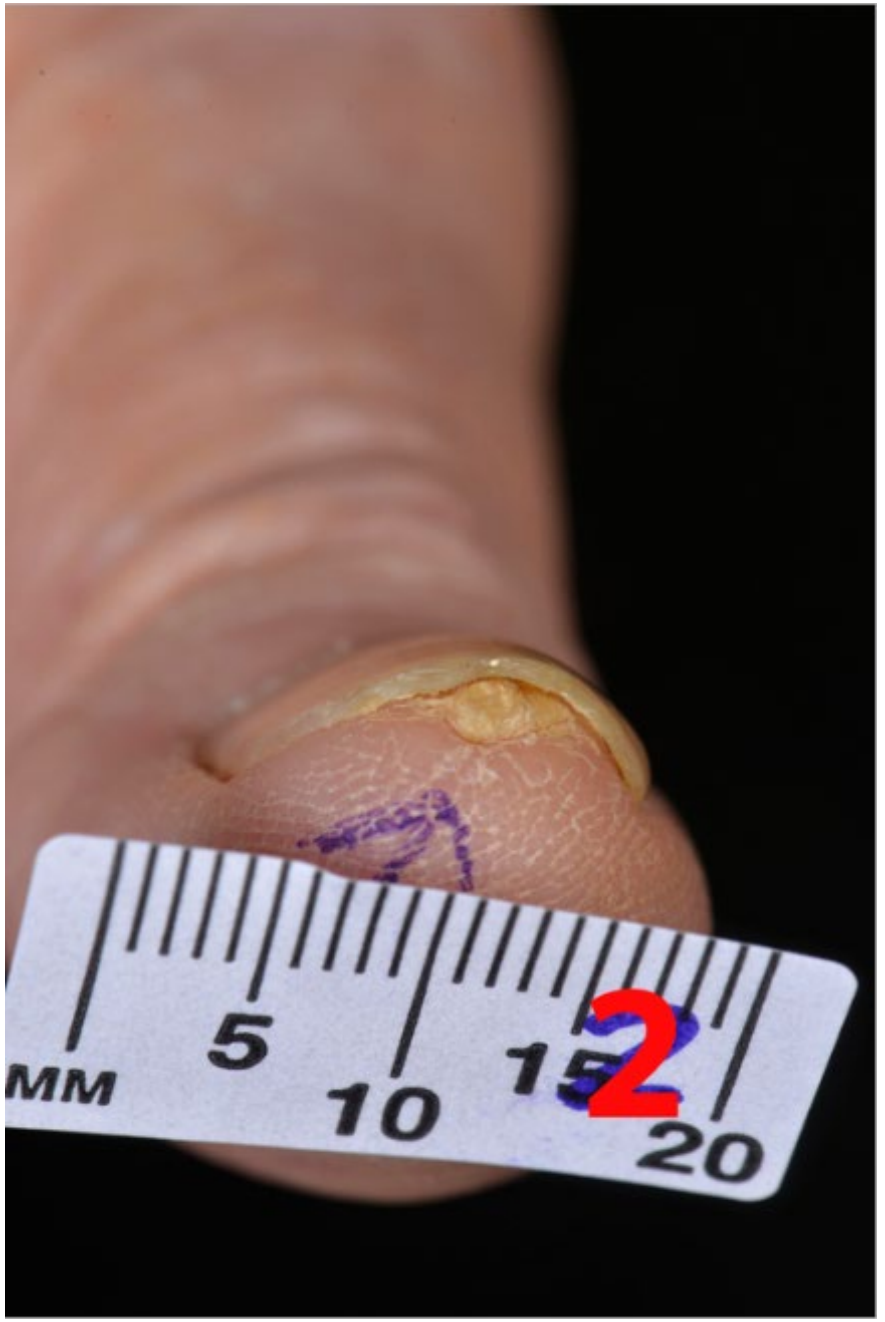
Matrix metaplasia



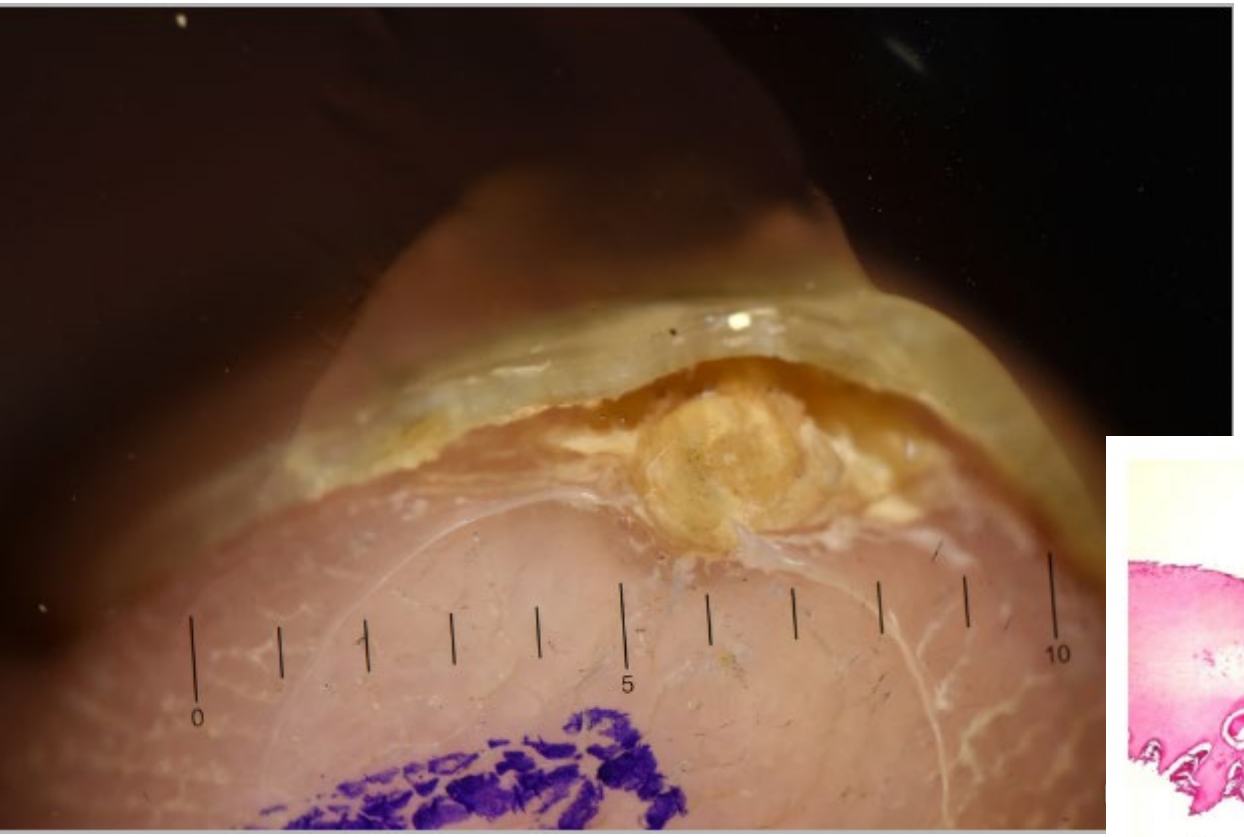
Hyperkeratosis at hyponychium

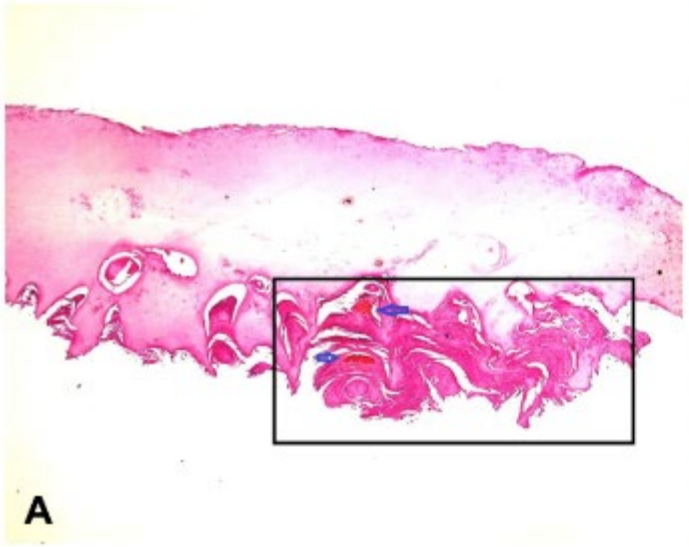
Hyponychium
Subungual
keratotic
Focal mass

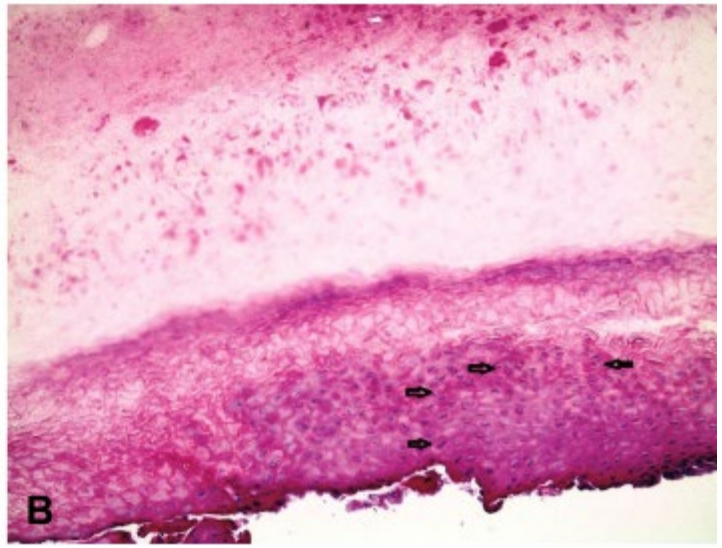




FREE EDGE DERMOSCOPY AND NAIL CLIPPING HISTOPATHOLOGY







Tosti A et al. JAAD 2016;74:521-526

Onychopapilloma with longitudinal melanonychia

Pigmented onychopapilloma in Caucasians: a case series of six patients

Dear Editor,

Onychopapilloma is a relatively common benign tumor of the distal nail matrix and proximal nail bed with heterogeneous clinical presentations that can present itself, in order of frequency, as longitudinal erythronychia, leukonychia, melanonychia, splinter hemorrhages, xanthonychia, chromonychia, and onycholysis. Distal nail plate often shows distal splitting, a wedge-shaped notch, and onycholysis.[1]

The pathogenesis is unknown, and the mean age of onset is 54.4 years. Tosti *et al.*[2] described that most patients with longitudinal erythronychia and longitudinal leukonychia had Fitzpatrick 1–3 phototype, whereas all the patients with longitudinal melanonychia had Fitzpatrick 4–6 phototype. Ito *et al.*[3] and Min

Table 1 Demographic and clinical data

Number	Age	Sex	Digit	Position	Side	Width	Time
1	70	Male	4	Hand	Left	2 mm	3 months
2	57	Female	1	Foot	Left	1 mm	6 months
3	58	Male	2	Foot	Left	2 mm	4 months
4	43	Female	1	Hand	Right	1 mm	6 months
5	77	Male	2	Hand	Left	2 mm	3 months
6	51	Female	1	Foot	Left	2 mm	2 months

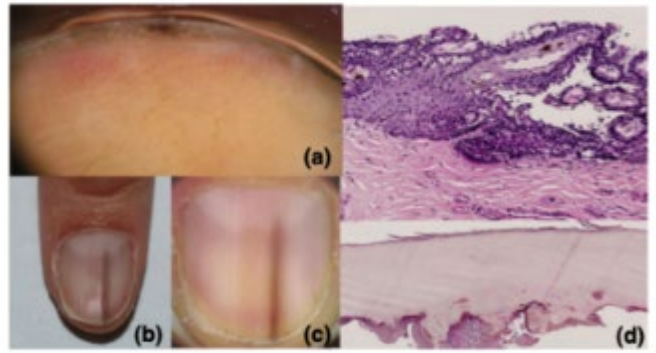
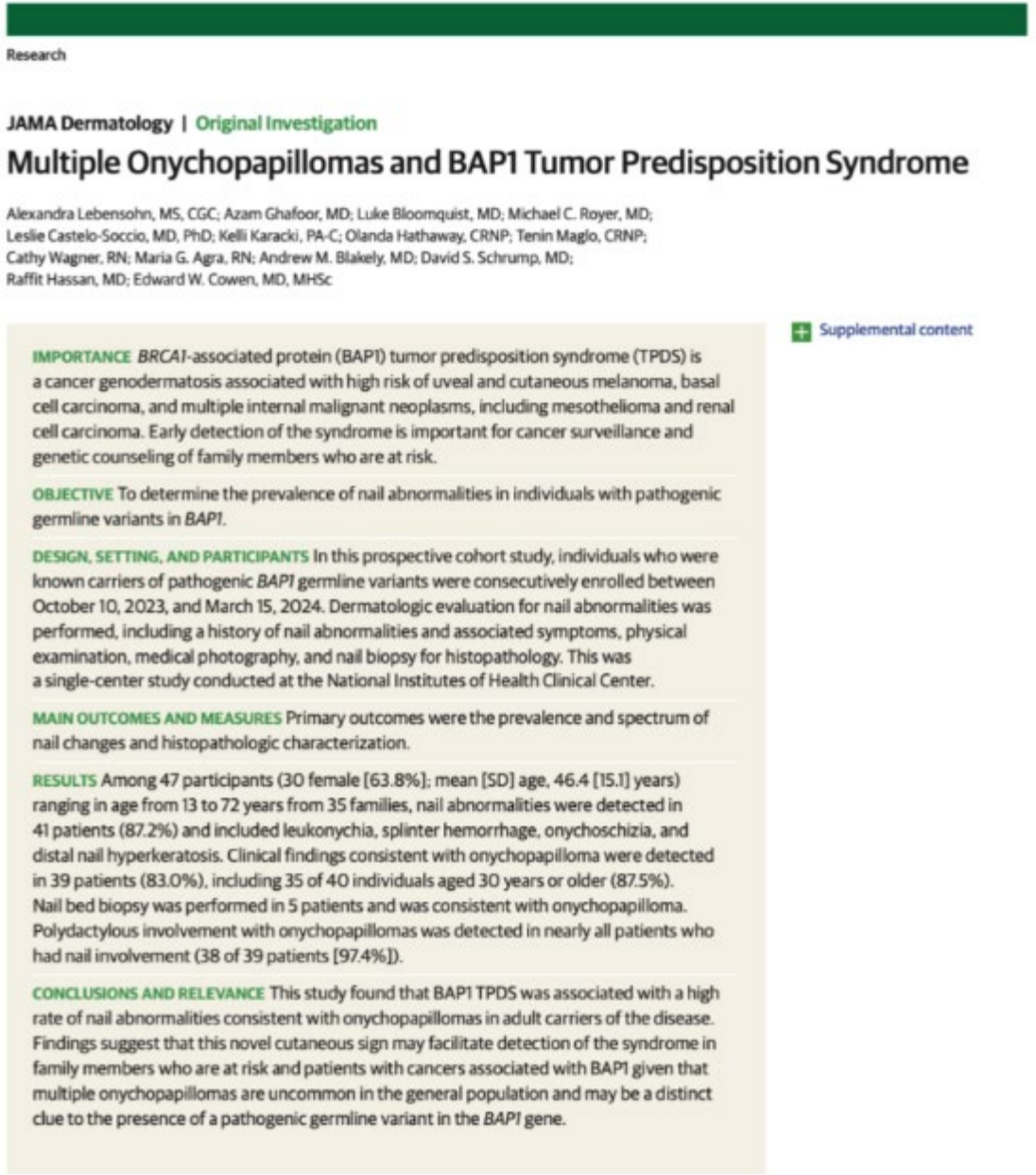


Figure 1 (a) Onychoscopy (20× magnification) of the free nail edge, showing a filiform mass of the nail plate. (b) Clinical picture of the affected nail. (c) Onychoscopy (10× magnification) of the nail plate, showing the longitudinal band of melanonychia. (d) Hematoxylin and eosin (H&E) stain, original magnification ×40 histopathology of the nail matrix and nail bed of the nail tumor

Polydactilous onychopapillomas



Research

JAMA Dermatology | Original Investigation

Multiple Onychopapillomas and BAP1 Tumor Predisposition Syndrome

Alexandra Lebensohn, MS, CGC; Azam Ghafoor, MD; Luke Bloomquist, MD; Michael C. Royer, MD; Leslie Castelo-Soccio, MD, PhD; Kelli Karacki, PA-C; Olanda Hathaway, CRNP; Tenin Maglo, CRNP; Cathy Wagner, RN; Maria G. Agra, RN; Andrew M. Blakely, MD; David S. Schrump, MD; Raffit Hassan, MD; Edward W. Cowen, MD, MHSc

Supplemental content

IMPORTANCE *BRCA1*-associated protein (BAP1) tumor predisposition syndrome (TPDS) is a cancer genodermatosis associated with high risk of uveal and cutaneous melanoma, basal cell carcinoma, and multiple internal malignant neoplasms, including mesothelioma and renal cell carcinoma. Early detection of the syndrome is important for cancer surveillance and genetic counseling of family members who are at risk.

OBJECTIVE To determine the prevalence of nail abnormalities in individuals with pathogenic germline variants in *BAP1*.

DESIGN, SETTING, AND PARTICIPANTS In this prospective cohort study, individuals who were known carriers of pathogenic *BAP1* germline variants were consecutively enrolled between October 10, 2023, and March 15, 2024. Dermatologic evaluation for nail abnormalities was performed, including a history of nail abnormalities and associated symptoms, physical examination, medical photography, and nail biopsy for histopathology. This was a single-center study conducted at the National Institutes of Health Clinical Center.

MAIN OUTCOMES AND MEASURES Primary outcomes were the prevalence and spectrum of nail changes and histopathologic characterization.

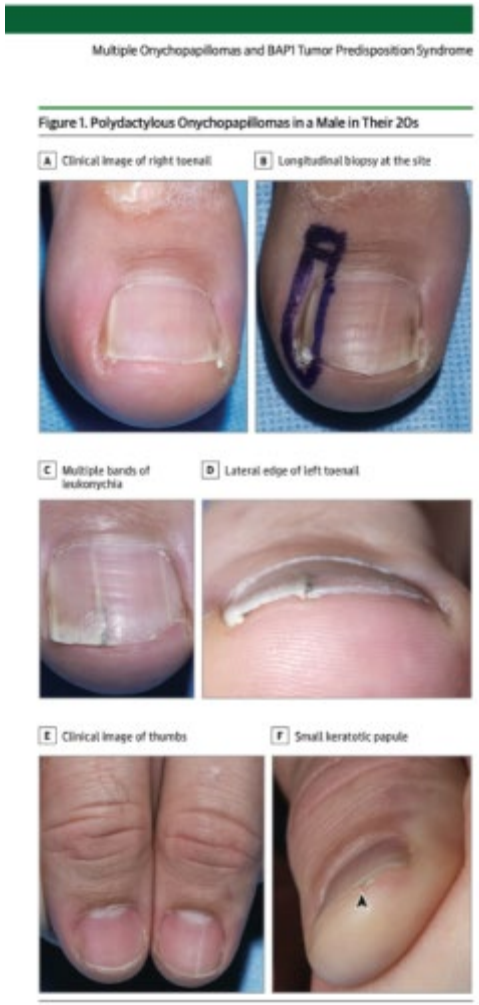
RESULTS Among 47 participants (30 female [63.8%]; mean [SD] age, 46.4 [15.1] years) ranging in age from 13 to 72 years from 35 families, nail abnormalities were detected in 41 patients (87.2%) and included leukonychia, splinter hemorrhage, onychoschizia, and distal nail hyperkeratosis. Clinical findings consistent with onychopapilloma were detected in 39 patients (83.0%), including 35 of 40 individuals aged 30 years or older (87.5%). Nail bed biopsy was performed in 5 patients and was consistent with onychopapilloma. Polydactylous involvement with onychopapillomas was detected in nearly all patients who had nail involvement (38 of 39 patients [97.4%]).

CONCLUSIONS AND RELEVANCE This study found that BAP1 TPDS was associated with a high rate of nail abnormalities consistent with onychopapillomas in adult carriers of the disease. Findings suggest that this novel cutaneous sign may facilitate detection of the syndrome in family members who are at risk and patients with cancers associated with BAP1 given that multiple onychopapillomas are uncommon in the general population and may be a distinct clue to the presence of a pathogenic germline variant in the *BAP1* gene.

Lebensohn A et al. JAMA Dermatol;160 (8):838-845

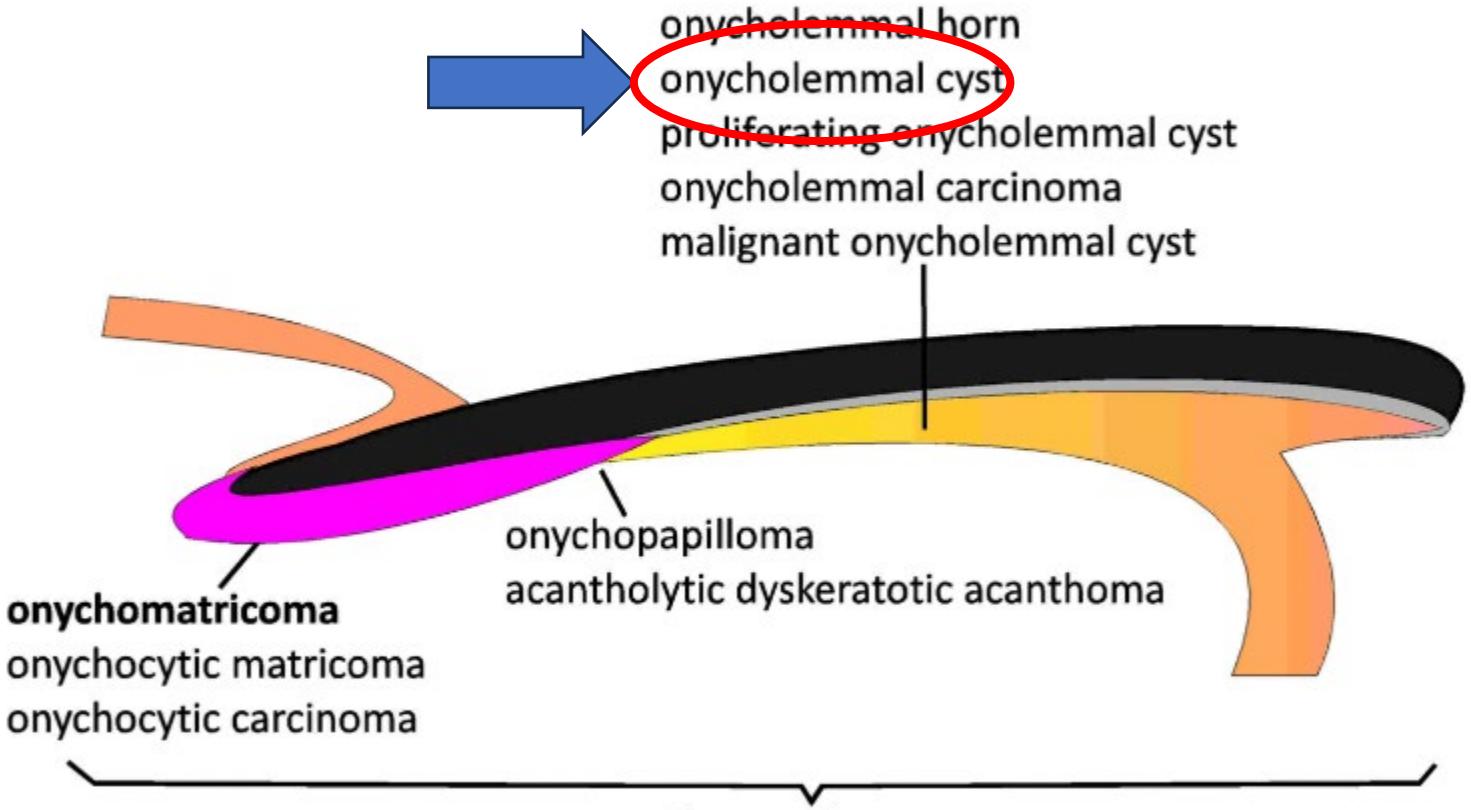
Multiple onychopapillomas & BAP1 tumour predisposition syndrome (TPS)

- BRCA1-associated protein (BAP1) TPS is a cancer genodermatosis associated with uveal Ca, melanoma, BCC, and internal malignancies: mesothelioma and renal cell carcinoma
- NIH Study of the prevalence of nail abnormalities in patients with confirmed pathogenic germline variants in BAP1
- 47 participants (30 females 63.8%)
- Results:
  - 41 patients: nail abnormalities (87.2%)
  - 39/41: onychopapillomas (83%); 35/40 were 30 years or older (87.5%)
  - 38/39: polydactylous involvement (97.4%)



Lebensohn A et al. JAMA Dermatol 2024;160 (8):838-845

Nail tumour origin



ONYCHOLEMMAL CYSTS

Subungual epidermoid inclusions (SEI) were originally described by Samman [1] in 1959 in the toe nails. Later, Lewin [2, 3] reported several examples in postmortem and surgical specimens of normal nails or finger clubbing.

Dermatologica 1989;178:209–212

0011–9075/89/1784–0209 $ 2.75/0

Subungual Epidermoid Inclusions: Report of 8 Cases

Pier Alessandro Fanti, Antonella Tosti

Department of Dermatology, University of Bologna, Italy

Key Words. Subungual epidermoid inclusions · Epidermoid implantation cysts · Onychodystrophy · Nail bed hyperplasia · Keratin cysts

Table 1. Clinical features

Patient No.	Sex	Age	Site	Traumatic events	Duration	Clinical features
1	F	67	right thumb	yes	1 year	nail-plate thickening, subungual hyperkeratosis
2	M	74	fingernails	no	several years	subungual hyperkeratosis
3	M	49	right big toe	yes	7 years	marked subungual hyperkeratosis
4	F	60	right big toe	no	1 year	subungual hyperkeratosis
5	F	67	right thumb	no	6 months	subungual hyperkeratosis, initial nail plate loss
6	M	61	left big toe	yes	1 year	nail-plate thickening, subungual hyperkeratosis, nail-plate thickening
7	F	42	toenails RF 1,3,4,5 LF 1,3,4,5	no	3 years	subungual hyperkeratosis
8	F	34	left thumb	yes	6 months	onycholysis

Fanti & Tosti 1989

NAIL BED

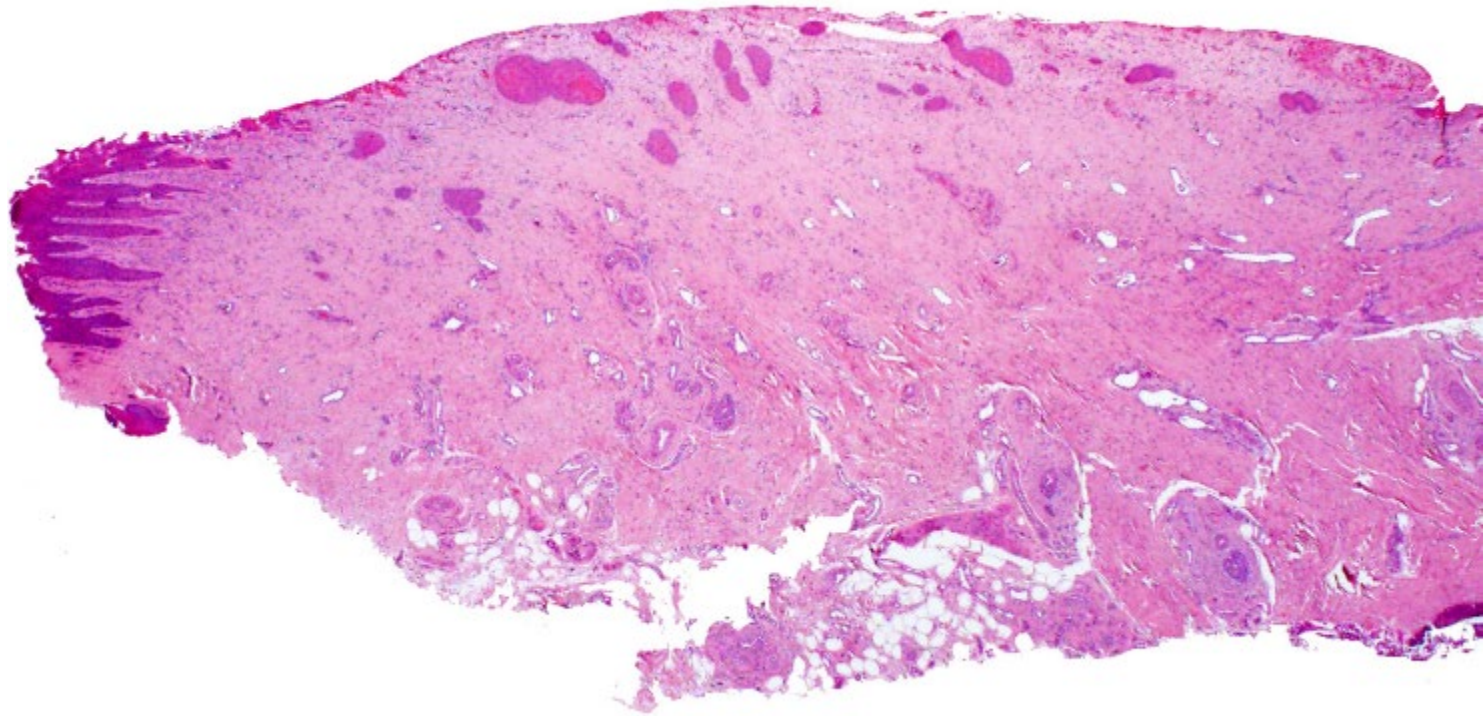
ONYCHOLEMMAL CYSTS
Benign and incidental finding

