

Summer Academy of Dermatopathology

Graz 2024

Selected Nail Pathology, Inflammatory and Neoplastic



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Cabinet de Dermatopathologie Mathurin Moreau Paris Xpath**

ULB

UNIVERSITÉ LIBRE DE BRUXELLES

THE NORMAL NAIL

- Anatomy
- Histology

de Berker DAR, André J, Baran R. Nail biology and nail science. *Int J Cosmet Sci* 2007; 29: 241-75.

ANATOMY



- NAIL PLATE → “Nail”
- Semi hard keratin plate
- Embedded in the soft tissues of the dorsal digital extremity
- Peri-ungual grooves
 - Lateral
 - Proximal
 - Distal

NAIL MATRIX



- Proximal part of the nail apparatus
- Partly covered by a skin fold: the proximal nail fold (PNF)
- Lunula = visible, distal part of the nail matrix

Cuticle: Seal



Paronychia

NORMAL NAIL

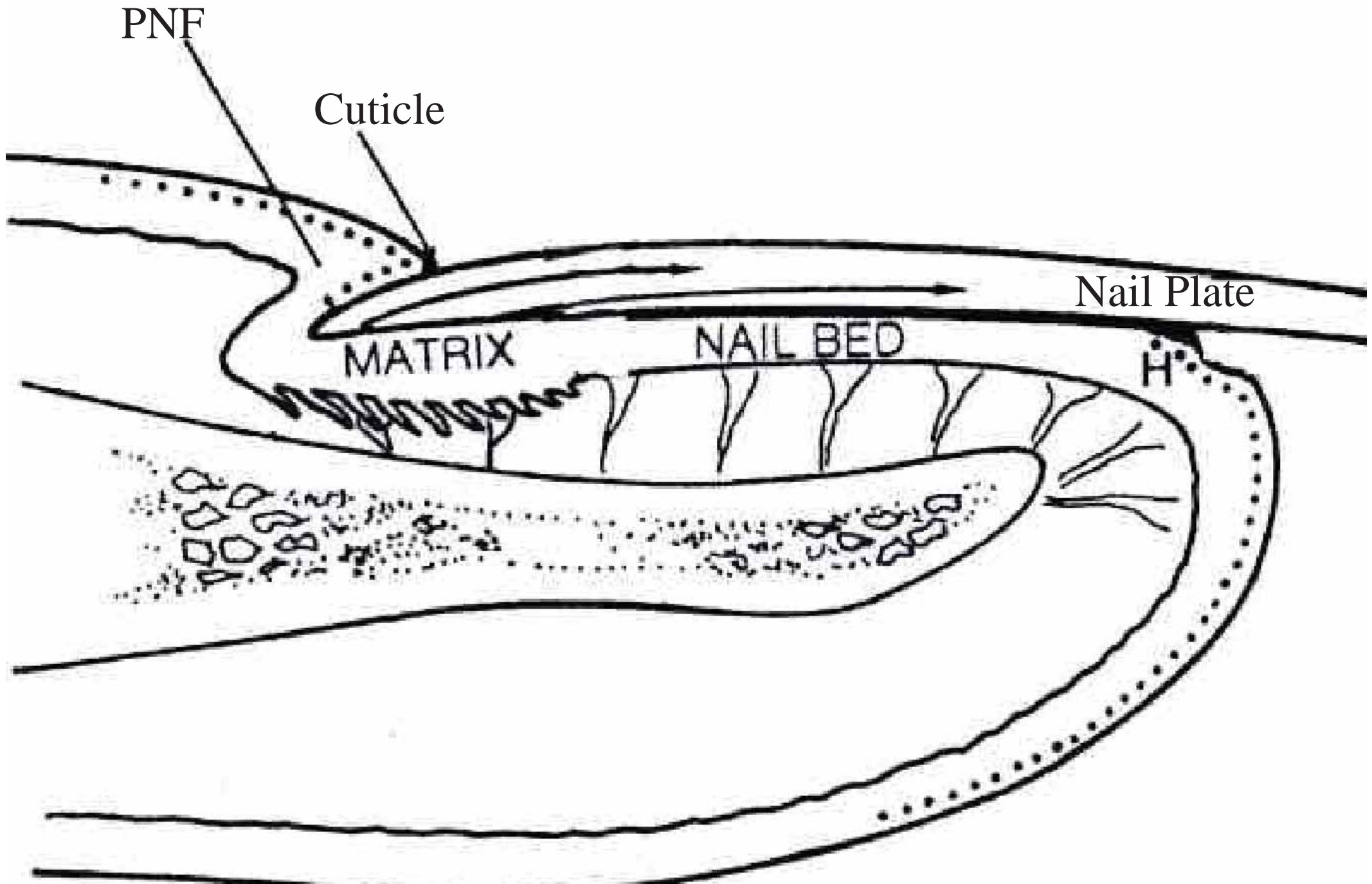
Major Differences Skin - Nails

- ✓ Stratum corneum
- ✓ Epidermis
- ✓ Dermis
- ✓ Subcutaneous fat



Absence of stratum granulosum in the nail matrix and nail bed

Nail plate \neq Stratum corneum



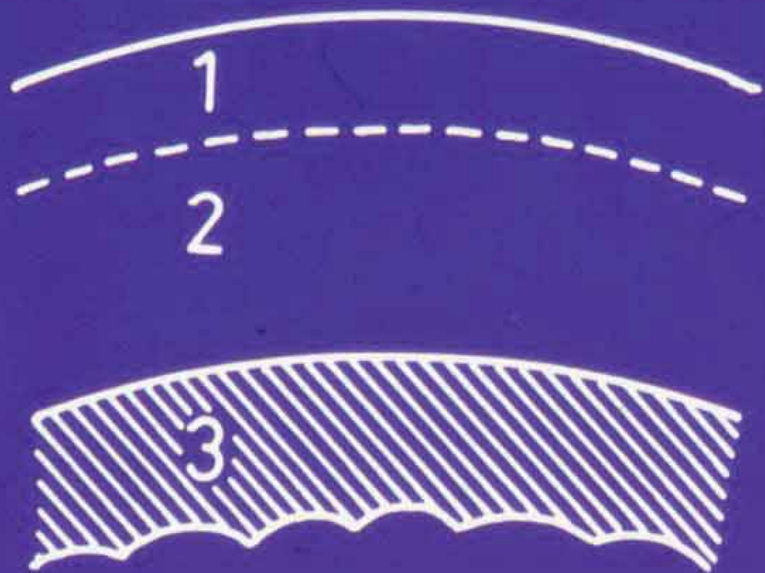