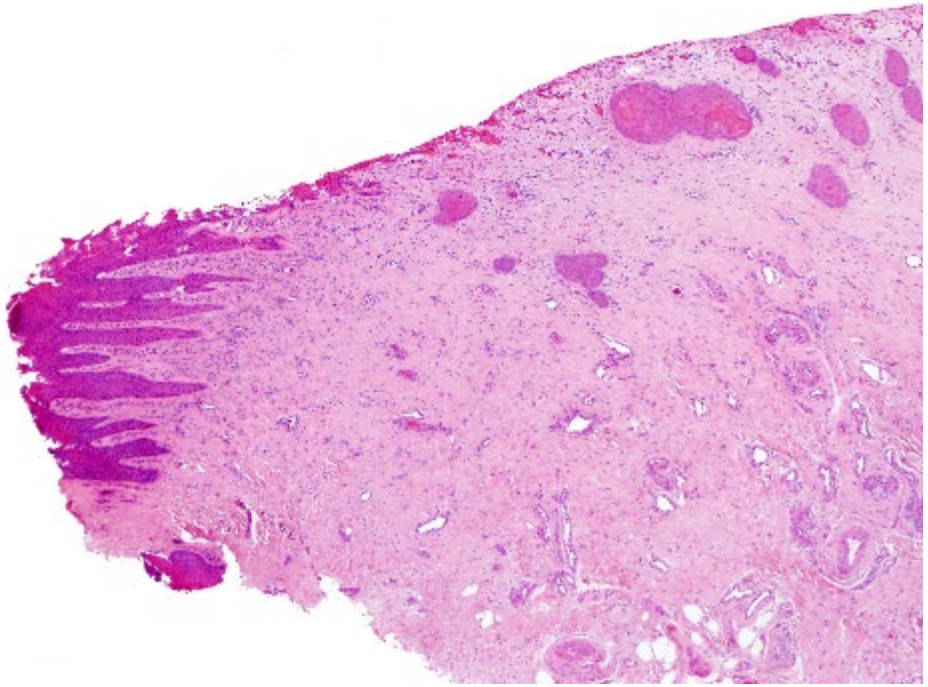
SECOND OPINION CONSULTATION CASE

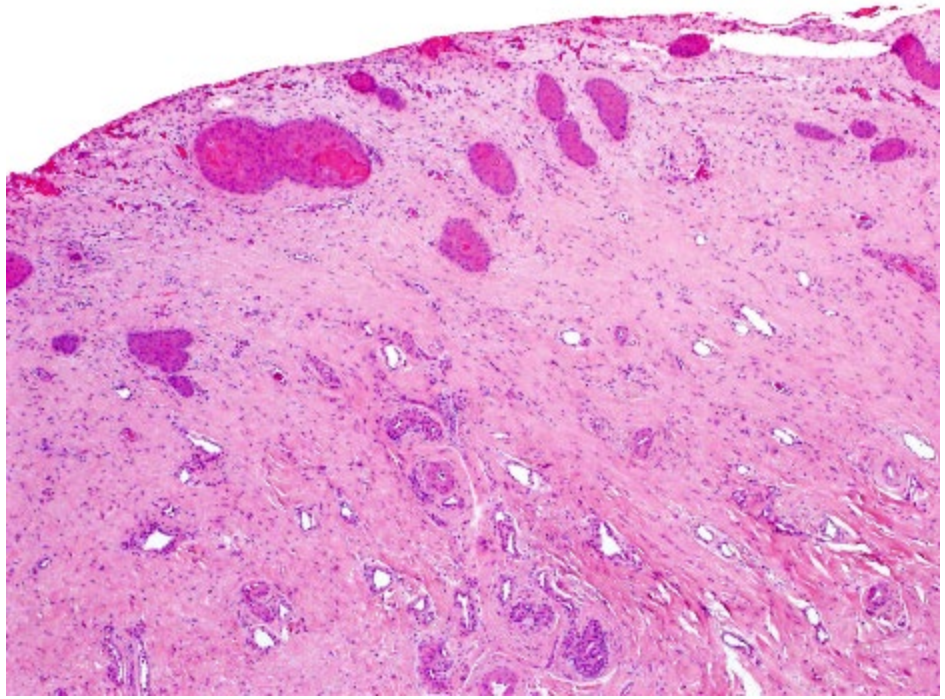
42F LEFT GREAT TOE

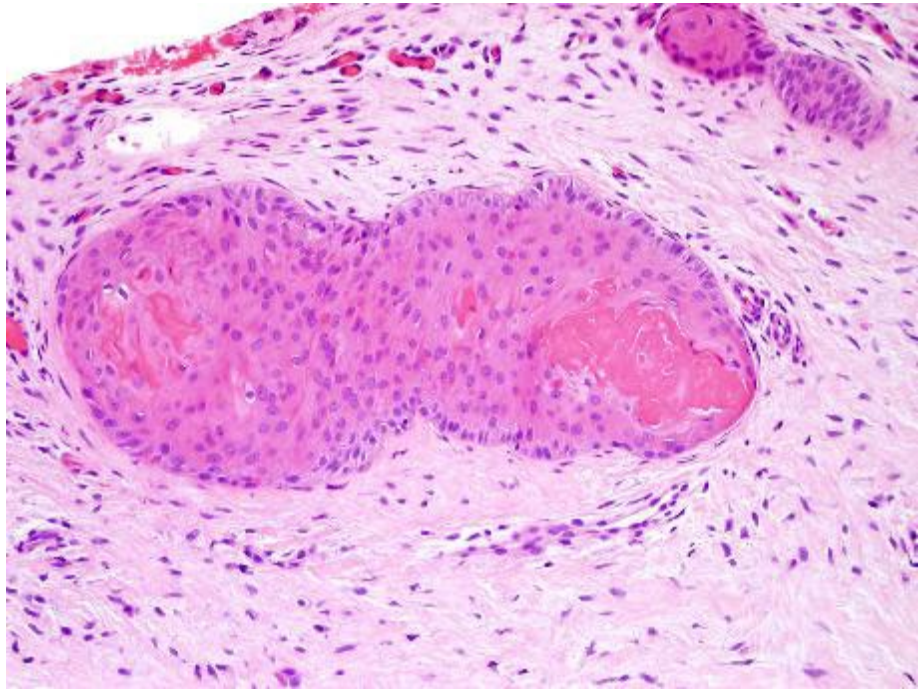
Nail bed biopsy

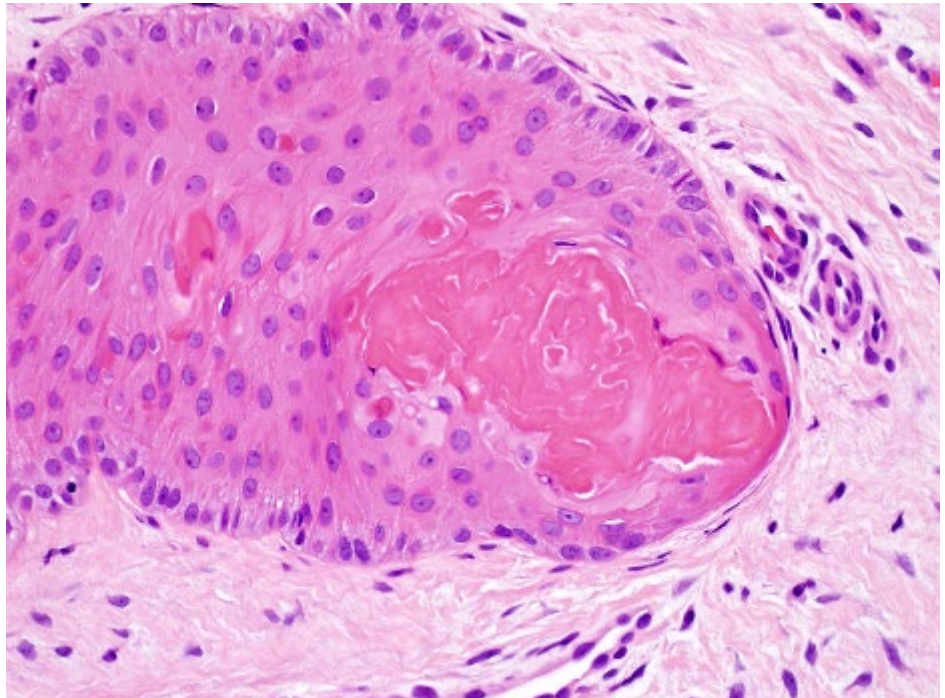
R/O Squamous cell carcinoma

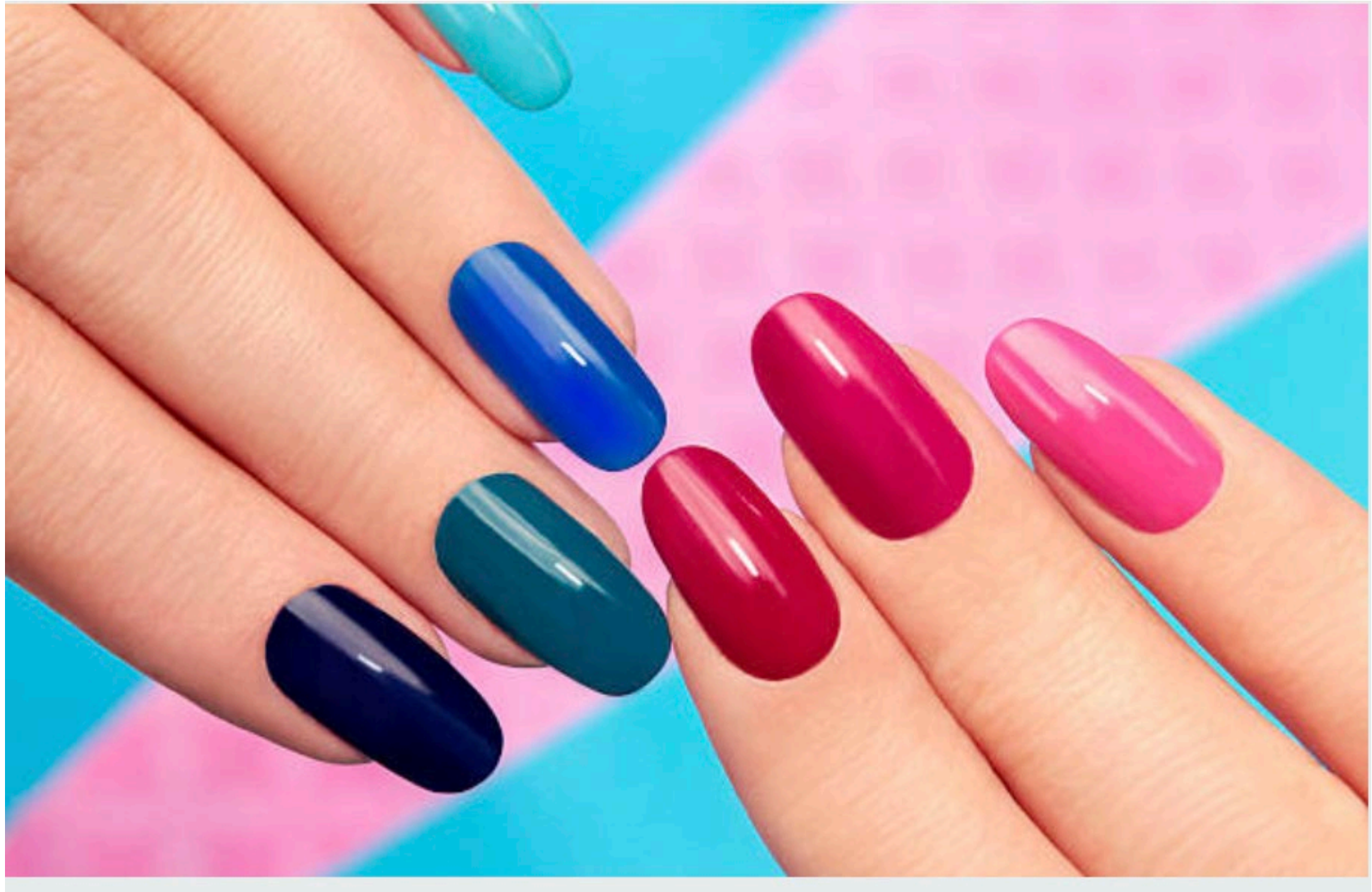




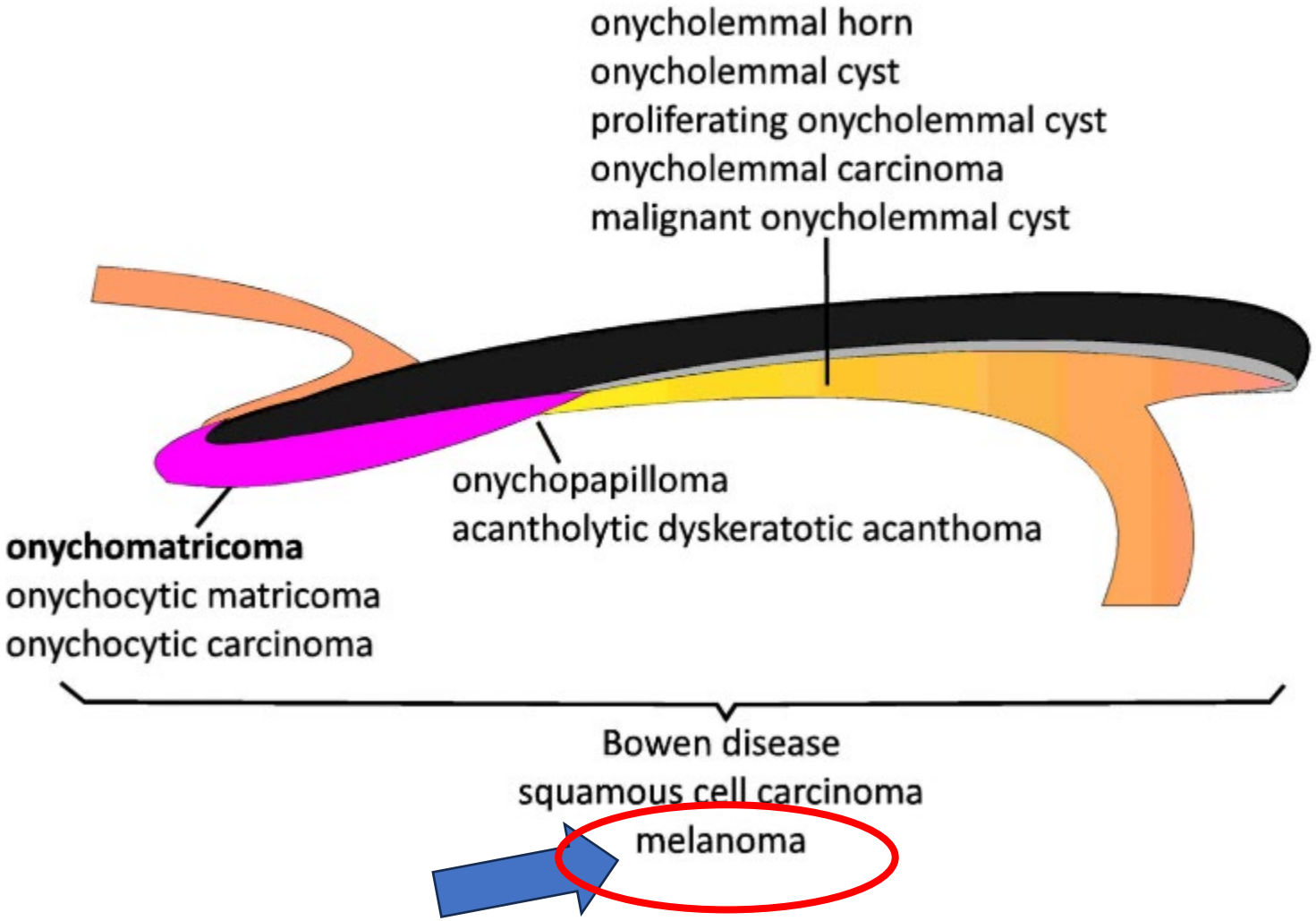


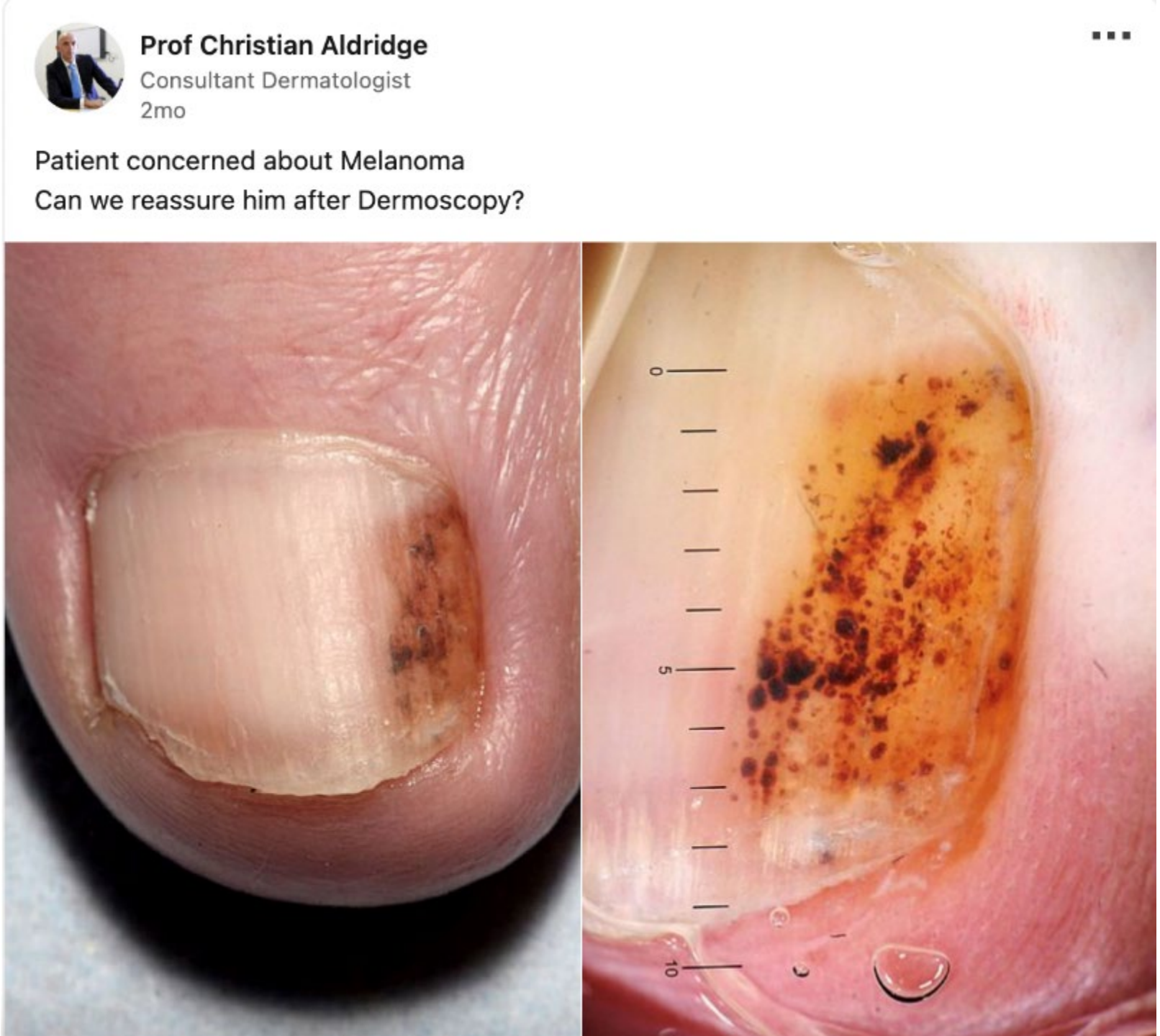






Nail tumour origin





YES

Source:Linkedin

DOI: 10.1111/jdv.17521

REVIEW ARTICLE

The value of dermoscopy of the nail plate free hyponychium

M. Iorizzo,[1] M. Starace,[2,*] A. Di Altobrando,[2] A. Alessandrini,[2] L. Venez

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[2]Dermatology- IRCCS Policlinico Sant'Orsola, Department of Experimental, Diagnostic Specialty Medic Studiorum, University of Bologna, Bologna, Italy

*Correspondence: M. Starace. E-mail: michela.starace2@unibo.it

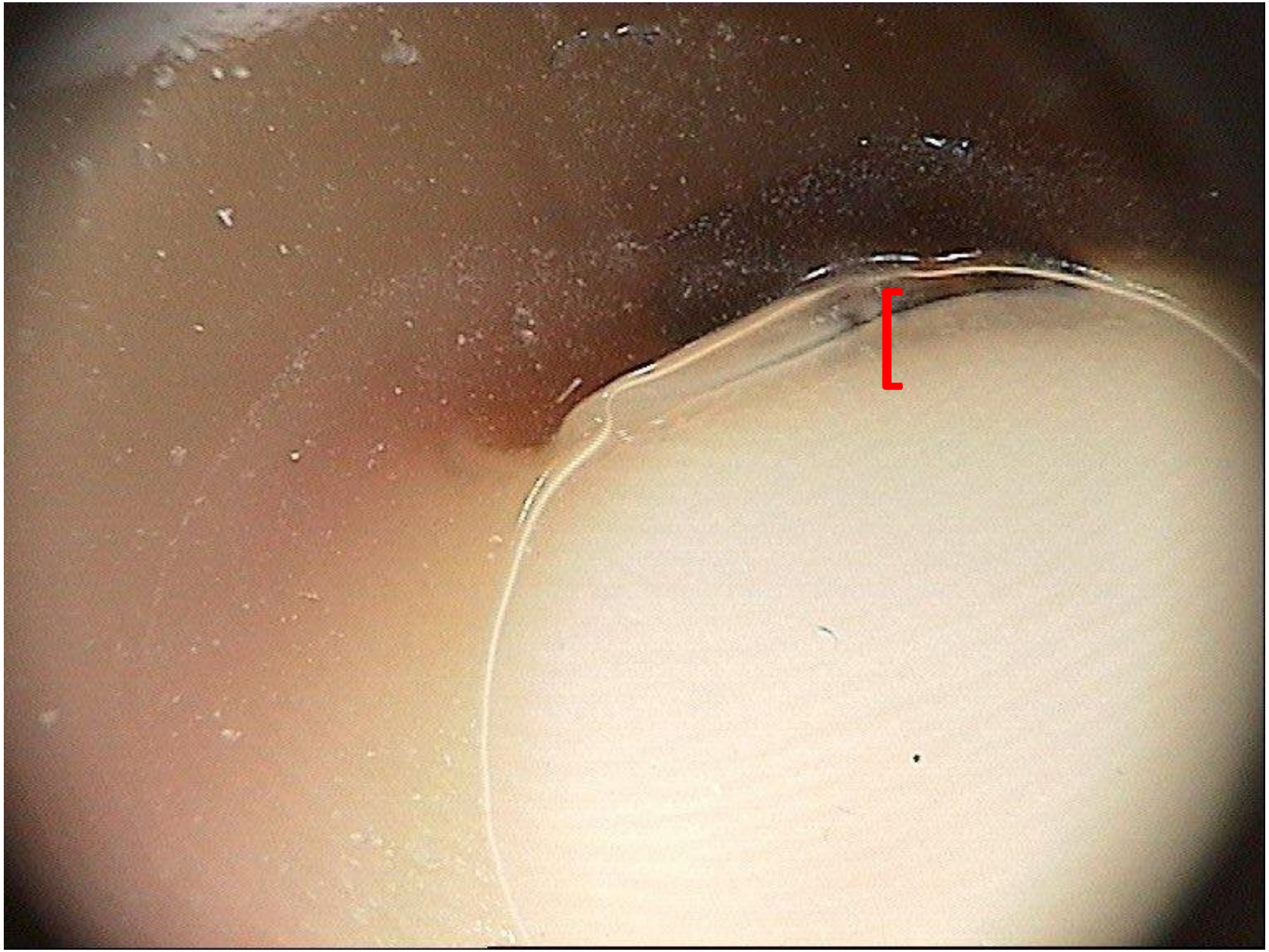
Abstract

The non-invasive examination of the nail unit using a dermoscope is known as onychoscopy. increasingly appreciated to facilitate the clinical diagnosis of nail disorders, opening up a v potential to avoid invasive diagnostic procedures. During a nail consultation, the nail unit with the aid of a dermatoscope in all its components. The aim of this paper was to provide onychoscopy of the nail plate free edge and hyponychium, two components of the nail unit eye and often forgotten, but of paramount importance.

Received: 20 January 2021; Accepted: 2 July 2021

Conflicts of interest

None declared.

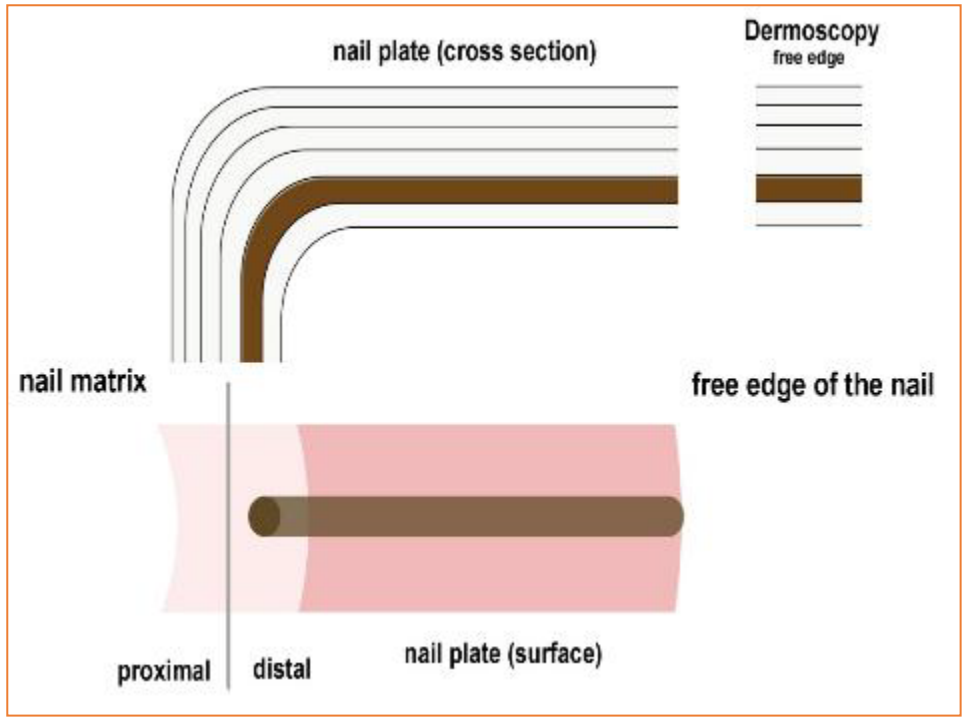


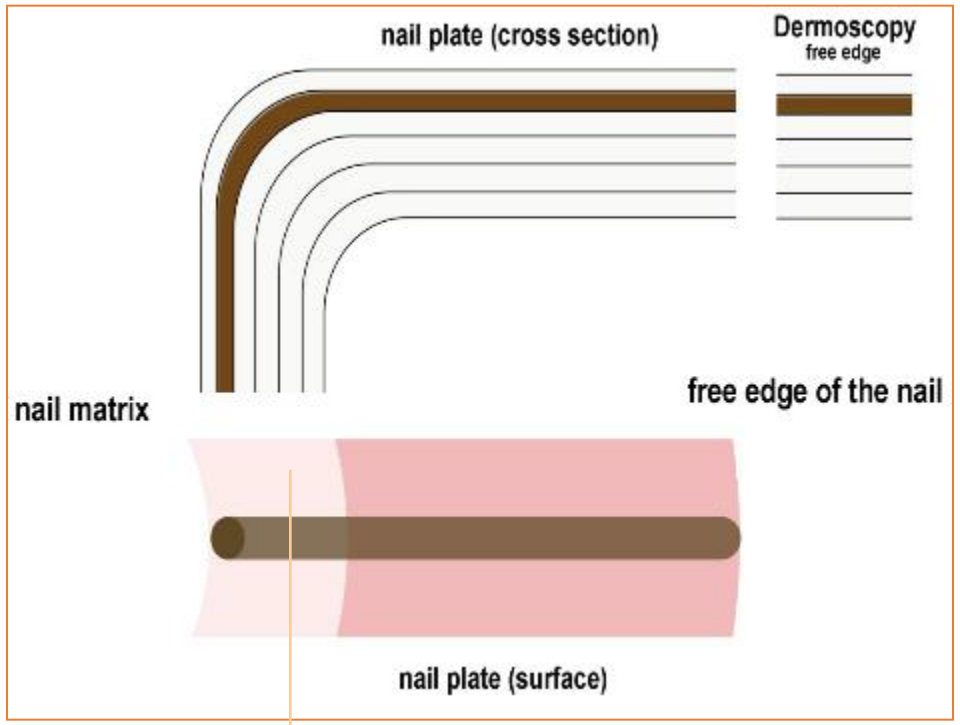
Micro-Hutchinson sign

Courtesy G. Ferrara (IT)/Luc Thomas (Lyon, FR)

Nail Dermoscopy

Free-edge dermoscopy





The location of the pigment (observed at the free edge) can predict the location of the causative pigmentary lesion

Dorsal nail plate: proximal matrix / Ventral nail plate: distal matrix

WHEN TO PERFORM A NAIL BIOPSY?

- Age >40
- Size >6 mm (between 3 and 6 mm a follow up can be scheduled)
- Monodactylic
- History/clinical evidence of changes
- Suspicion for Hutchinson’s/microHutchinson’s
- Hx trauma and ‘systemic cause’ of pigmentation

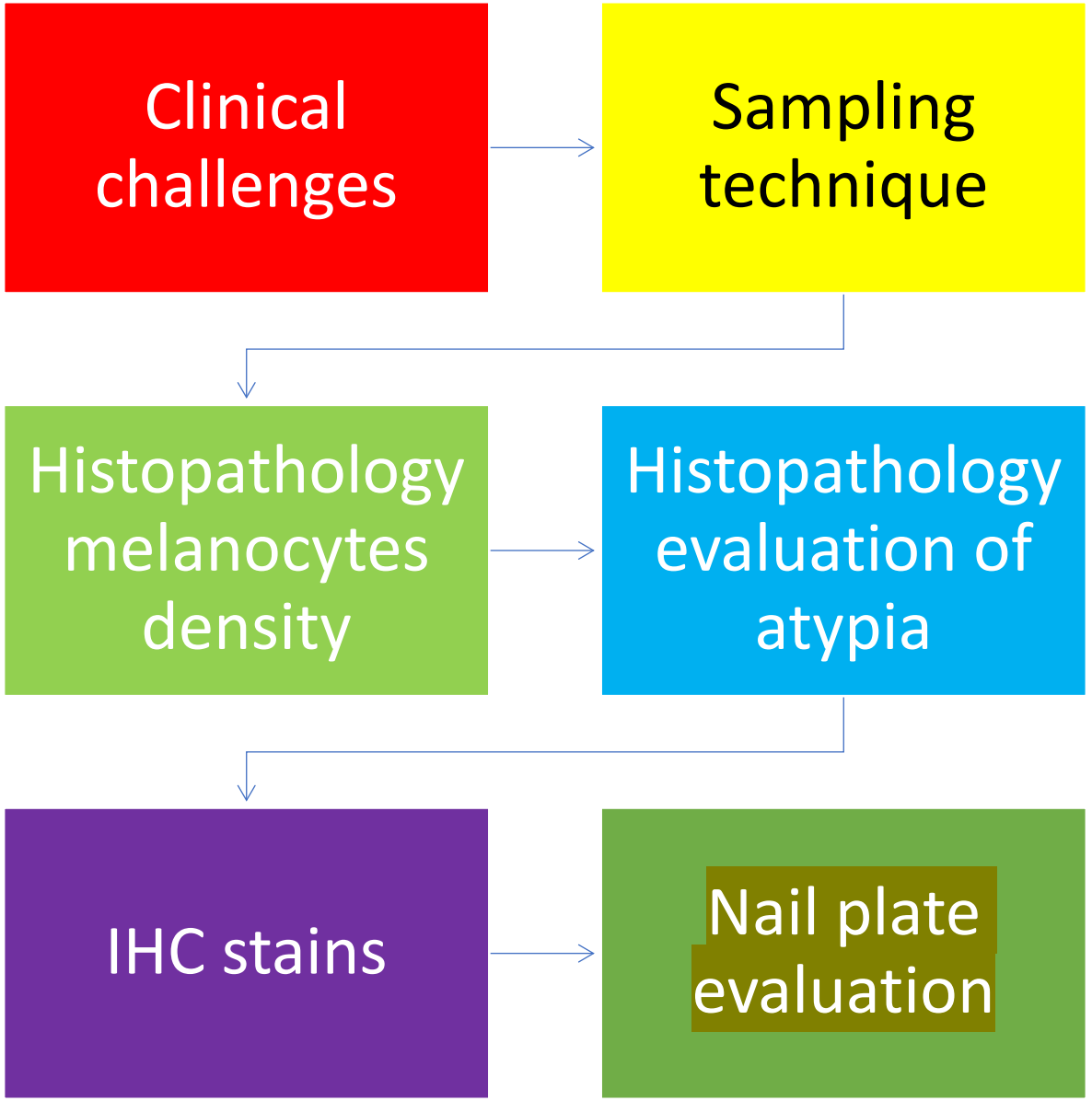
REVIEW

JCP JOURNAL OF CUTANEOUS PATHOLOGY WILEY

Clinicohistopathologic challenges and traps in the diagnosis of nail unit melanoma

Angela J. Jiang MD[1] | James J. Abbott MD[2] | H. William Higgins MD, MBE[3] | Rosalie Elenitsas MD[3] | Adam I. Rubin MD[3]

J Cutan Pathol 2023; 50 (6): 580-590


Clinical challenges
Sampling technique
Histopathology melanocytes density
Histopathology evaluation of atypia
IHC stains
Nail plate evaluation

1. Clinical challenges

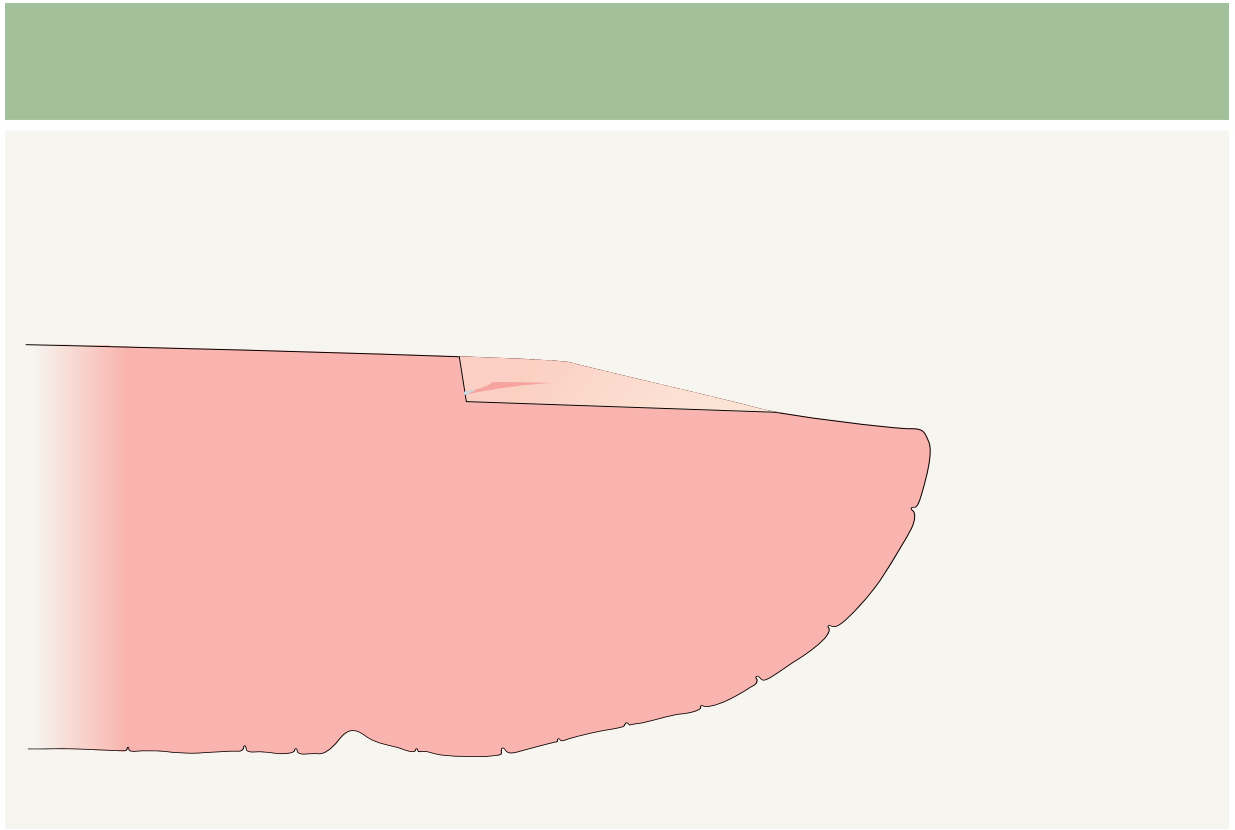
- > 60 years old
- Thumb/index finger /great toe
- Longitudinal melanonychia (not always!), width >3mm, >28% of the nail plate, multicolour, asymmetry, fading borders
- Hutchinson and micro-Hutchinson sign
- Amelanotic variants (25%) presenting as vascular lesions.
- Odd presentations: longitudinal splitting, ridging, nail plate atrophy, onychodystrophy mimicking tinea

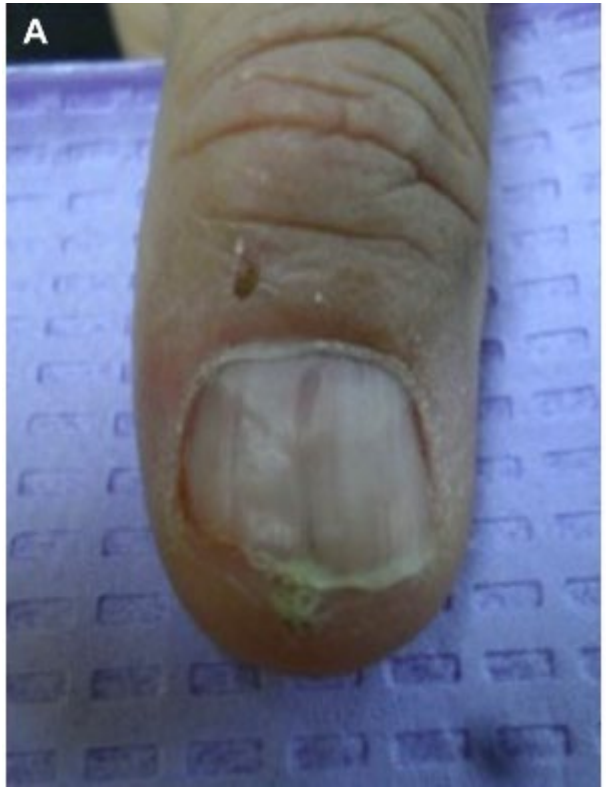
=> Risk: Late diagnosis, deeper Breslow, poor prognostic outcome

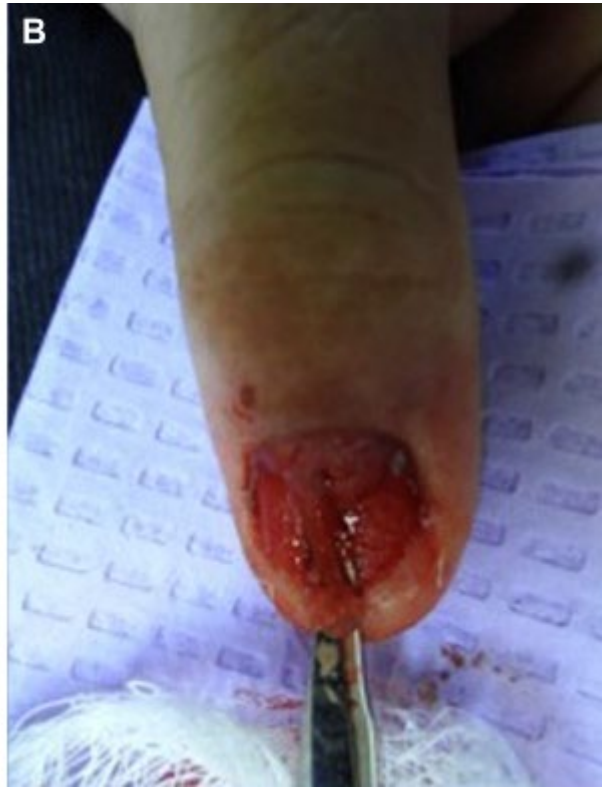
- DDx: melanocytic activation, ethnic variants, genodermatoses, drug-induced pigmentation, pigmented SCC, onychomatricoma, onychomycosis

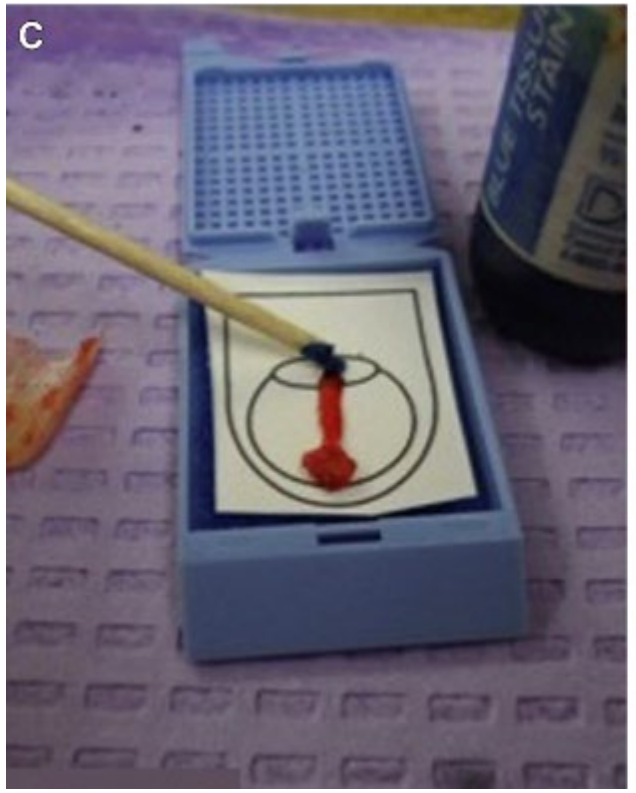
2. Sampling technique

- Optimal requirement: **Longitudinal excision that includes the nail matrix,** (low risk of nail dystrophy when performed correctly)
- Challenges: inadequate sampling, partial sampling, lack of clinicopathologic correlation



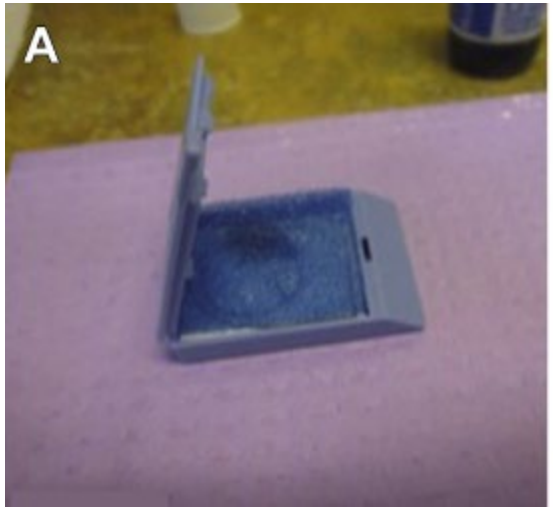


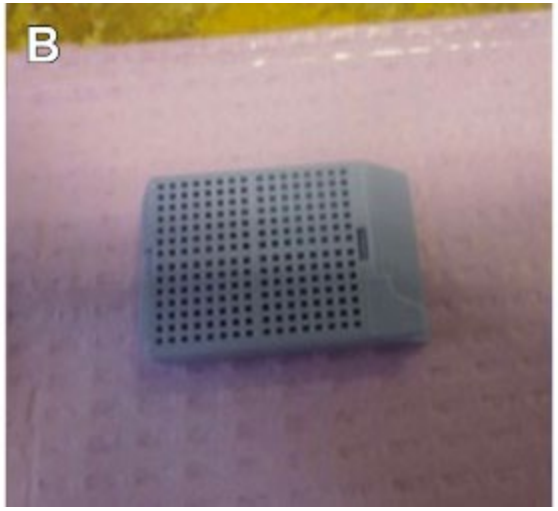


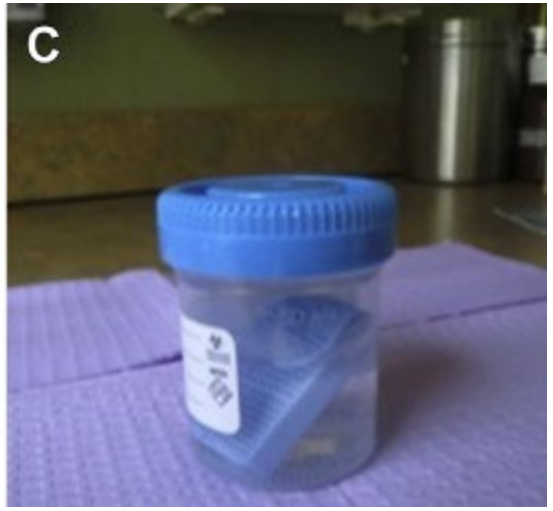


Longitudinal biopsy

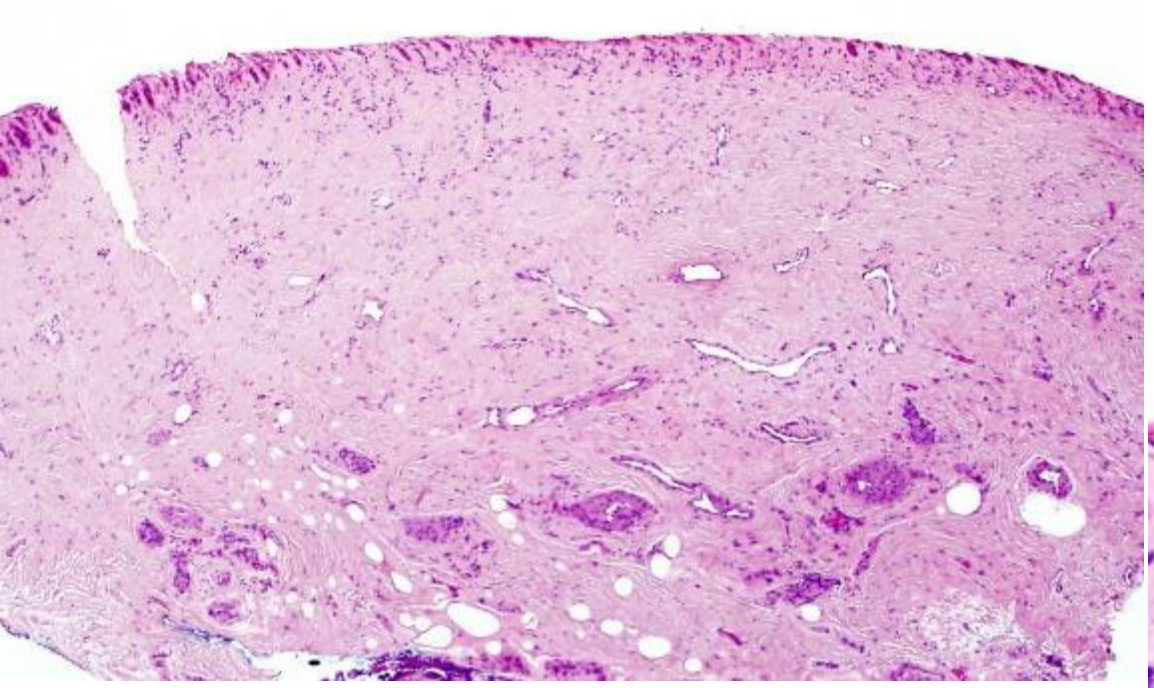
Dermatol Clin 33 (2015):303-305





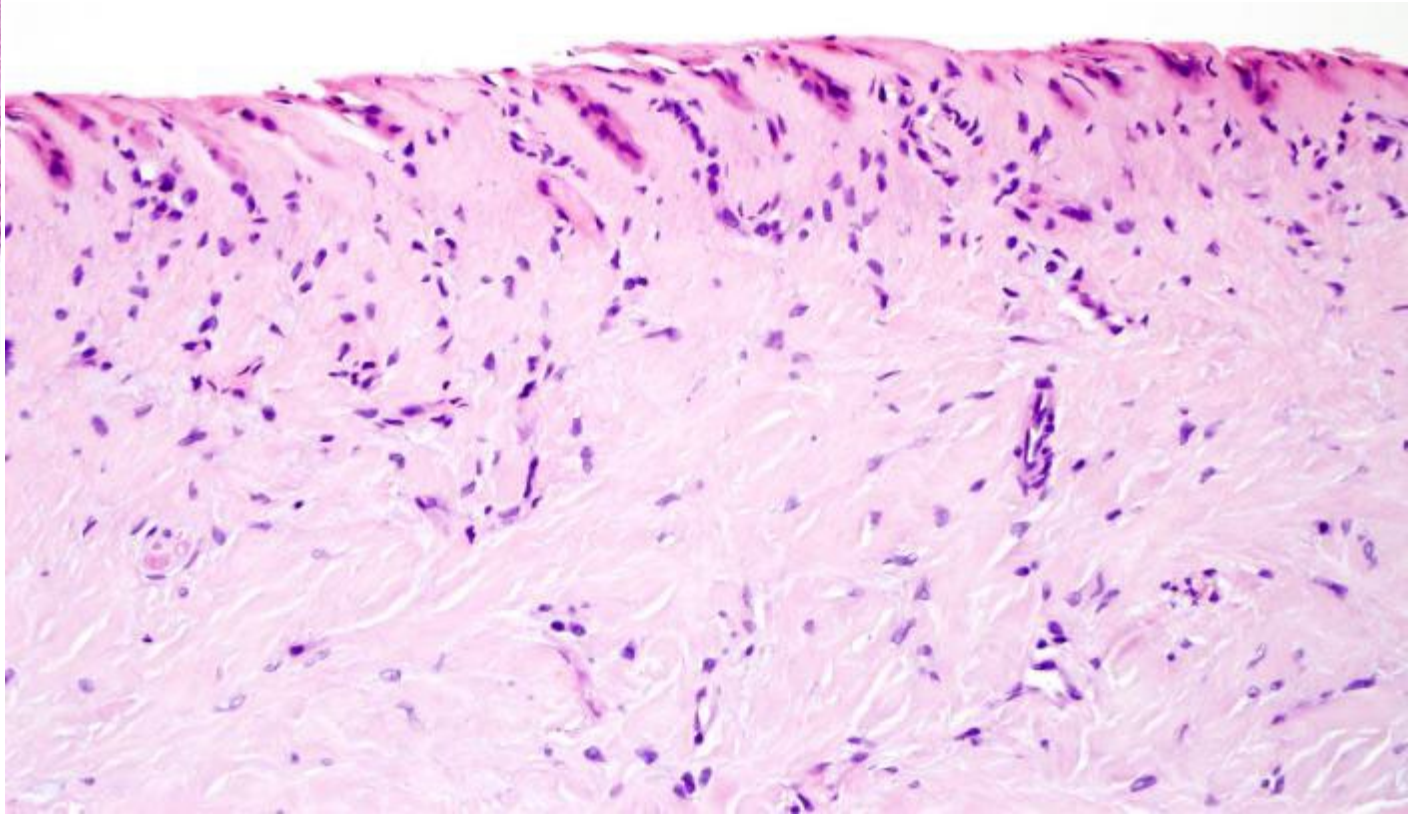


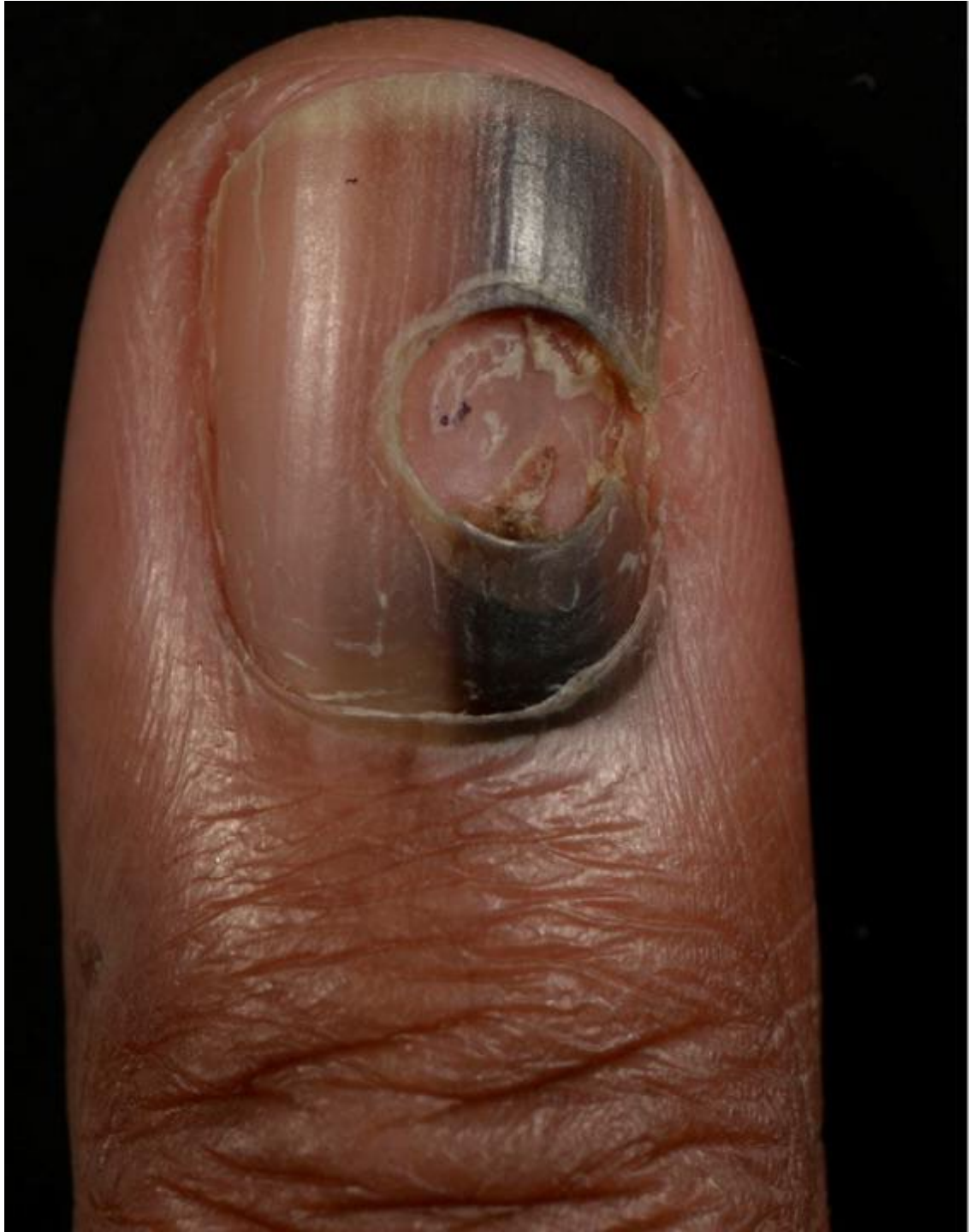
37F, 3rd Fingernail right hand: R/O melanoma



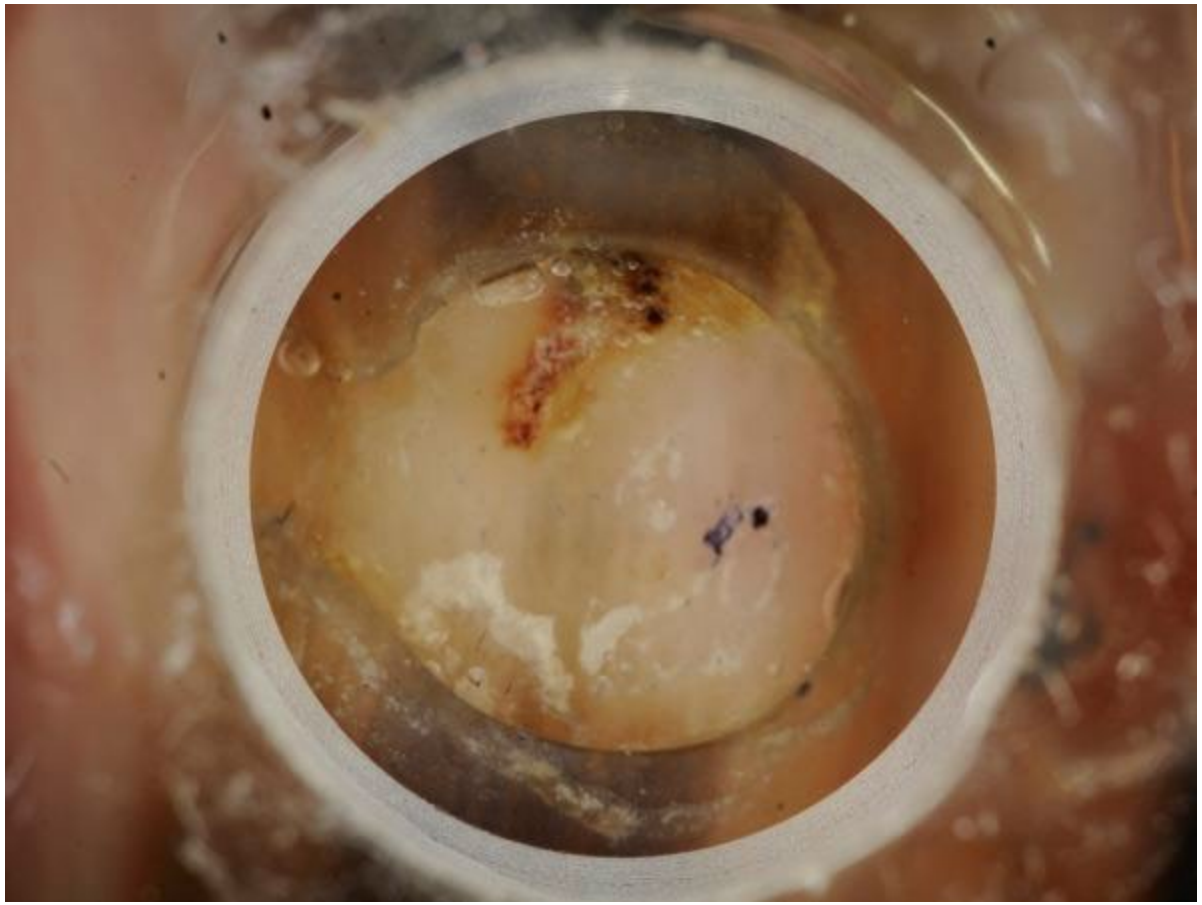
Not diagnostic

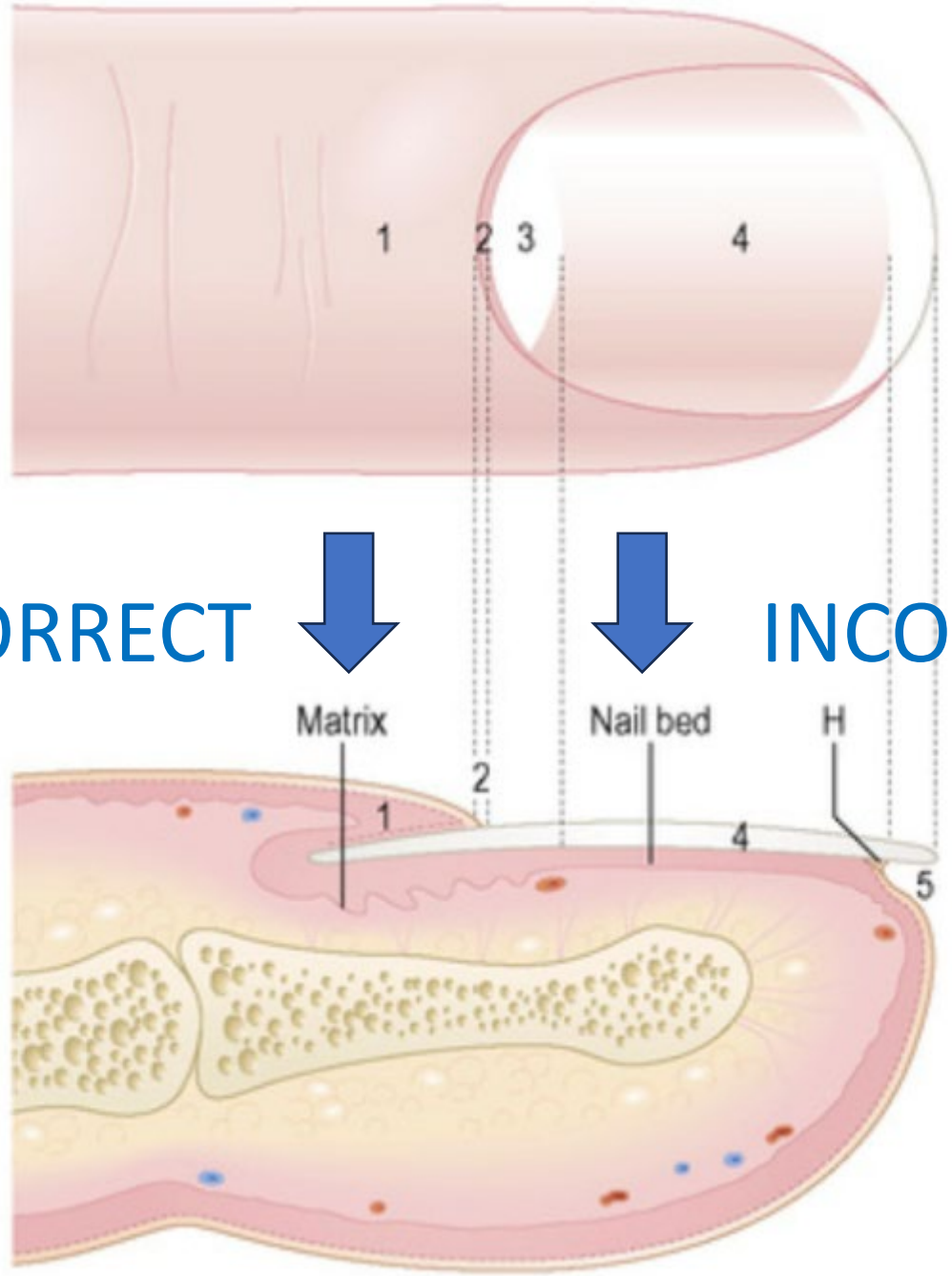
1st biopsy





JAN 2019- 2MO AFTER 1ST BIOPSY




1
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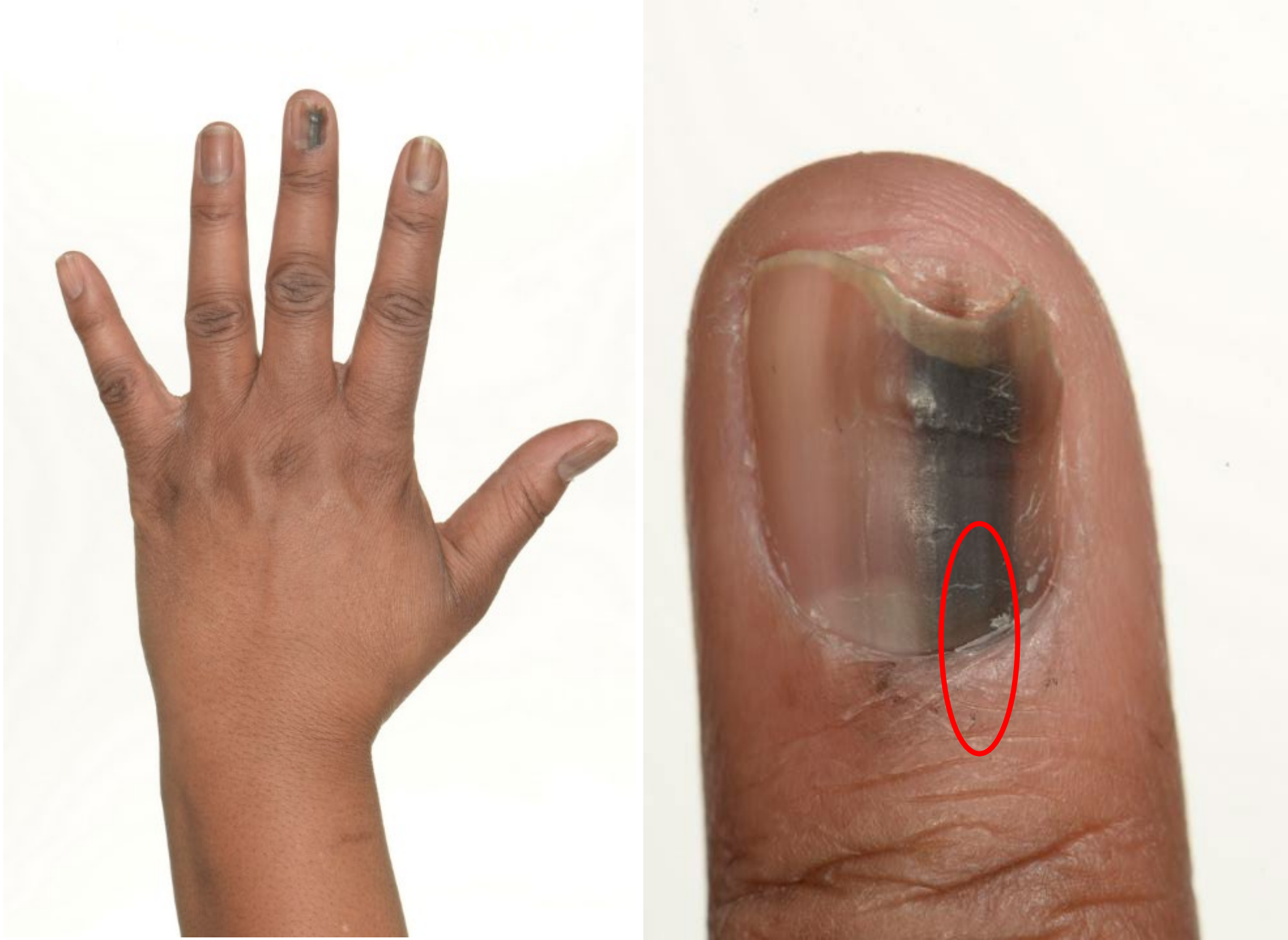
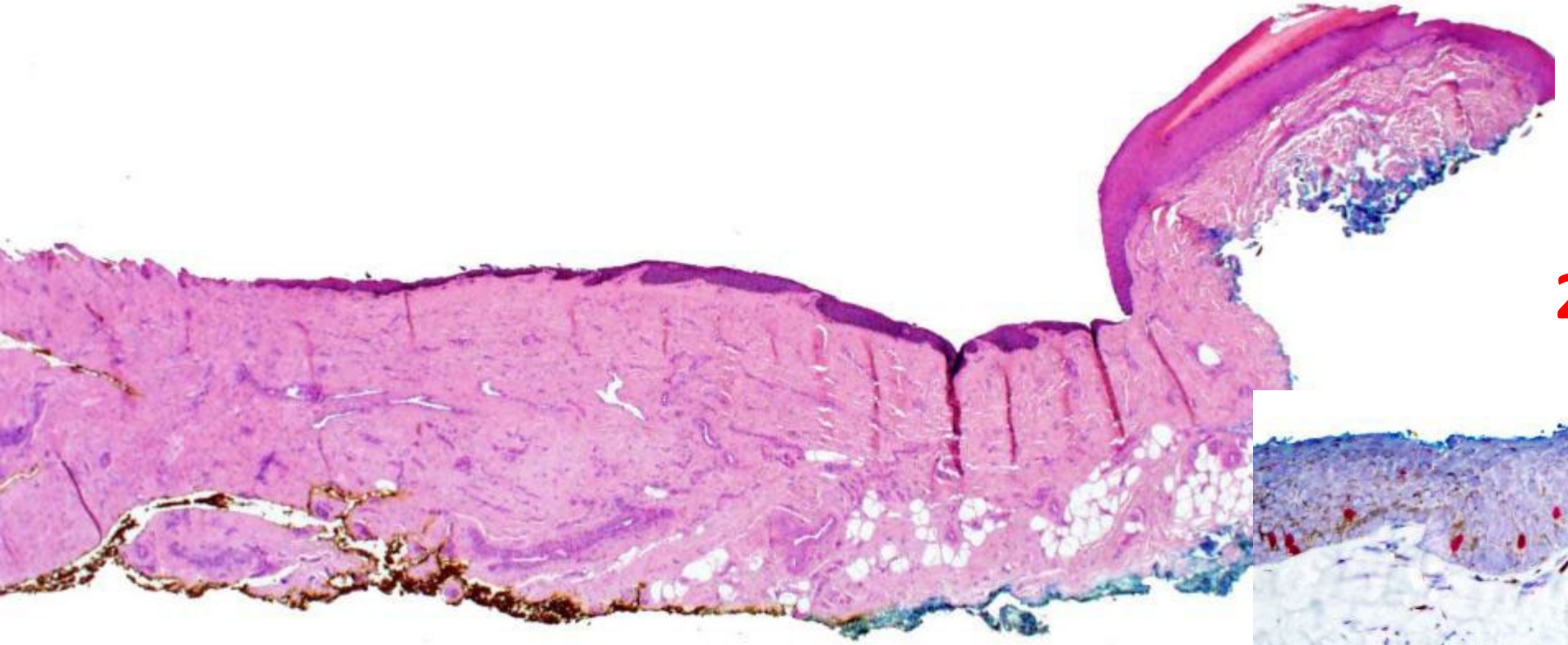
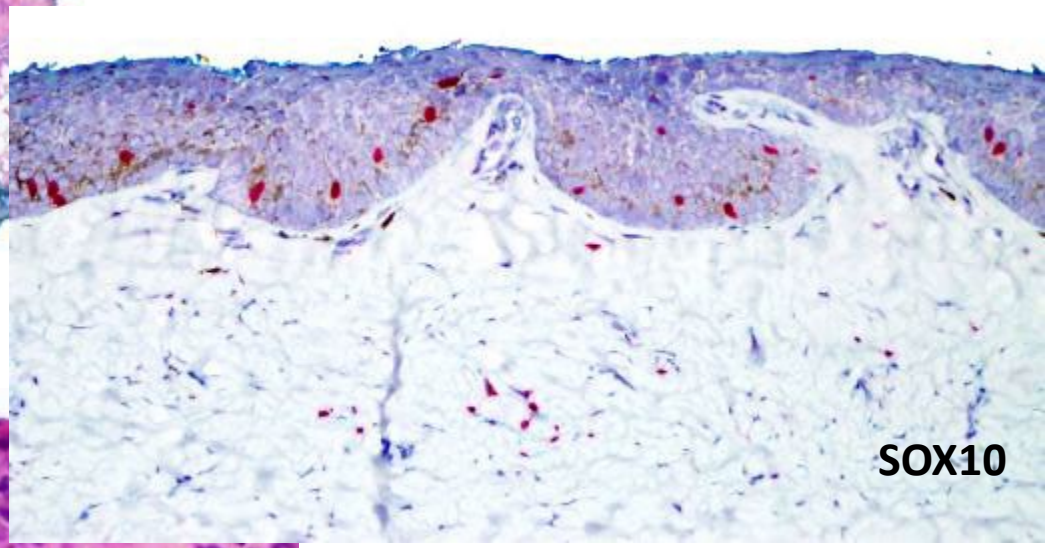
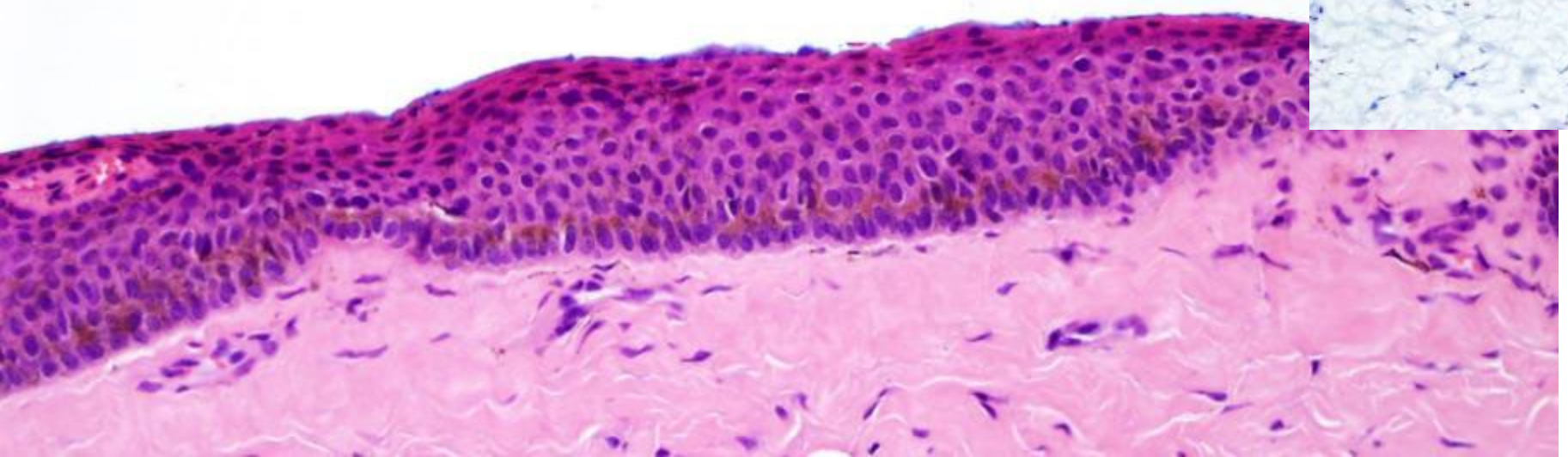




2nd excision bx





MMIS

3. Histopathology : Melanocytes density

- Normal proximal nail fold and nail bed epithelium have rare melanocytes
- NORMAL Proximal matrix: 8-20/mm
- NORMAL Distal matrix: 4-17/mm
- NORMAL Nail bed 4/mm
- A normal nail plate in an adult should not have melanocytes

4. Histopathology evaluation of atypia

Benign melanocytic hyperplasia: melanocyte density up to 30/mm
Suspicious for a NUM: melanocyte density of >40/mm

5. IHC staining - markers

- Sensitivity Melan-A and HMB-45 > SOX10
- Melan-A and HMB-45 non-specific/over-staining of keratinocytes
- SOX10 for precise localization of melanocytes
- Good to combine nuclear and cytoplasmic stains

PRAME still to be fully understood in the nail unit but “some benefits” for the authors

Shown to be strongly positive for melanoma BUT cases of PRAME positivity in melanocytic activation have been described (Perrin C. Am J Dermatopathol. 2022;44:499–502).

6. Nail plate evaluation

- Melanocytes do not typically reach the keratinized zone in benign proliferations
- The presence of melanocytes in the nail plate of an adult is a useful clue to the diagnosis of melanoma
- Large number and density of melanocytes in nail plate correlates with invasive NUM
- Evaluate the attached nail plate epithelium

J Cutan Pathol 2010: 37: 1027–1029
doi: 10.1111/j.1600-0560.2010.01593.x
John Wiley & Sons. Printed in Singapore

Journal of
Cutaneous Pathology

Cover Quizlet

Beth S. Ruben and Timothy H. McCalmont

Figures 1 and 2 are depicted on the journal cover.

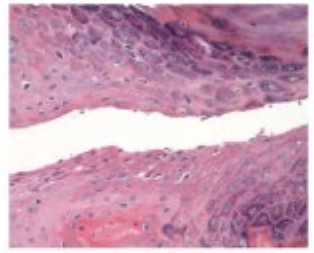


Figure 3 *(cont'd from the cover).*

Figure 4.

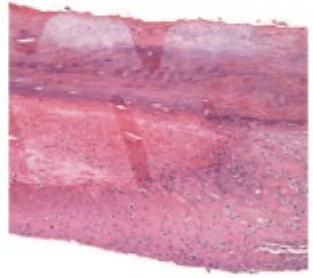


Figure 5.

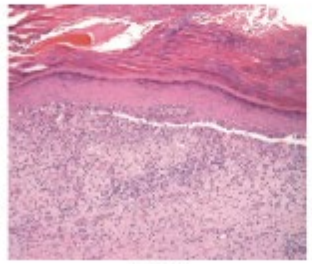


Figure 6.

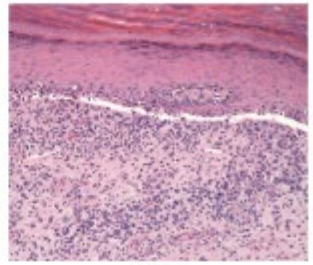


Figure 7.

Your diagnosis?

Discussion follows on page 1028

The Importance of Attached Nail Plate Epithelium in the Diagnosis of Nail Apparatus Melanoma

Beth S. Ruben and Timothy H. McCalmont

Departments of Pathology and Dermatology, University of California, San Francisco

Timothy H. McCalmont
e-mail: Tim.McCalmont@ucsf.edu

Accepted for publication July 16, 2010

The accurate histopathological diagnosis of melanoma remains challenging, and the diagnosis of nail apparatus melanoma and distinction from its simulants persists as an extremely demanding activity.[1,2] Diagnostic hazard is caused by rarity, physician unfamiliarity, misinterpretation, and the physical barrier of the nail plate.[3,4] The latter represents an especially important factor, as distorted and fragmented biopsies are a routine consequence of sampling through the inflexible ungual shield. The prognosis of nail apparatus melanoma is poor in the best circumstances, and once the diagnosis has been missed, increases in lesional thickness, advances in stage at the time of ultimate diagnosis, and lower survival are documented consequences.[3,4]

The approach emphasized by most authorities relies on the application of traditional criteria such as assessment of circumscription, determination of the ratio of single cells to nests, appraisal of cytologic atypia and degree of intraepithelial scatter, and evaluation of junctional/subjunctional lymphocytes.[1] Successful application of precise histopathological criteria presumes that an adequate specimen for interpretation has been or can be obtained, which often proves not to be the case.[5] Little has been written regarding the optimization of bad circumstances.[6] When a less than ideal specimen crosses the microscope stage, what is the best course of analysis?

We posit that close scrutiny of epithelium attached to or dangling from the nail plate represents an overlooked means to facilitate the diagnosis of nail unit

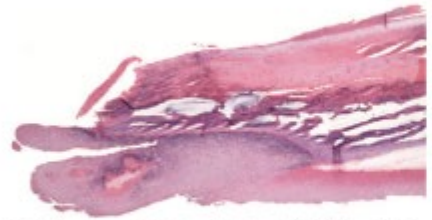


Fig. 1. A portion of nail plate with attached epithelium includes probable proximal nail fold and superficial matrix.

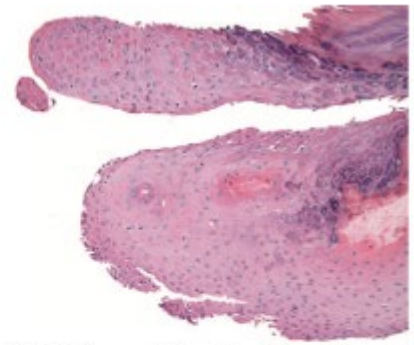


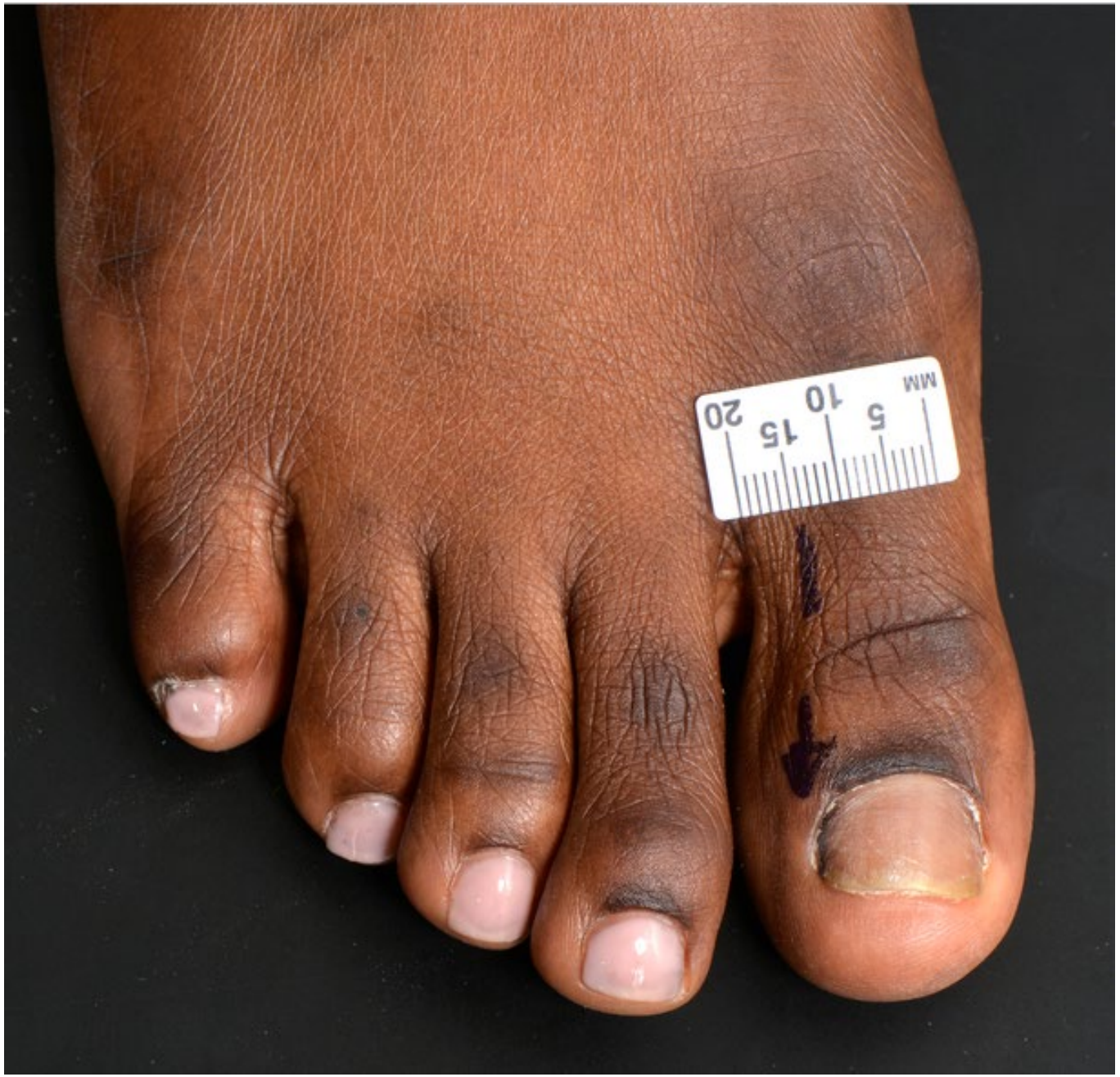
Fig. 2. At higher magnification, scatter of melanocytes through the attached epithelium is apparent.