PROX DISTAL

MATRIX

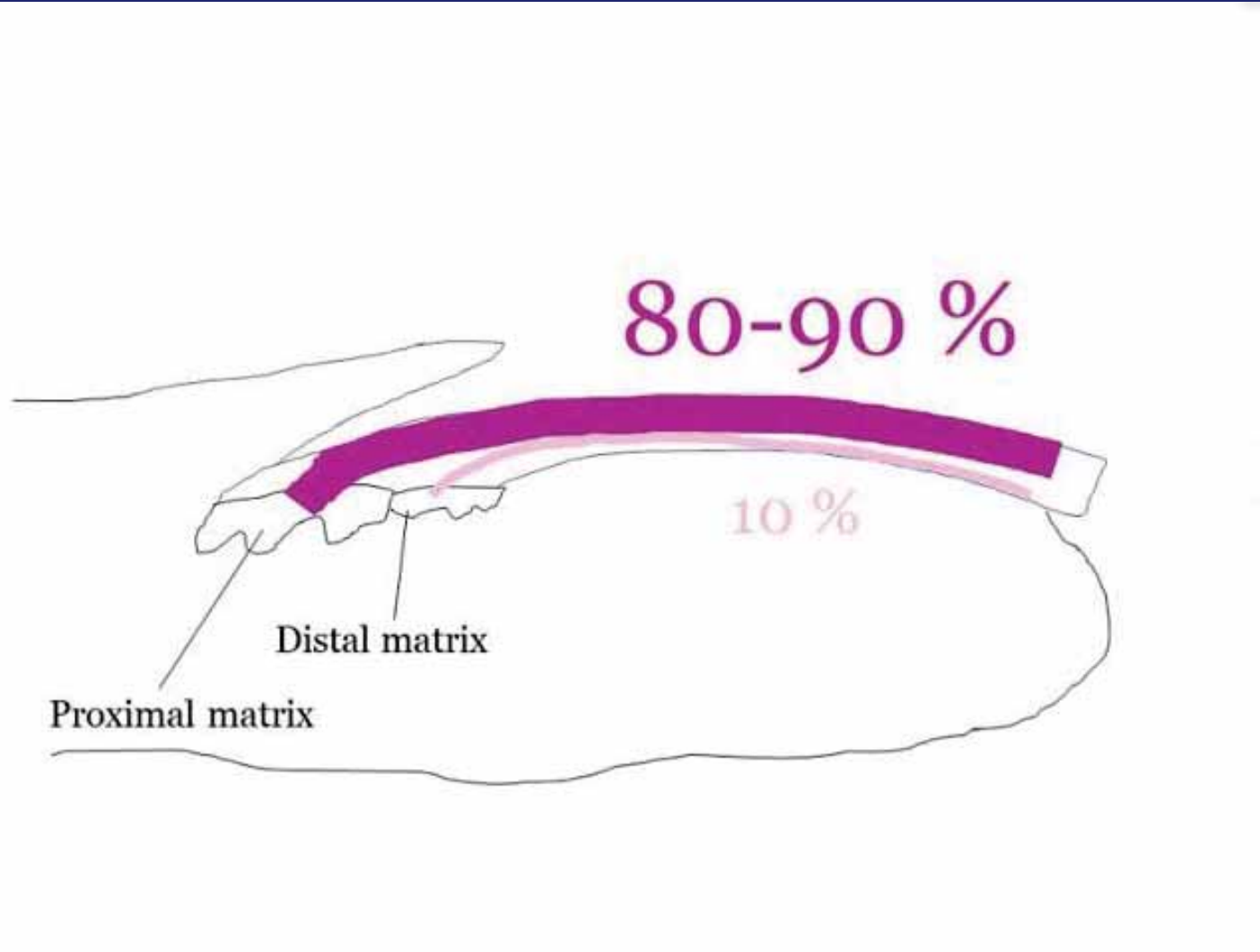
NAIL PLATE

HYPONYCHIUM



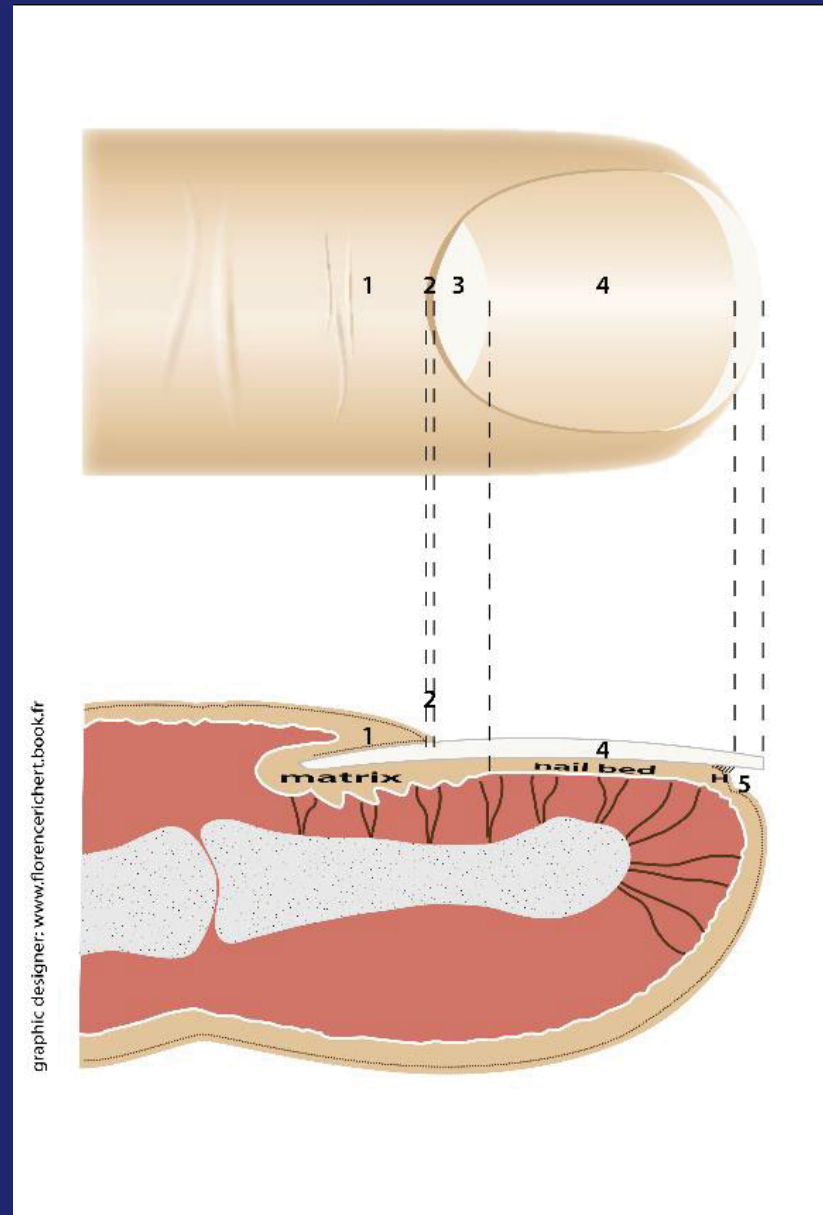
DORSAL

VENTRAL

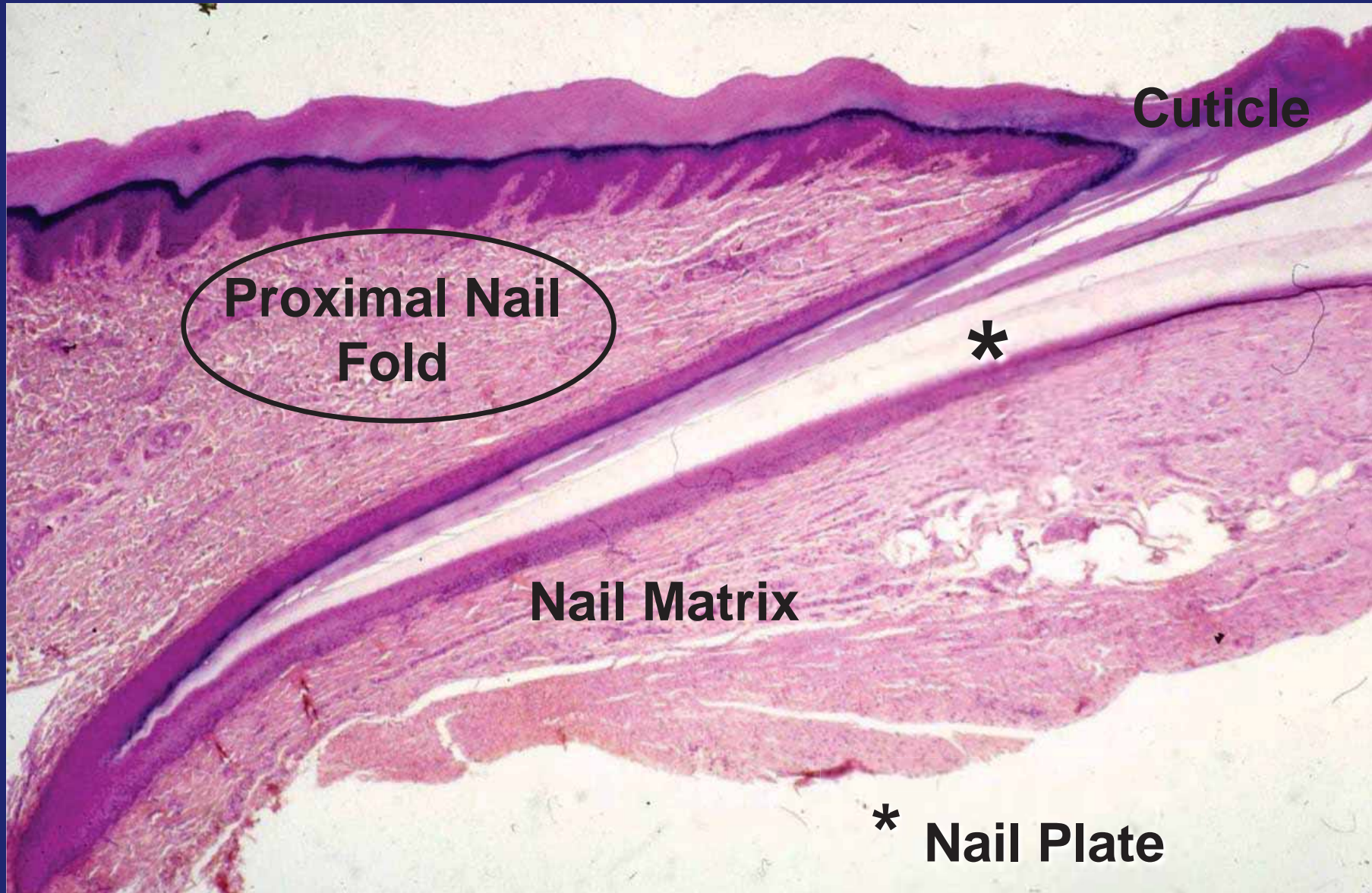


Nail Matrix

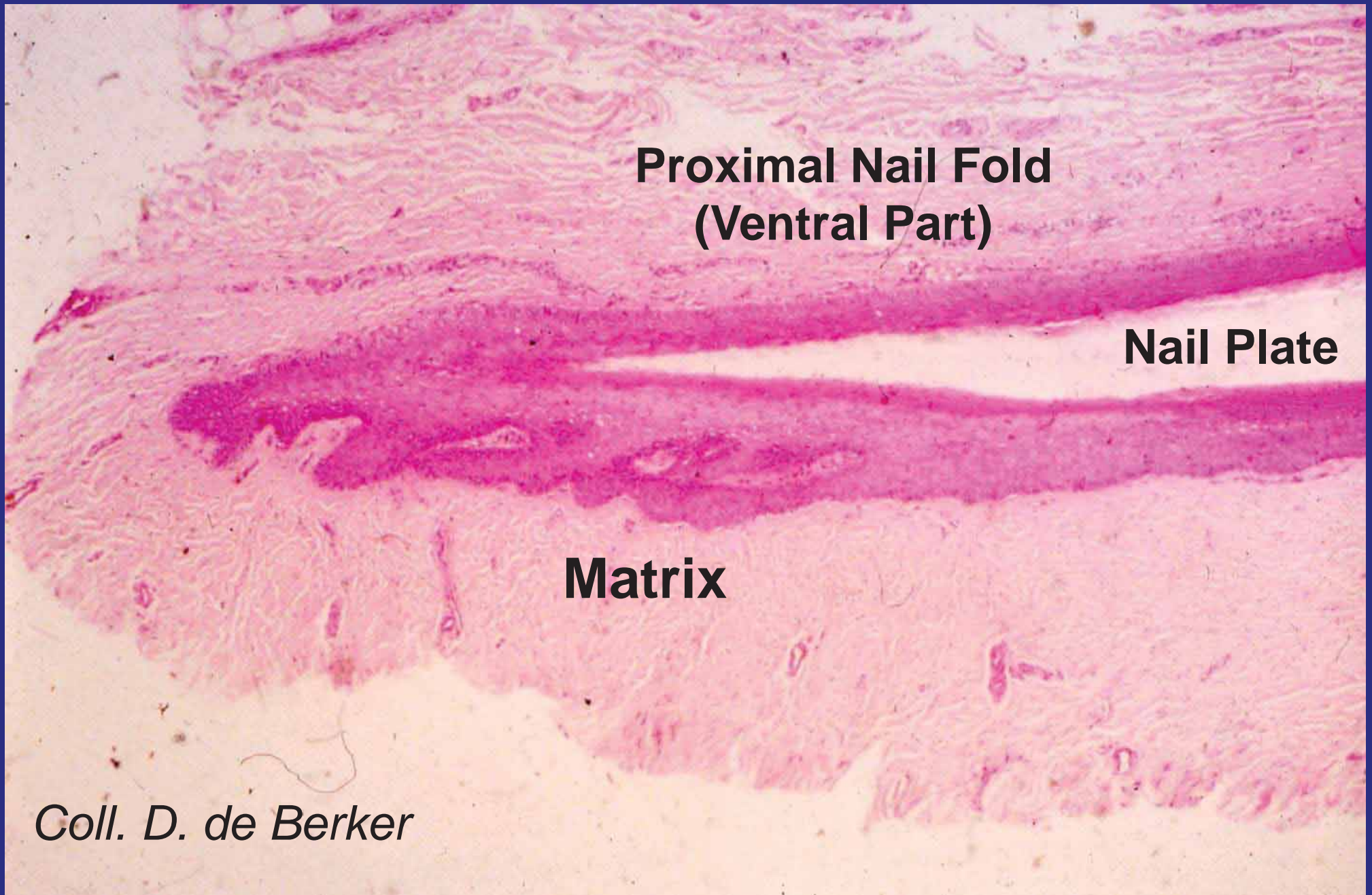
- From the proximal part of the proximal nail fold
- Up to the distal part of the lunula



Proximal Part of the Nail Apparatus



Proximal Matrix



**Proximal Nail Fold
(Ventral Part)**

Nail Plate

Matrix

Coll. D. de Berker

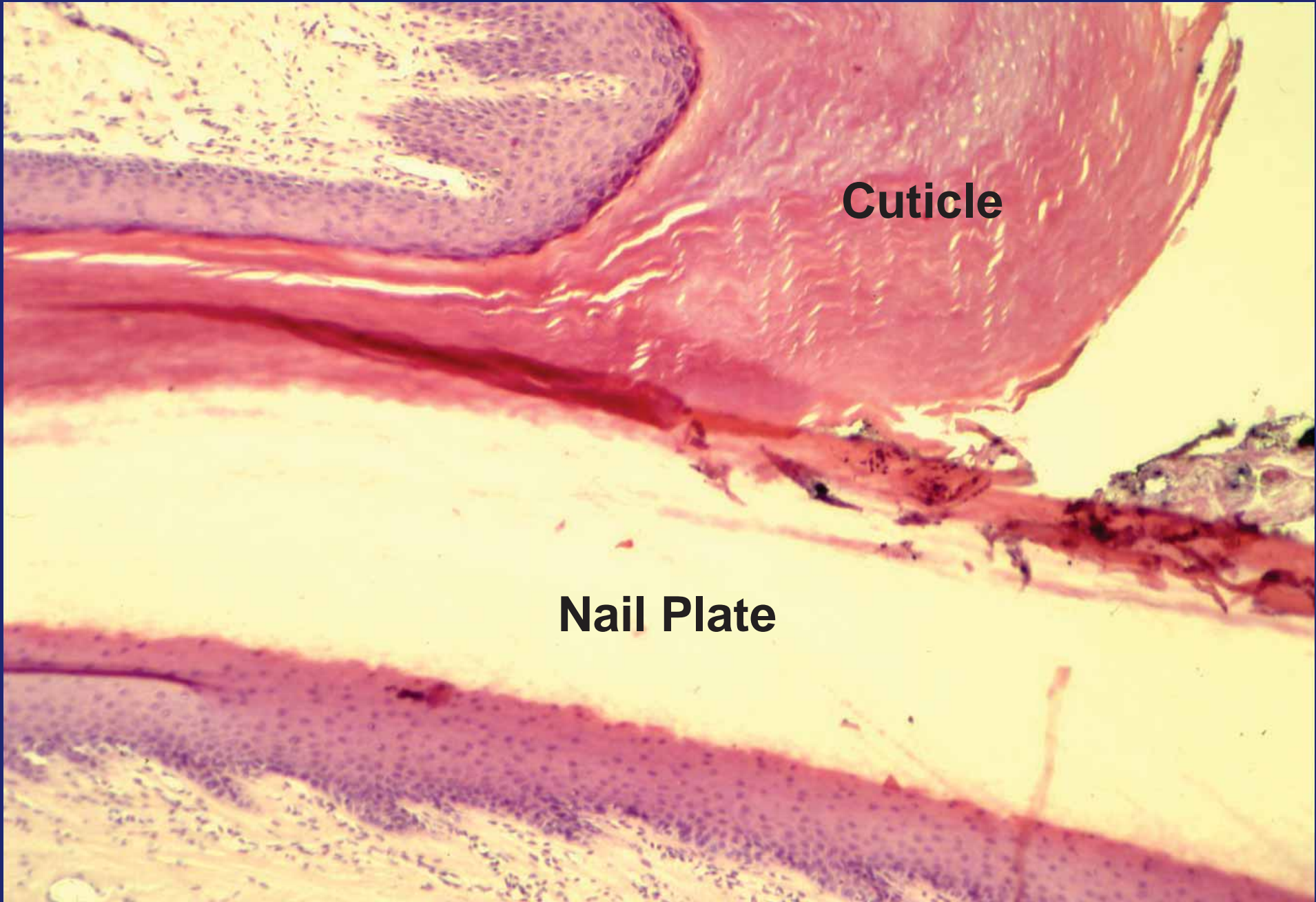


**Proximal Nail Fold
(Ventral Part)**

This histological section shows the ventral part of the proximal nail fold at the top, characterized by a dense layer of stratified squamous epithelium. Below it is the nail plate, a thick, eosinophilic, keratinized structure. The nail matrix is located at the bottom, showing a stratified epithelium with a distinct basal layer and a layer of keratinocytes that are actively producing the nail plate. The nail plate is seen as a continuous, layered structure extending from the matrix.

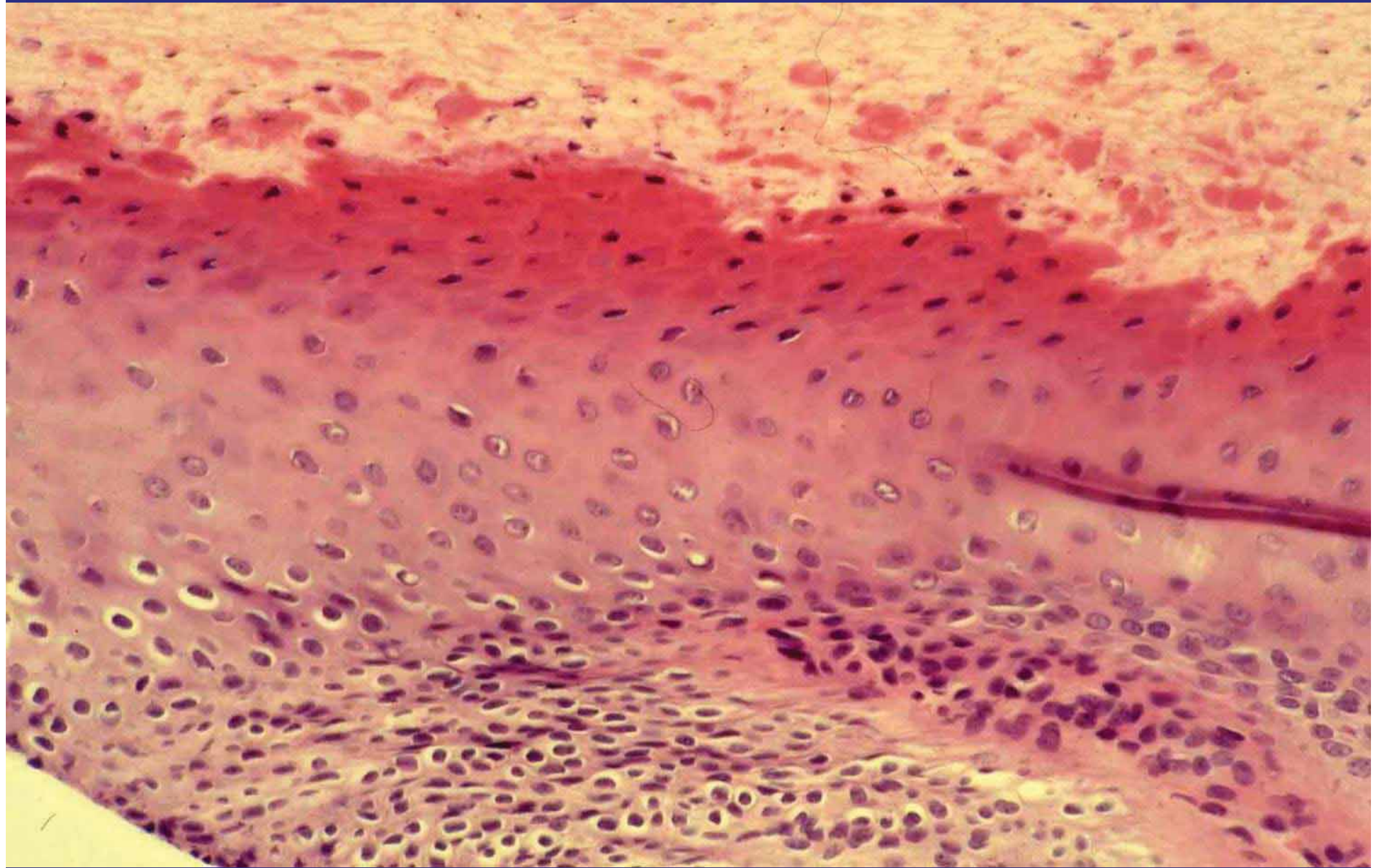
Nail Plate

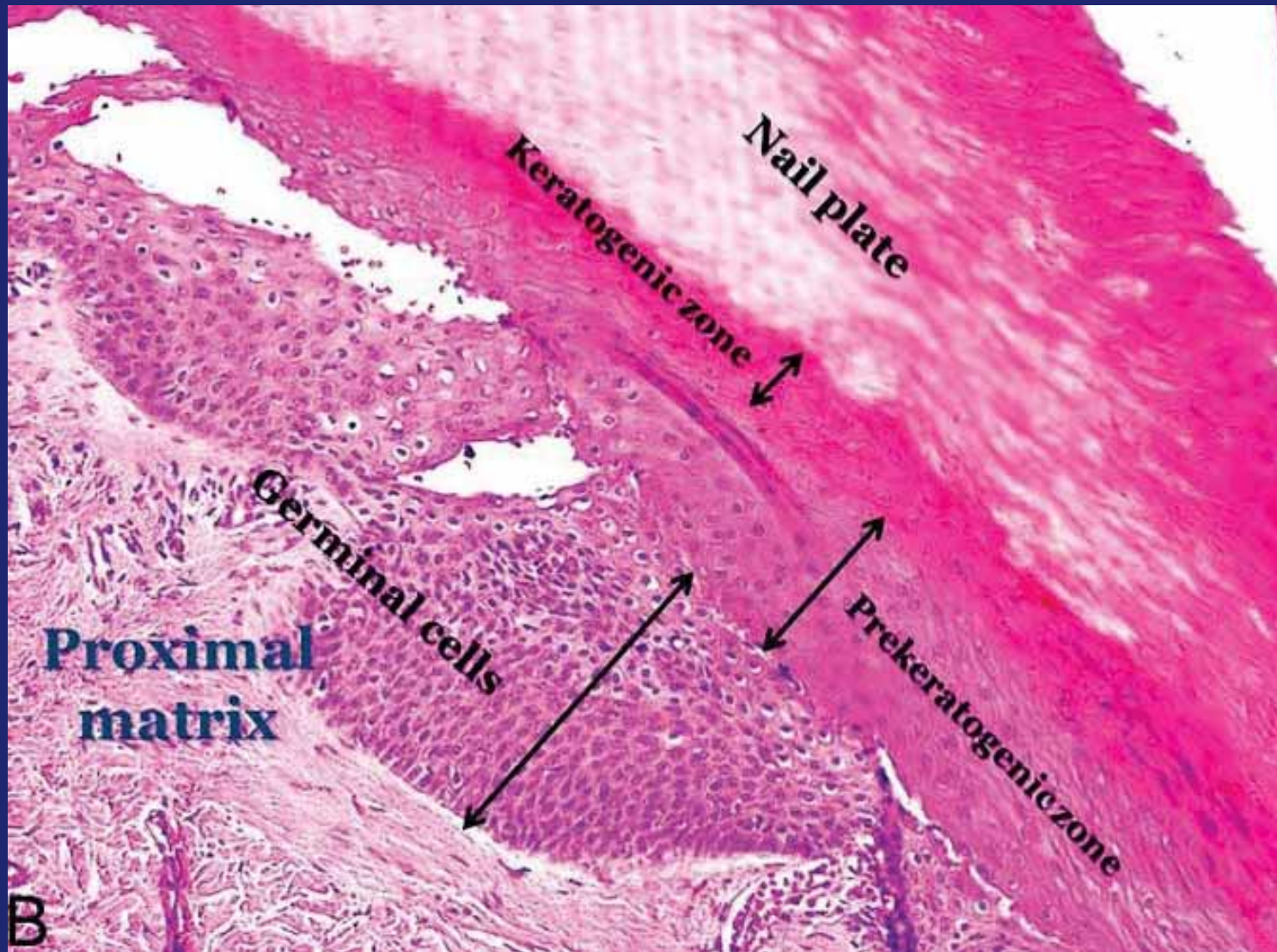
Nail Matrix



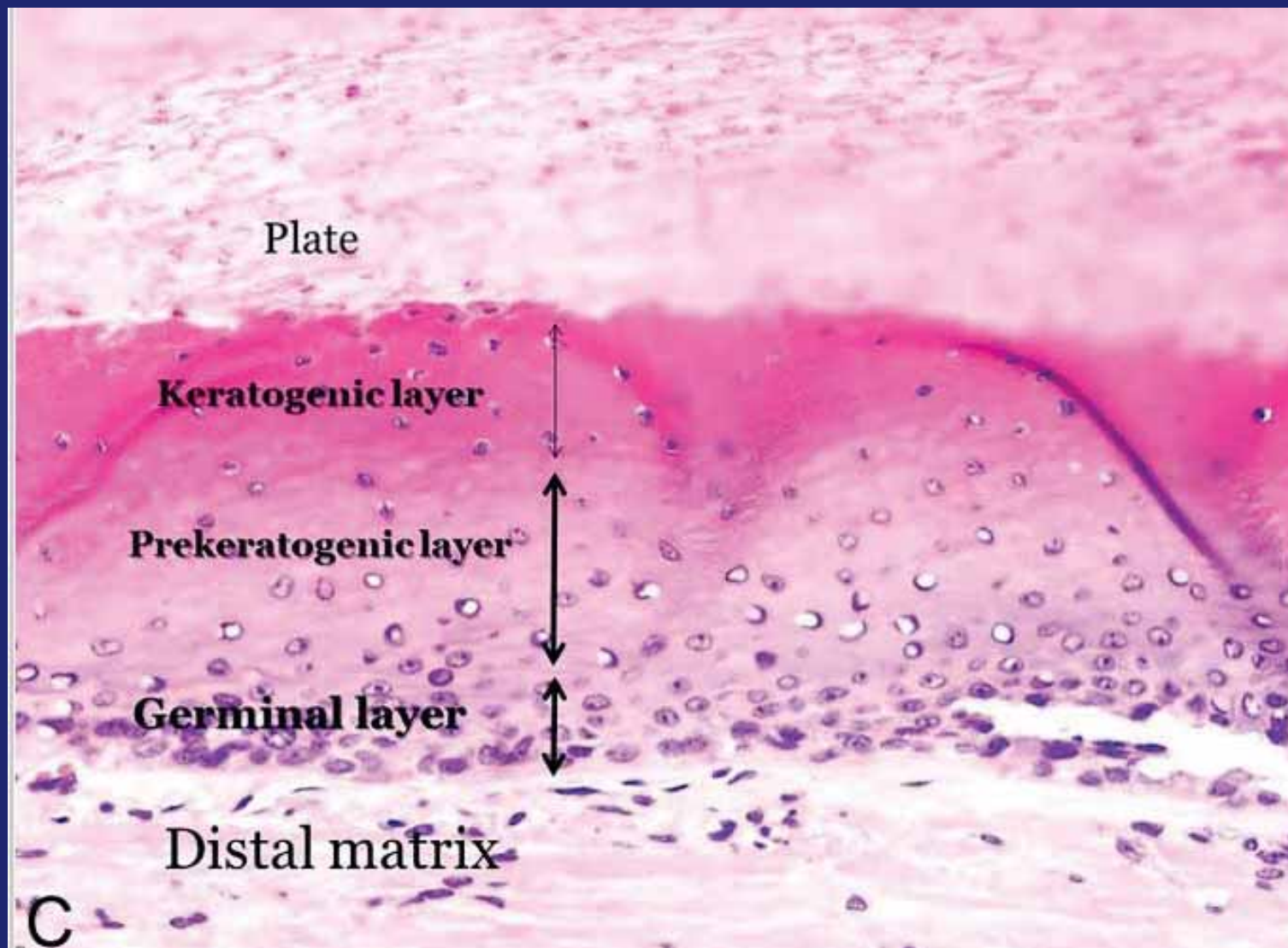
Cuticle

Nail Plate

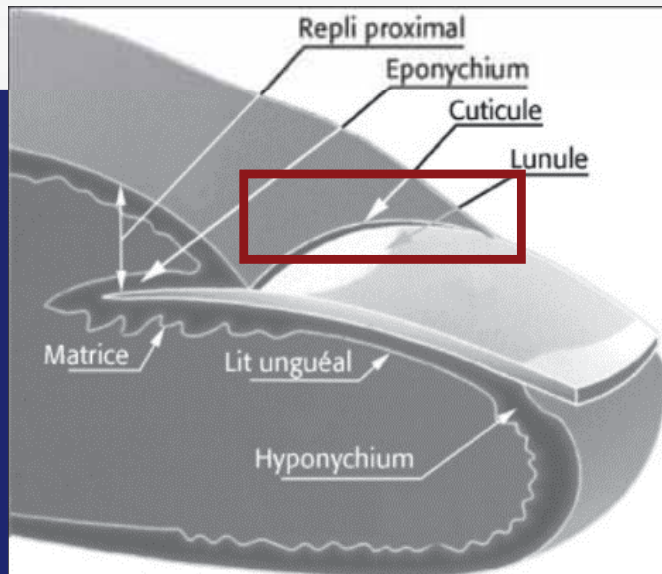




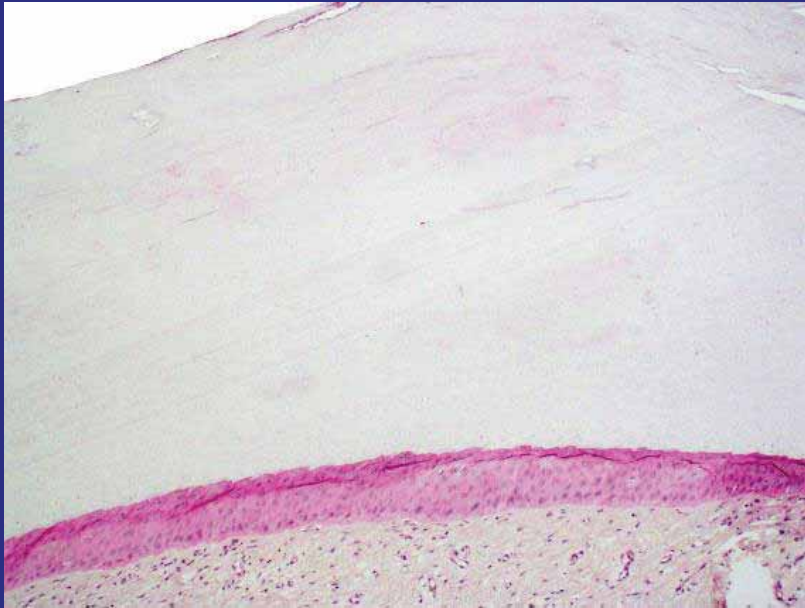
Fernandez-Flores A. Basic Concepts in Nail Pathology. Am J Dermatopathol. 2023 1;45(10):675-693.