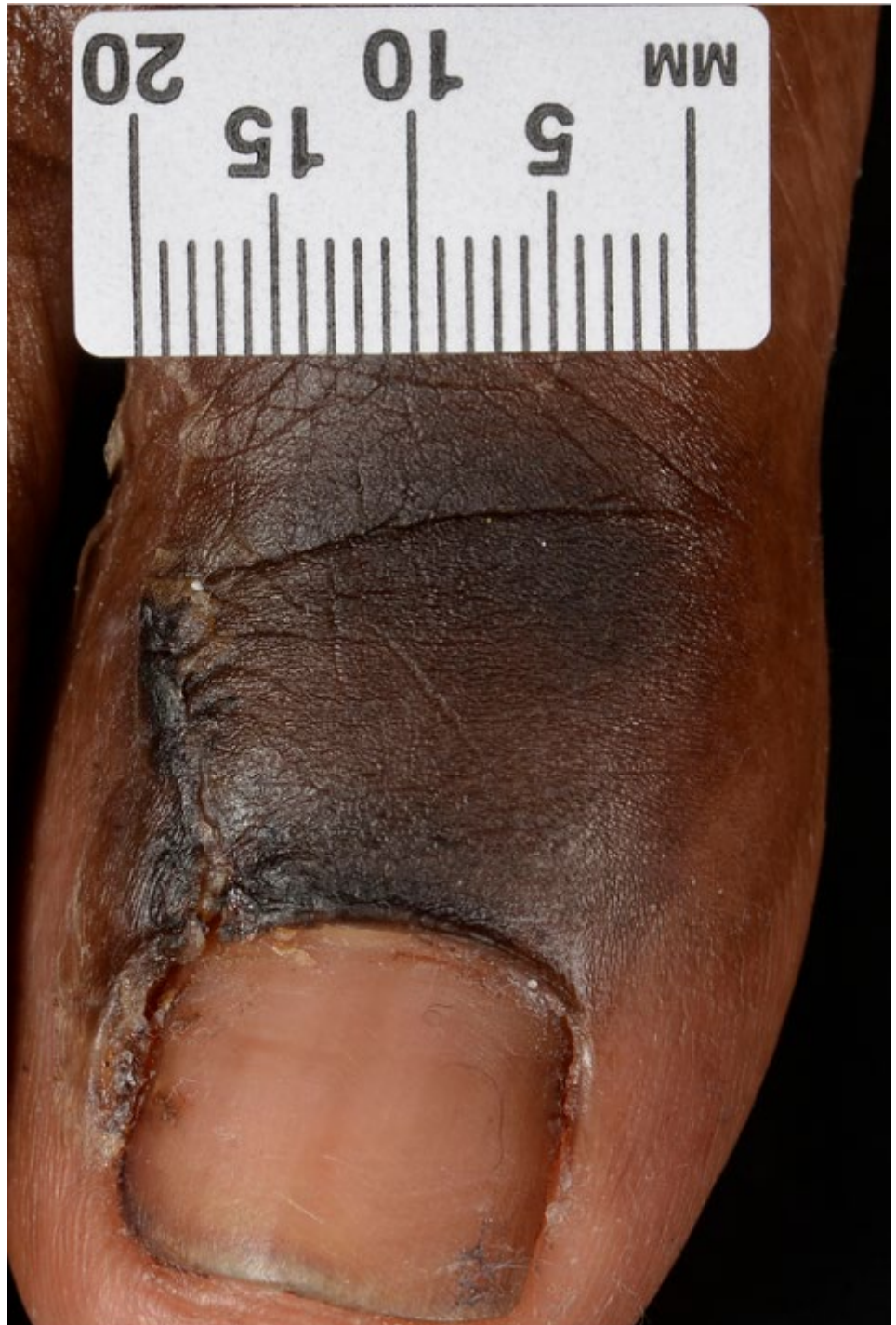
20M RIGHT LATERAL GREAT TOE NAIL

Widening pigmented band since 2020. Recurrence.

Type IV skin.

Excision involving nail matrix

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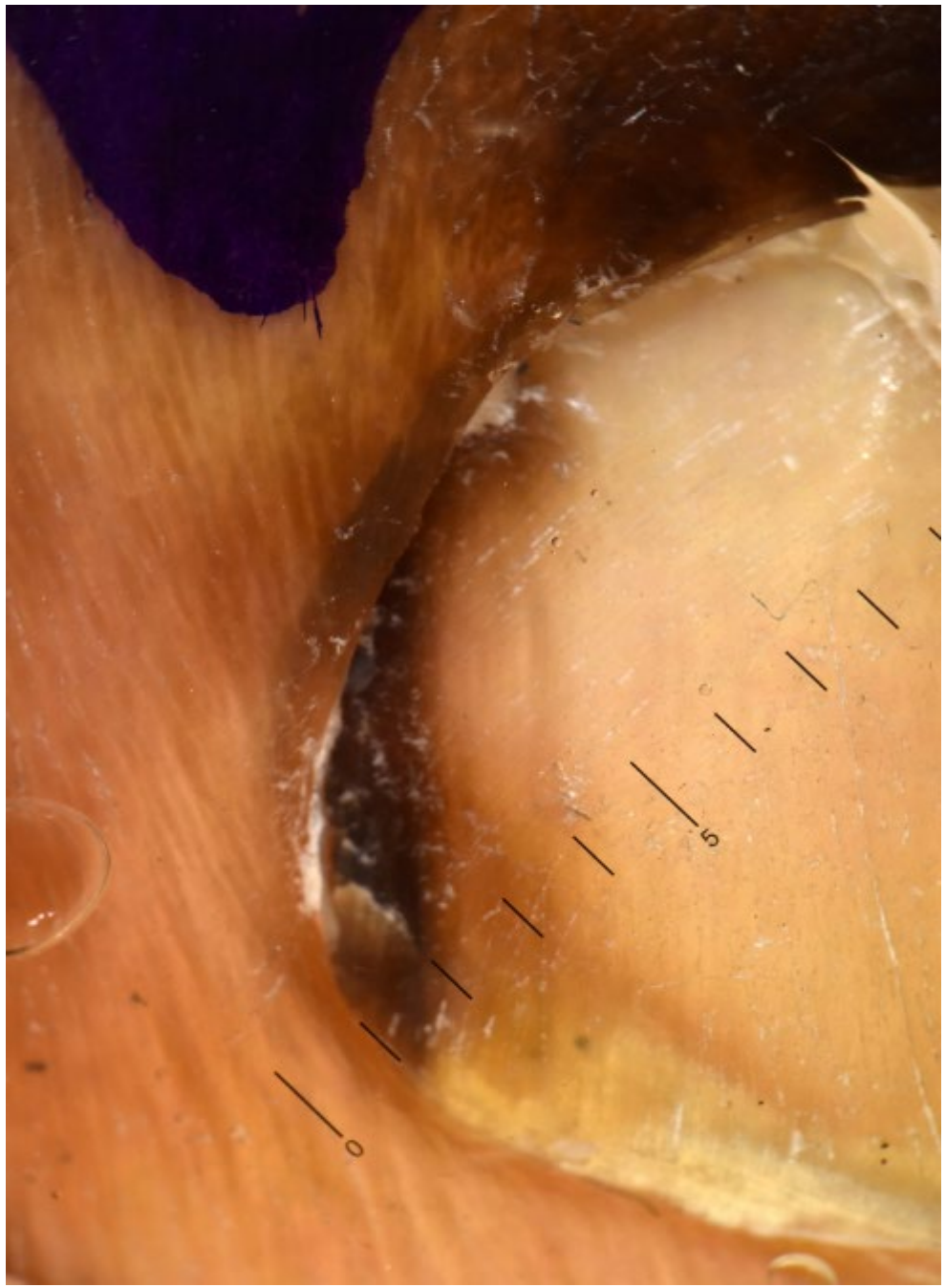
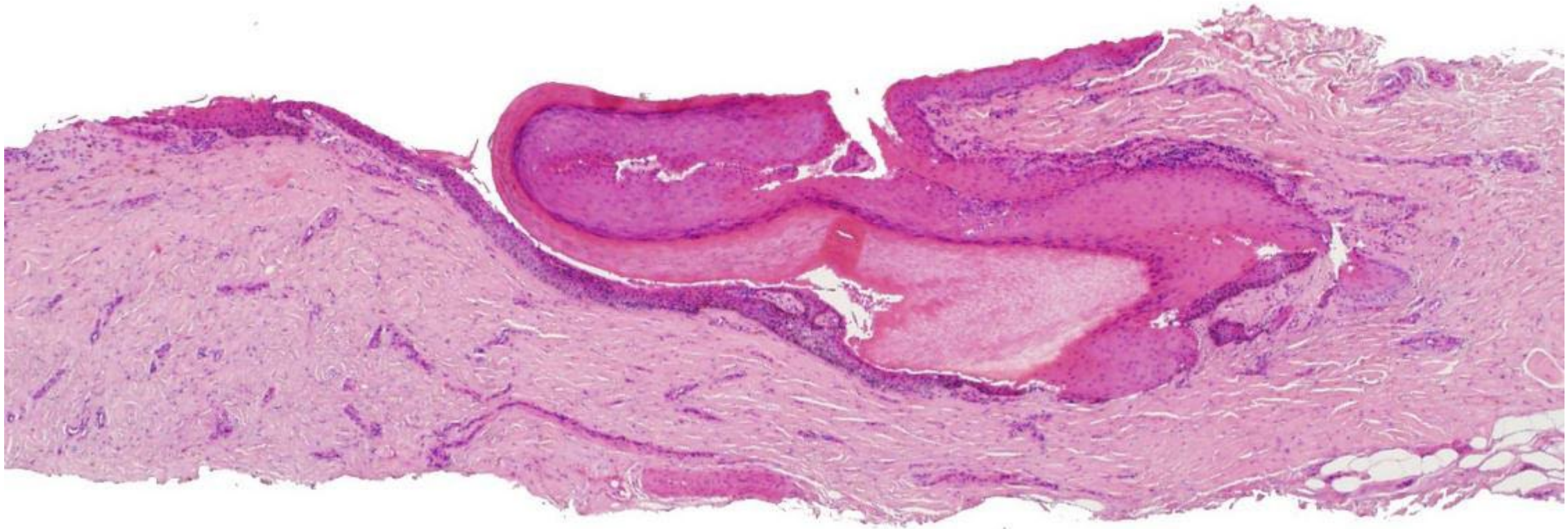
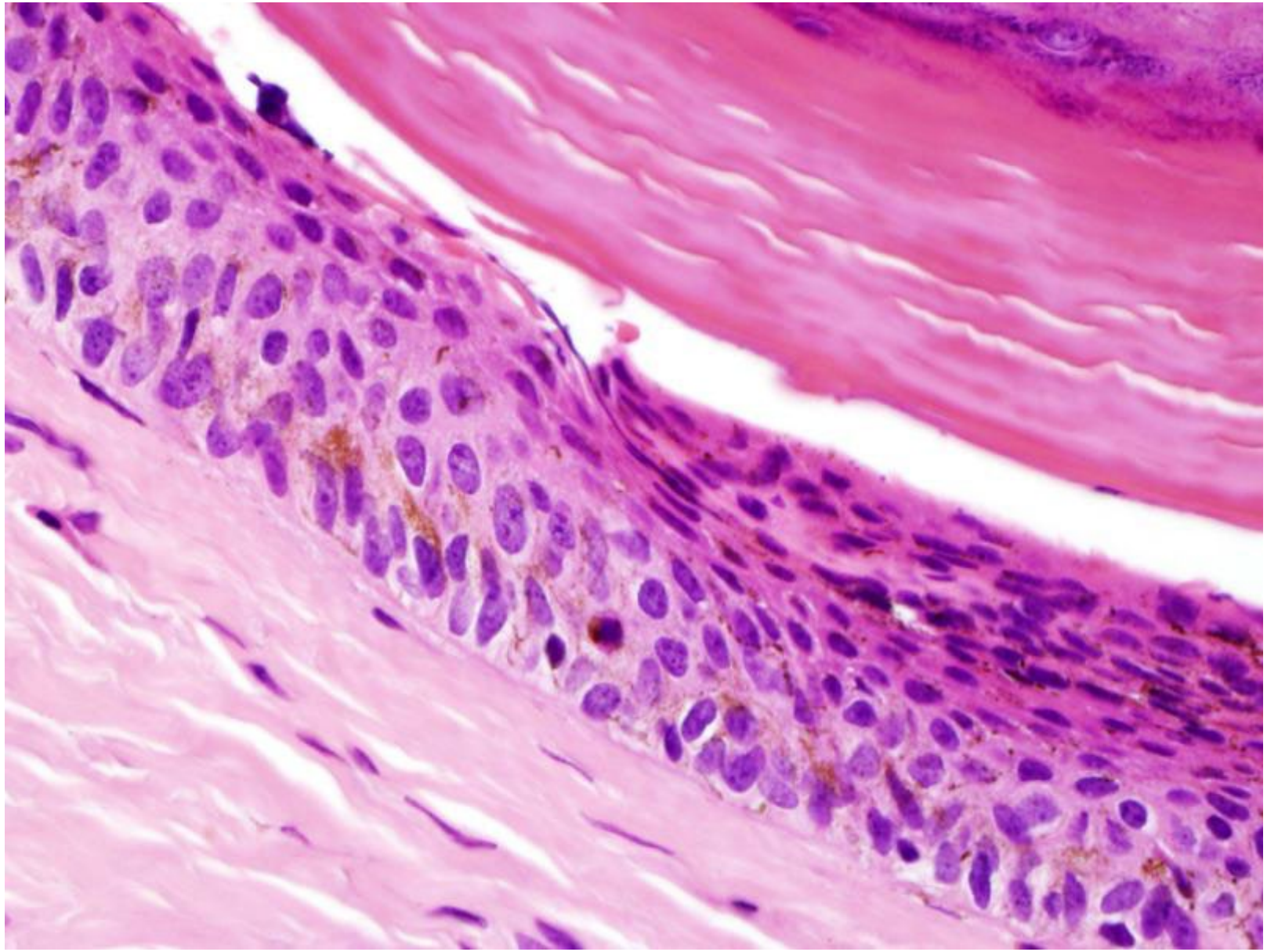
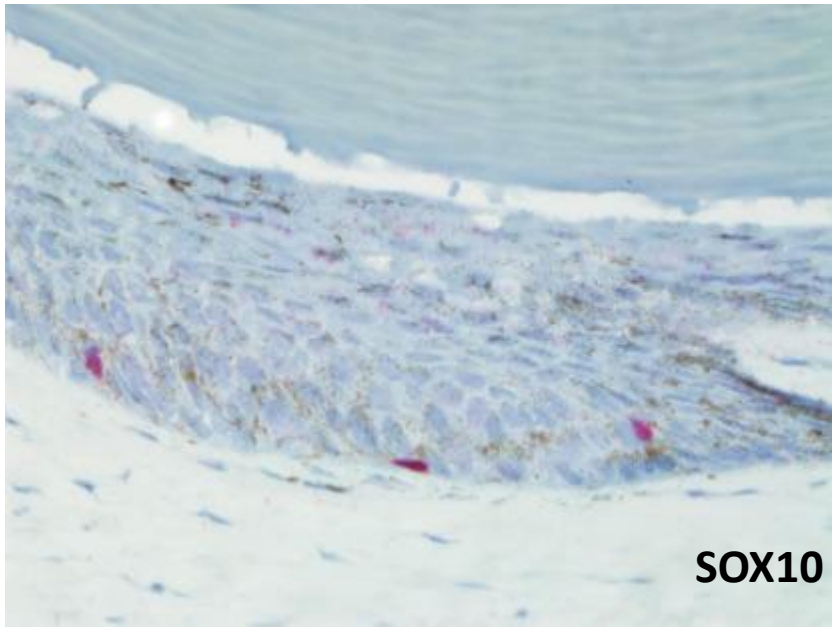
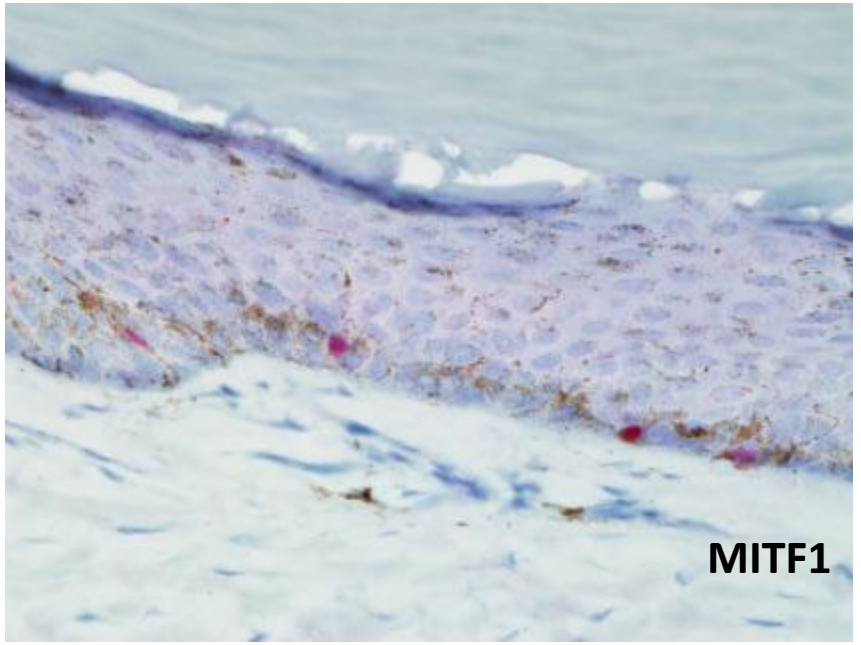







SOX10


MITF1

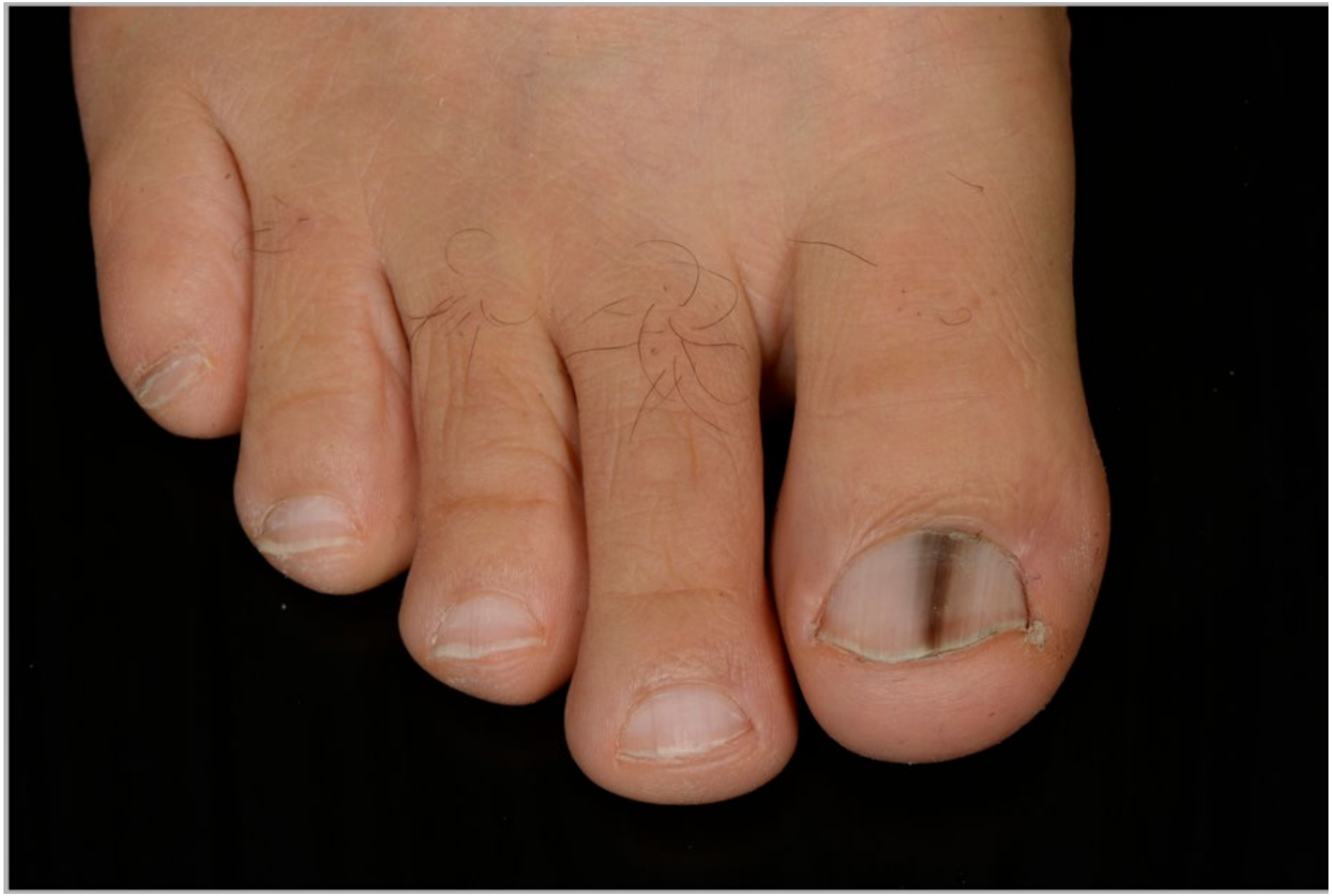
MELANOCYTIC ACTIVATION

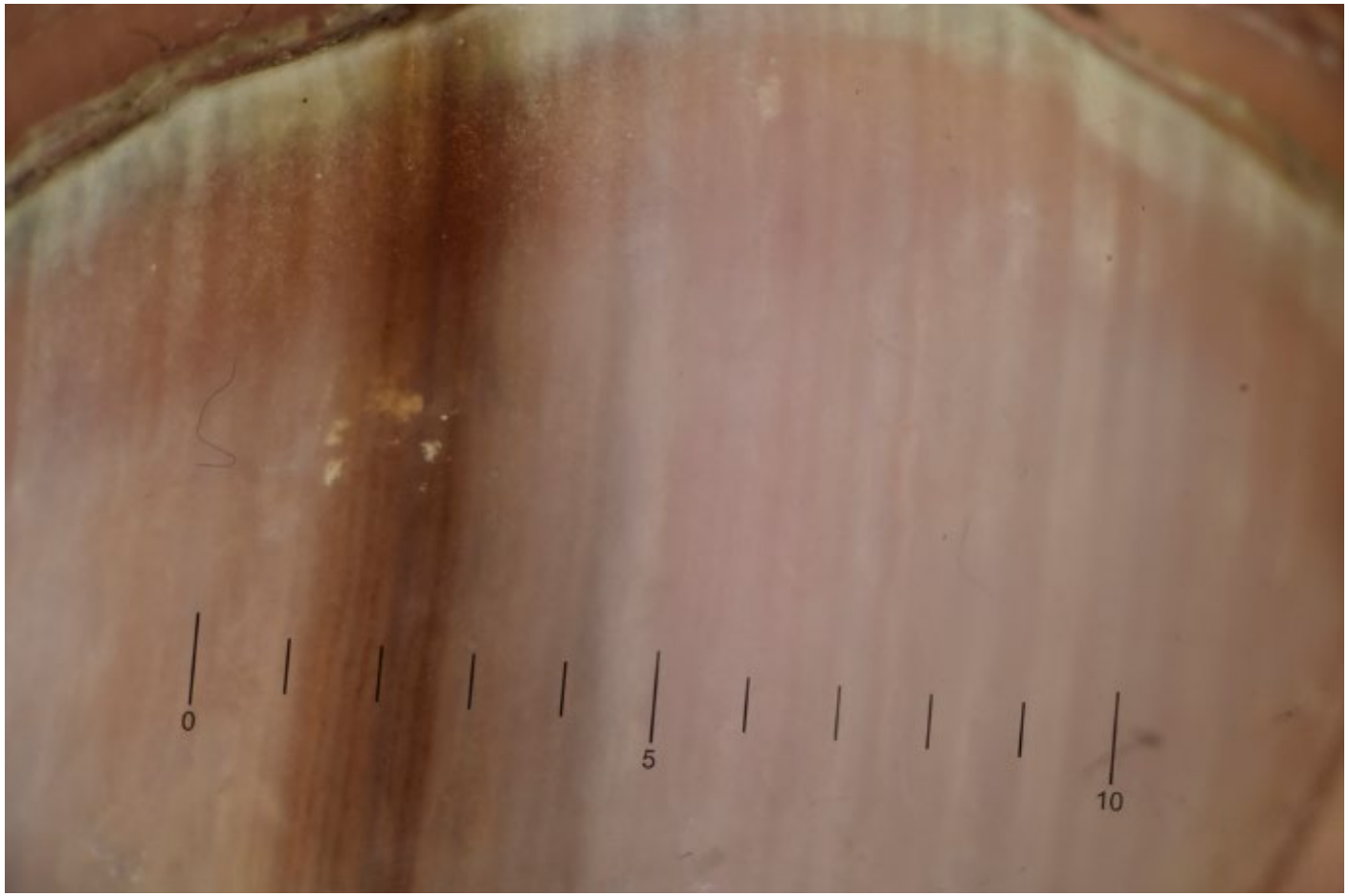
Increased melanin pigmentation

without increase of melanocytes number

52M RIGHT GREAT TOENAIL

4 months hx linear melanonychia >3mm.
R/O melanoma

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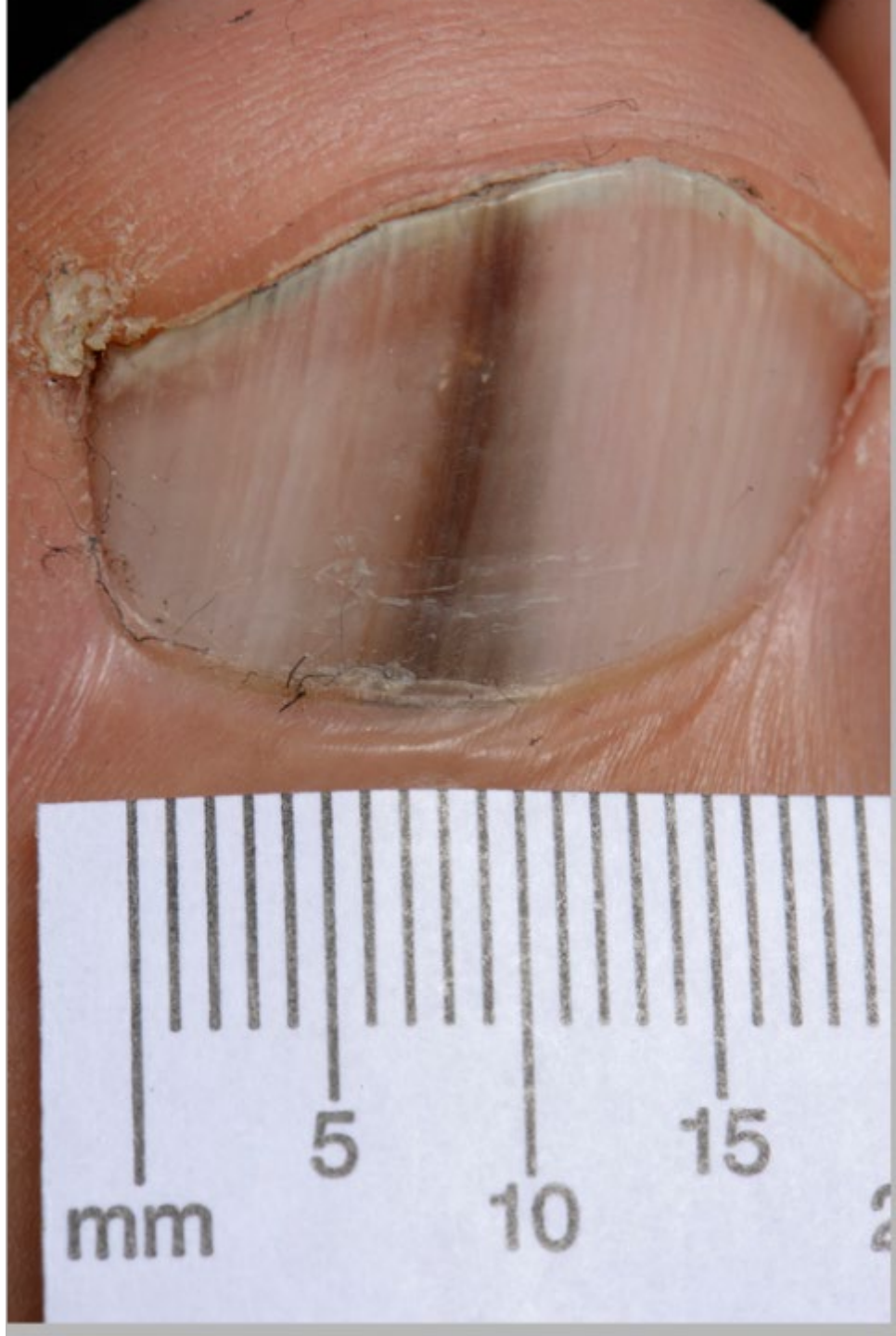
mm
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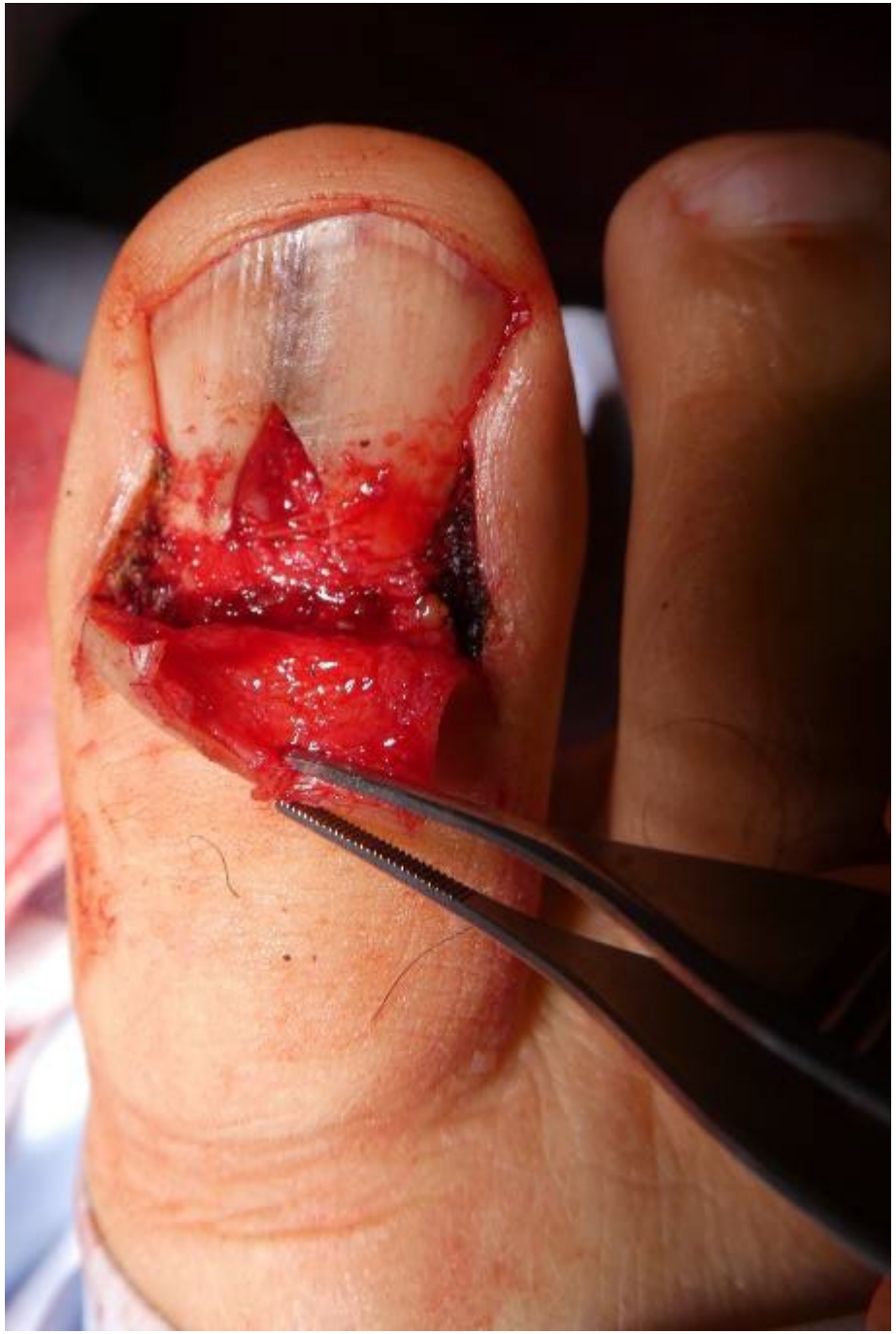
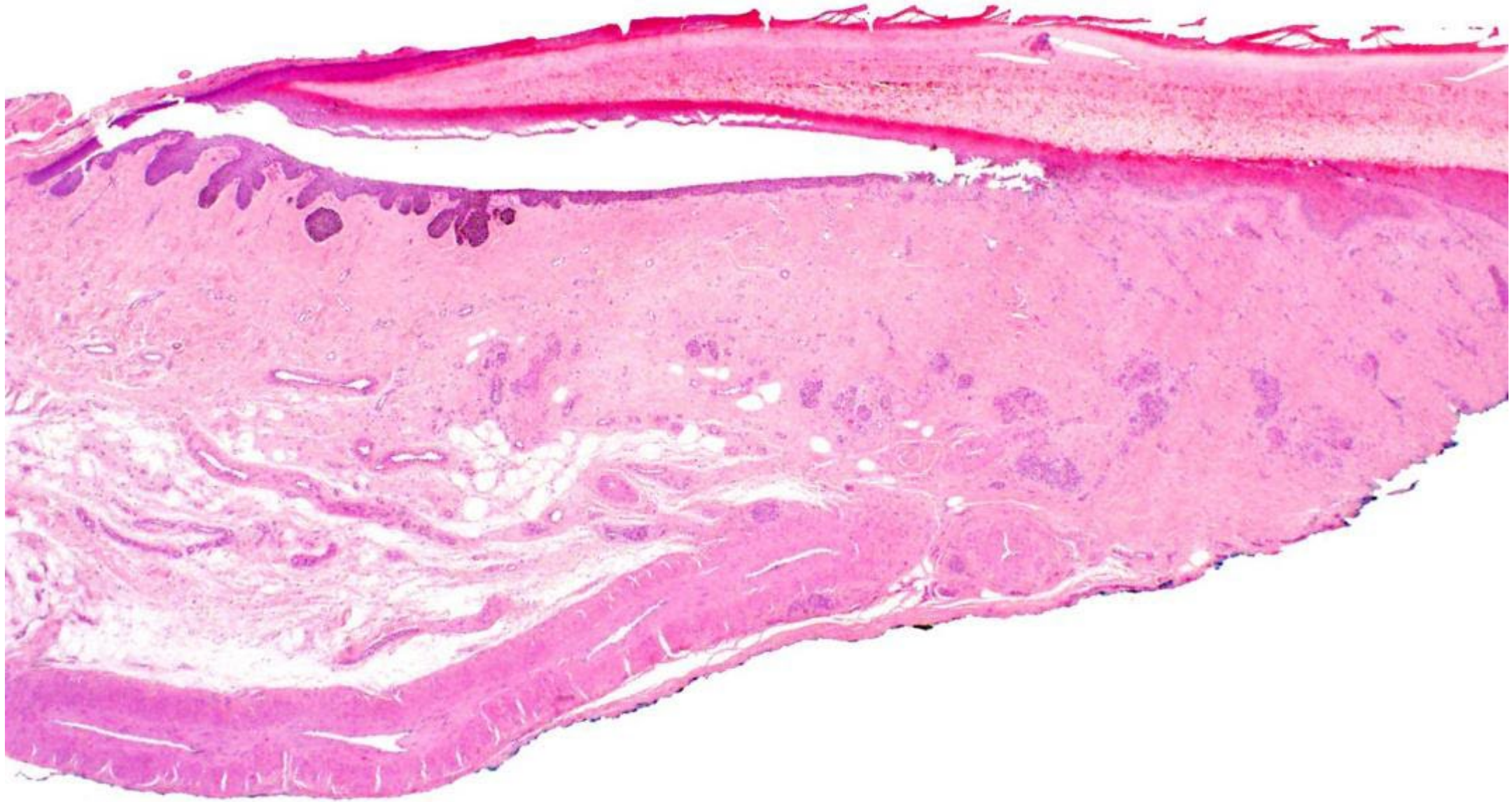
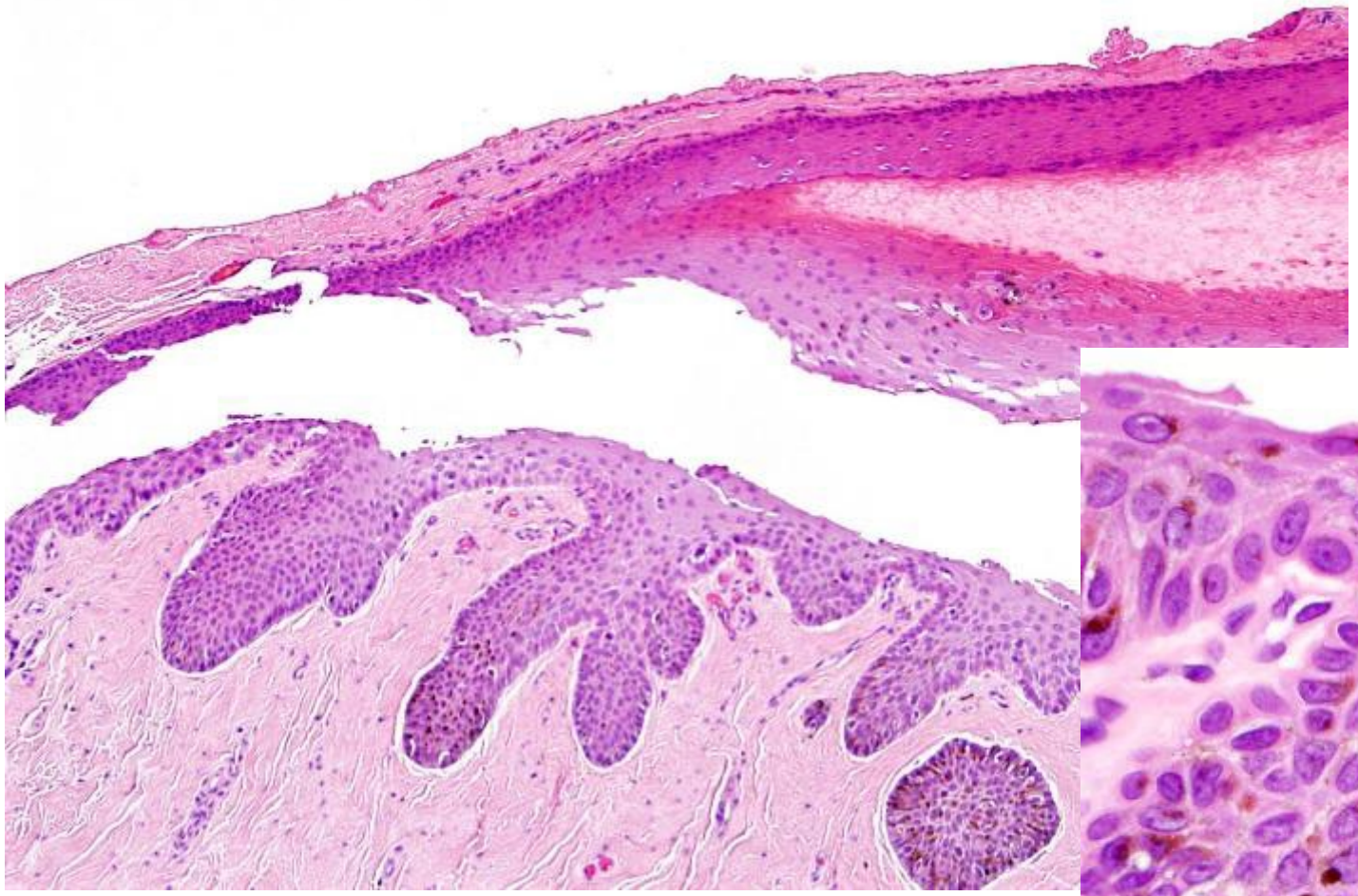
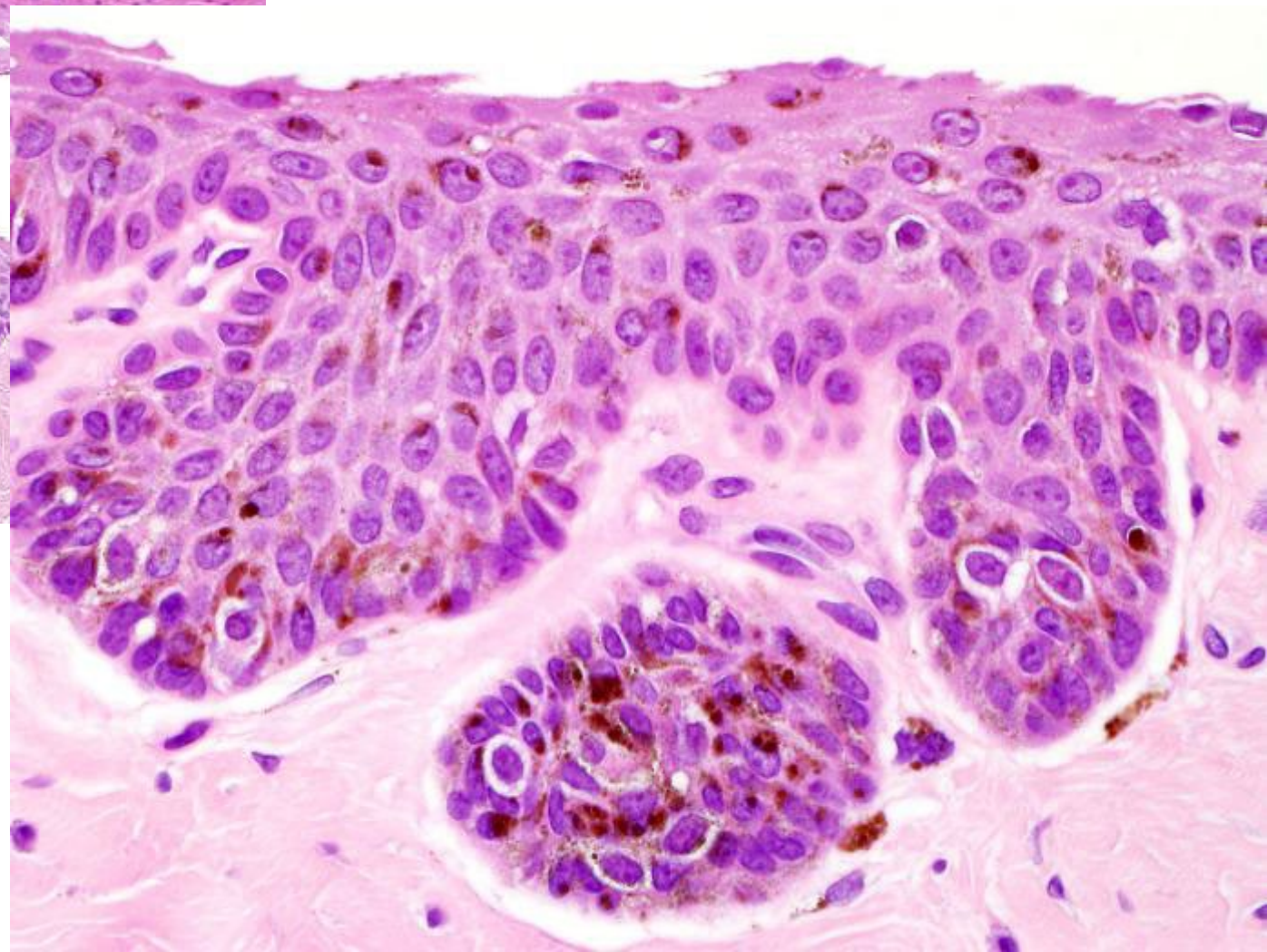
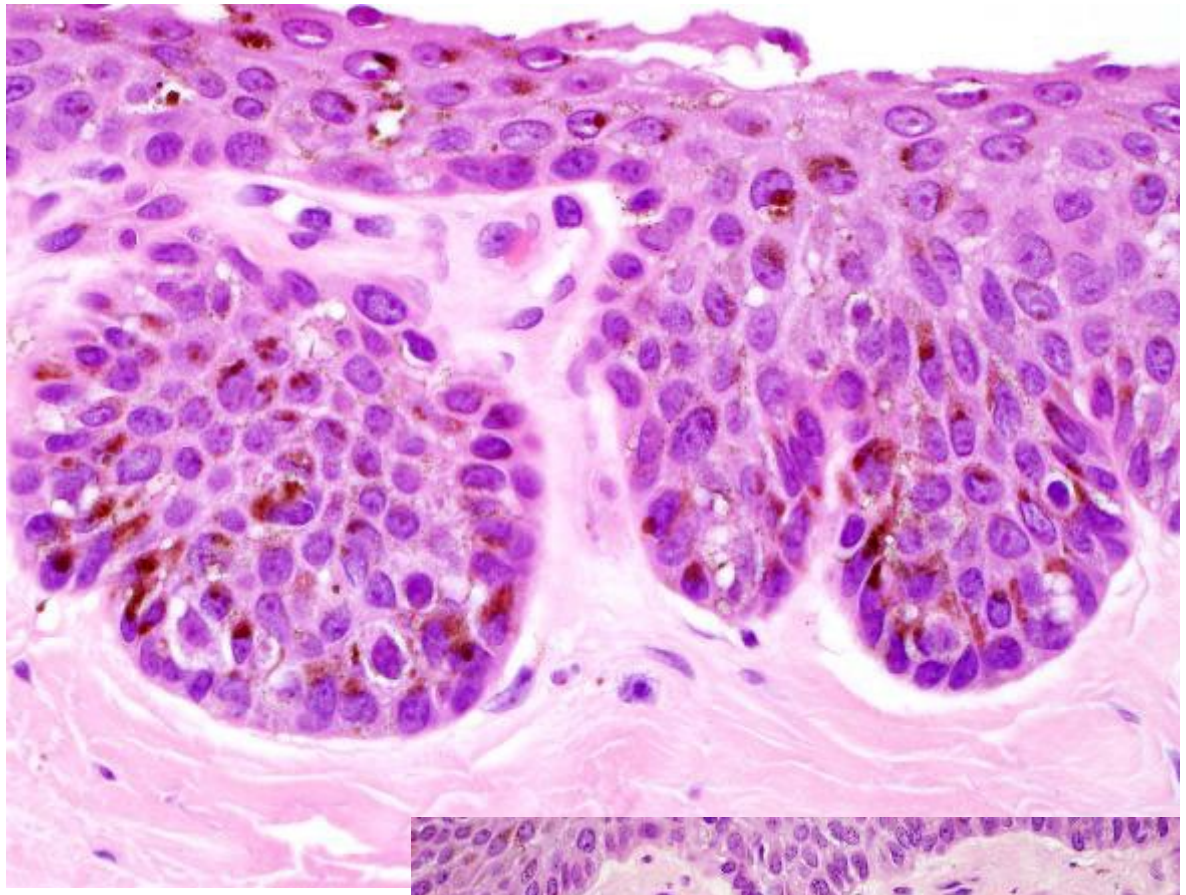
Biopsy of the Matrix