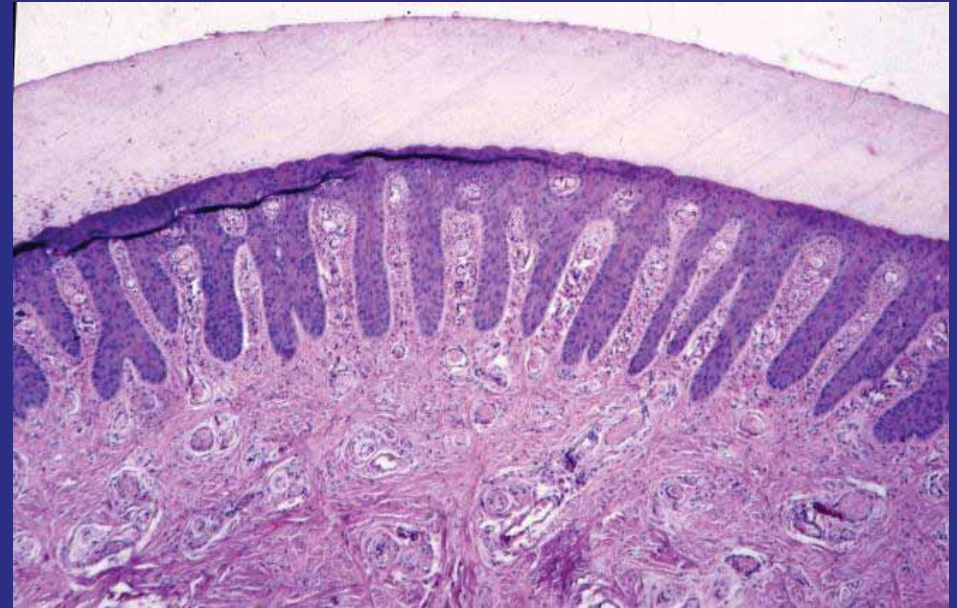
Nail Bed



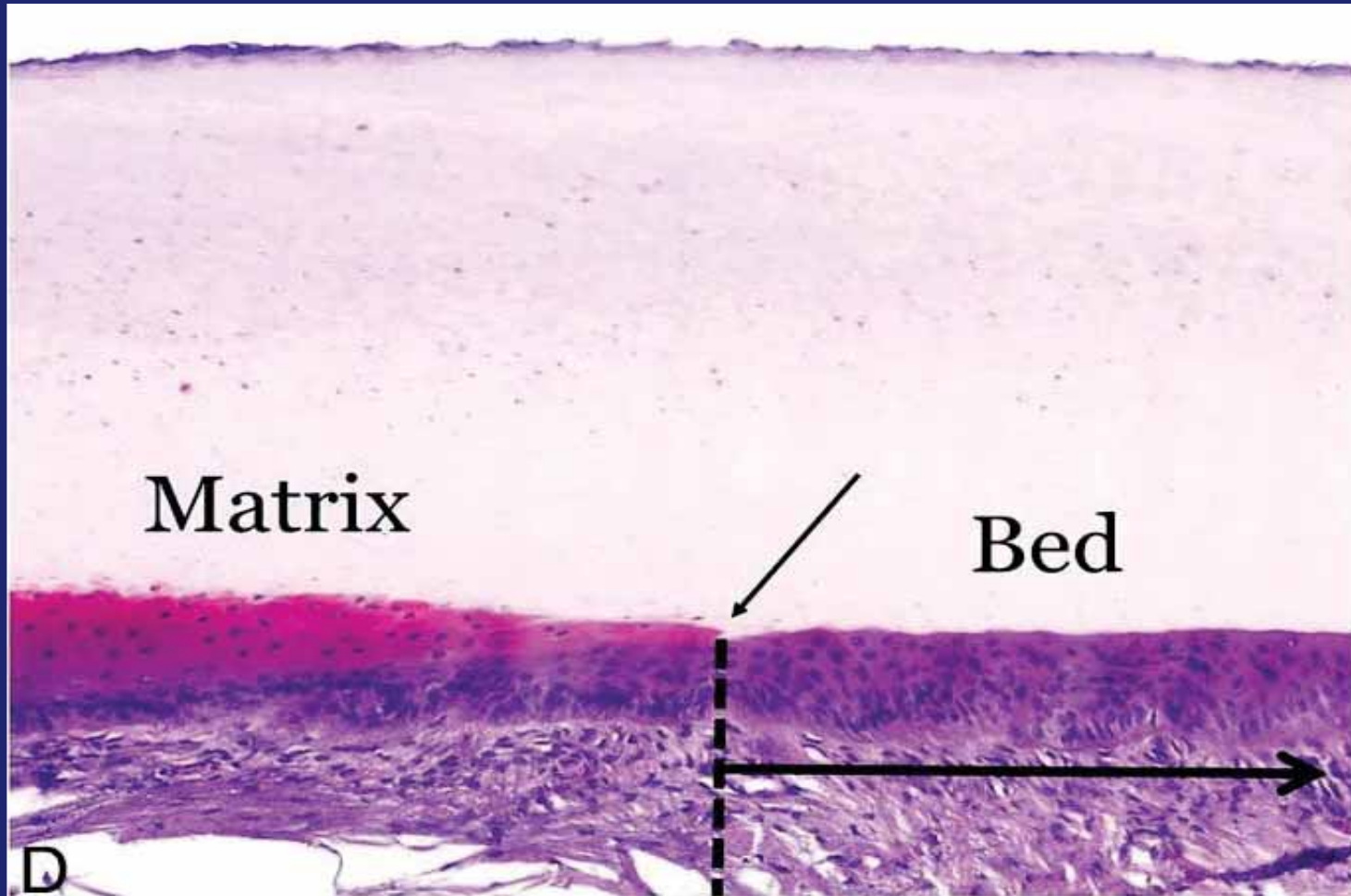
Nail Bed



Longitudinal View



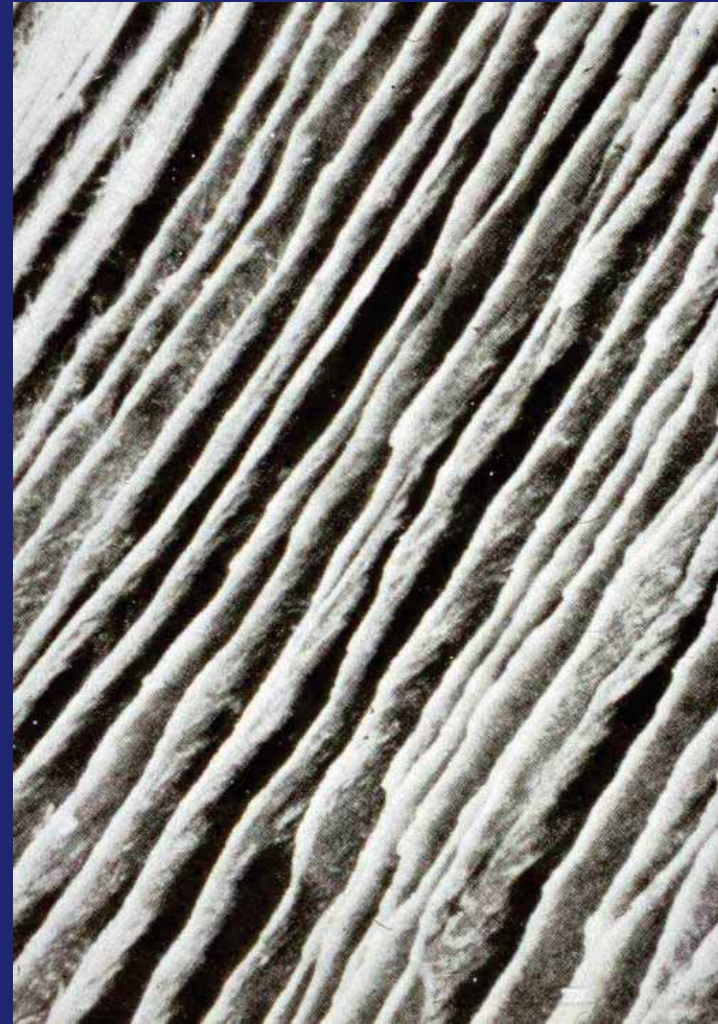
Transversal view



Interaction Nail Bed/Plate strongly adherence \neq Matrix

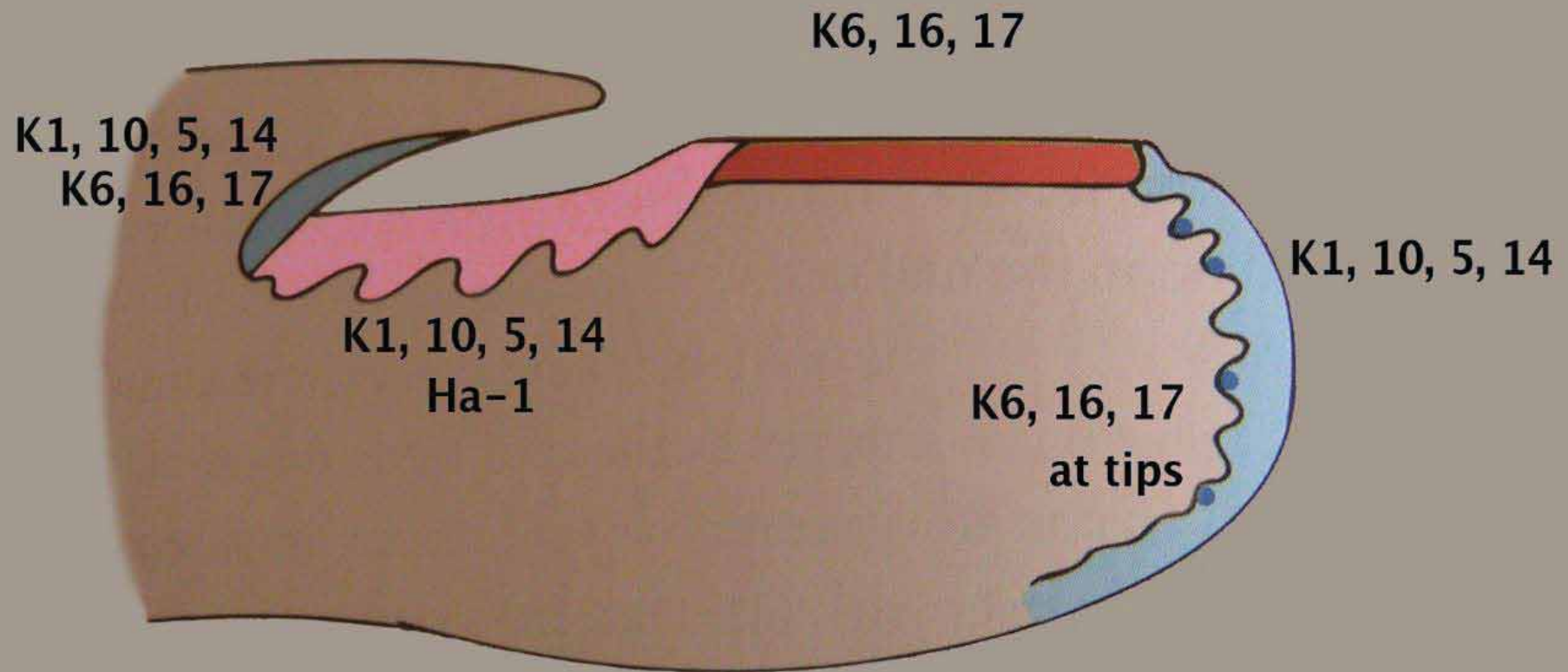


Coll. B. Richert



Scanning EM of the
nail bed surface

NAIL BED



Coll. D. de Berker, UK

Mutations in Keratin 6,16,17 → Pachyonychia congenita

Melanocytes

- **Epidermis:** 1150/mm²
Basal cell layer
- **Proximal Matrix**
 - 4-9/mm or 200/mm²
 - Suprabasal layers (2 – 4)
 - Quiescent, small, thin dendrites
- **Distal Matrix**
 - 200/mm²
 - Basal layers
 - 50% quiescent, 50% active



Nail bed: melanocytes very rare

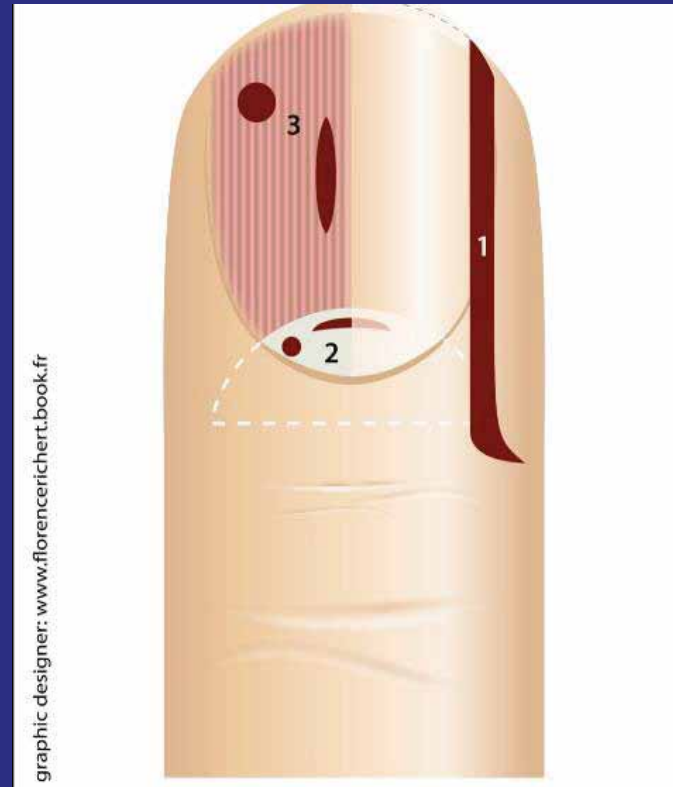


Best immunostain: Sox 10

Perrin Ch et al. Am J Dermatopathol 1997; 19:462-467

Biopsies/exérèses classiques de l'ongle

1. Biopsie et exérèse latéro-longitudinale
2. Biopsies matricielles : croissant transversal, shave-biopsie, punch
3. Biopsies du lit : punch, ellipse longitudinale
4. Exérèse d'appareil unguéal



An international survey about nail histology processing techniques

Christina Wlodek¹, Pauline Lecerf², Josette Andre³, Beth S Ruben⁴, David de Berker¹

Longitudinal sample and en bloc excision require orientation.
Draw a map alone for a punch biopsy.

SPECIMEN ORIENTATION

- Ink edge nearest pathology sparingly
- Suture
- 'Map' onto accompanying diagram

FIXING SPECIMENS [6-48 hours]

- 10% formalin
- Time will depend on nail thickness

SOFTENING SPECIMENS [0-48 hours]

- Mollifex Gurr (VWR Int. Ltd.)
- Potassium hydroxide solution 10% or 17%
- Potassium thioglycolate 10%
- Tween 40 (for particularly thick nails)
- See Appendix A for further details

EMBEDDING [<1hour]

- Paraffin wax
- 2-hydroxyethylmethacrylate if very thin slices required*
- *softening agent not required with this method

Prior to cutting sections, hard specimens may need to be further softened,
using above techniques on the cutting surface

SECTIONING SPECIMENS onto SLIDES

- Cut sections between 1-9µm thick & place onto glass slides (APES or gelatinized)
- TIP: consider using glycerin in water to help prevent specimens folding over
- TIP: consider applying albumin solution with glycerine to cover the slides before applying the specimen. This reduces risk of them sliding off
- TIP: use conservative sections initially to ensure the specimen is correctly oriented and then perform level sections to avoid wasting material

STAINING SPECIMENS

- Routine – H&E
- Fungal hyphae – PAS. Also consider Grocott's silver stain
- Nail keratins – Giemsa. Also consider Masson-Goldner's
- Melanin vs blood differentiation – Fontana Masson for melanin, DAB for blood. NB Prussian blue & Perls are not useful for nail plate
- Pigmented lesions – Melan-A /MART-1, HMB-45, S100

Submitting tangential nail-matrix specimens

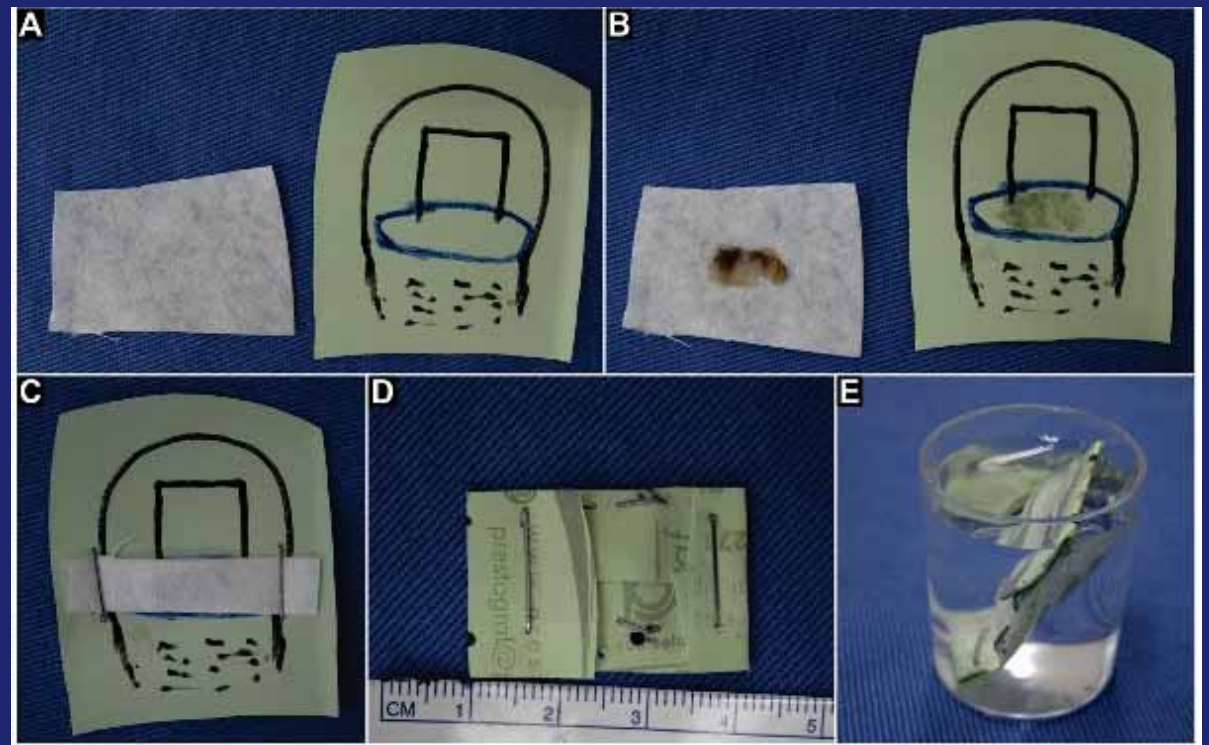


Jorge Ocampo-Garza, MD,^{a,b} Nilton Gioia Di Chiacchio, MD,^{b,c} Judith Dominguez-Cherit, MD,^d
Leandro Fonseca Noriega, MD,^c and Nilton Di Chiacchio, MD^c
Monterrey, Mexico; São Paulo, Brazil; and Ciudad de Mexico, Mexico

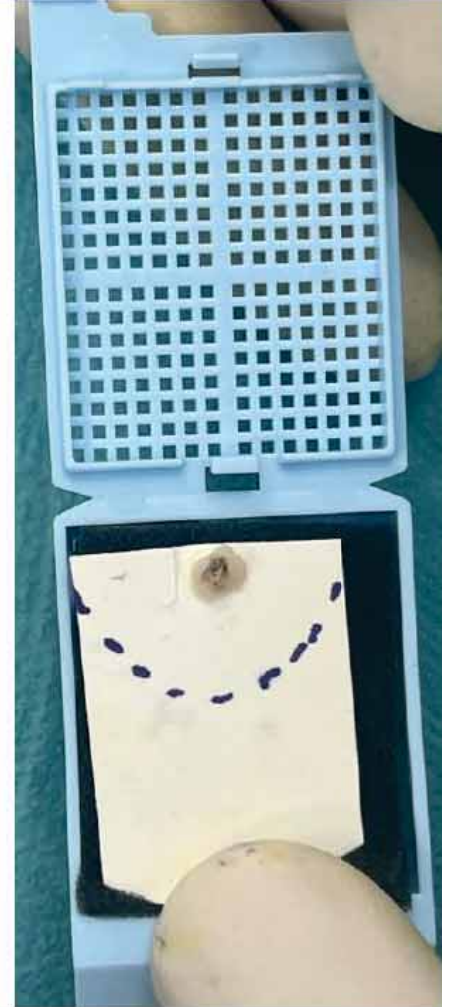
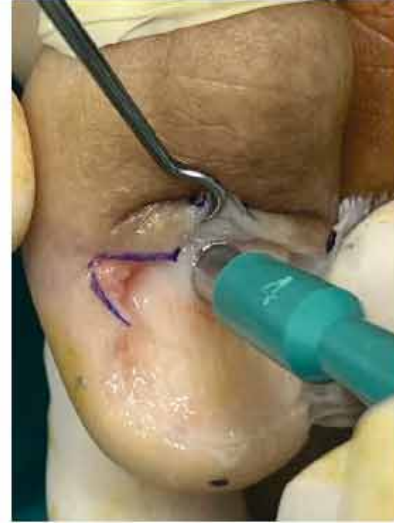
Key words: dermatologic surgery; melanonychia; nail biopsy; nail surgery; nail-matrix specimens; sample processing.

J Am Acad Dermatol. 2017
Nov;77(5):e133-e134.

Haneke E. Operative Therapie akraler und subungaler Melanome. In: R.Rompel, J. Petres eds. *Operative und onkologische Dermatologie.* Berlin: Springer; 1999:210–4



Punch matrix



Coll B Ovchinnikoff



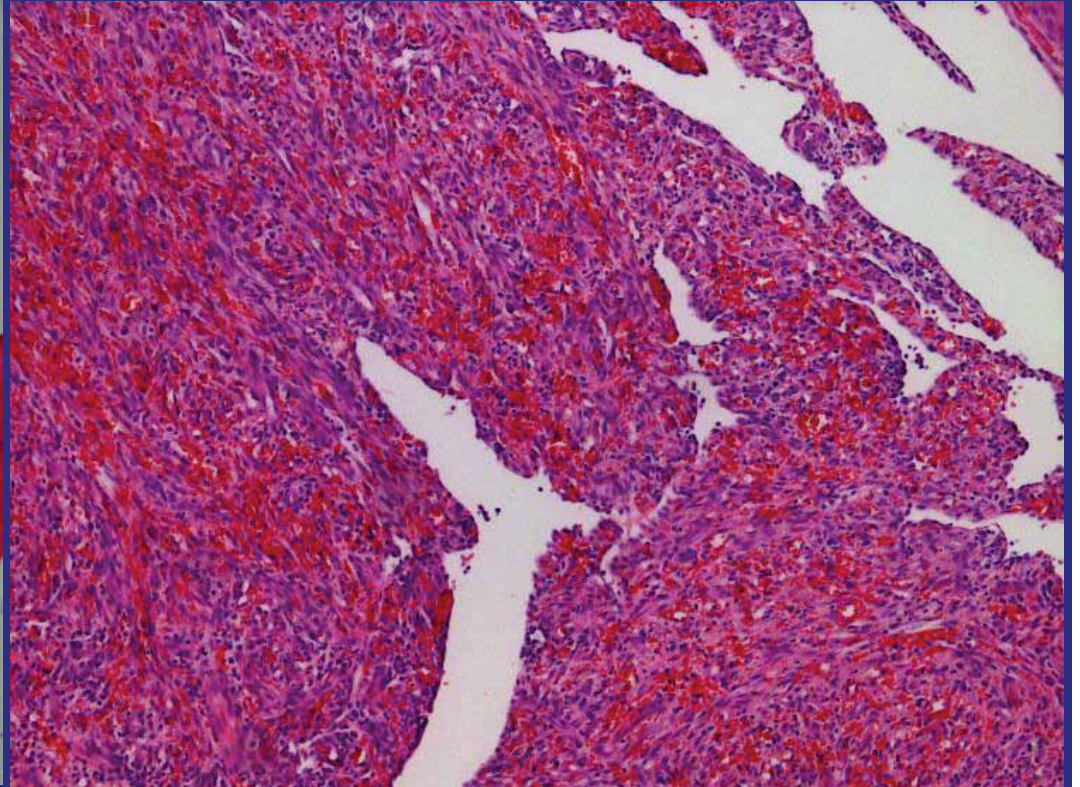
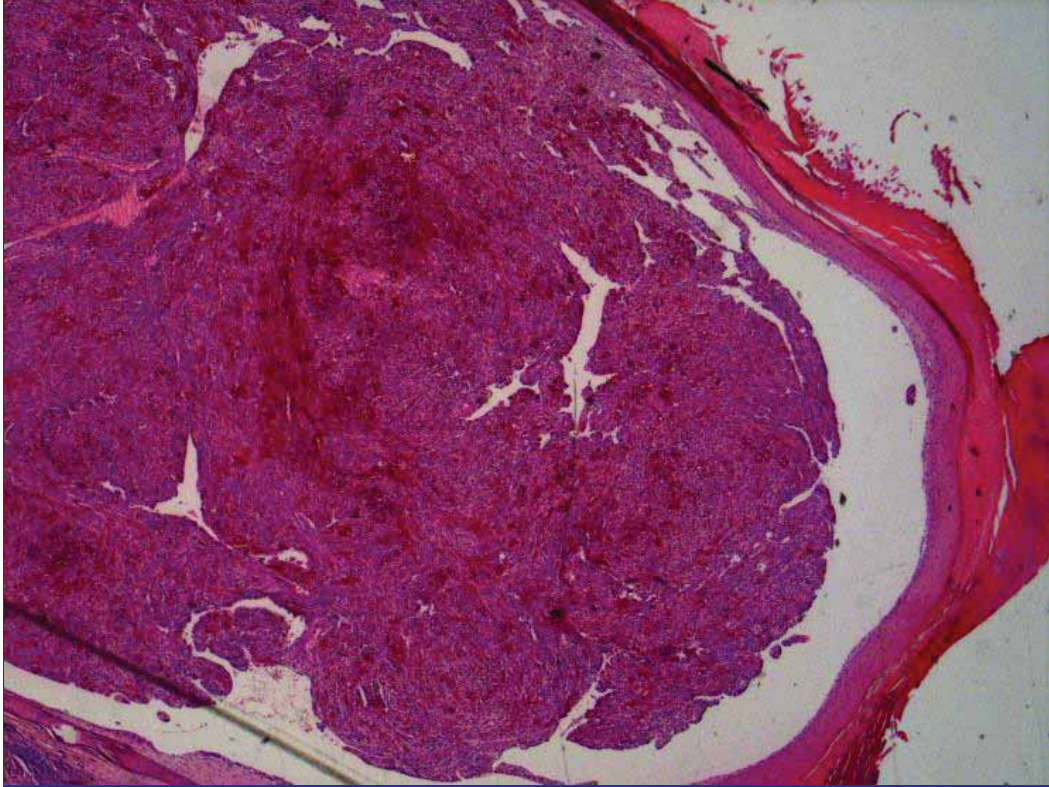
Mollifex Gurr® - VWR Int Ltd)

- Rinse the sample for 15 minutes in water
- Immerse the sample for 24 hours in the Mollifex solution in order to soften the hard keratin
- Rinse again in the water for 15 minutes
- Put the paraffin bloc in the water in order to swell it, easier to cut ...

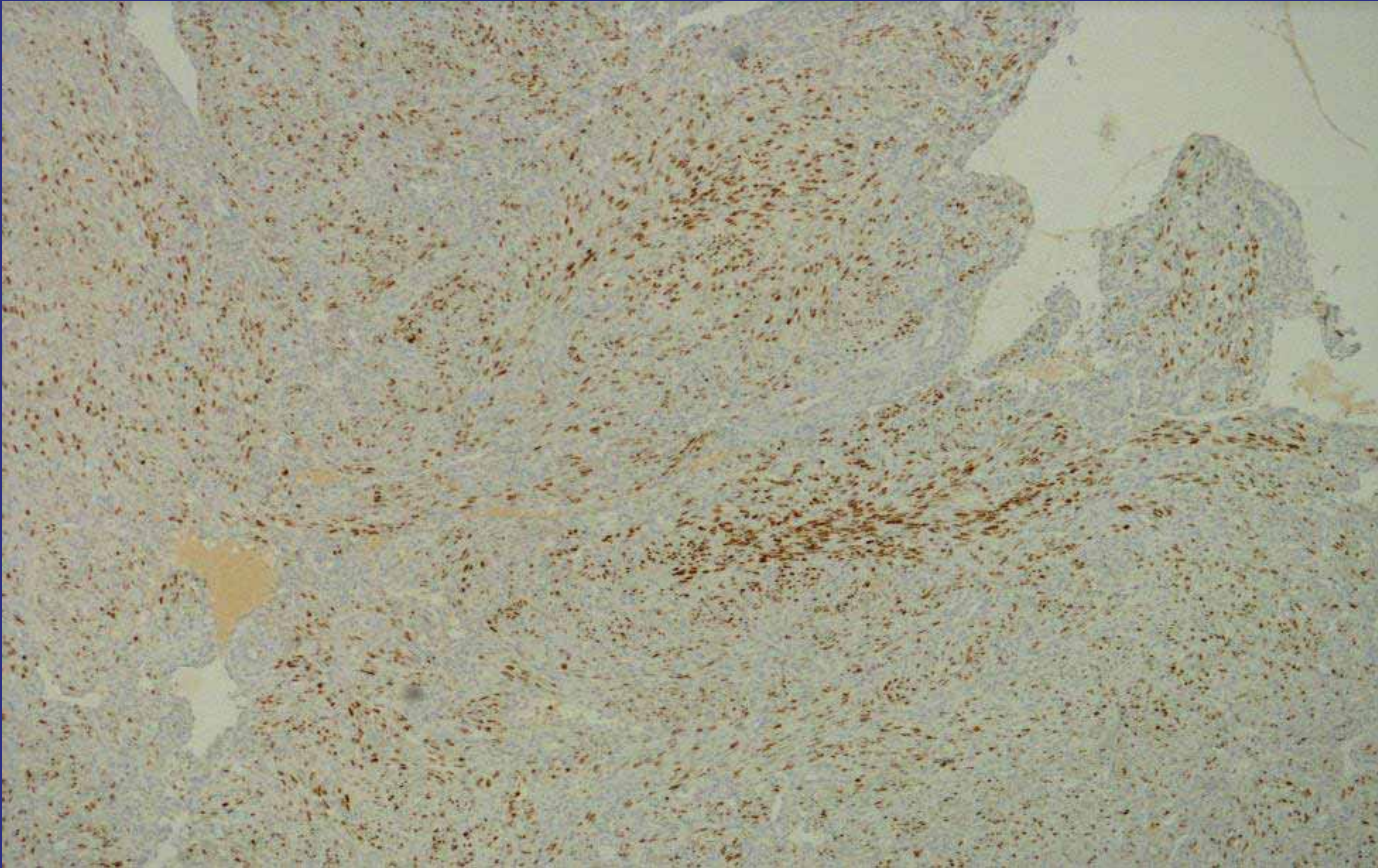
Case I

- 55 year-old African man
- Slow growing subungual painful tumor
- 3. right toe
- No trauma
- No medical history
- Clinical diagnosis:
Pyogenic granuloma?





HHV 8 immunostain



Kaposi sarcoma of the nail unit

Table 1. Review of main characteristics of nail KS cases

Authors and year of publication	Carrel et al. 1977 [4]	Keith et al. 1986 [5]	Berkowitz et al. 1998 [6]	Aïm et al. 2011 [7]	Lee et al. 2013 [8]	Zinoune et al. 2019 [9]	Krygier et al. 2023
Gender/age, years	M/82	M/26	M/48	F/63	M/61	M/77	M/55
Location	Right great toe	Left small finger	Left great toe	Left ring finger	Right great toe	Left great toe	Right third toe
KS Type	Unspecified but no mention of immunosuppression, probably classic	HIV-related	HIV-related	HIV-related	Unspecified but no mention of immunosuppression, probably classic	Unspecified but no mention of immunosuppression, probably classic	Endemic, adult subtype
HHV-8 immunostain on biopsy	Unspecified	Unspecified	Unspecified	Unspecified	Positive	Positive	Positive
Bone involvement	Unspecified	No (excluded by X-ray)	Yes (confirmed by X-ray and bone scan)	Yes (confirmed by X-ray and MRI)	Unspecified	No (excluded by X-ray)	No (excluded by X-ray)
Other cutaneous lesions (current or past)	No	Yes, left arm (current)	Yes, left foot (current)	Yes, upper and lower limbs (past)	Yes, feet (past)	Yes, feet and hands (current)	No
Treatment	Hallux amputation	Local excision	Radiotherapy	Local excision with bone curettage	Unspecified	Unspecified	Local excision

Kaposi Sarcoma of the Nail Unit: A Case Report and Review of the Literature

Jonathan Krygier Ursula Sass Isabelle Meiers Alice Marneffe
Marine de Vicq de Cumplich Bertrand Richert

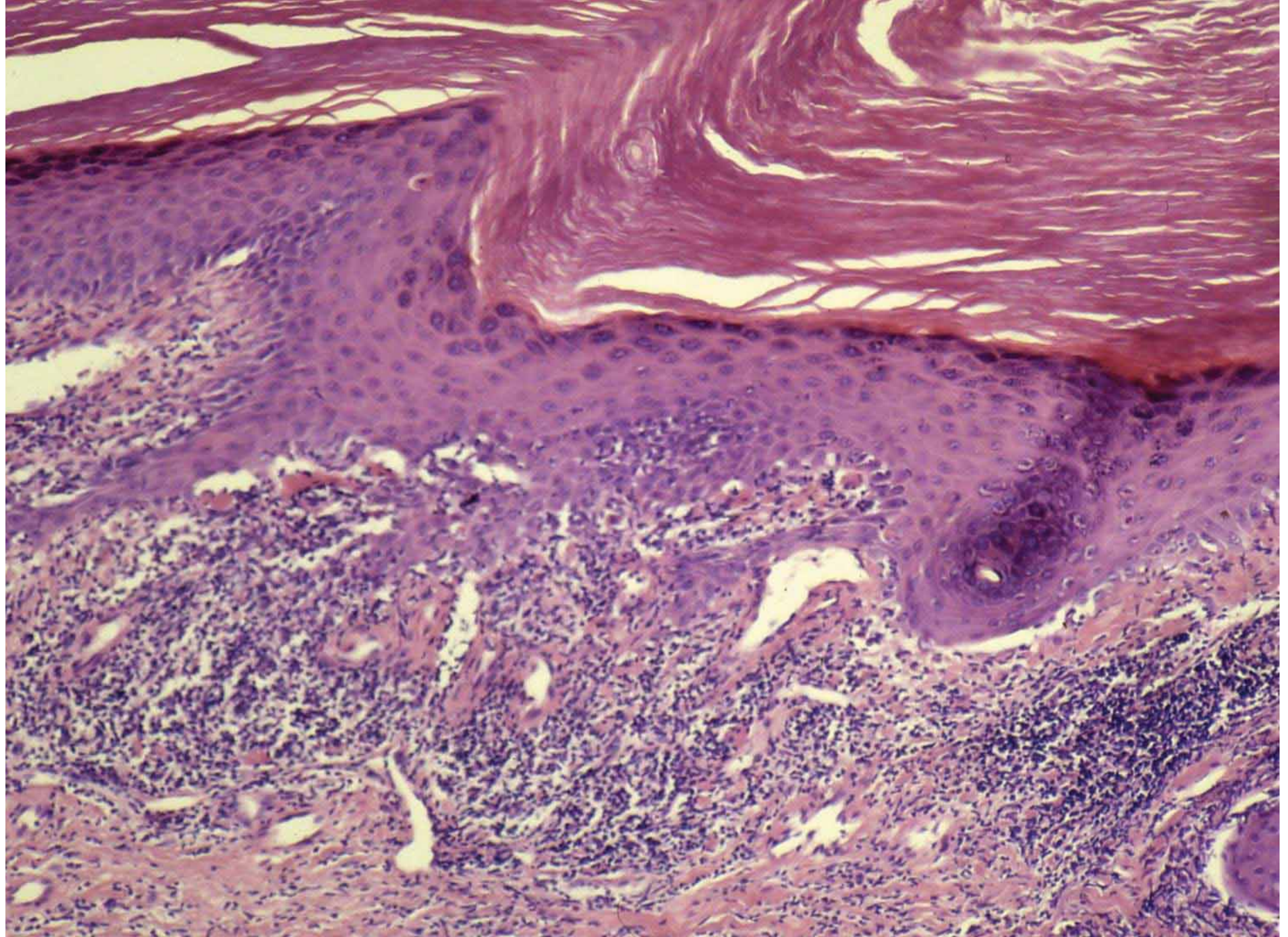
Department of Dermatology, Saint-Pierre and Brugmann University Hospitals, Université Libre de Bruxelles, Brussels, Belgium

Case II

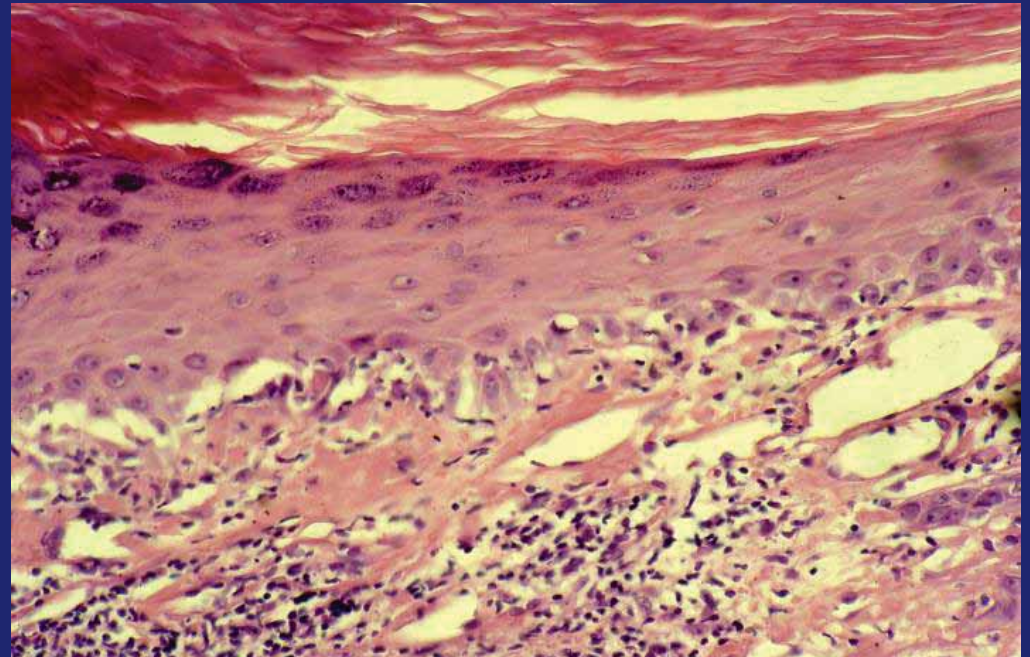
Diagnosis?