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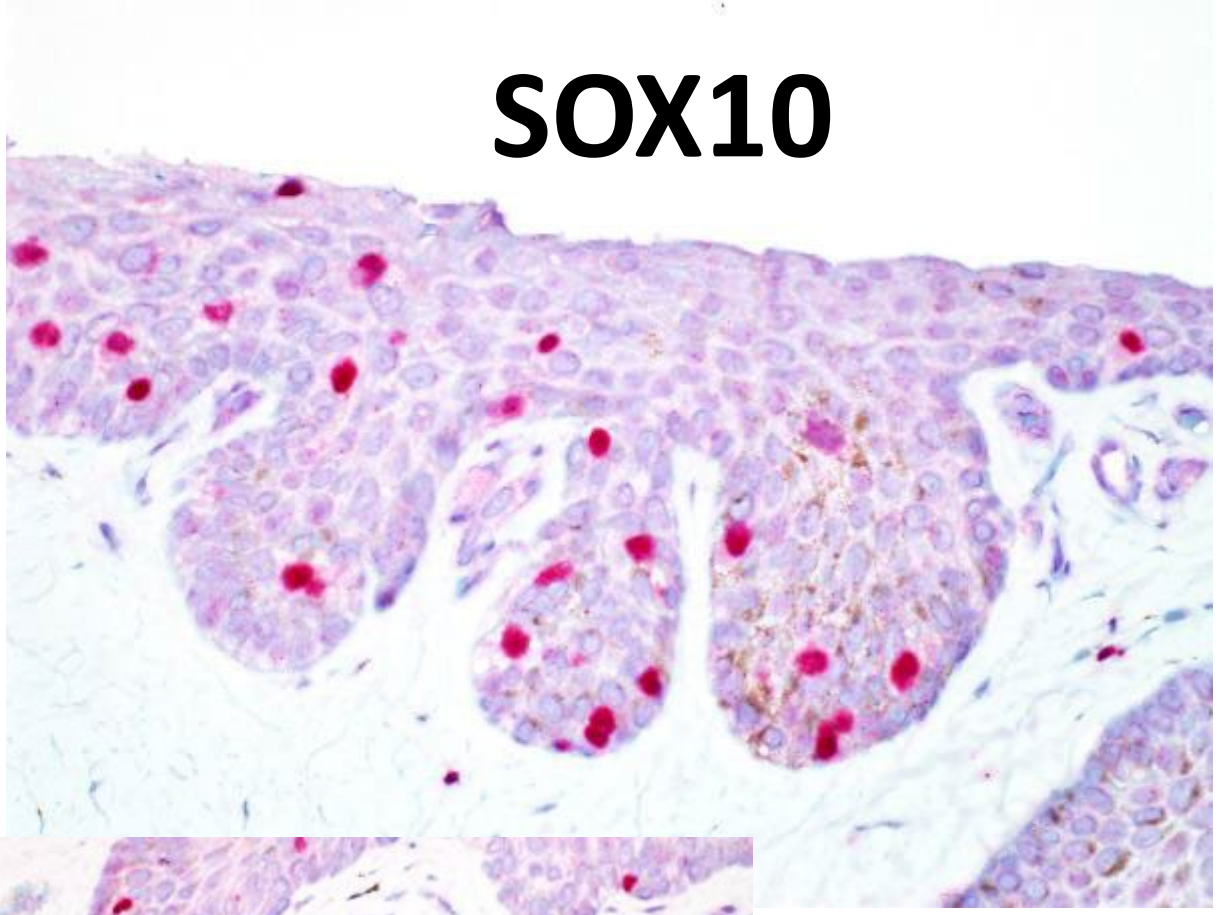
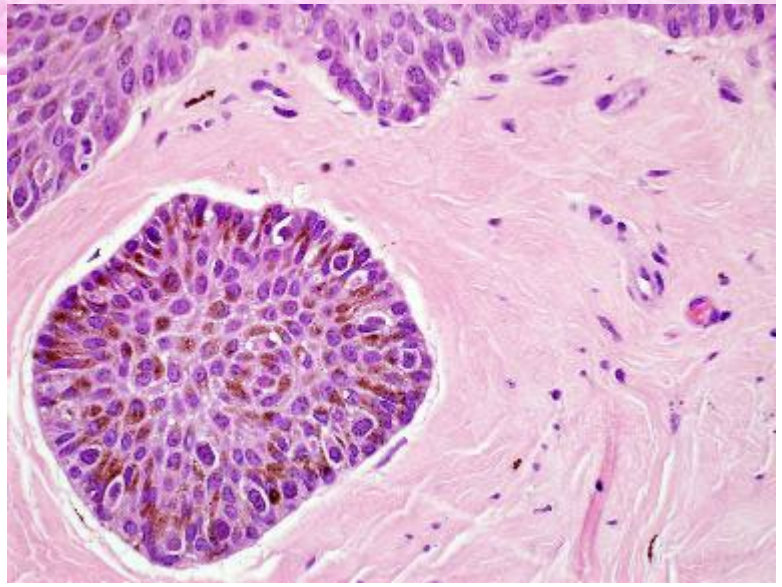
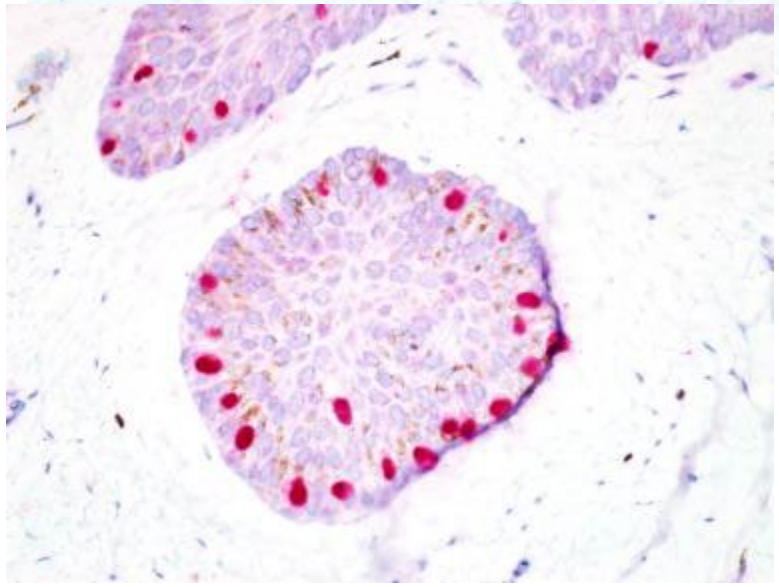




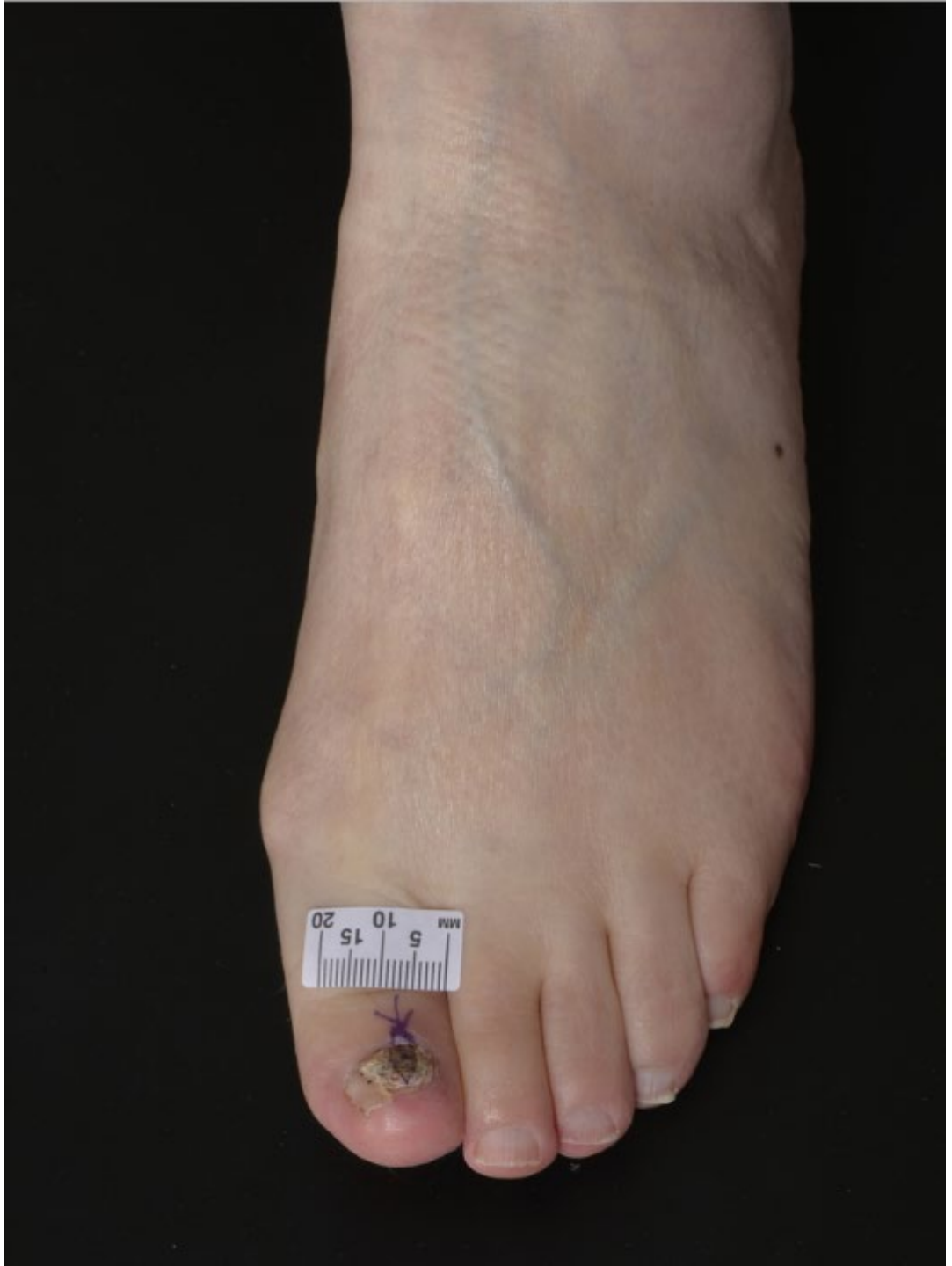


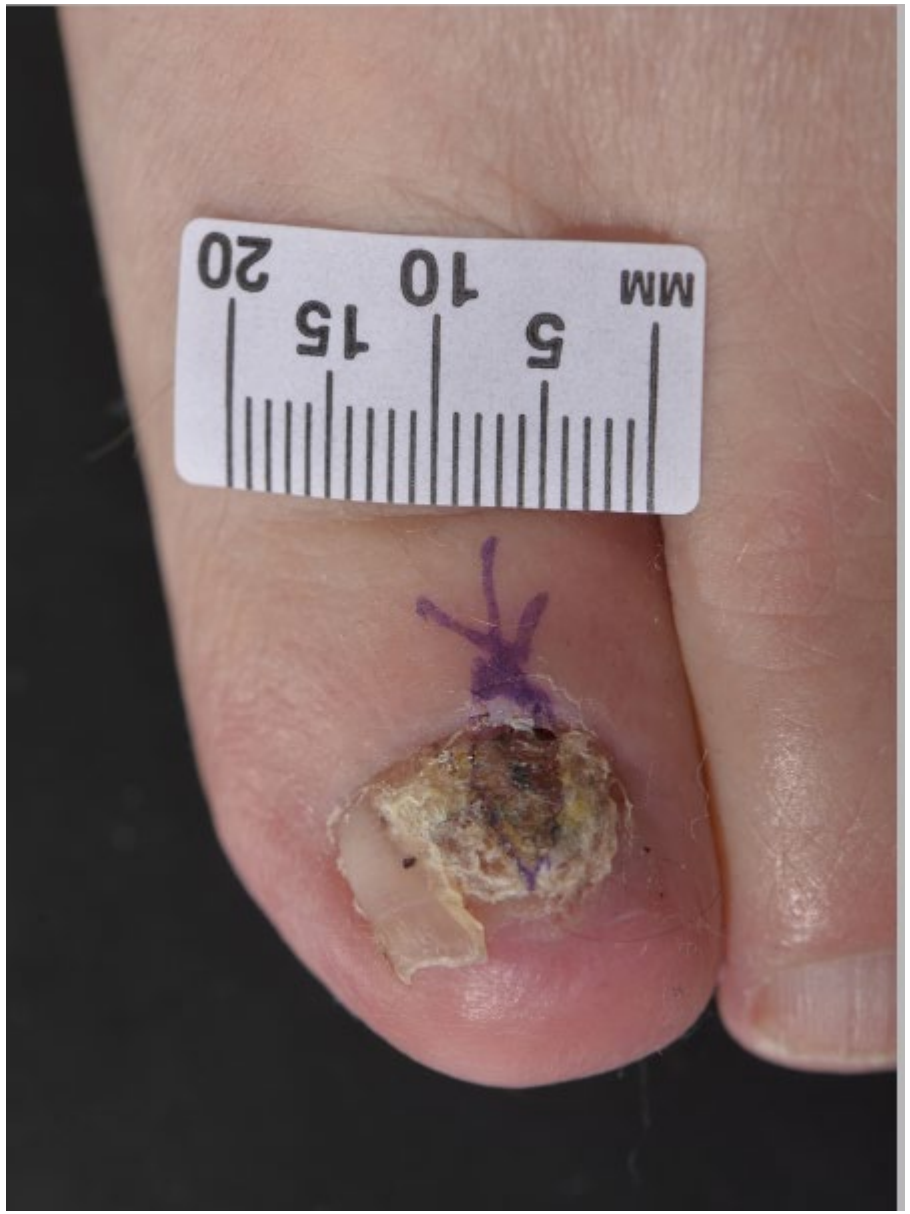
MELANOMA IN SITU

67F LEFT GREAT TOENAIL

2yr history dystrophic changes with crusting

Unresponsive to antifungal and antibiotics

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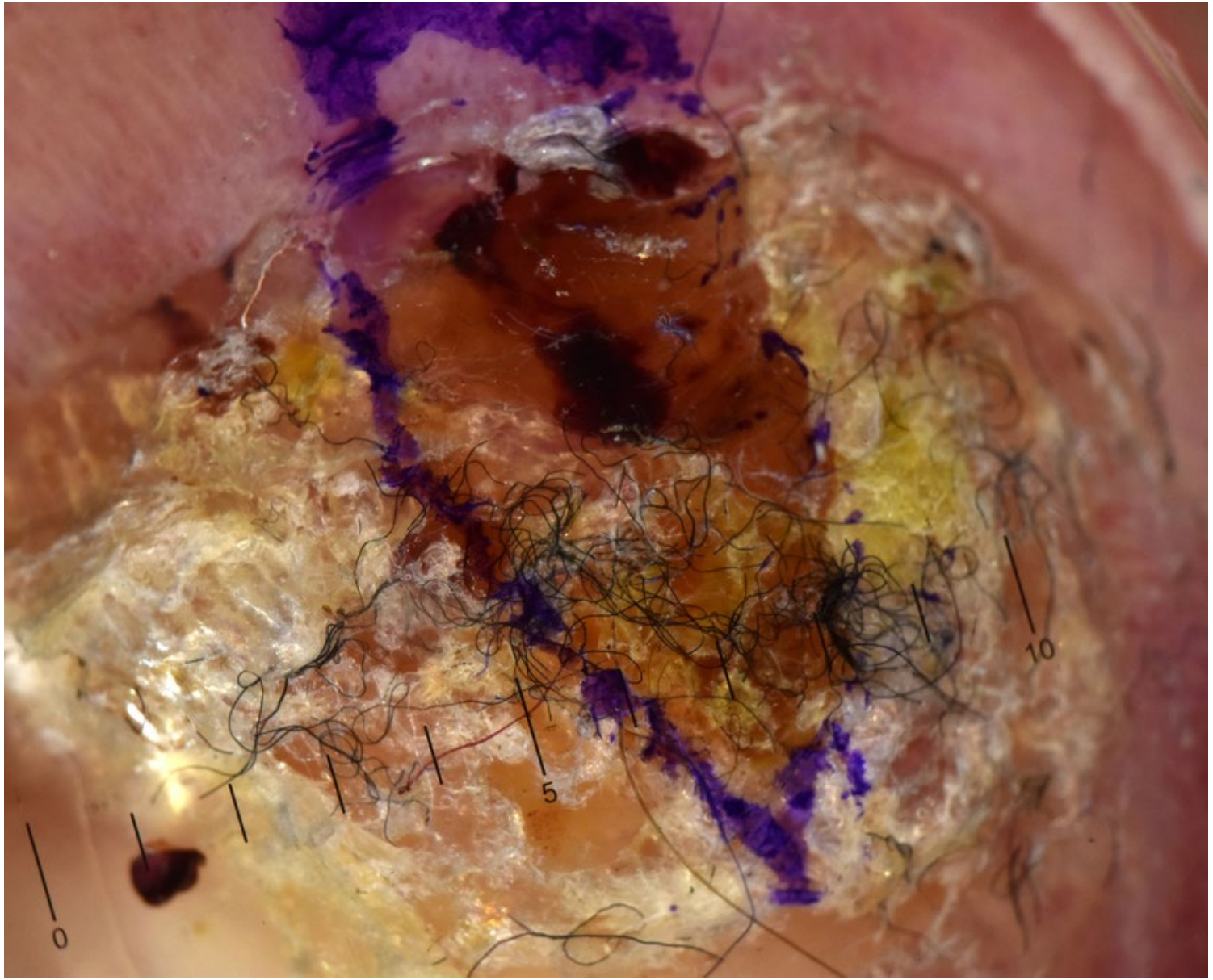
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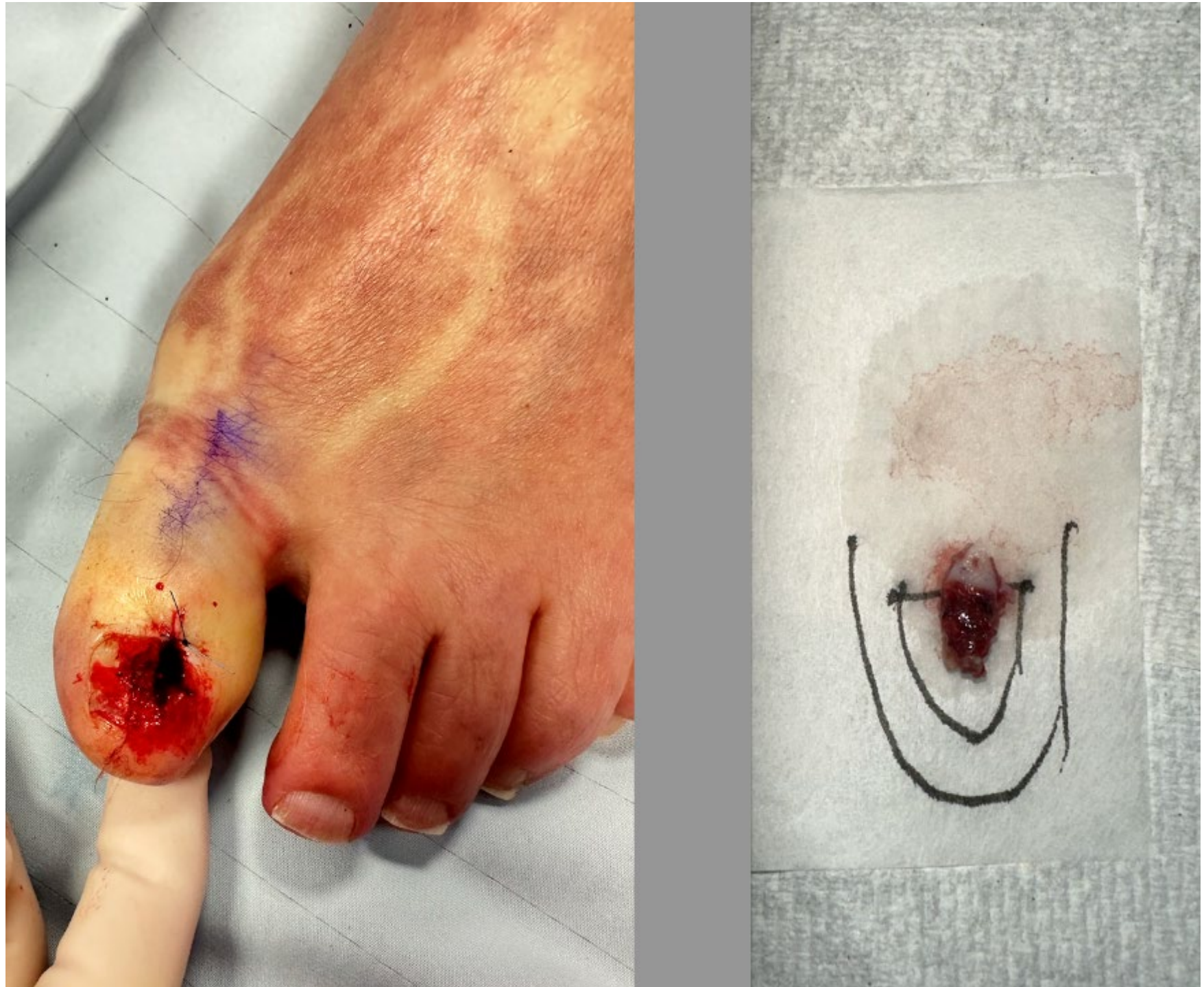