- 50-year-old male
- For about 2 months
- Paronychia of several fingers
- Subungual hyperkeratosis
- Longitudinal nail biopsy





Lupus erythematosus



Coll. B. Richert

Nail involvement in Discoid Lupus Erythematosus

- Unusual
- Never restricted to the nail unit
- Severe Subungual hyperkeratosis
- Longitudinal ridging
- Nail Atrophy
- Higher risk to develop SLE

-Richert B et al. Hyperkeratotic nail discoid Lupus evolving towards Systemic Lupus Erythematosus J Eur. Acad dermatol Venereol 2004

-Wagner C et al. Ungual lesions in Lupus Erythematosus. Ann Dermatol Venereol. 2020

CASE III

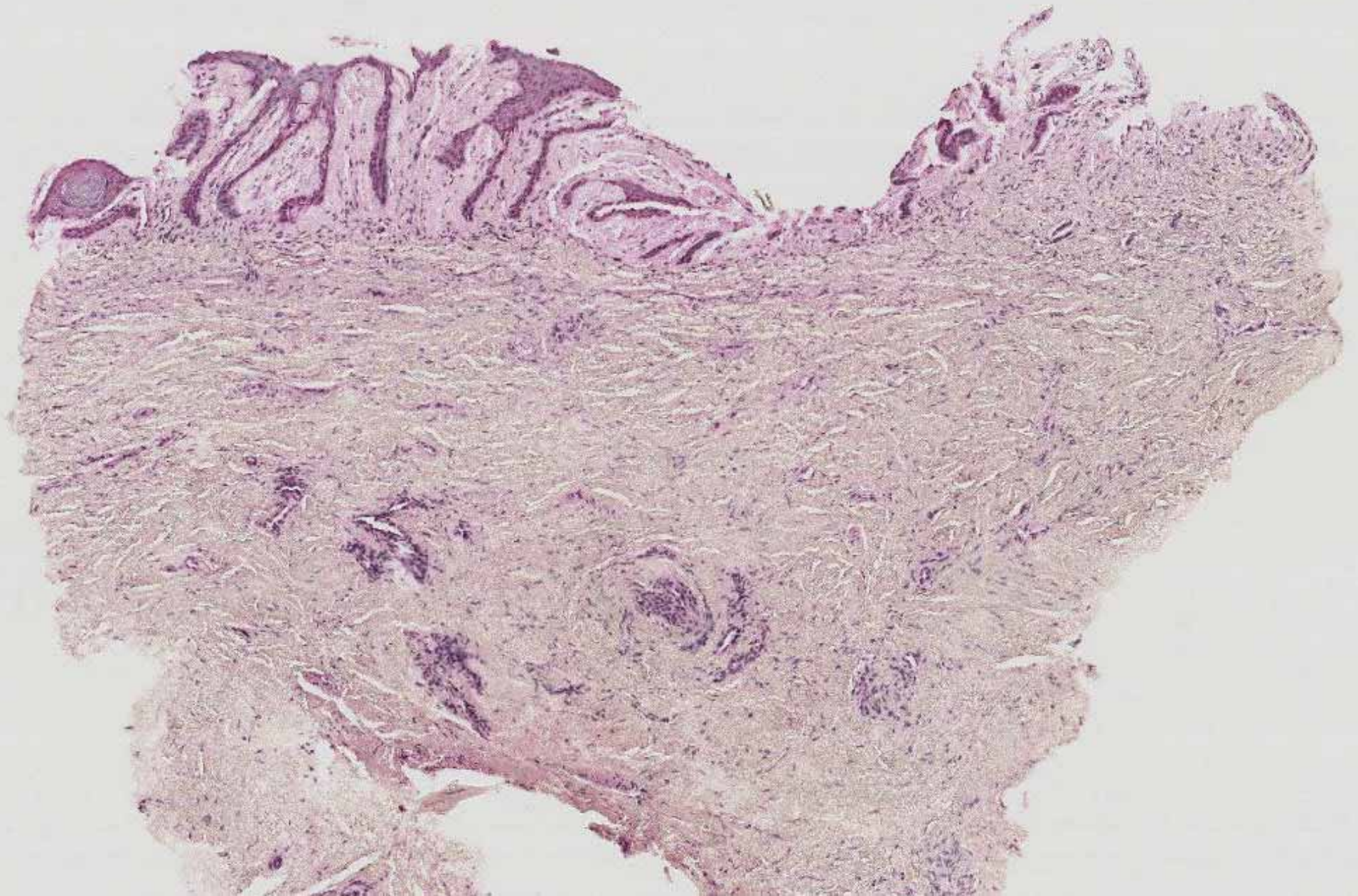
Lichenoid nail alterations with cardiomyopathy

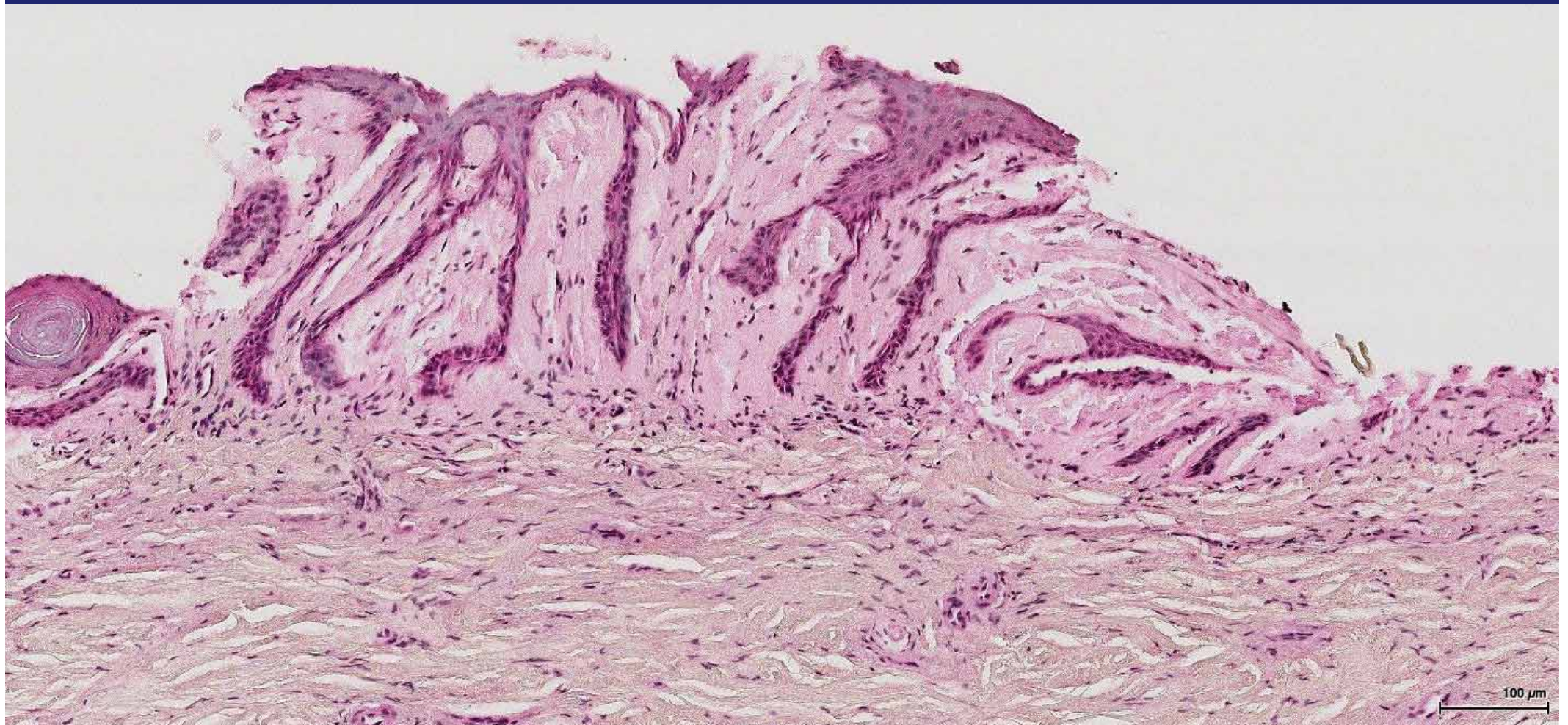
- ✓ 73-year-old male
- ✓ Rapidly evolving obstructive cardiomyopathy
- ✓ Nail alterations for several months
- ✓ No improvement after oral antimycotics, prescribed by the GP
- ✓ Matrix punch biopsy



x24







Amorphous eosinophilic deposits in the superficial dermis

Congo red staining: green coloration on polarized light examination → **Amyloidosis**

Nail Changes in PRIMITIVE SYSTEMIC AMYLOIDOSIS

- Very rare
- Early Manifestation
- Very similar to nail lichen planus
- Onychorrhexis, atrophy, brittleness, distal splitting
- → disappearance of the nail plate
- Discrete distal hyperkeratosis

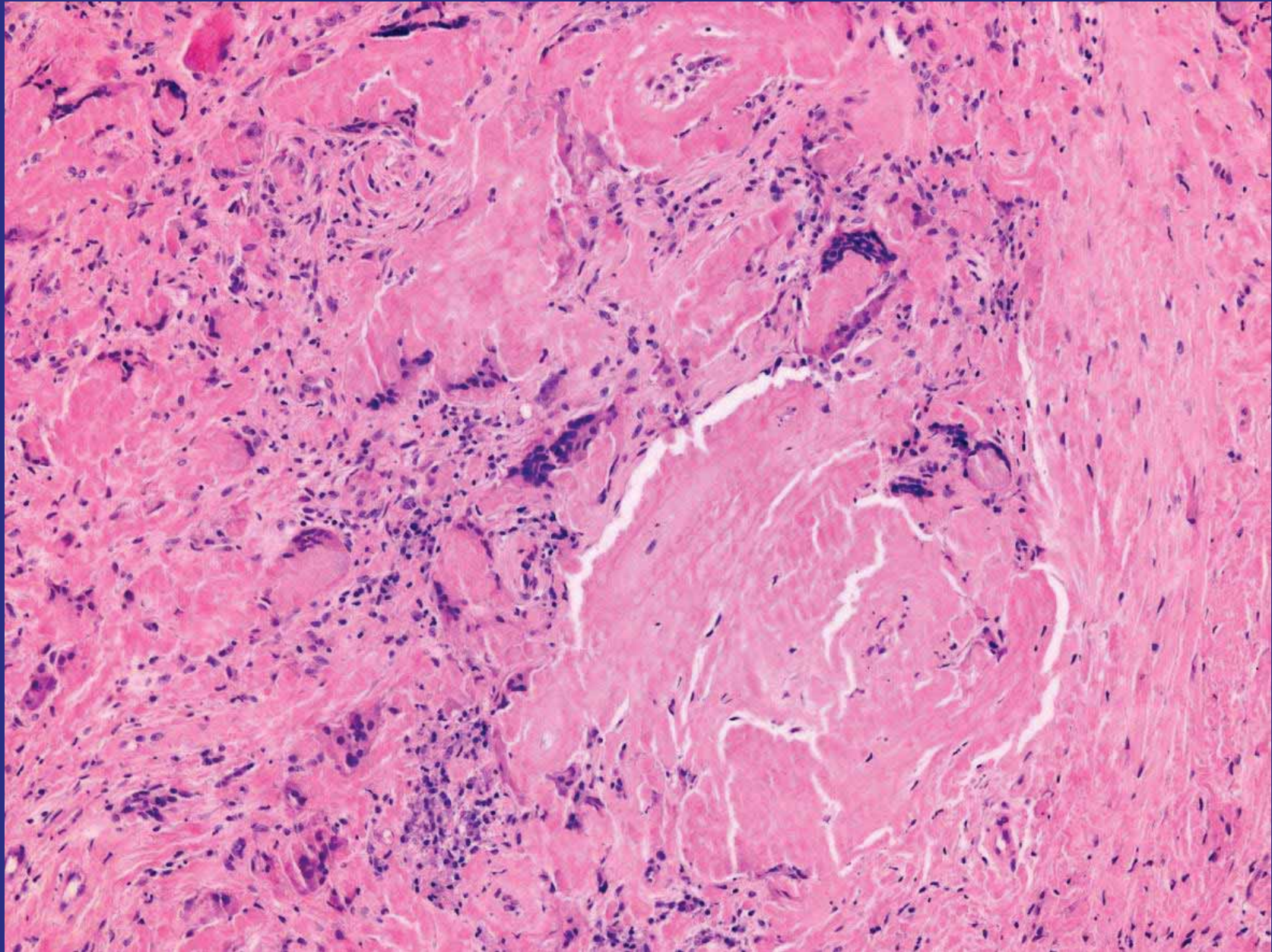
PRIMITIVE SYSTEMIC AMYLOIDOSIS

- Fanti PA, Tosti A, Morelli R, Galbiati G.
Nail changes as the first sign of systemic amyloidosis.
Dermatologica 1991; 183: 44-46.
- Litaiem N et al. Nail changes in systemic Amyloidosis.
Clin Case Rep 2021 Aug
- Yang X, liu D. Nail dystrophy as an initial presentation of systemic amyloidosis. *Australas J Dermatol* 2021