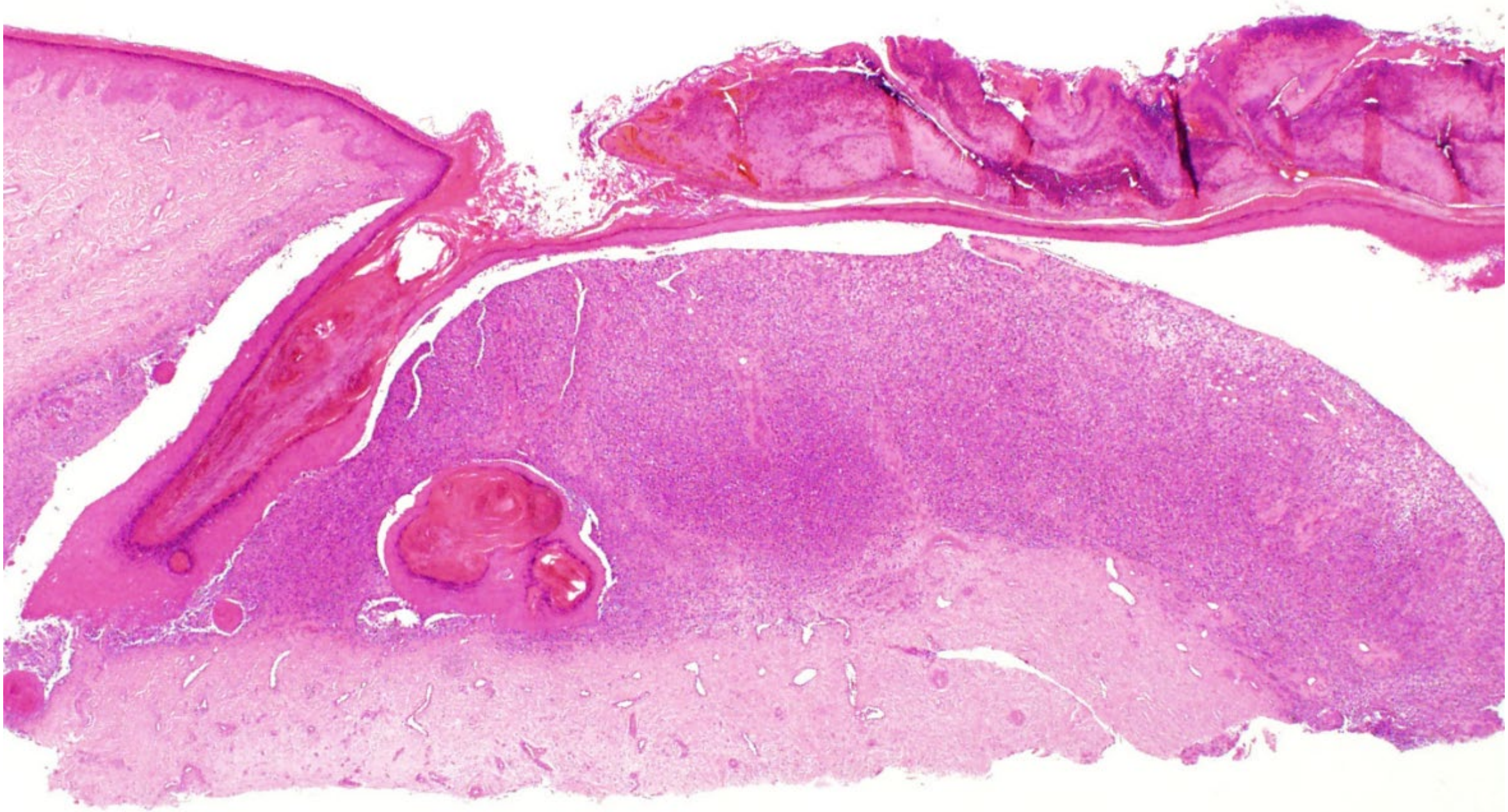

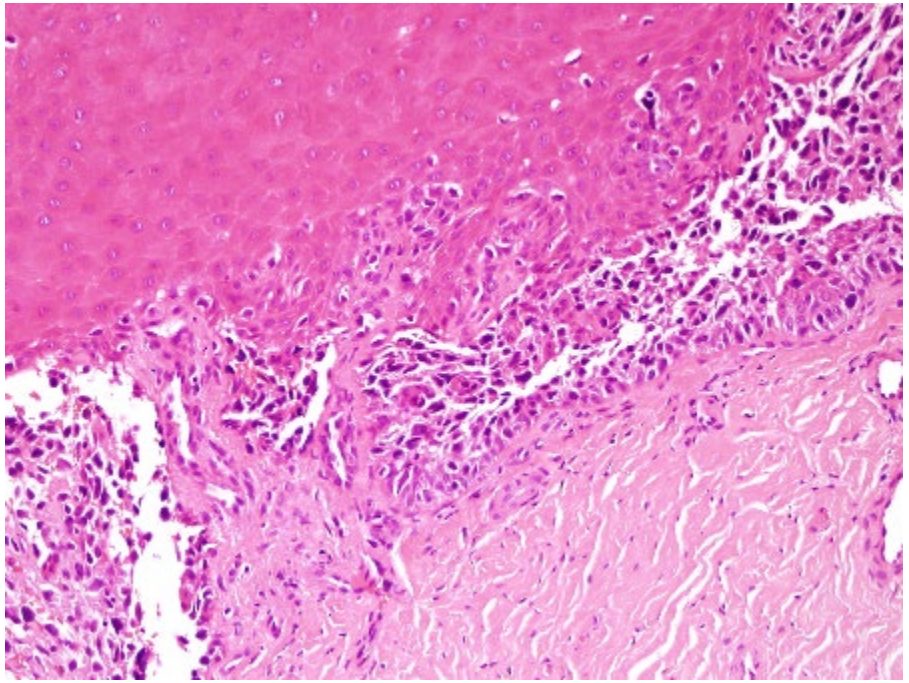

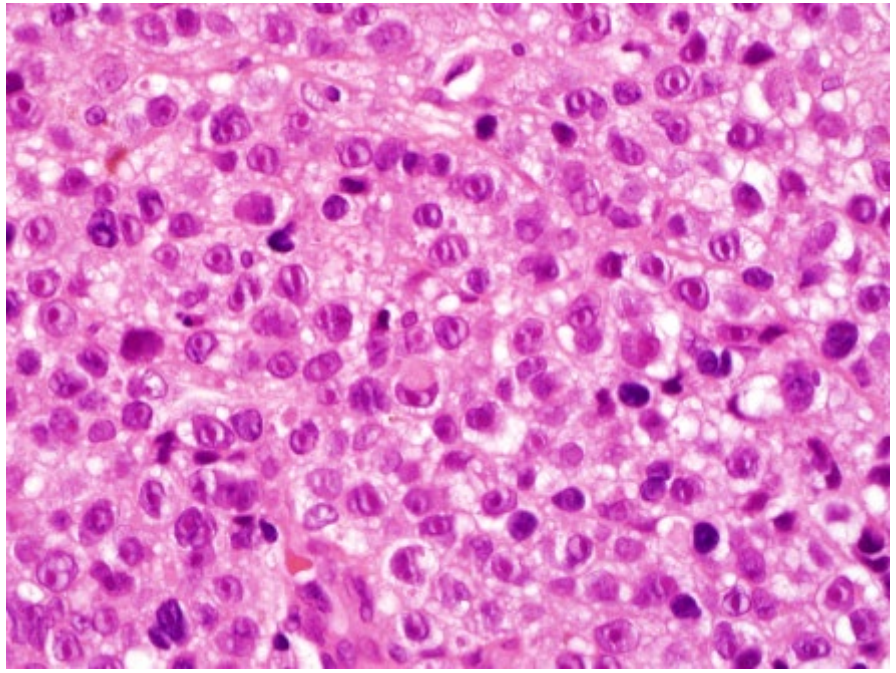

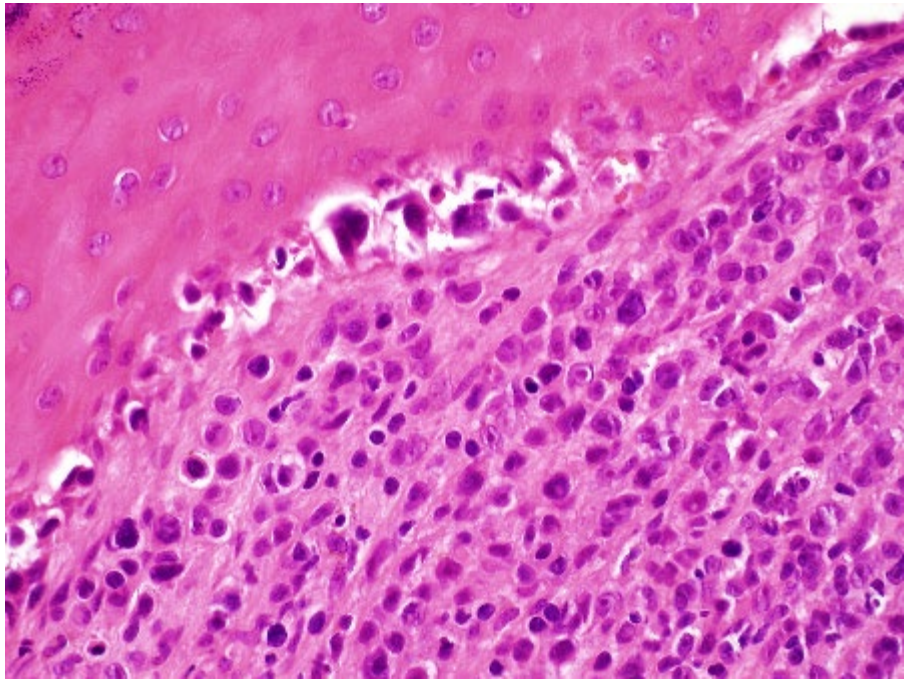

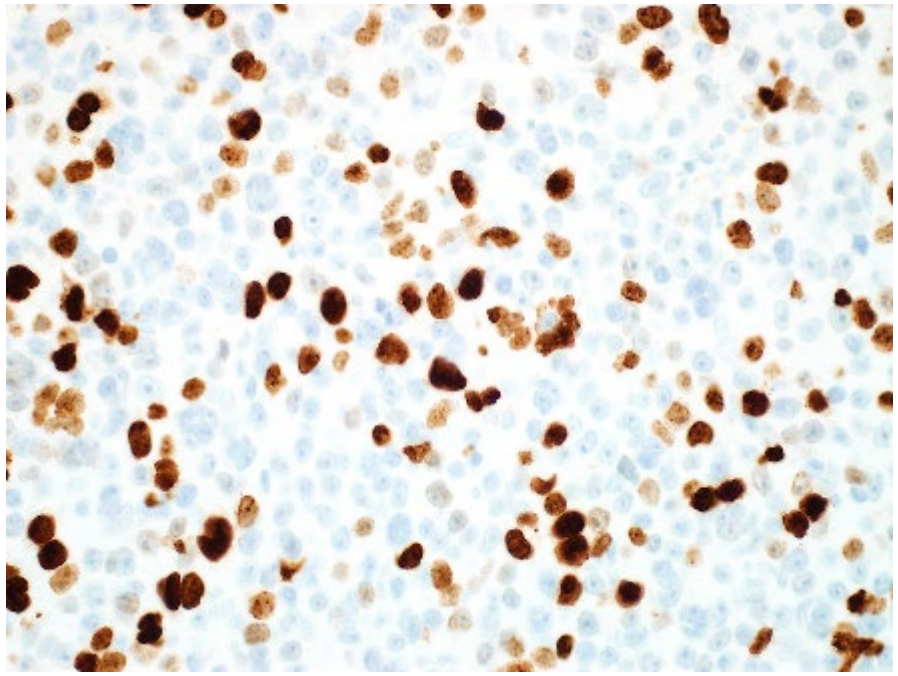

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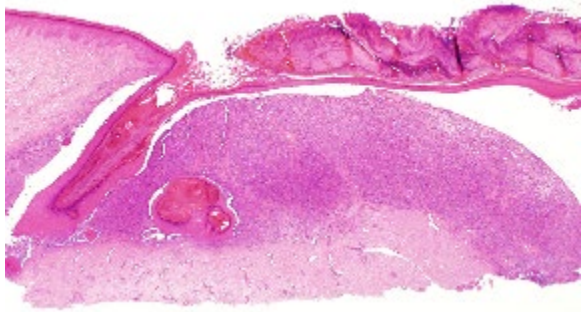
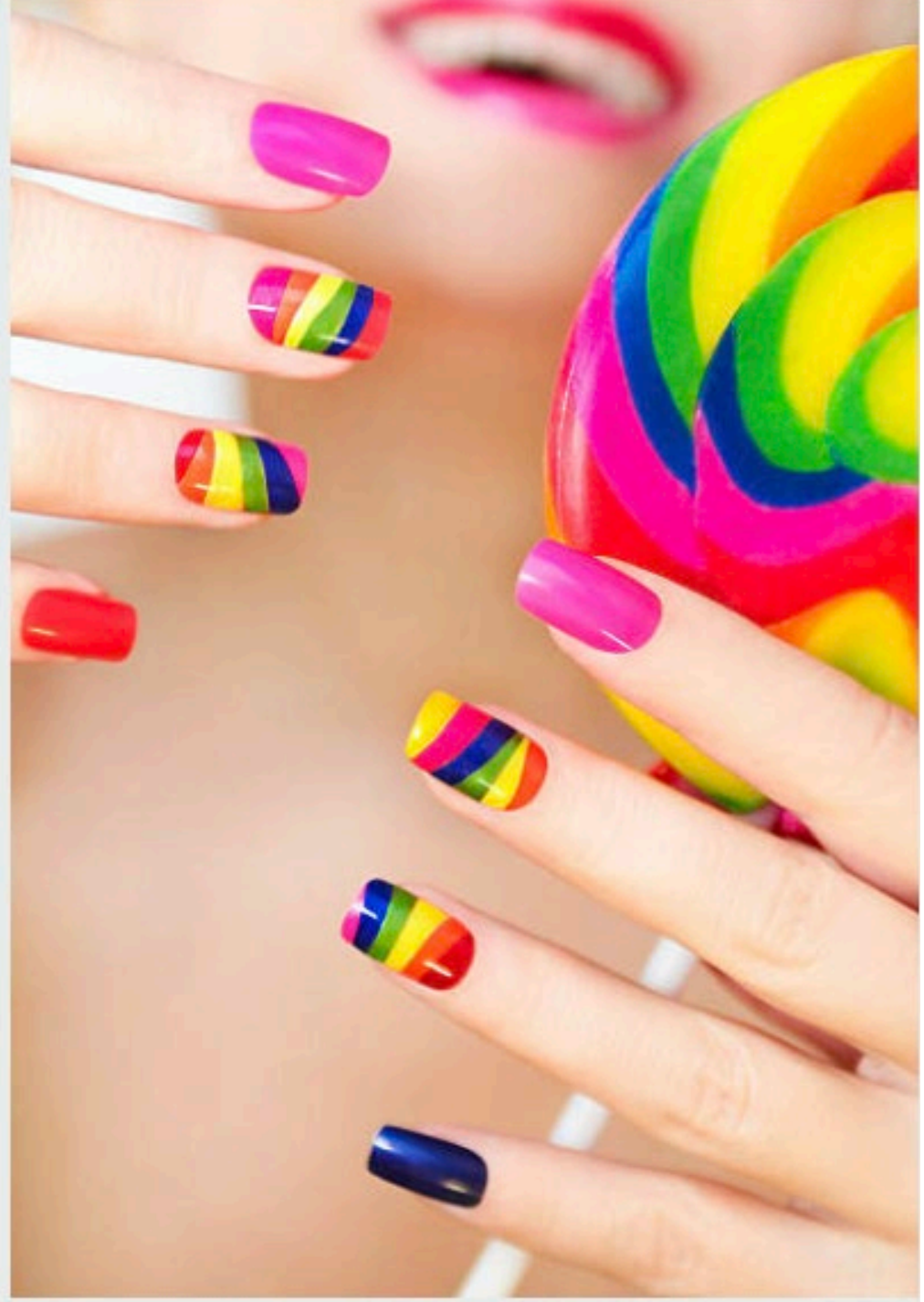


PRAME

INVASIVE MALIGNANT MELANOMA

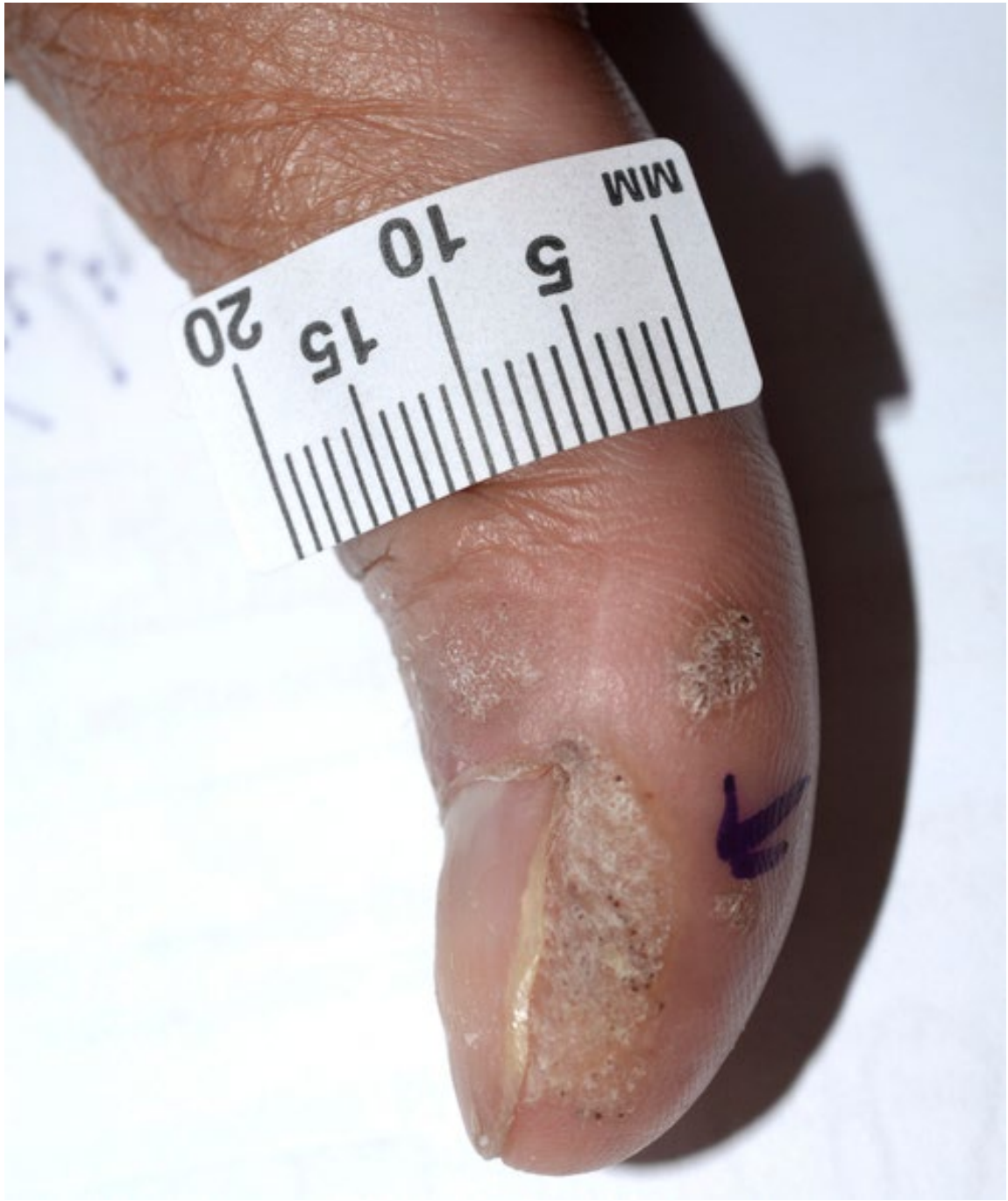


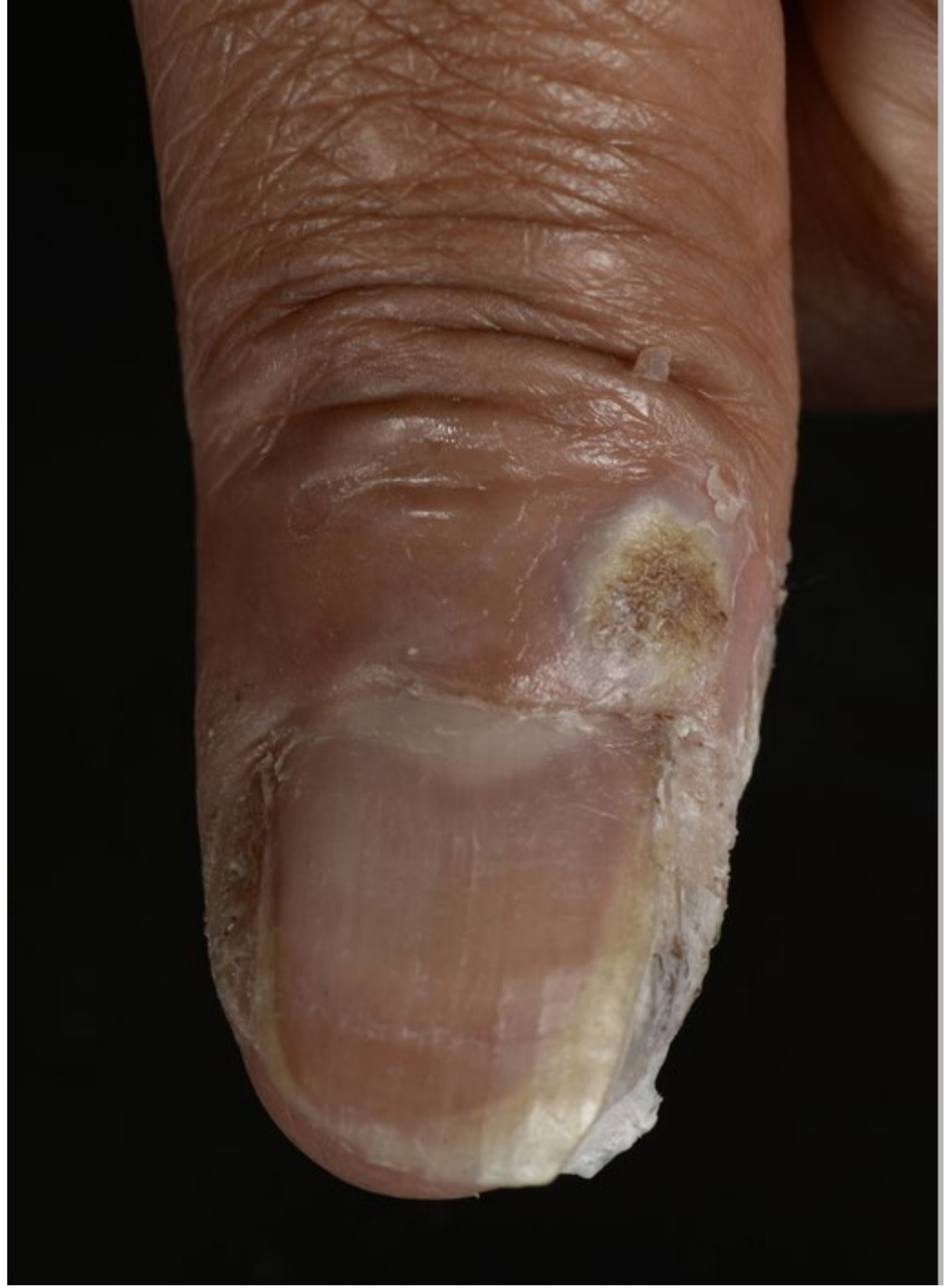
“Warts’ New?”

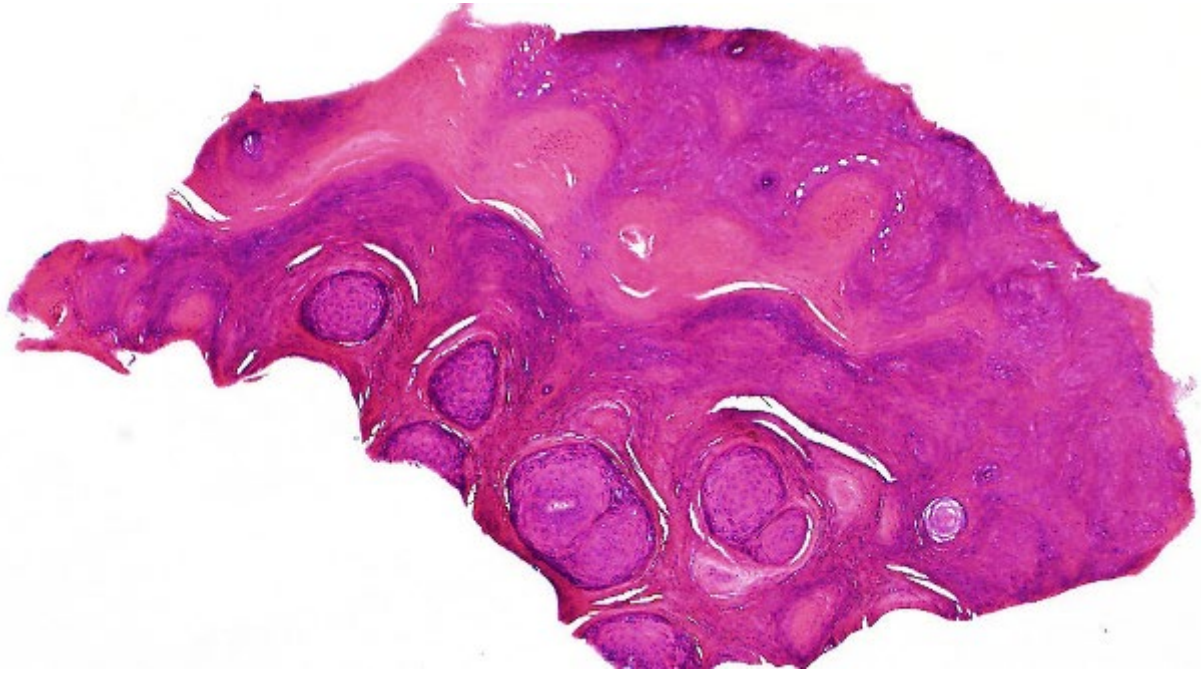
58F LEFT THUMB

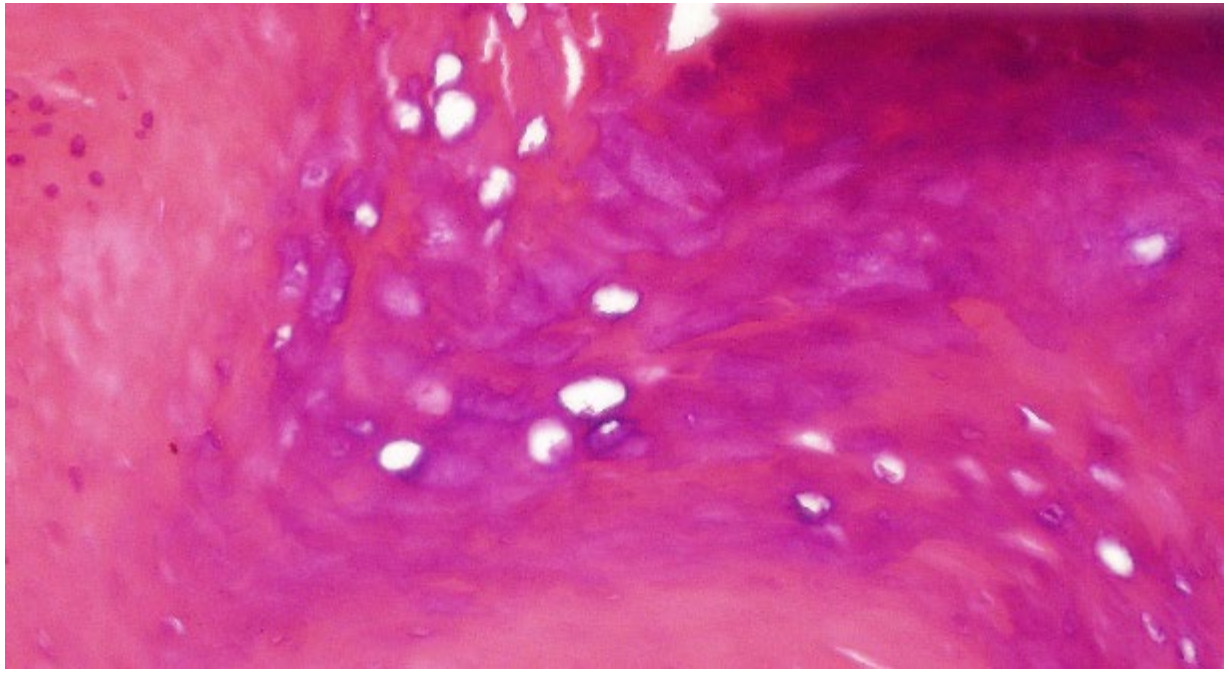
Nail avulsion.

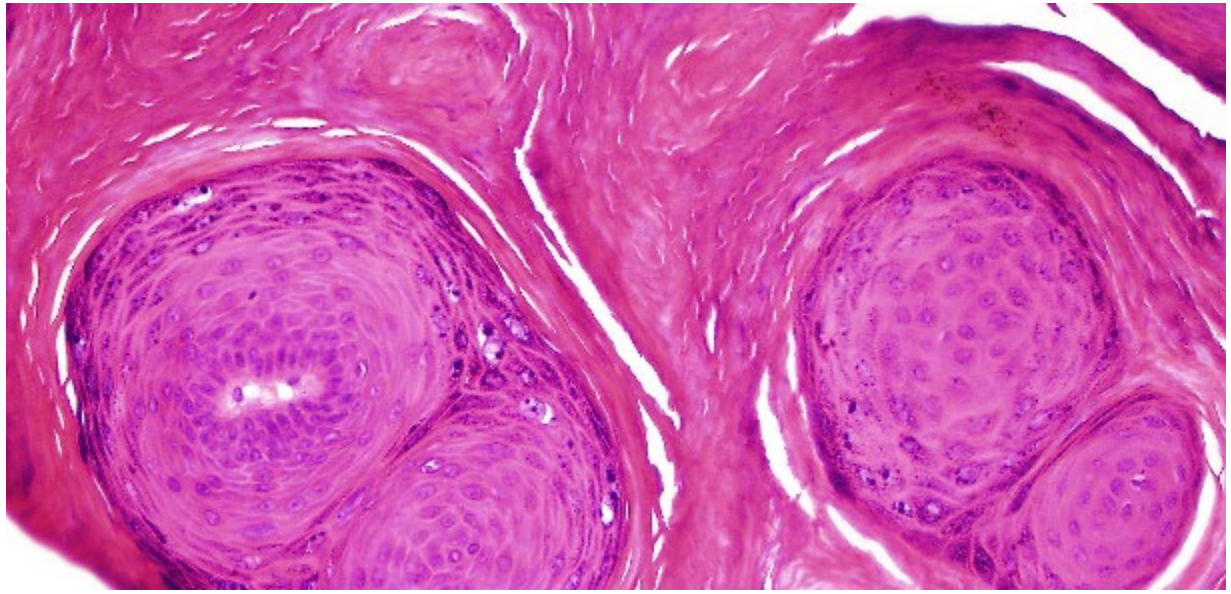
R/O wart

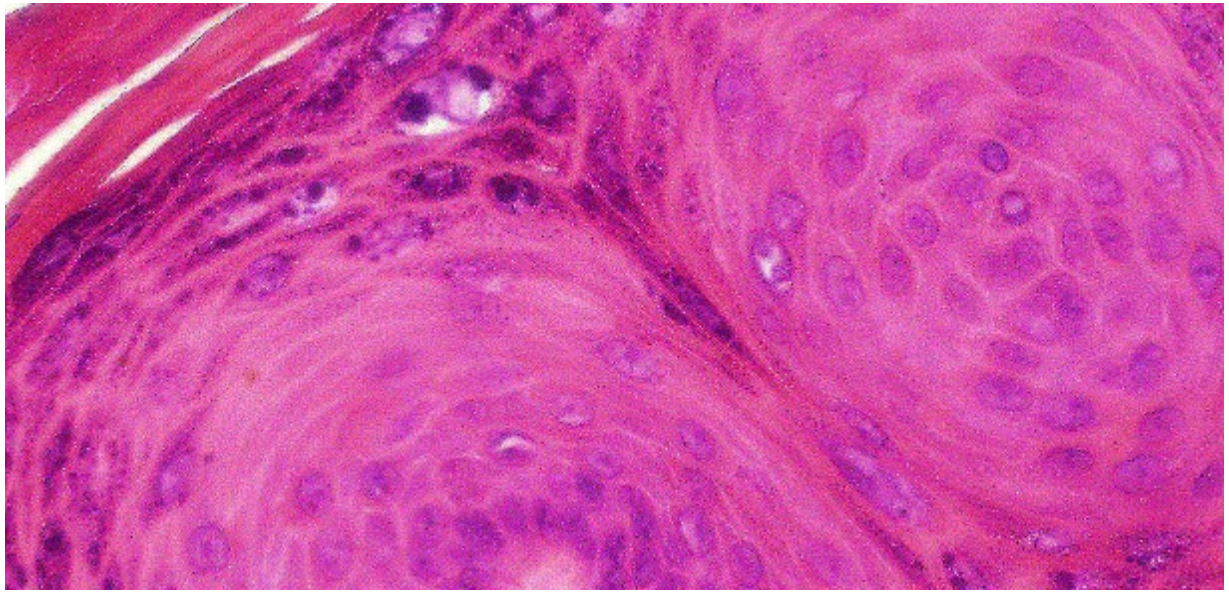








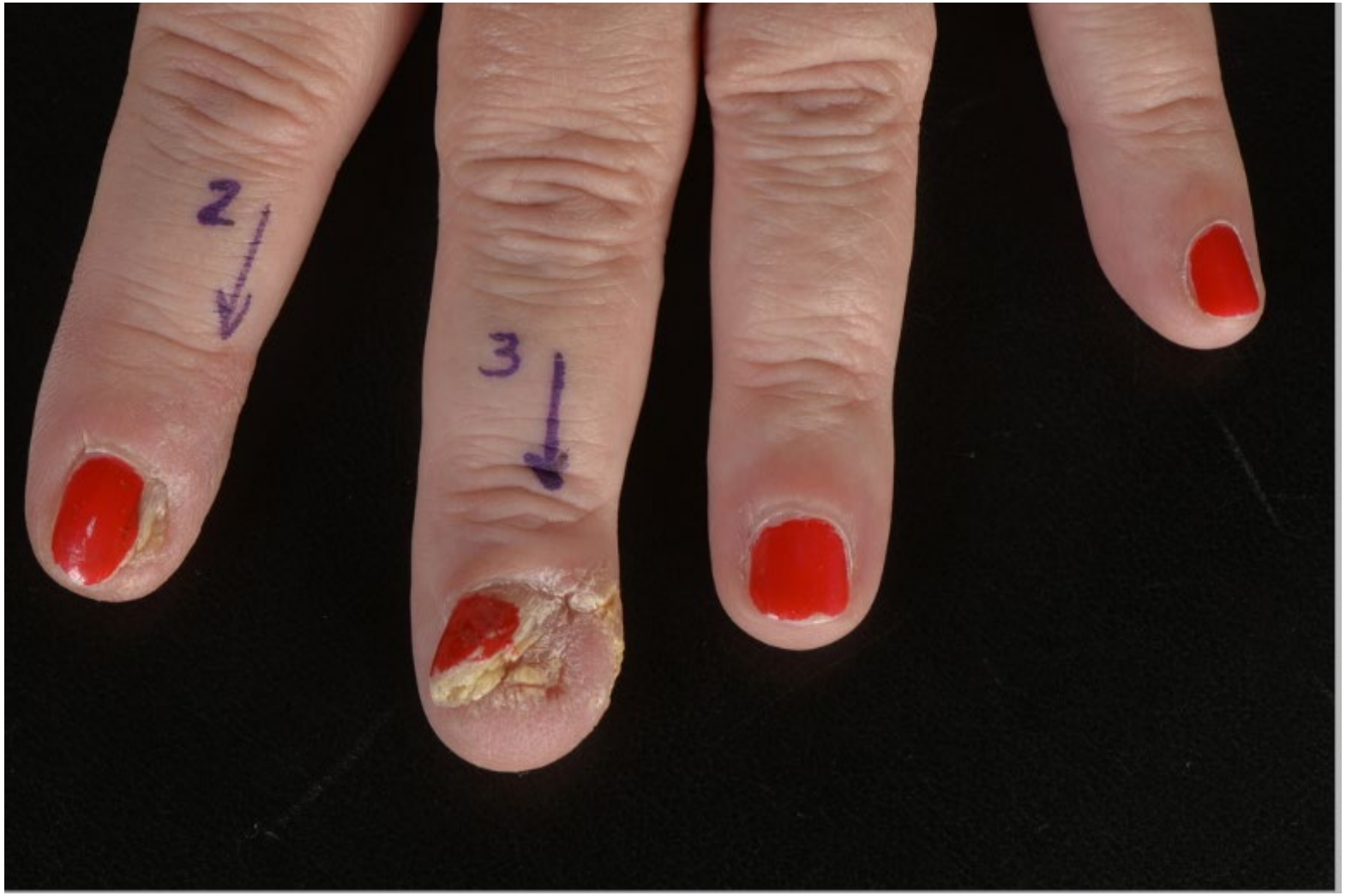


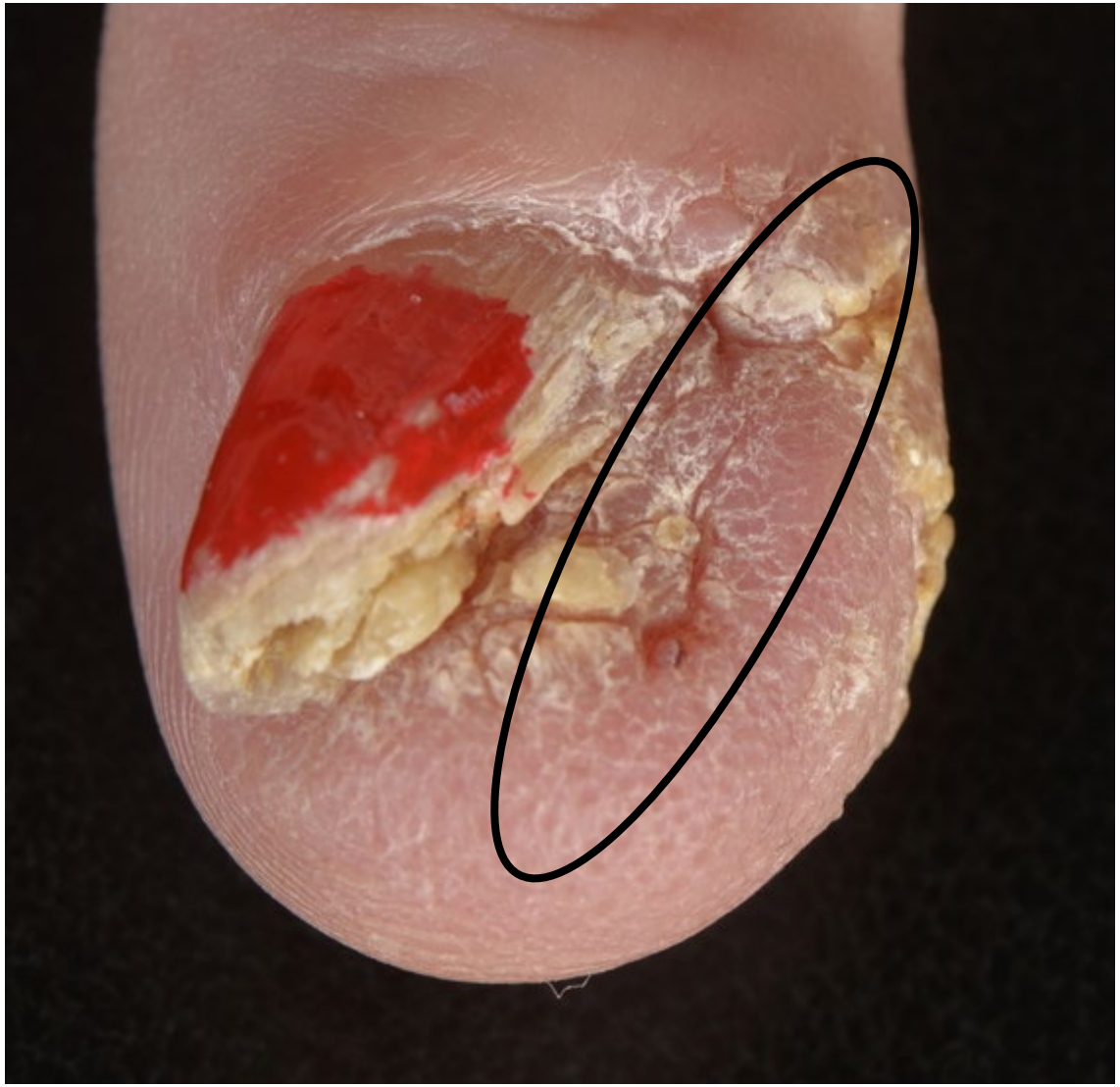


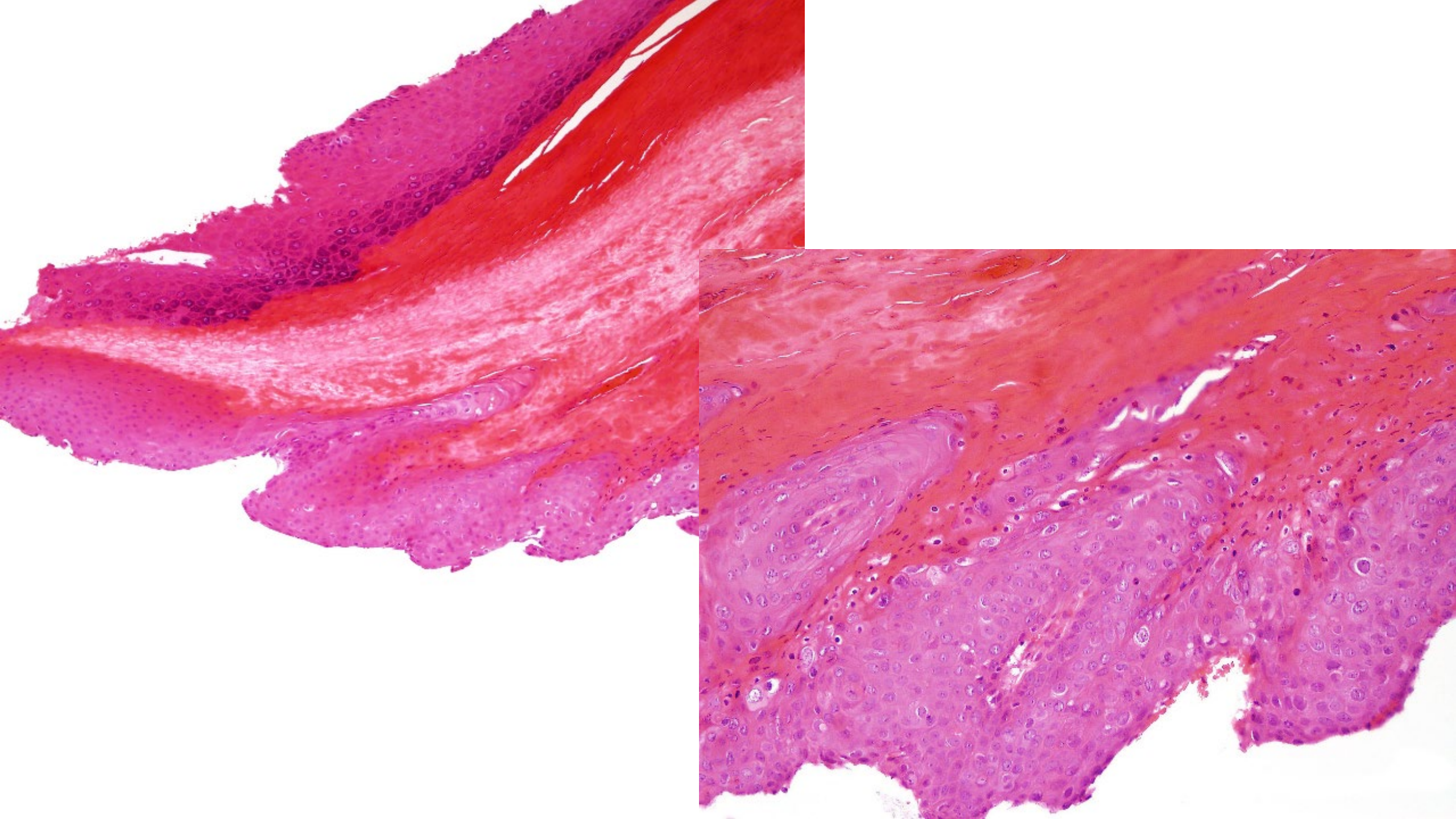
VERRUCA VULGARIS

47F LEFT MIDDLE FINGER

Nail avulsion and debulk.
Viral warts?







IN SITU HYBRIDIZATION
HUMAN PAPILLOMA VIRUSES (HPV)

LOW RISK HPV

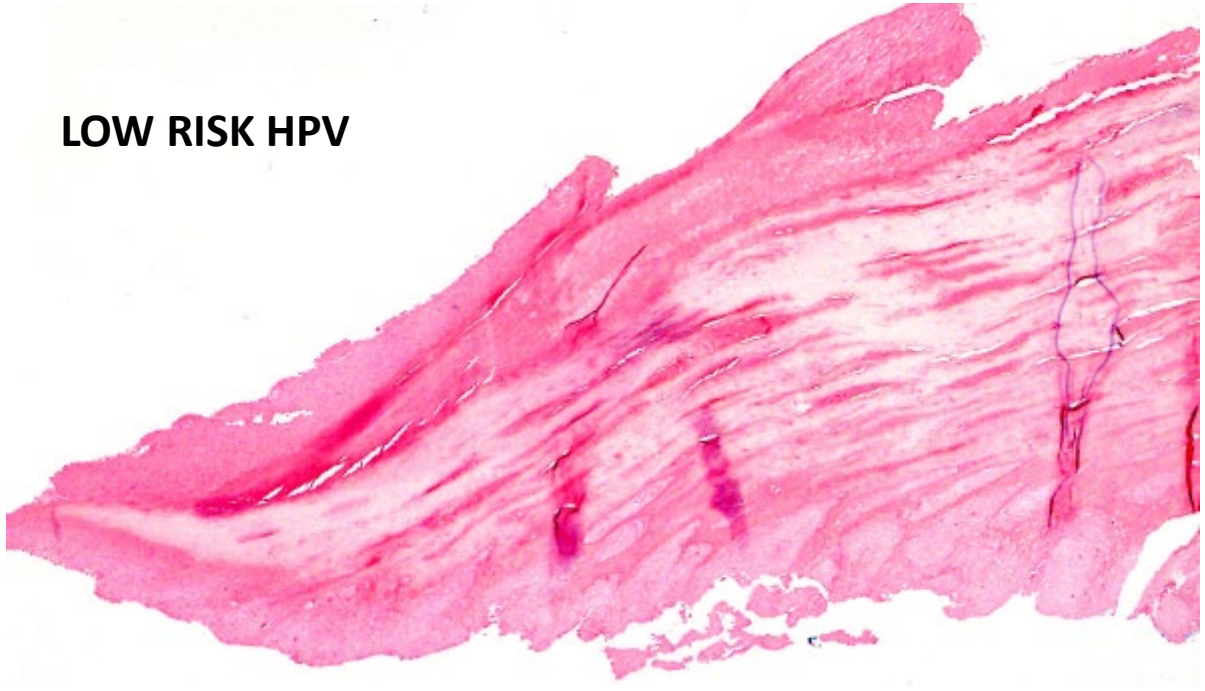
- 6
- 11

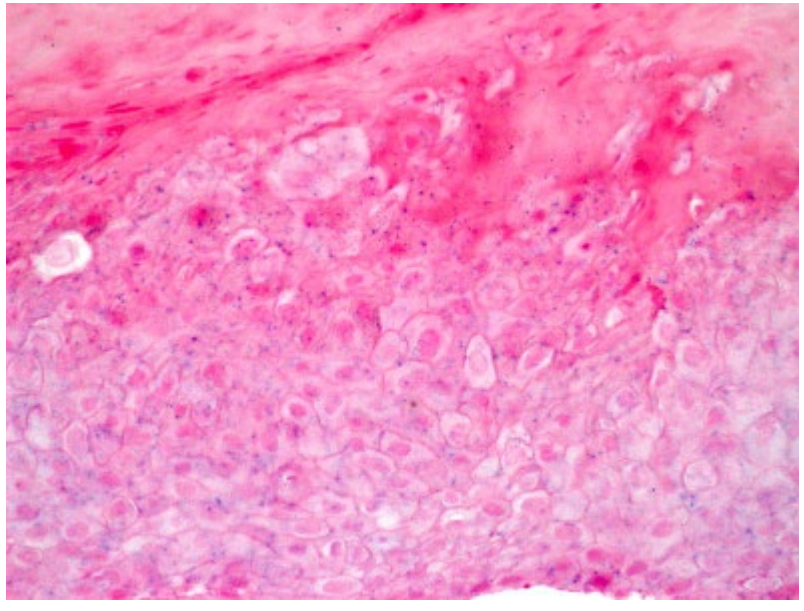
HIGH RISK HPV

- 16
- 18
- 31
- 33
- 35
- 45
- 52
- 56
- 58
- 66

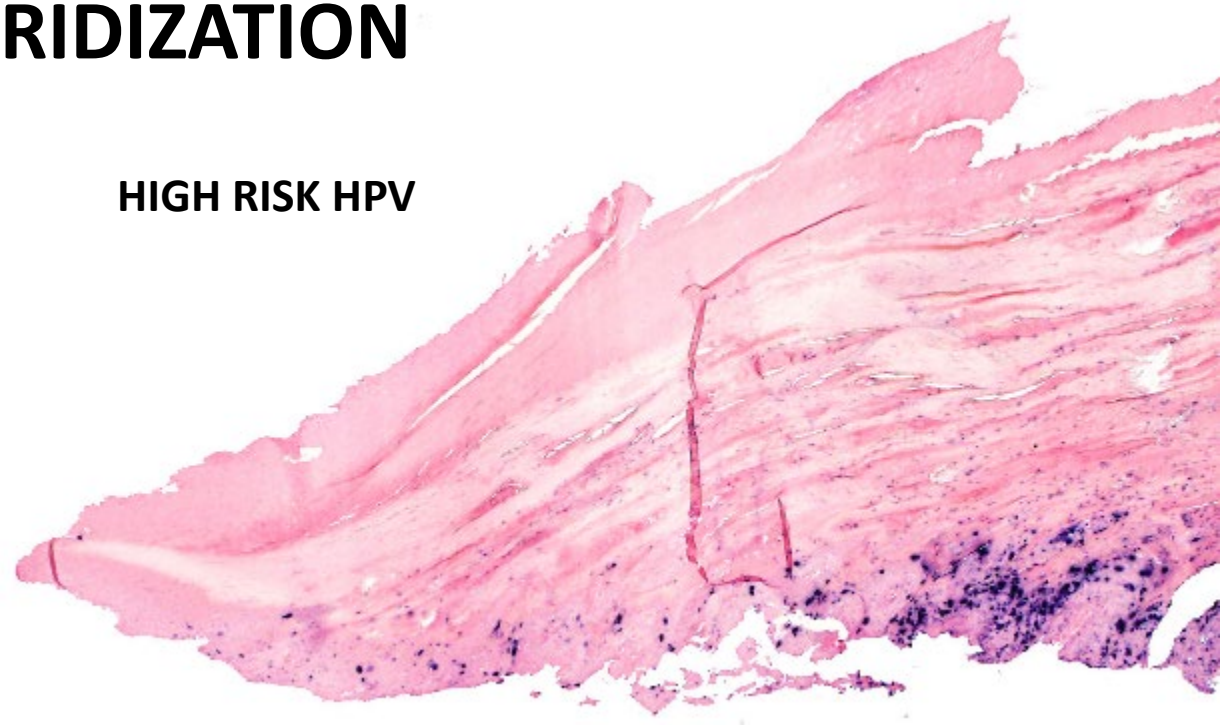
IN SITU HYBRIDIZATION

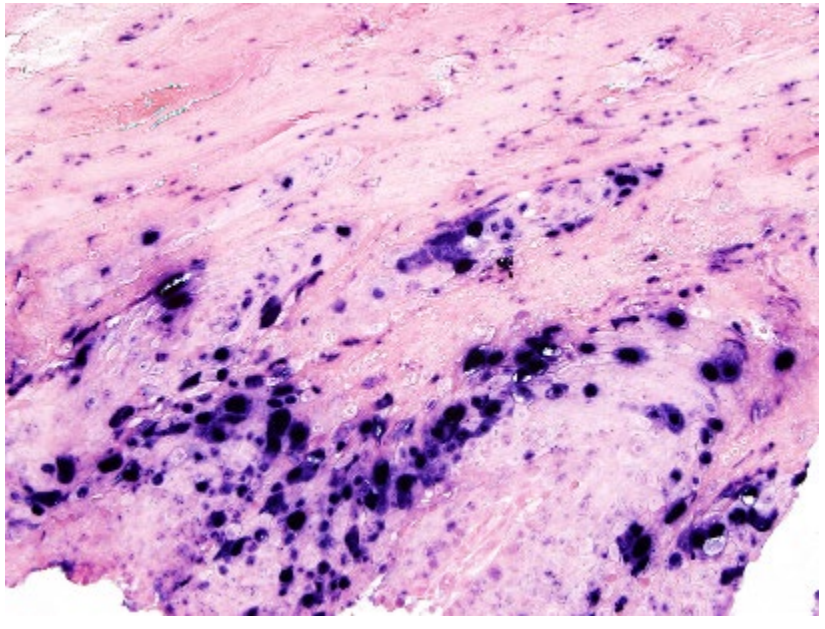
LOW RISK HPV





HIGH RISK HPV





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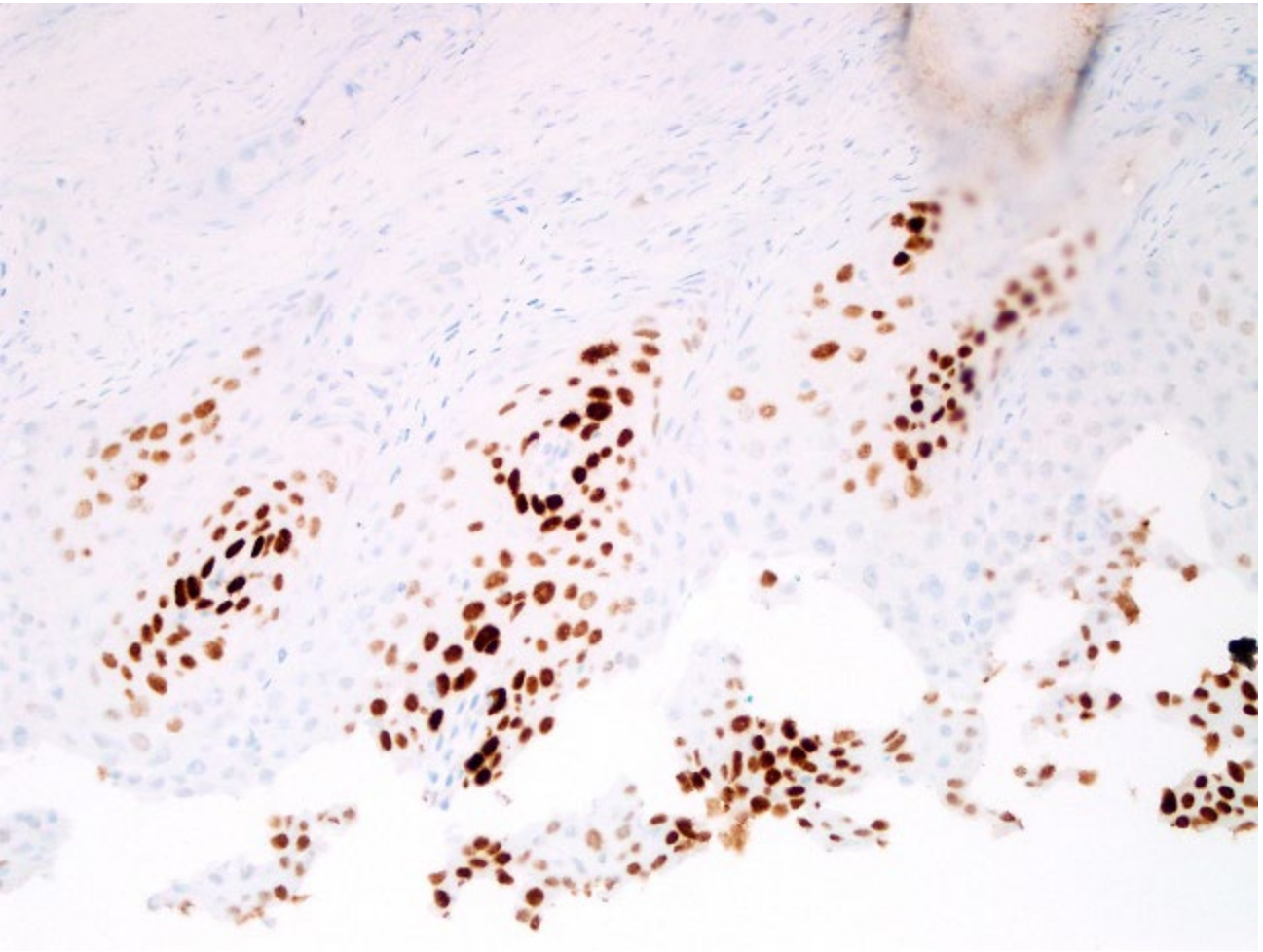

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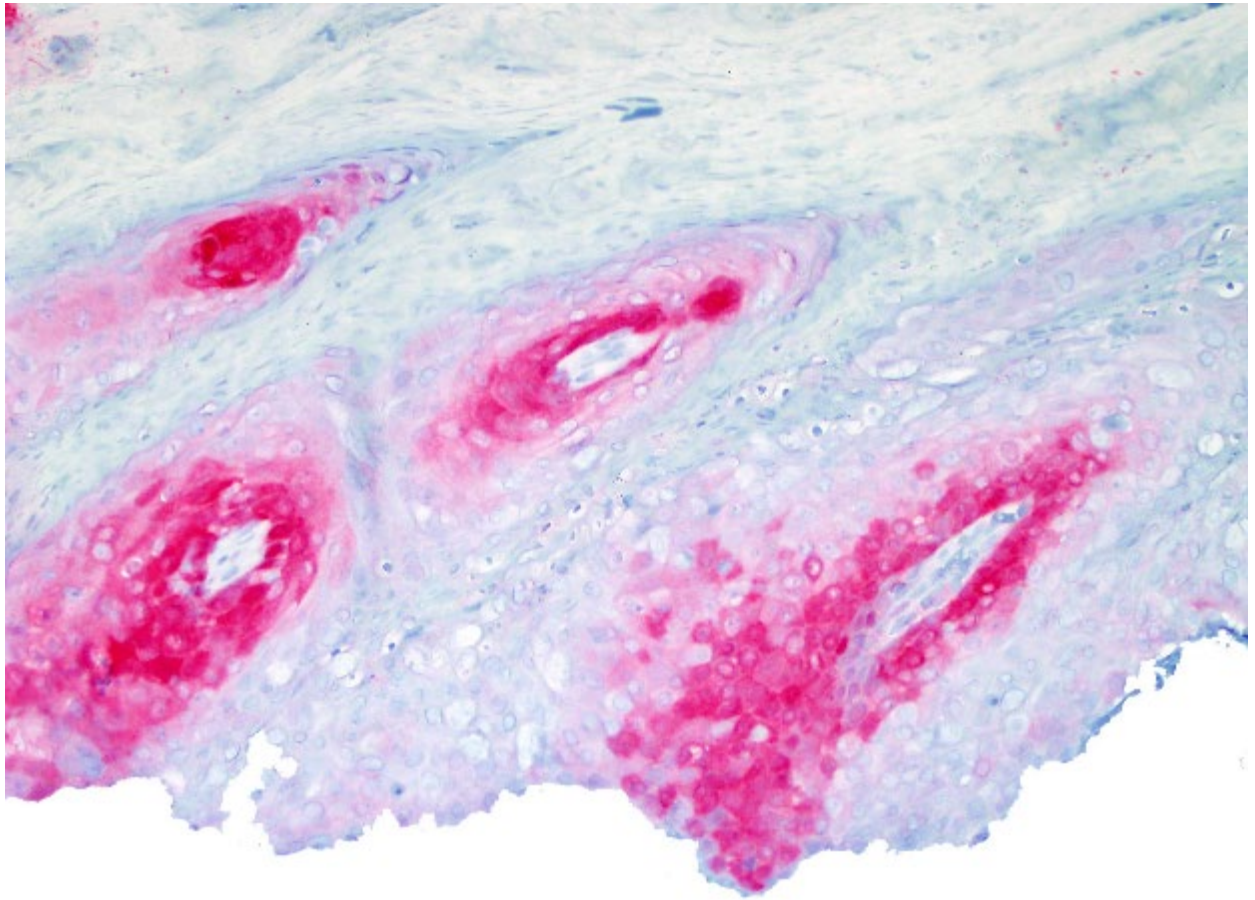
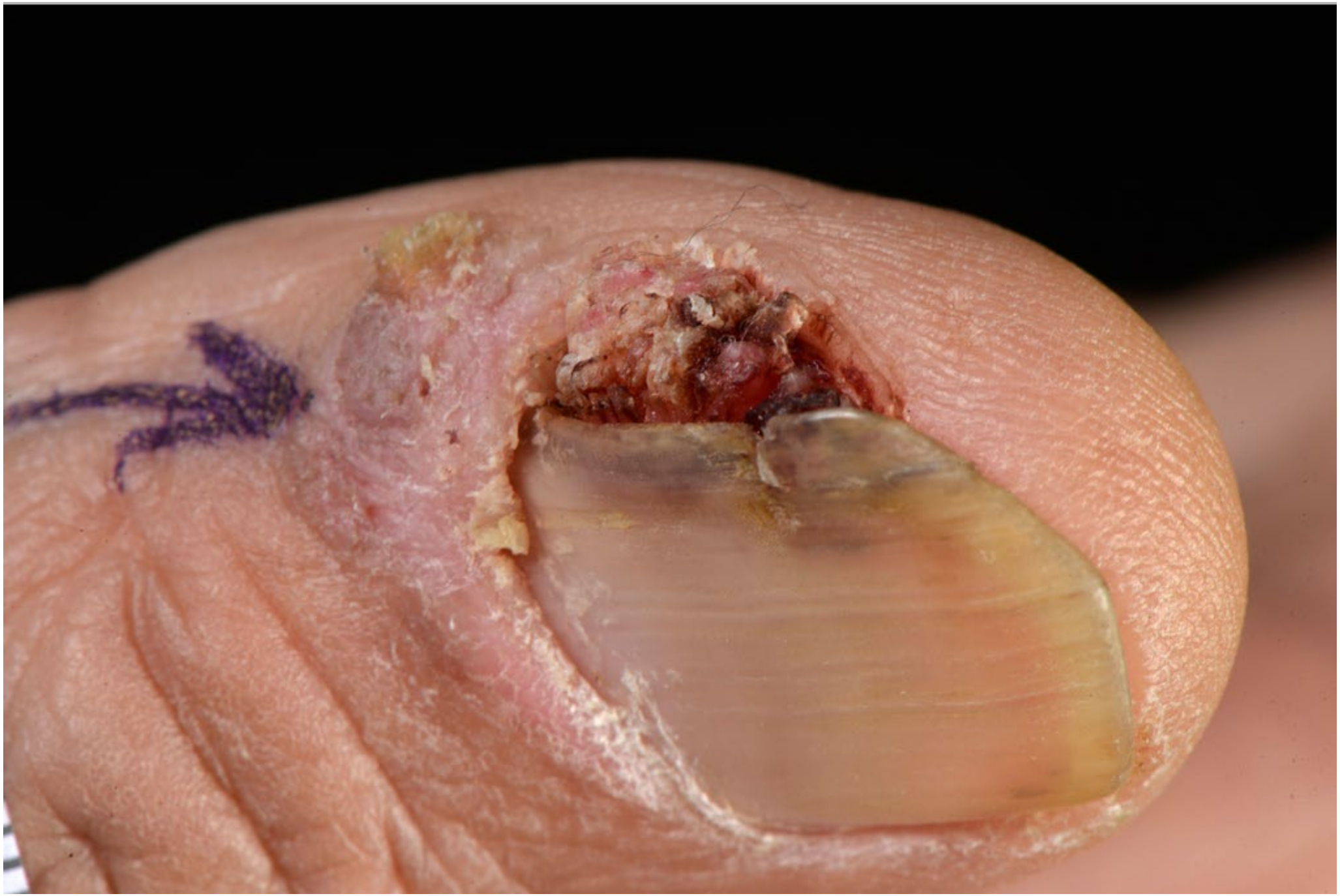


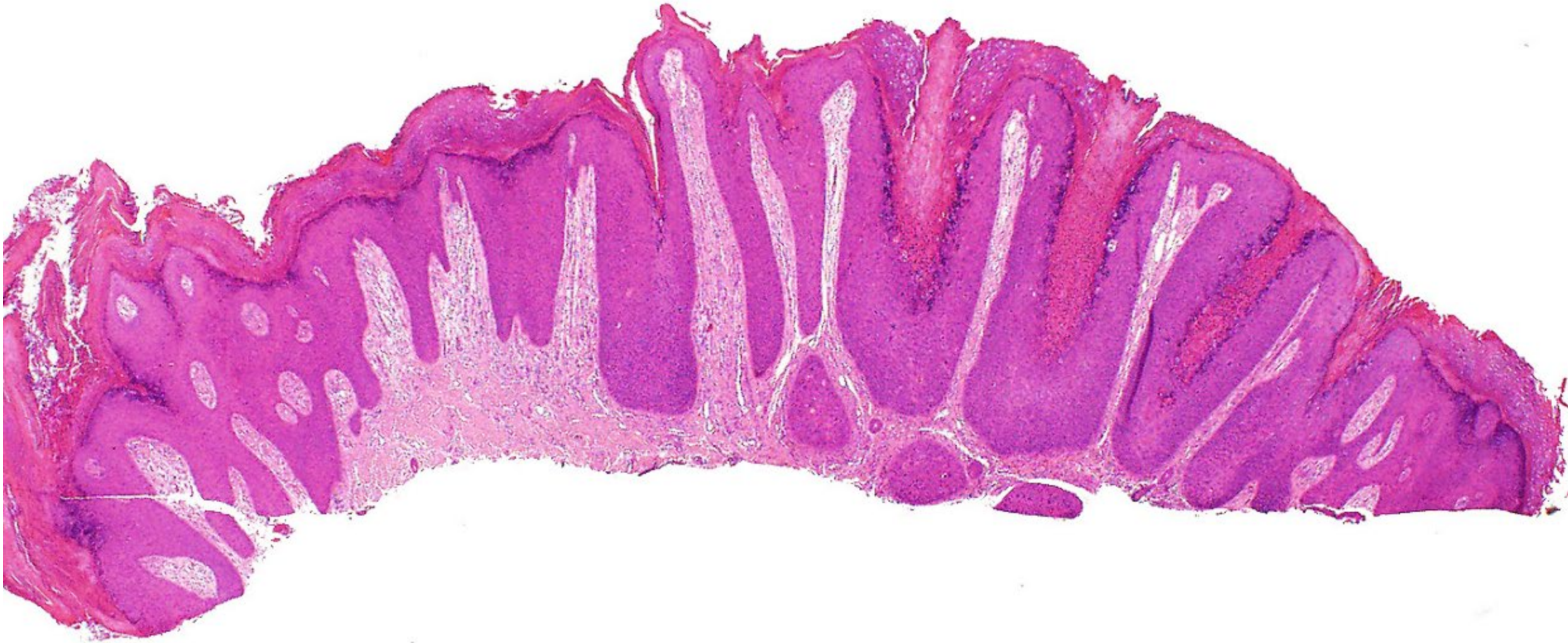
SQUAMOUS CELL CARCINOMA IN SITU

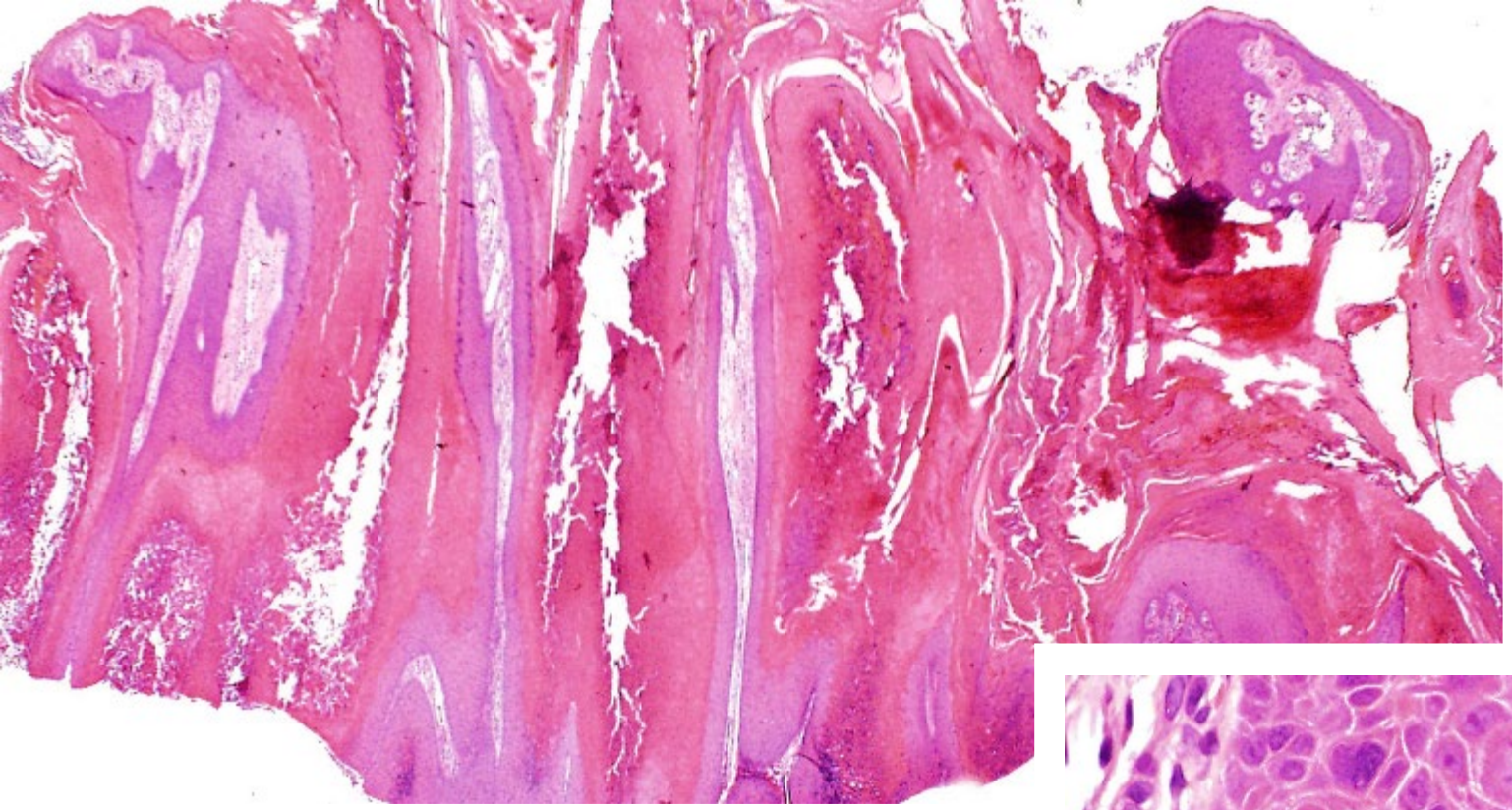
62M RIGHT THUMB, NAILFOLD & NAILBED

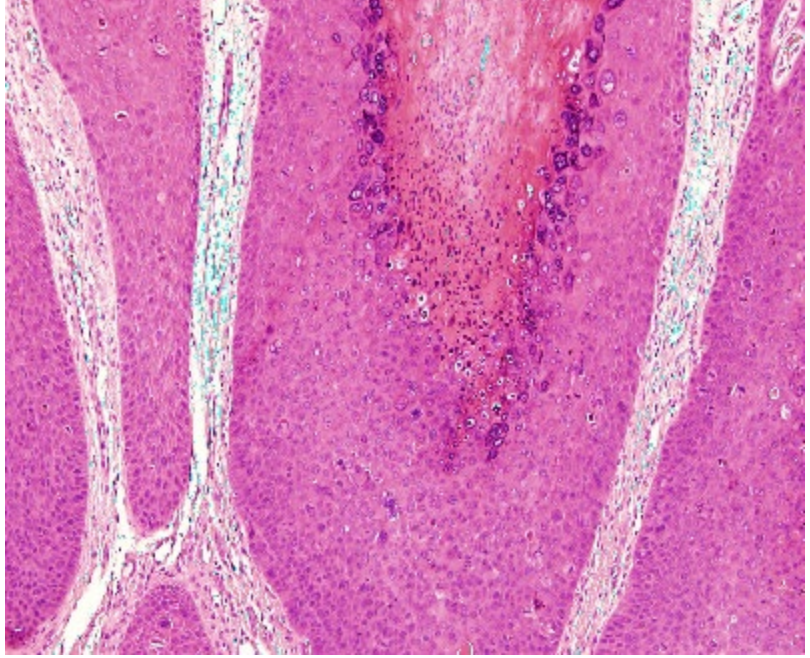
1yr hx warty growth started proximal nailfold area, extending under the nail