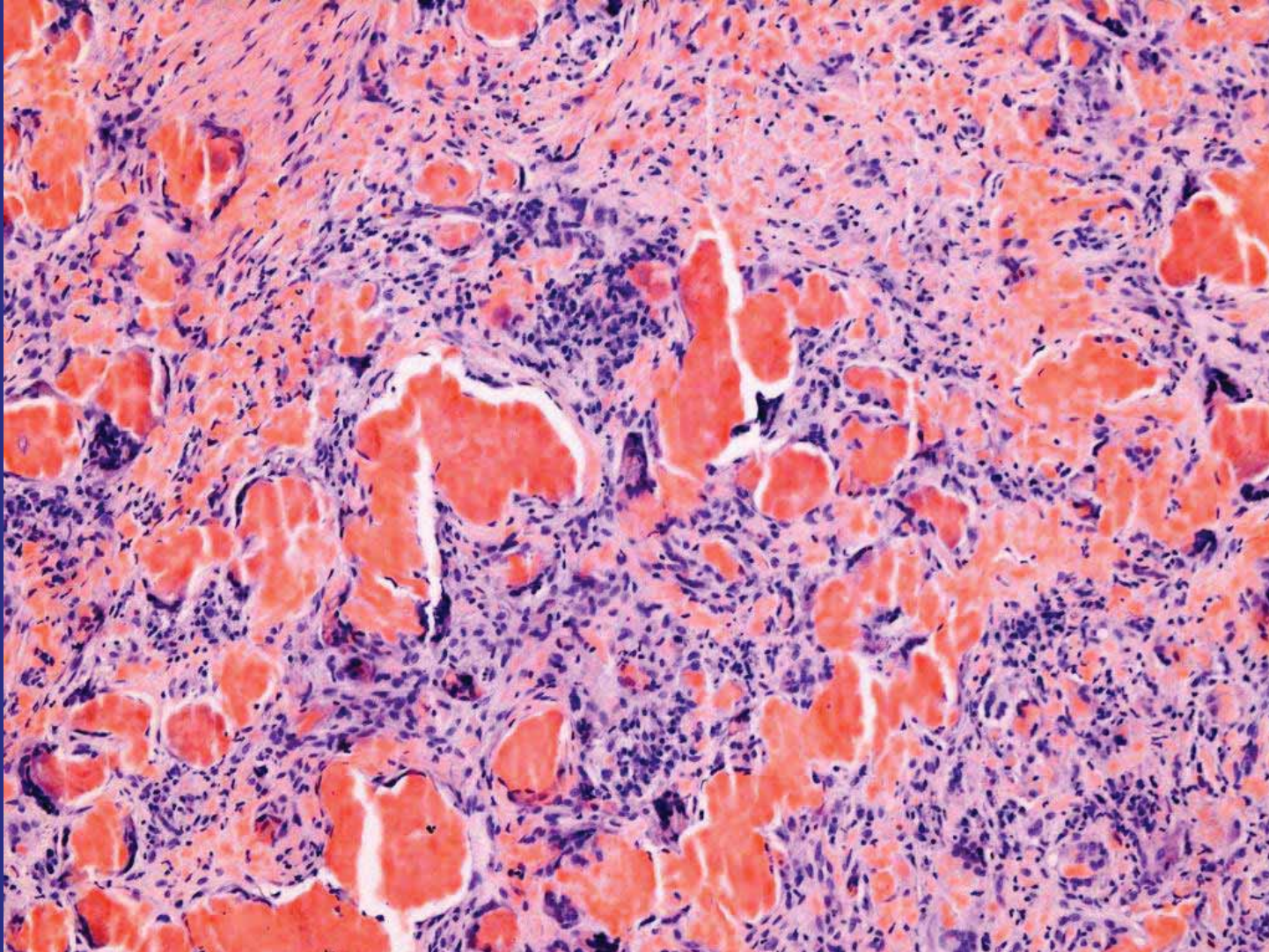
CASE IV - Clinical Data

- 67-year-old woman
- 1 year
- **2. left toe**
- 10 mm pink firm nodule
- Painless
- No trauma
- X-ray: no bone alteration

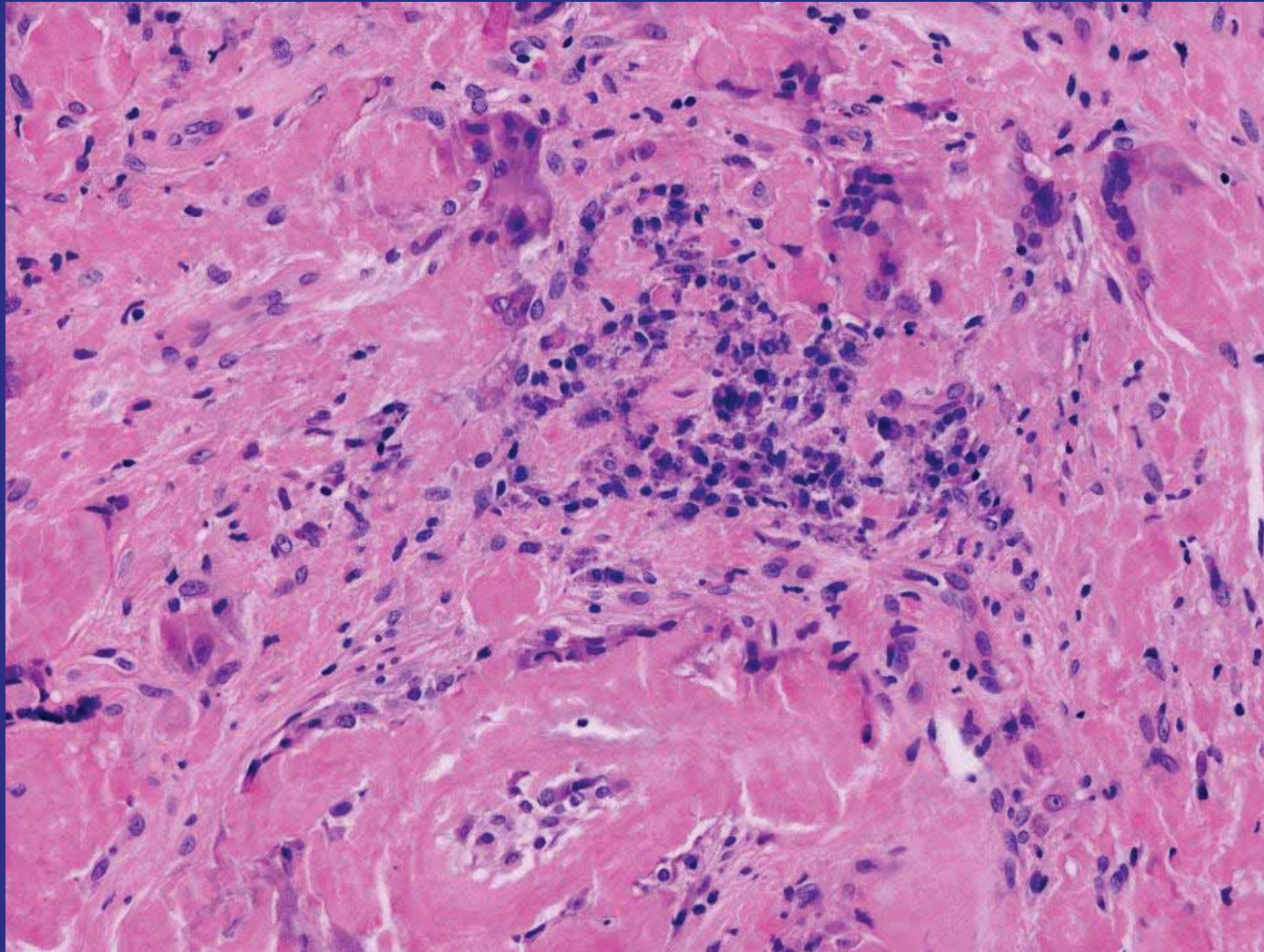




Red Congo stain birefringence under polarized light



No monotypia Kappa/Lambda
Immunostain AA (-), Kertatins (-)



Nail Amyloidoma

- Only few cases reported
- Considered as AL Nodular Amyloidosis
- Marginal B-cell lymphoma

Skin Appendage
Disorders

Novel Insights from Clinical Practice

Skin Appendage Disord
DOI: 10.1159/000529091

Received: Octob
Accepted: Janu
Published onlin

Nail Amyloidoma: Two Case Reports of a New Entity

Frederico Bonito^a Athanassios Kolivras^b Ursula Sass^b Bertrand Richert^c

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2. Case

52 y old Hispanic man HIV+

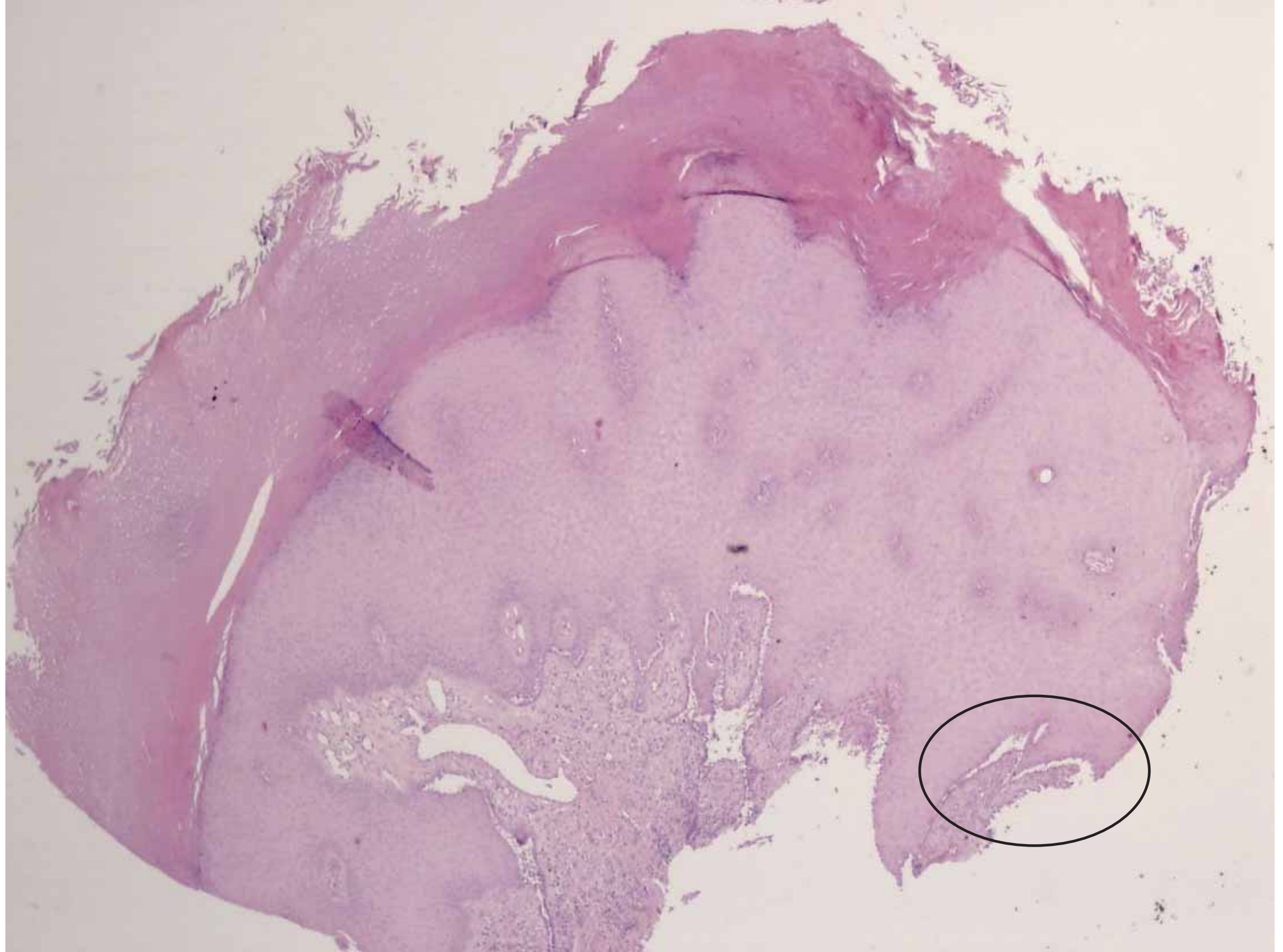


CASE V - Clinical Data

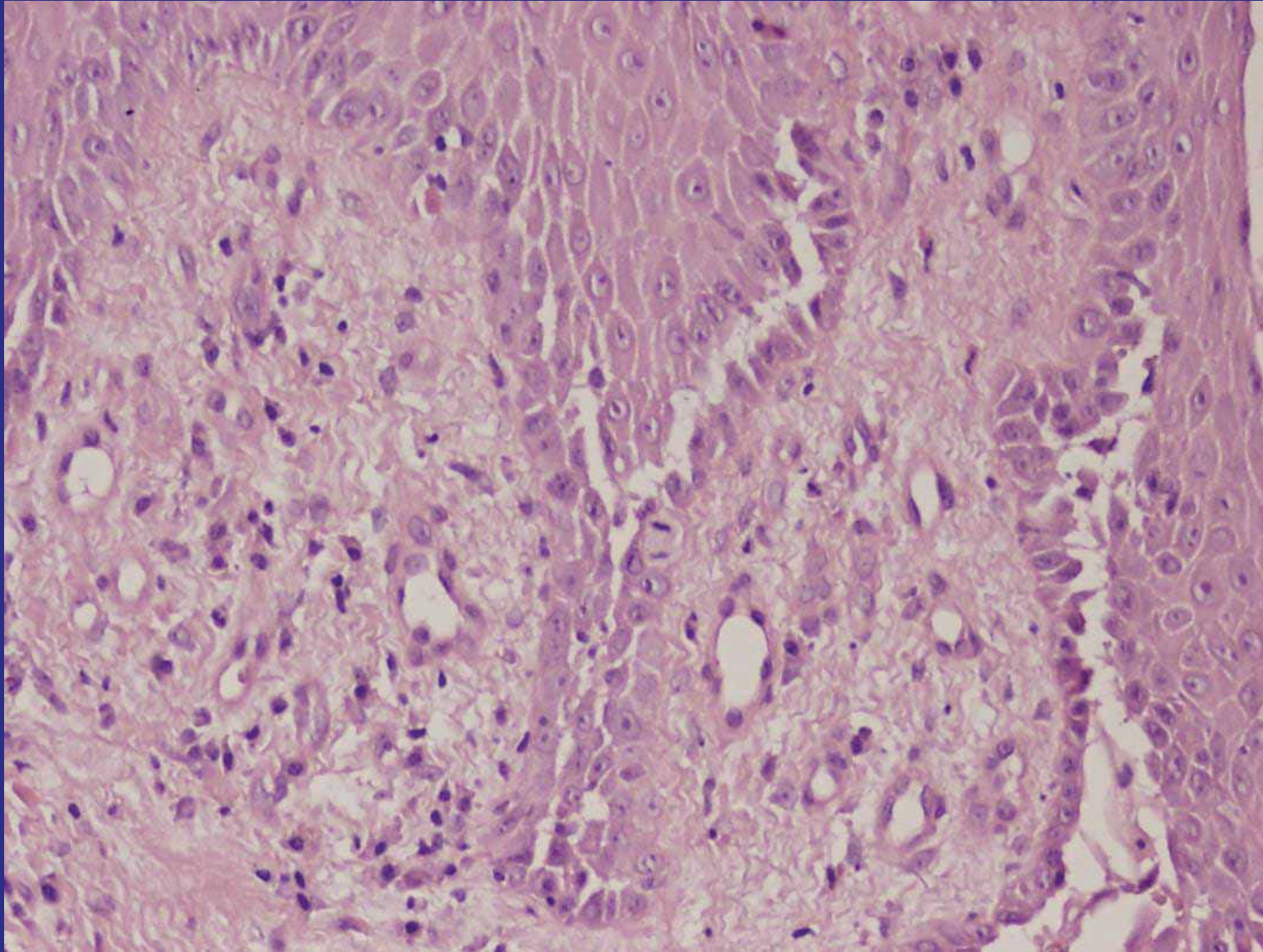
- 69-year-old female
- Left big toenail
- Erosive nail bed lesion with progressive destruction of the nail plate.
- Bowen's disease?



Coll. P. Gheeraert, Belgium



Chronic Nail Pemphigus vulgaris



Kolivras A, Gheeraert P, André J. *Dermatology* 2003; 206: 351-2.