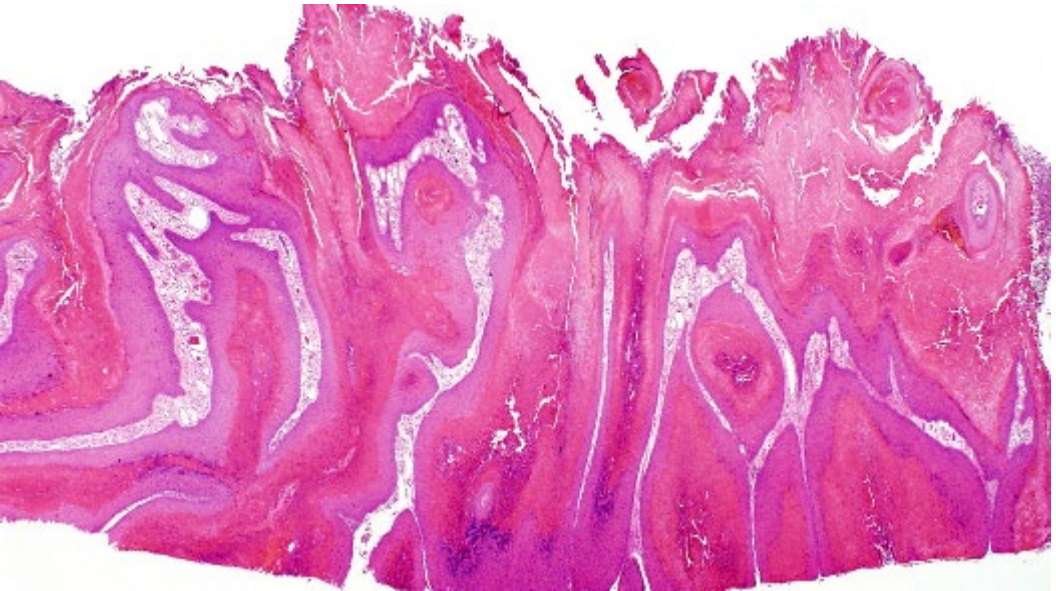
? Viral wart? Verrucous carcinoma

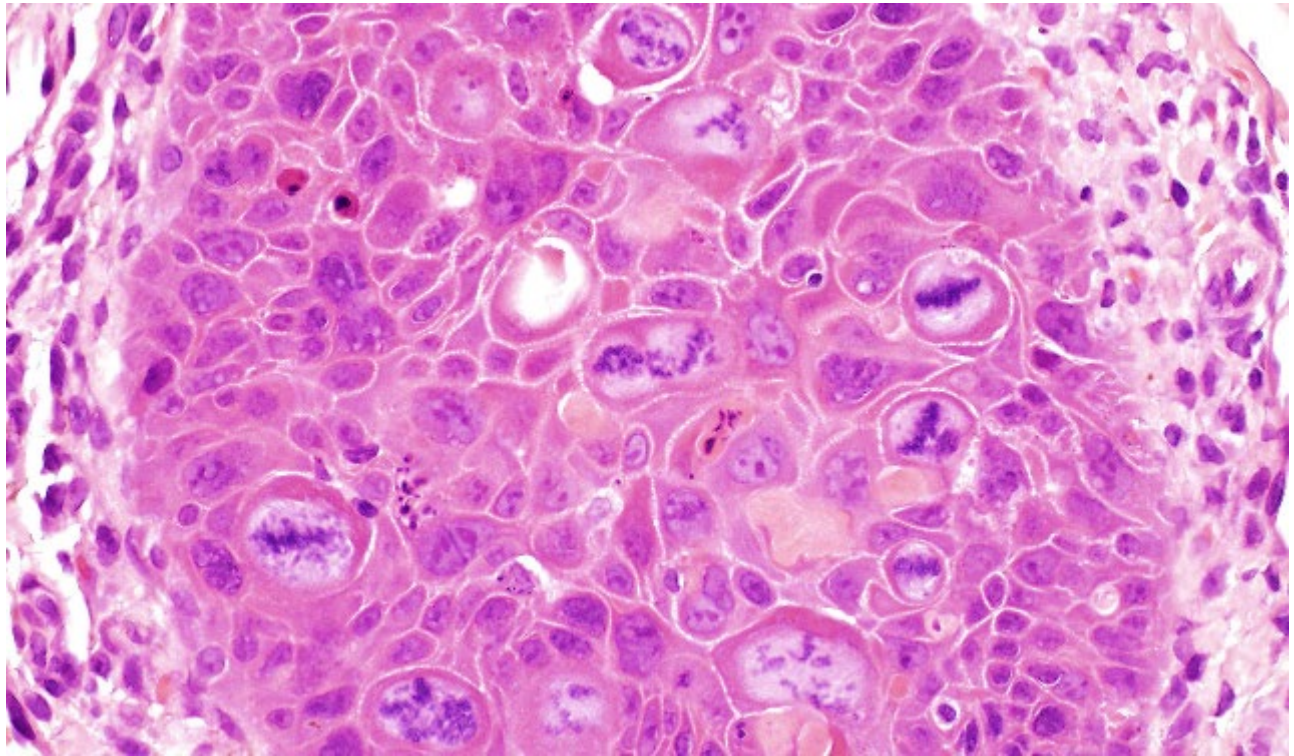




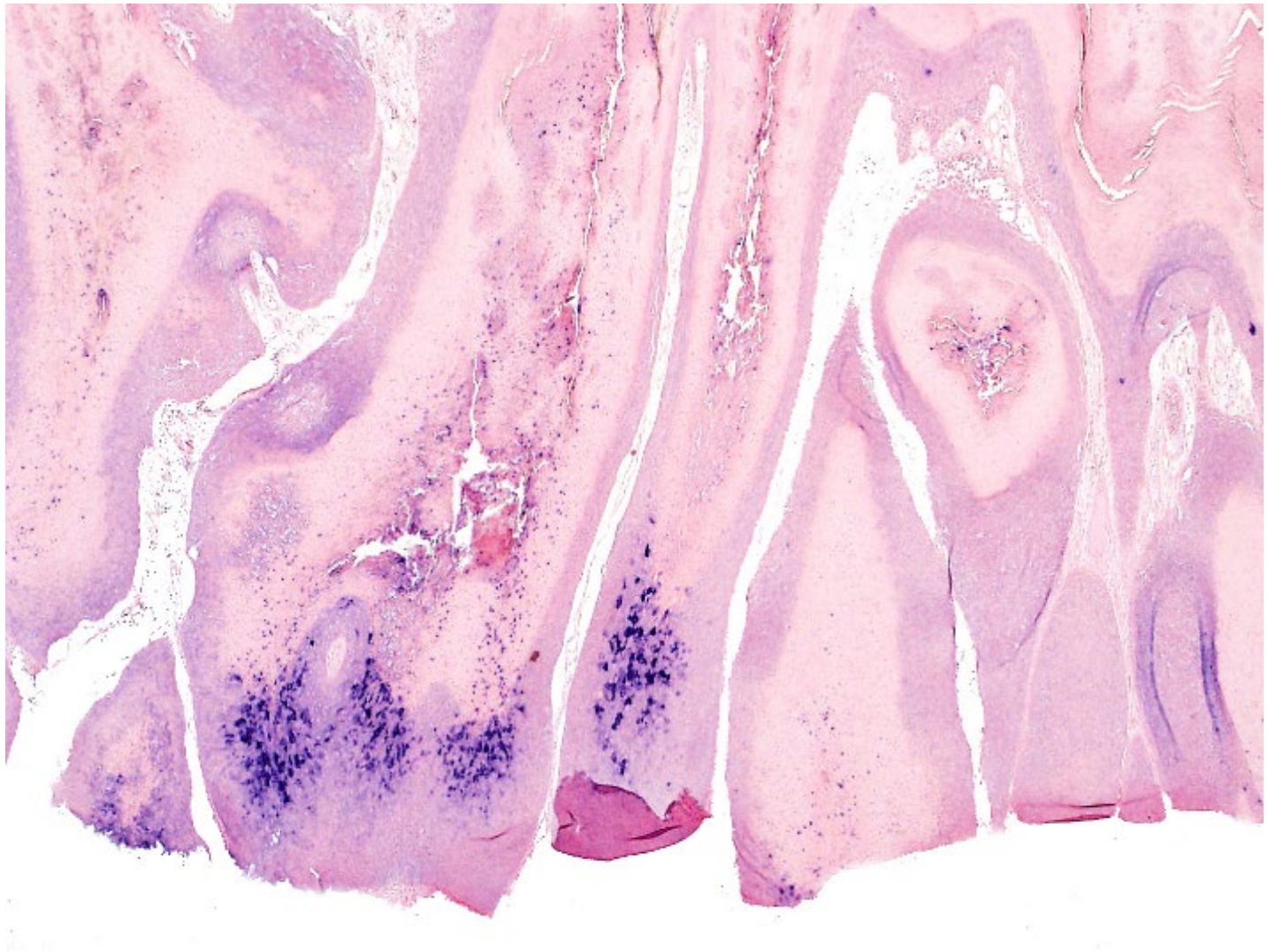


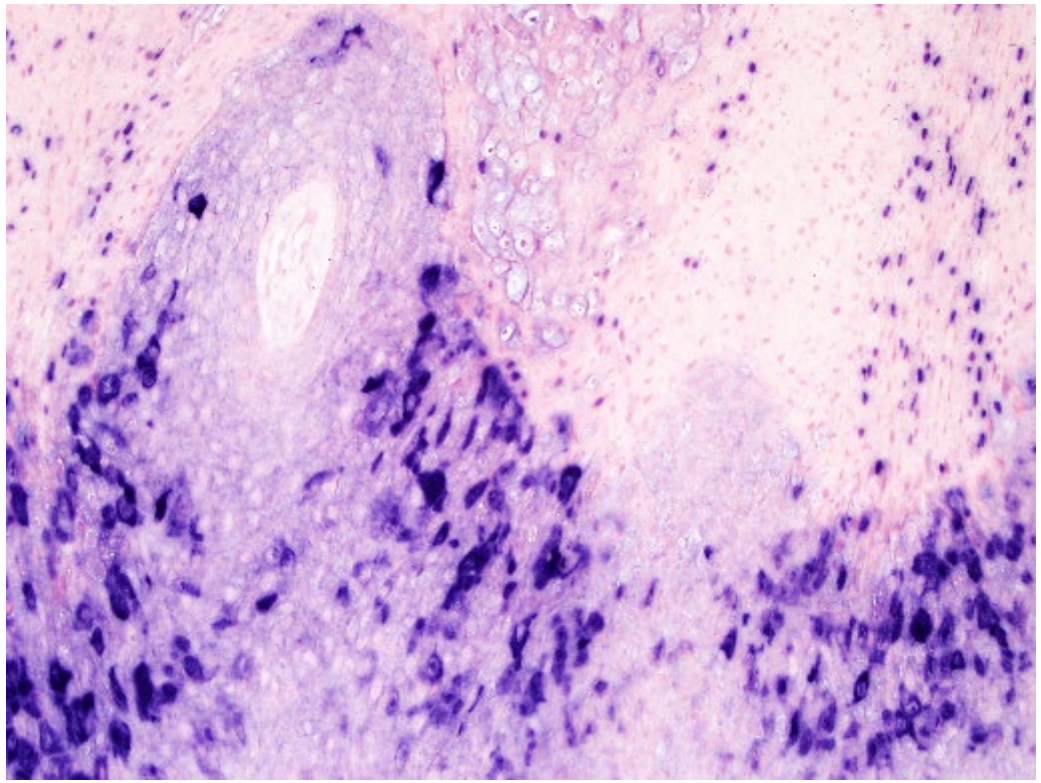






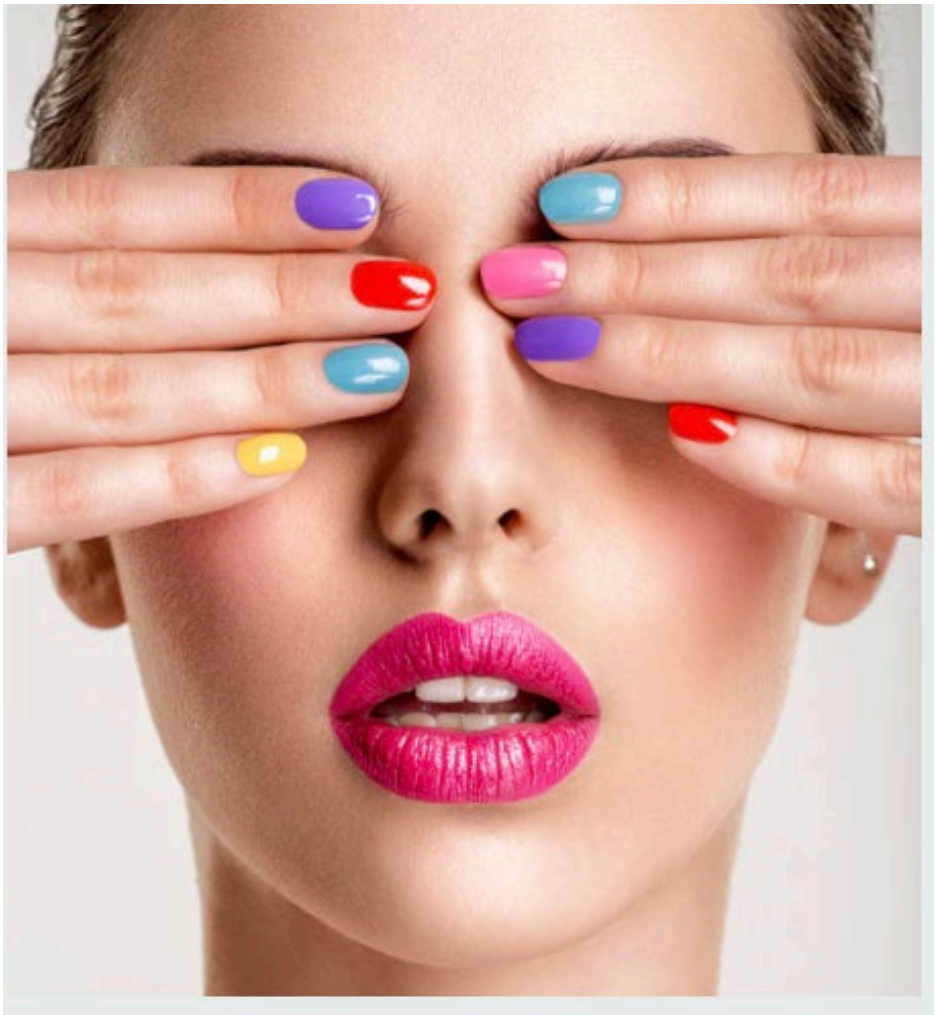
IN SITU HYBRIDIZATION: HIGH RISK HPV



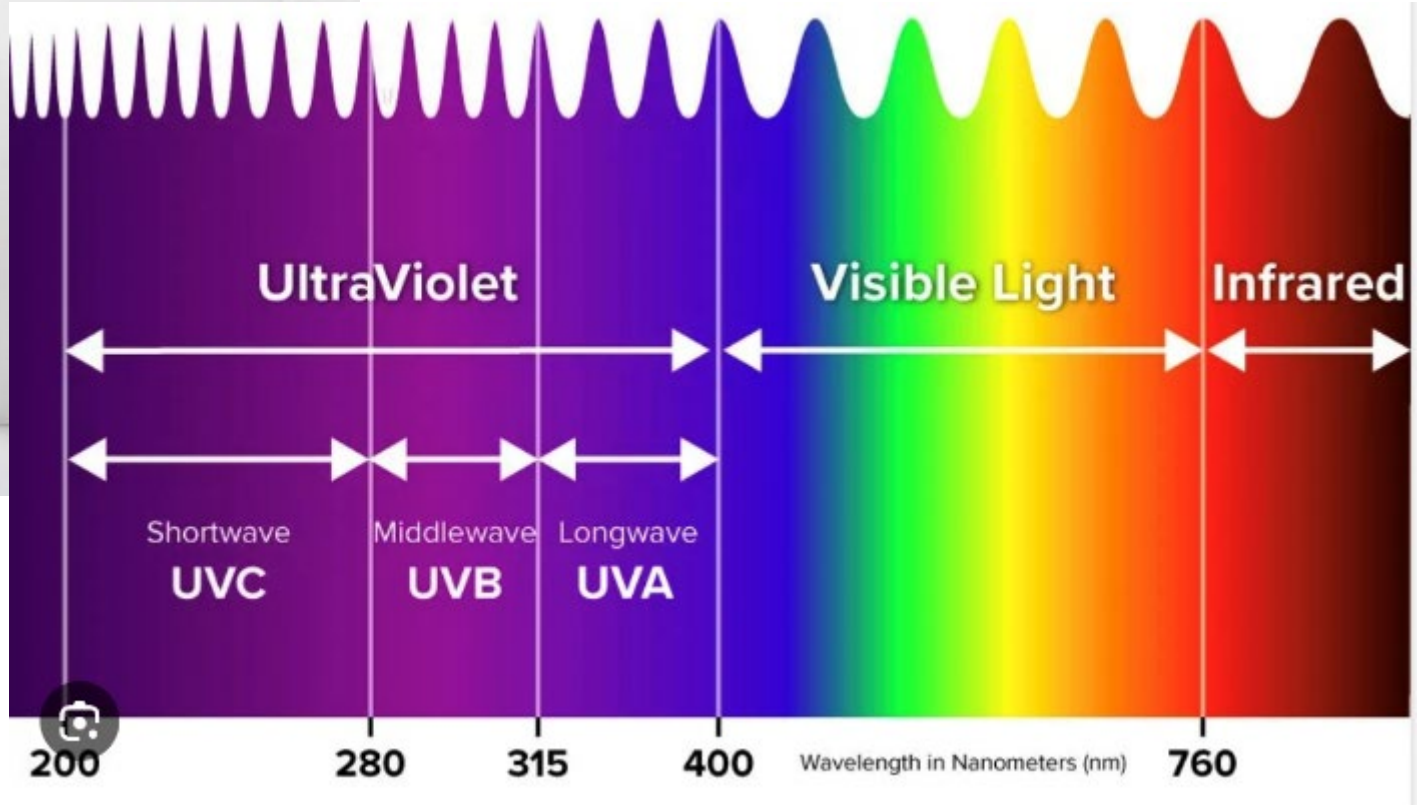


SQUAMOUS CELL CARCINOMA


CHARMING NAILS



Does chronic ultraviolet light exposure for gel na manicures cause squamous cell carcinoma?



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J Clin Aesthet Dermatol. 2020 Jul; 13(7): 45–46.
Published online 2020 Jul 1.

PMCID: PMC7492020
PMID: 32983337

Ultraviolet Light Gel Manicures: Is There a Risk of Skin Cancer on the Hands and Nails of Young Adults?

Chelsea T. Schwartz, DO,✉ Harib H. Ezaldein, MD, and Miesha Merati, DO

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Abstract

Go to: ▸

BACKGROUND: There appears to be limited research on whether the ultraviolet radiation used in nail lamps for gel manicures is increasing the incidence of skin cancer on the hands and nails of young adults. **OBJECTIVE:** We sought to assess evidence in the literature regarding the incidence of skin cancer on the hands and nails of young adults who receive gel manicures cured by ultraviolet light. **METHODS:** An extensive systematic literature review was conducted, focusing on patients aged 40 years or younger with a history of gel manicures diagnosed with nonmelanoma or melanoma skin cancers on the dorsum of their hands and nails. The Surveillance, Epidemiology and End-results Program (SEER) (SEER 9 and SEER 21) was chosen to analyze trends in the incidence of melanoma from 2007 to 2016. The SEER*Stat Client-serve Mode software was used to retrieve the incidence rates of melanoma of the skin among individuals aged 0 to 39 years from 1975 to 2016. **RESULTS:** There have been no cases reported of patients younger than the age of 40 years with a history of chronic gel manicures diagnosed with nonmelanoma skin cancer or melanoma on the dorsum of the hands or nail matrices. SEER revealed little to no change in the incidence of melanoma among patients under the age of 65 years. **CONCLUSION:** The literature is controversial regarding whether ultraviolet radiation from chronic gel manicures increases the risk of skin cancer on the hands and nails. A comprehensive literature search and the SEER database revealed that gel manicures have little to no carcinogenic risk.

Keywords: Gel manicures, ultraviolet light nail lamps, nonmelanoma skin cancer, melanoma, hands, nails

NO

Volume 26 Number 3| March 2020| 26(3):5

Squamous cell carcinoma of the dorsal hands and feet after repeated exposure to ultraviolet nail lamps

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Abstract

Gel nails are a common artificial nail option. Ultraviolet (UV) nail lamps are commonly used to cure gel nails. Ultraviolet A radiation is a known mutagen that penetrates into the nail bed. Although previously reported, the role of UV nail lamps in the carcinogenesis of both keratinocyte carcinoma and melanoma remains controversial. Herein, we report a patient taking the photosensitizing agent hydrochlorothiazide who developed numerous squamous cell carcinomas on the dorsal hands and feet with a 10-year history of UV nail light exposure every 2-3 weeks.

Keywords: nails, squamous cell carcinoma, photosensitization, UVA, UV nail lamps

Introduction

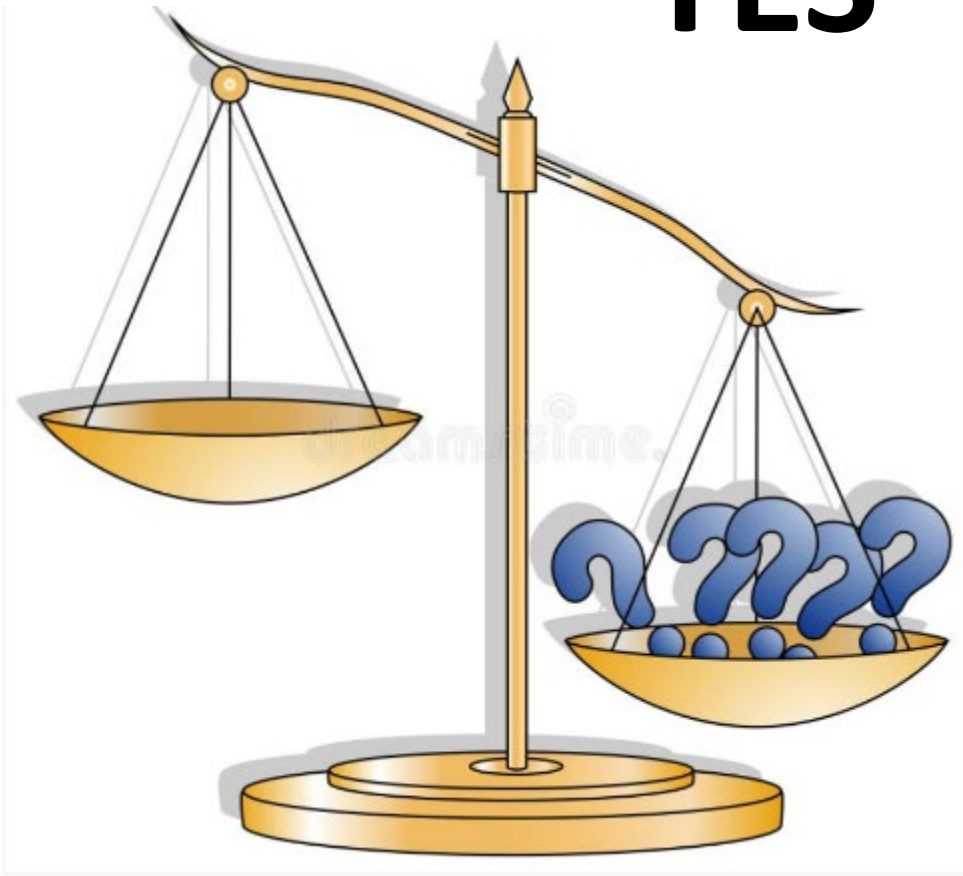
Owing to the increasing popularity of artificial nails, ultraviolet (UV) nail lamps are being used more than ever. UV nail lamps are used to quickly dry acrylic nails and to cure gel nails. These lamps emit UVA radiation, a known mutagen that contributes to cutaneous malignancies [1]. Herein, we report a 70-year-old woman with a long history of UV nail light exposure for artificial nails on both the fingers and toes who developed actinic damage and multiple invasive squamous cell carcinomas (SCC) in irradiated areas of the skin on her hands and feet.

Case Synopsis

A 70-year-old woman presented for evaluation of rough, red macules and papules on her dorsal hands (**Figure 1**). She had been taking hydrochlorothiazide 25mg daily as management of Ménière disease for over 40 years but was otherwise in good health. She had no history of systemic immunosuppression and during her past professional career she had worked indoors with no history of unusually intense sun exposure.

Figure 1. ***A)*** *A 4mm pink macule with hyperkeratotic scale on the dorsal aspect of the right second finger.* ***B)*** *A 10mm pink patch with areas demonstrating adherent hyperkeratotic scale on the dorsal aspect of the left fifth finger.*

YES



Case Reports in Dermatology

Case Rep Dermatol 2019;11:286–291

DOI: 10.1159/000503273
Published online: October 2, 2019

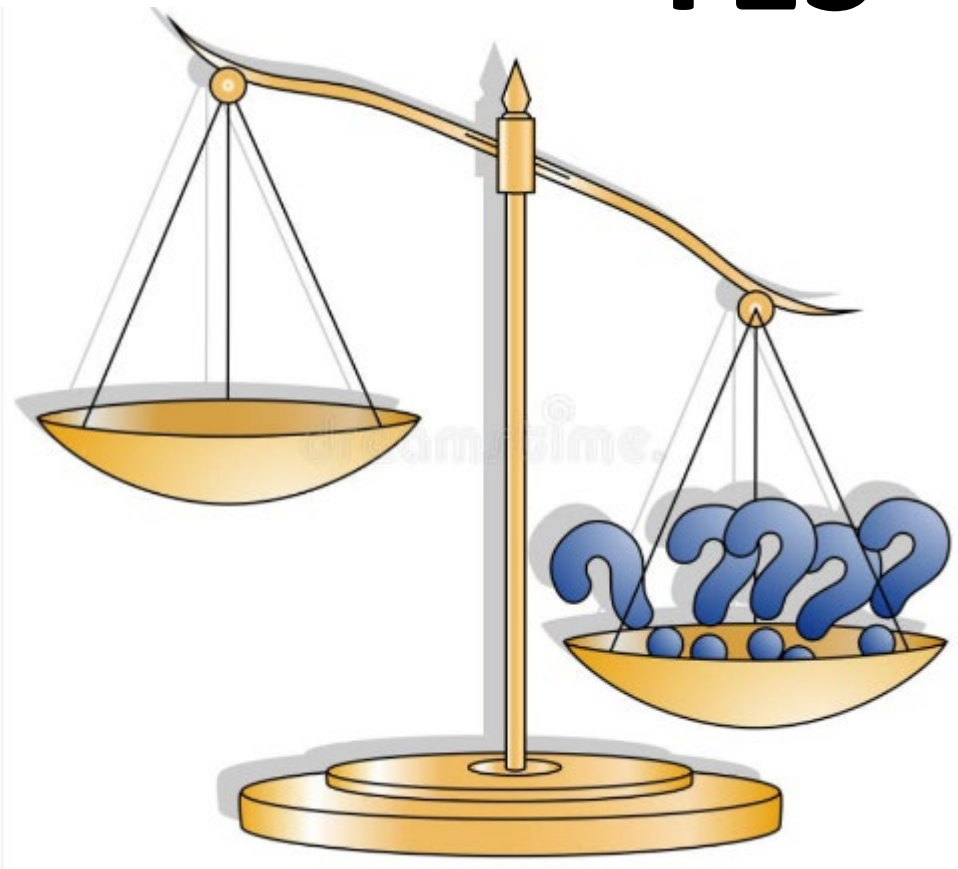
Case and Review

Multiple Dorsal Hand Actinic Keratoses and Squamous Cell Carcinomas: A Unique Presentation following Extensive UV Nail Lamp Use

Madison C. Ratycz[a] Joyce A. Lender[b] Lorie D. Gottwald[c]

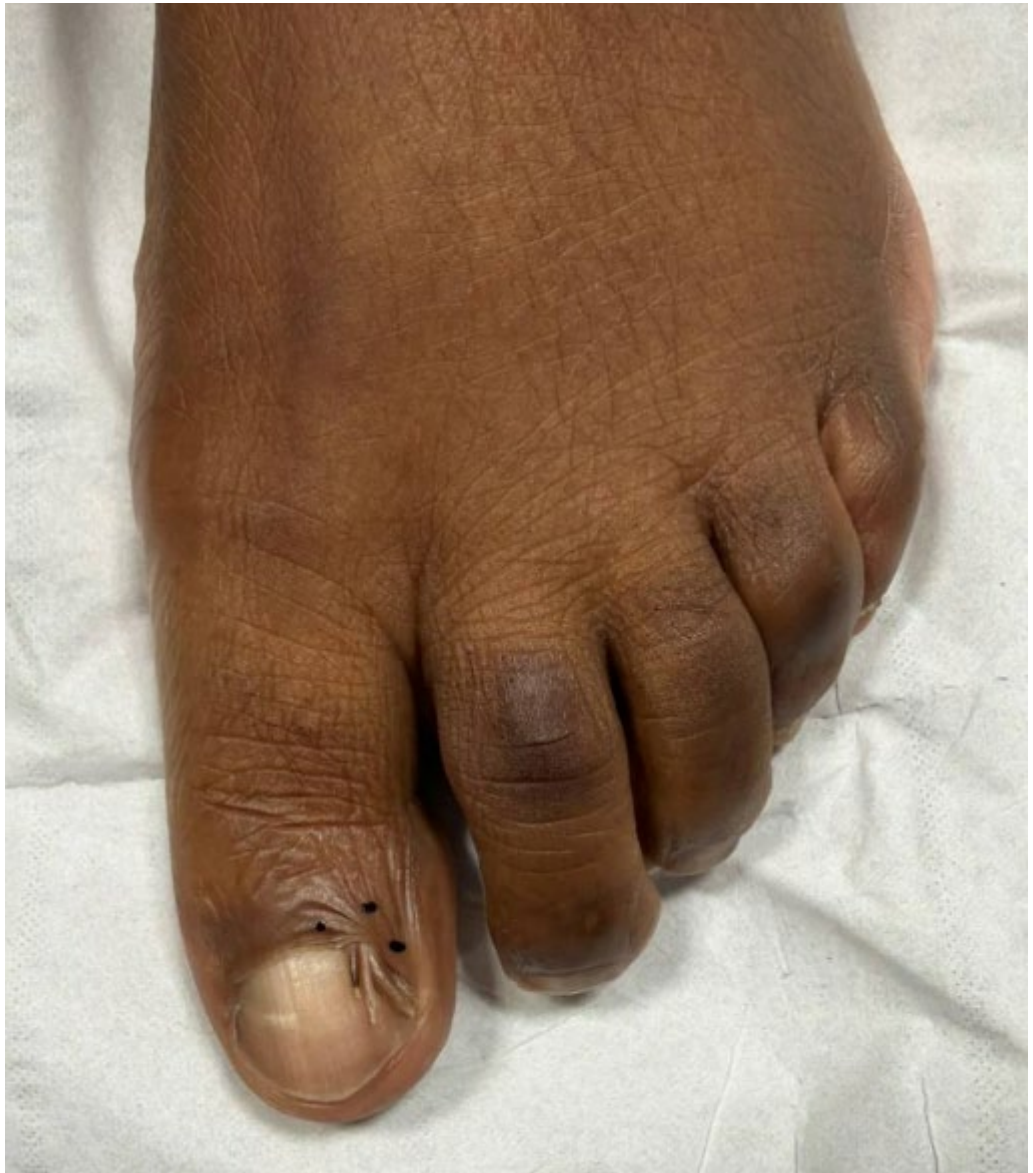
[a]University of Toledo College of Medicine and Life Sciences, Toledo, OH, USA; [b]Private Practice, Elyria, OH, USA; [c]Department of Dermatology, University of Toledo Medical Center, Toledo, OH, USA

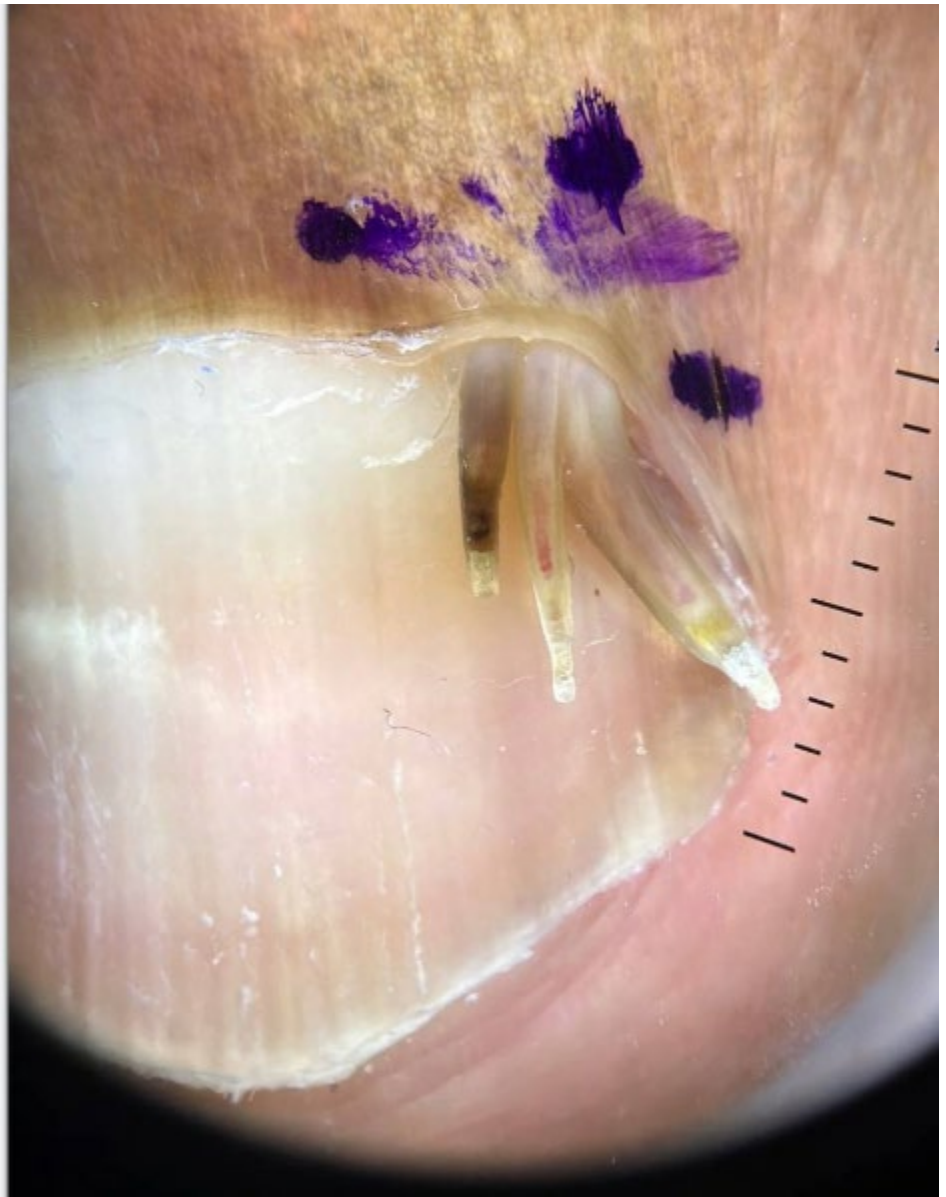
YES

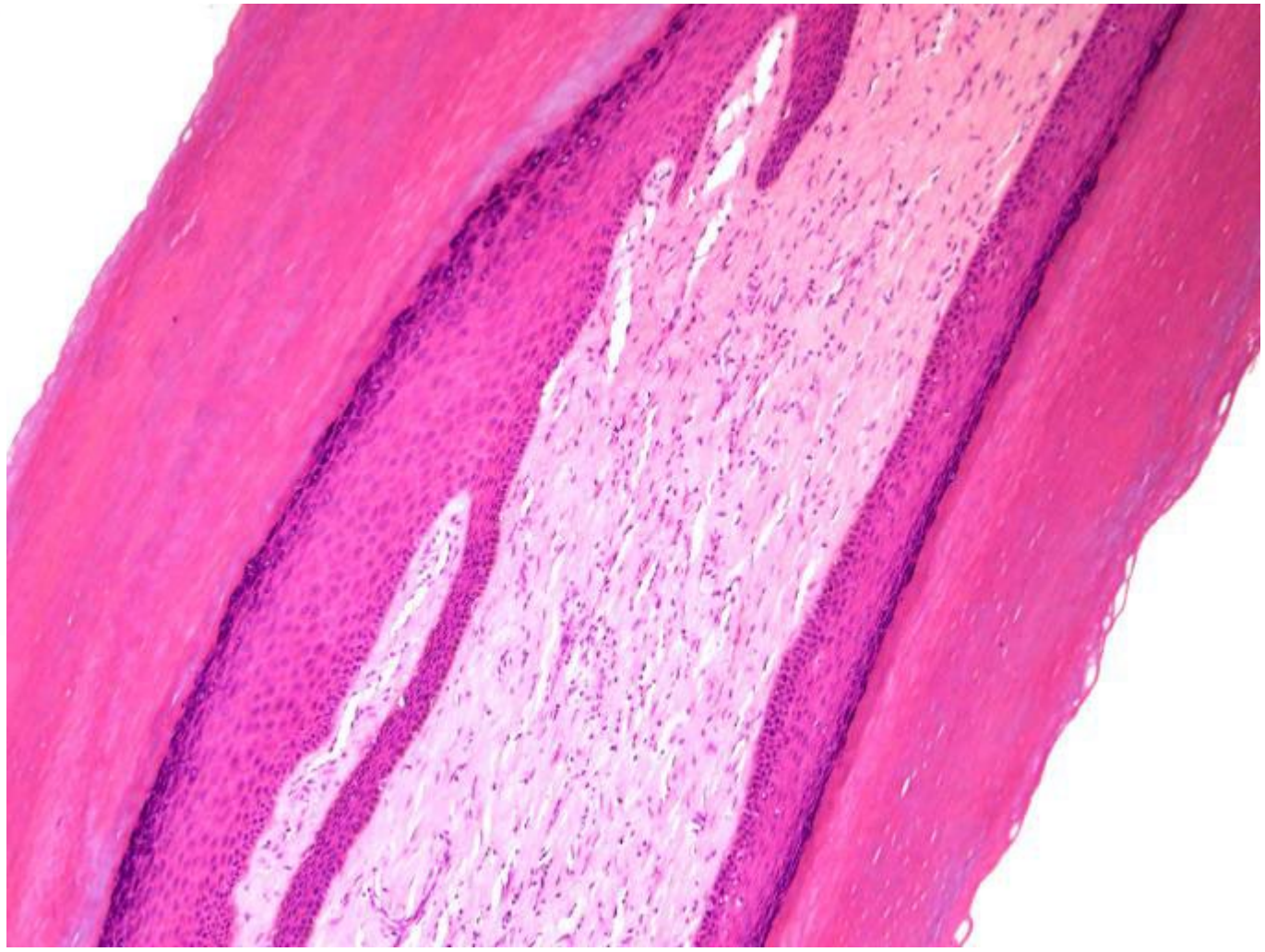


Ungual
Clinicopathological Cases

63M, left hallux toe proximal nail fold
Rule out wart







Courtesy of E. Lebas

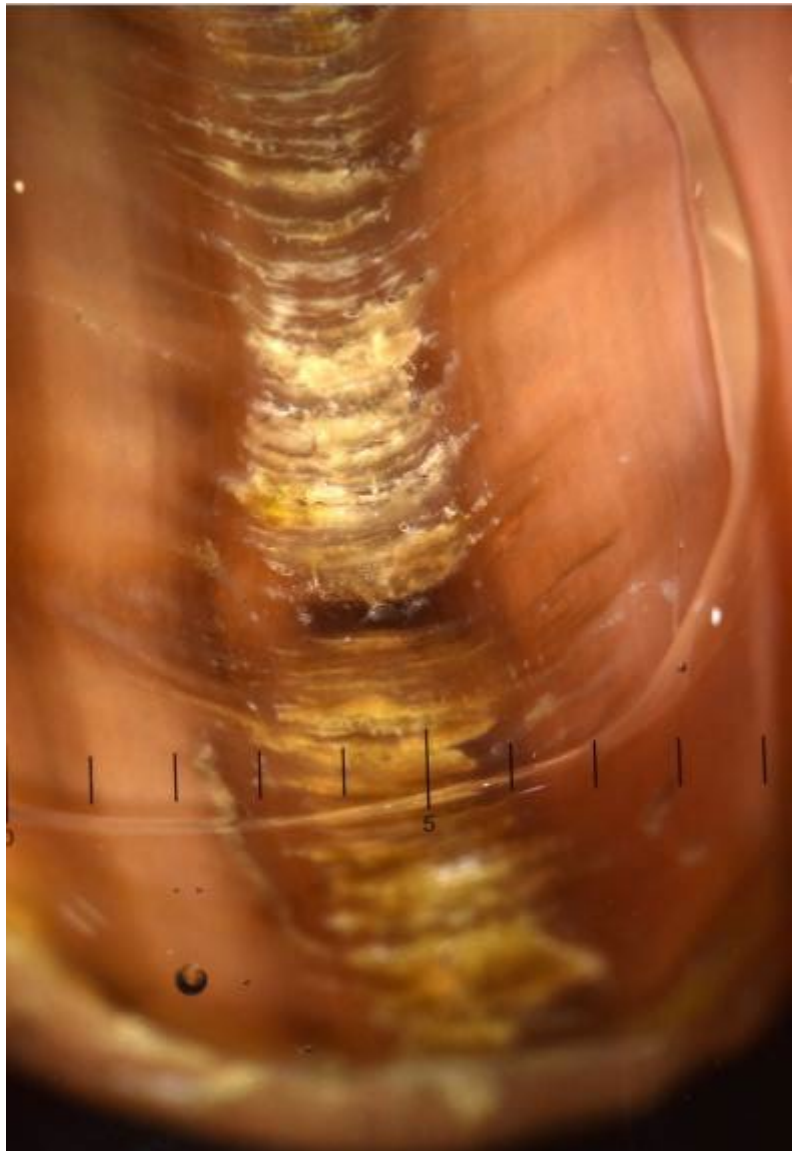
Acquired Ungual Fibrokeratoma

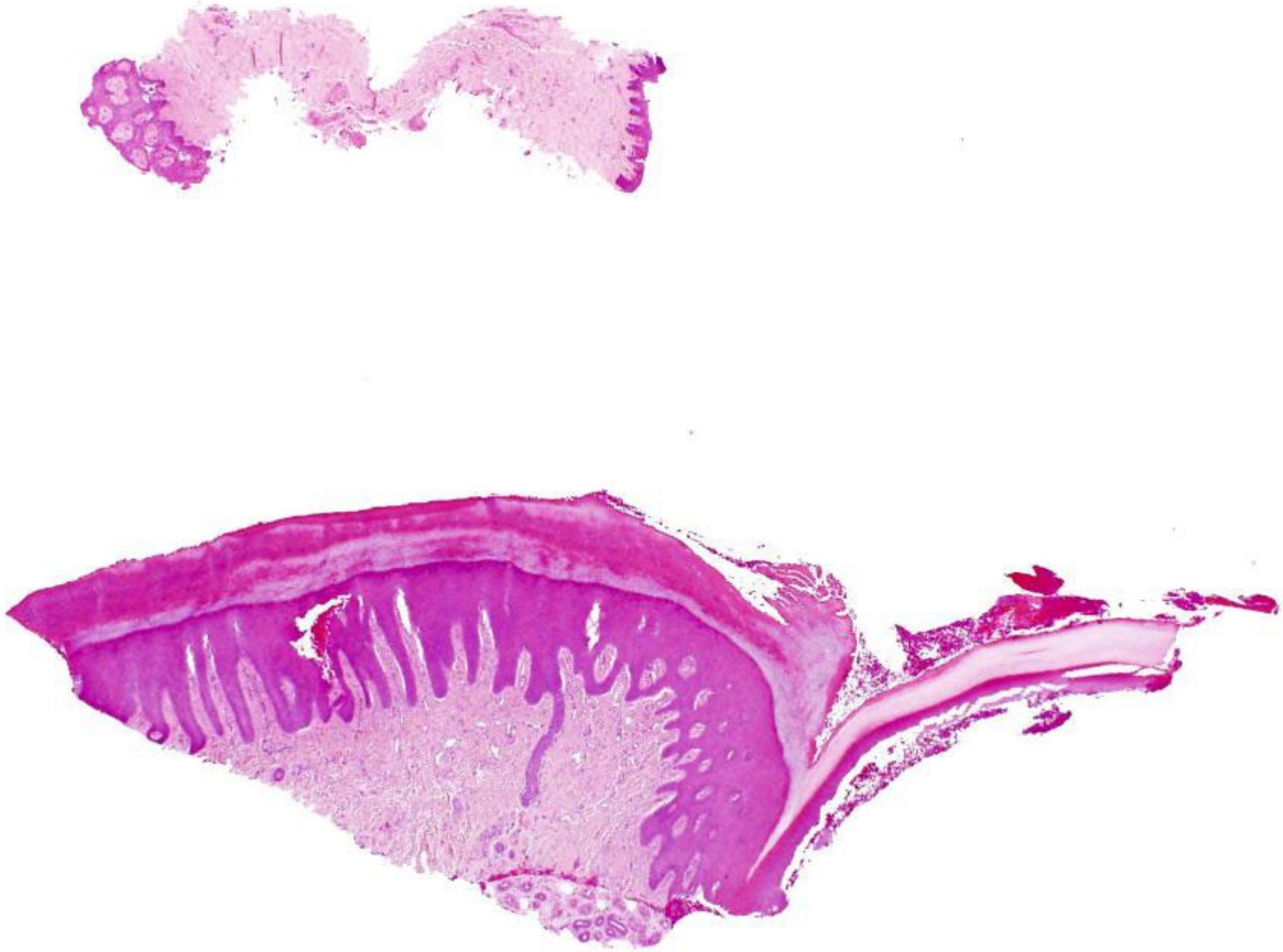
- May arise from nail folds, the matrix, nail bed, hyponychium
- Filiform morphology with hyperkeratotic tips
- Solitary/triple/quadruple tips
- Pathology: 3 subtypes:
  - Type I: tightly packed collagen bundles
  - Type II:increased fibroblasts
  - Type III: loose edematous cell poor stroma

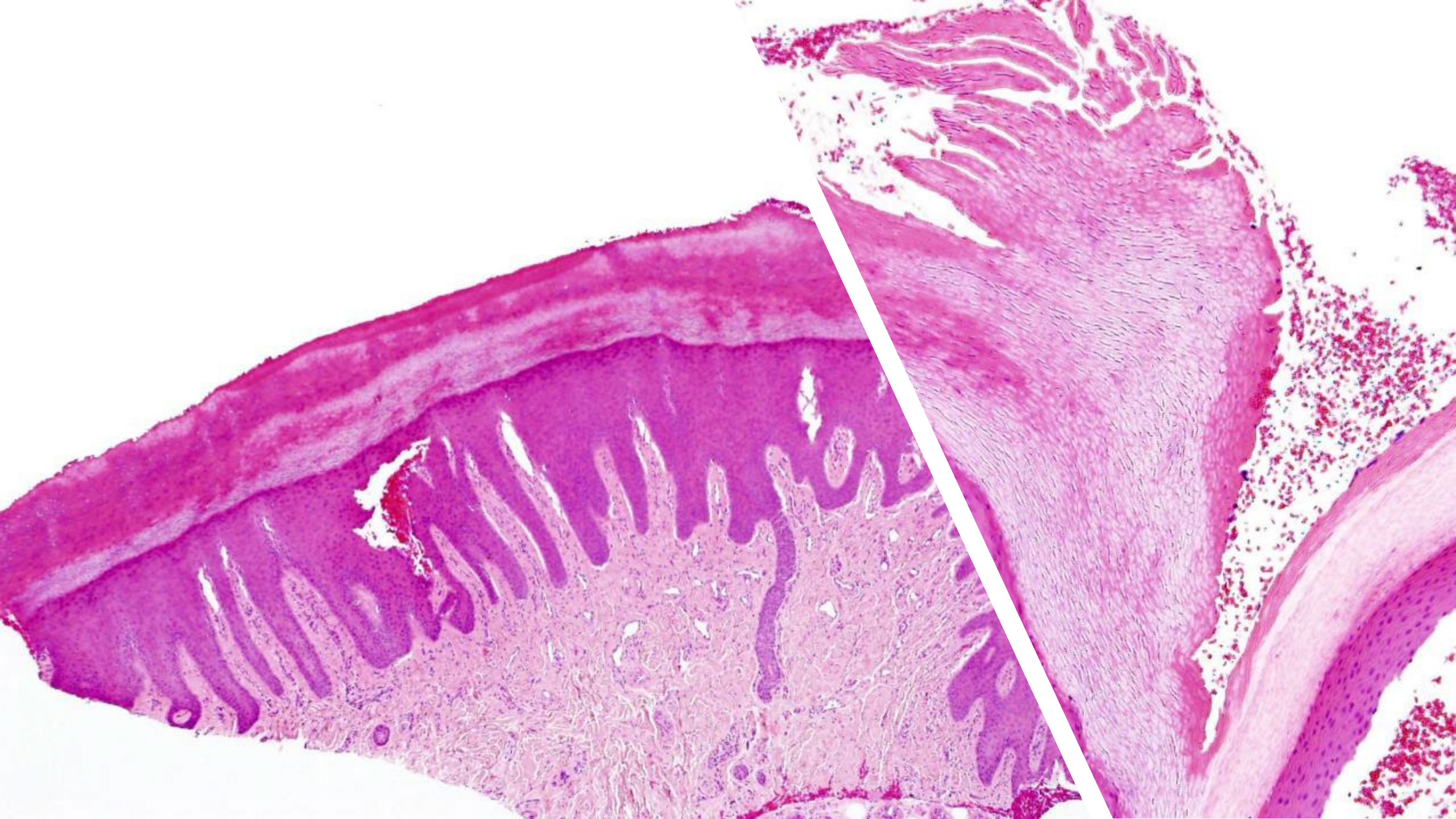
DDX: Ungual Fibrokeratoma: Koenen tumors

- Constitute one of the major criteria of the tuberous sclerosis complex (TSC)
- 50% patients with tuberous sclerosis
- Onset 12 years old
- Toes>fingers
- Females>males
- Progressively increase in size and number
- Maybe the only sign of tuberous sclerosis

36F, Right thumb,proximal nail fold biopsy







Onychotillomania

- Self-destructive habit due to chronic rubbing trauma
- Hyperkeratotic nail bed and distal matrix and prox nail fold with lichen simplex chronicus