Suprabasal acantholysis in a nail

- Differential diagnosis
 - Pemphigus vulgaris
 - Acantholytic dyskeratotic acanthoma
 - Darier's disease
 - Artefact
- Schlesinger N et al. Nail involvement in pemphigus vulgaris. *Br J Dermatol* 2002; 146: 836-9.
- Carducci M; et al. Nail involvement in Pemhigus Vulgaris *Acta Dermato-Venereol* 2007
- Sass U et al. Acantholytic tumor of the nail: acantholytic dyskeratotic acanthoma. *J Cutan Pathol* 2009;36:1308-11

Nail Alterations and Pemphigus vulgaris

- Up to 22%
- No correlation with duration or severity
- Accompany initial mucocutaneous presentation or a flare-up. Isolated primary manifestation.
- Chronic paronychia
- Onychomadesis
- Trachyonychia
- Onychorrhexis
- Onycholysis

CASE VI - Clinical case

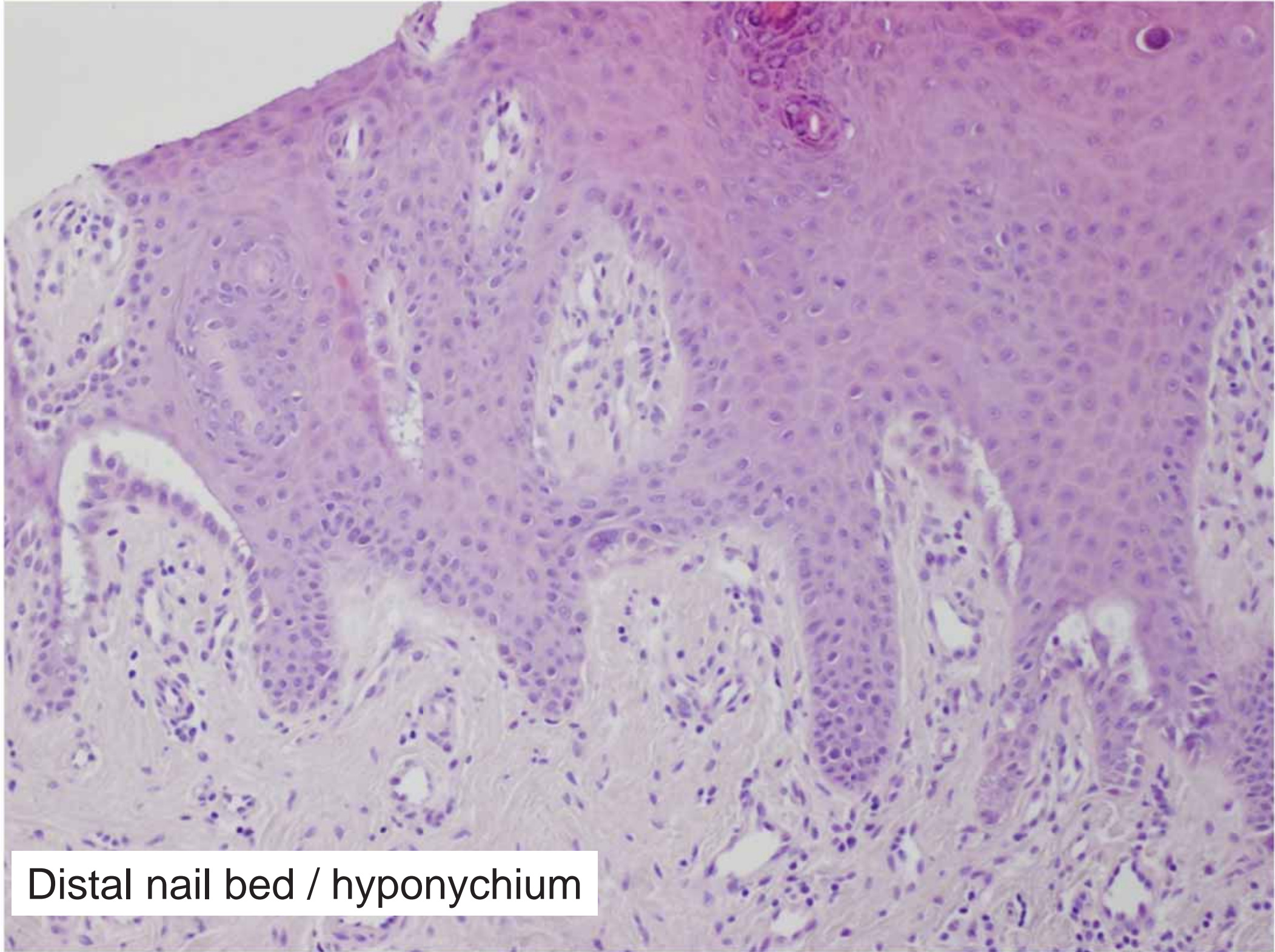
- 36-year-old Belgian female of African descent with skin phototype VI
- Painful nail alterations that prevailed on the fingers, with longitudinal leuconychia
- Disseminated guttate leucoderma



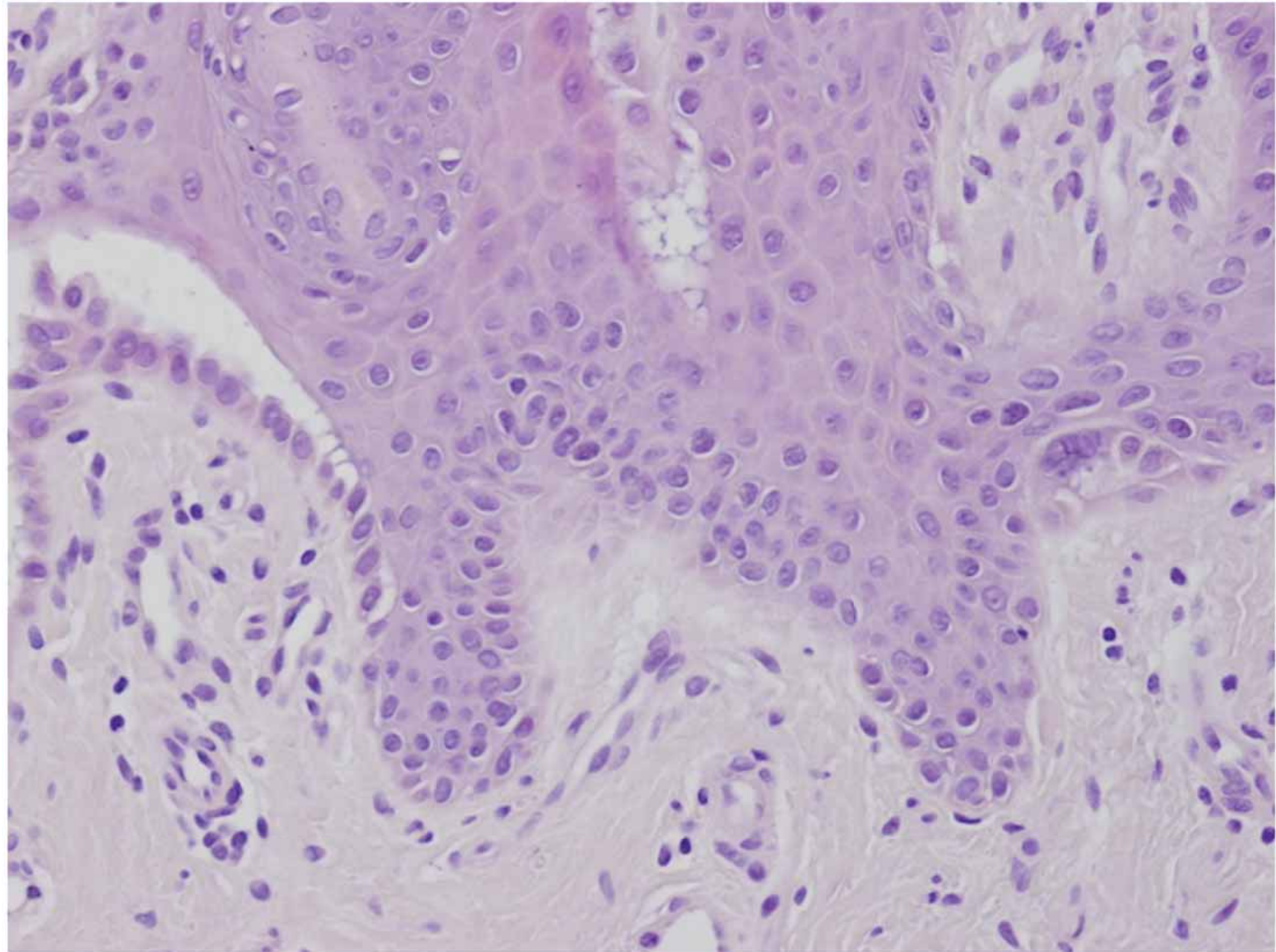




2 punch-biopsies of the most affected finger (left index finger): in the distal matrix and in the nail bed

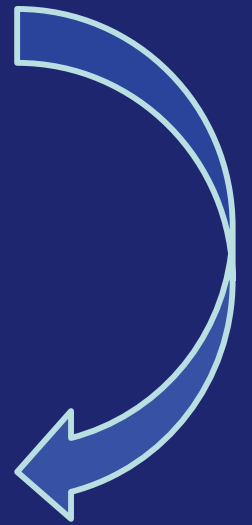


Distal nail bed / hyponychium



DIAGNOSIS

- Suprabasal acantholysis in the distal nail bed/hyponychium
- Longitudinal leuconychia on several fingernails
- Guttate leucoderma



DARIER WHITE'S DISEASE

Nails in Darier's Disease

- 92%
- Fingers > Toes
- Red and white streaks
- Distal subungual Hyperkeratosis

-Zaias N, Ackerman B The nail in Darier-White disease. *Ach Dermatol* 1973

-Lé A, Richert B. Sass U et al. painful nails and white macules; *Clin Exp. Dermatol*
2016

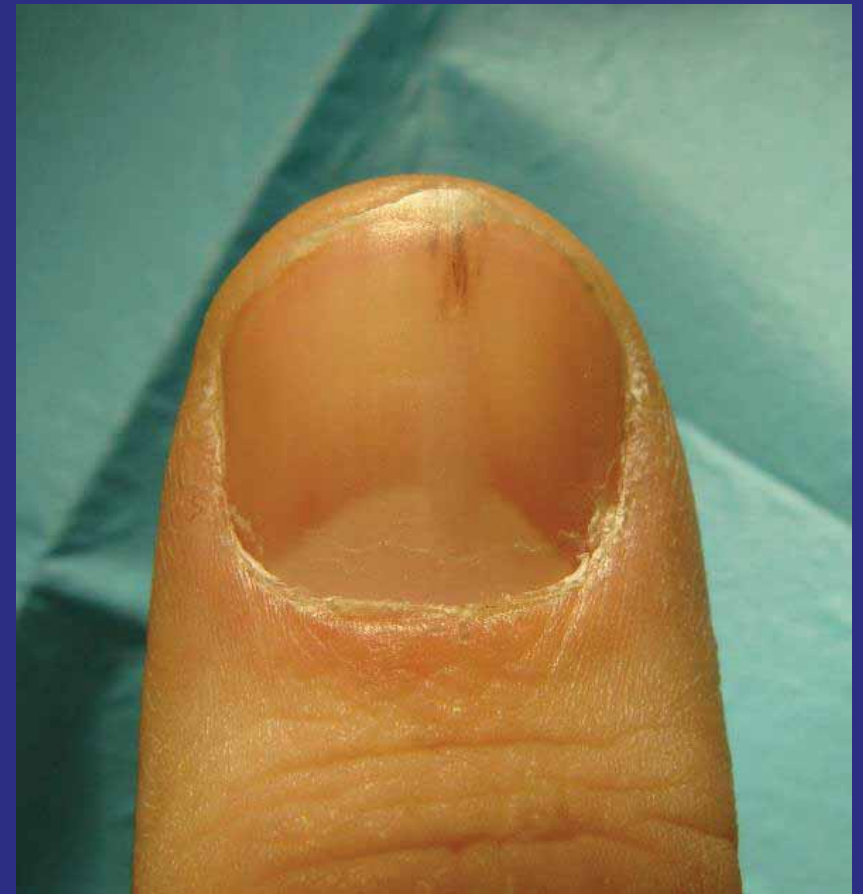
CASE VII



ONYCHOPAPILOMA

Coll B Richert

- Frequent benign neoplasm of the nail bed and distal matrix
- Female ++
- Middle-aged
- Finger ++(Thumb)



Onychopapilloma



Longitudinal
Erythronychia



Longitudinal
Leuconychia



ML

ONYCHOPAPILLOMA

- Unknown etiology
- Red, white or brown line,
- developing from the distal matrix
 - Filiform Hemorrhages
 - Distal Onycholysis
 - Subungual Hyperkératosis



Clinical, dermoscopic, and pathologic features of onychopapilloma: A review of 47 cases

Antonella Tosti, MD,^a Samantha L. Schneider, MD,^b Mae N. Ramirez-Quizon, MD,^c
Martin Zaiac, MD,^a and Mariya Miteva, MD^a
Miami, Florida; Bronx, New York; and Taguig, Philippines

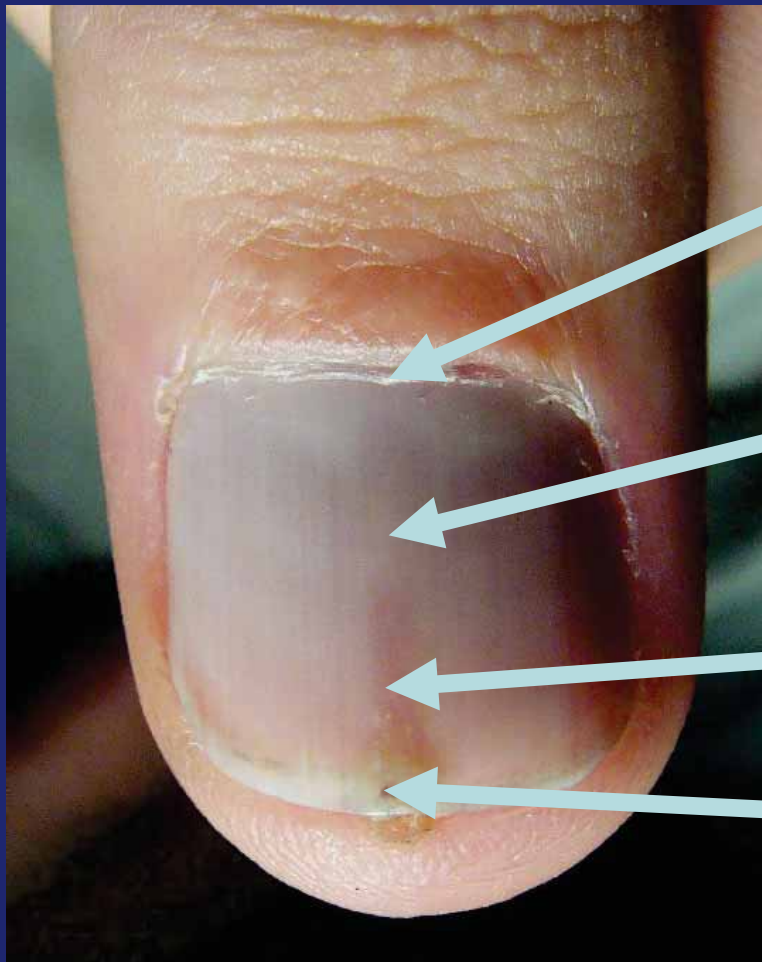
Onychopapillomas: a 68-case series to determine best surgical procedure and histologic sectioning

C. Delvaux, B. Richert, P. Lecerf, J. André*

Saint-Pierre – Brugmann University Hospital, Brussels, Belgium

*Correspondence: J. André. E-mail: Josette_ANDRE@stpierre-bru.be

ONYCHOPAPILLOMA



Notch (57%)

Longitudinal
Erythronychia
(73%)

Onycholysis
(50%)
Split (48%)

Distal
Hyperkératosis
(82%)



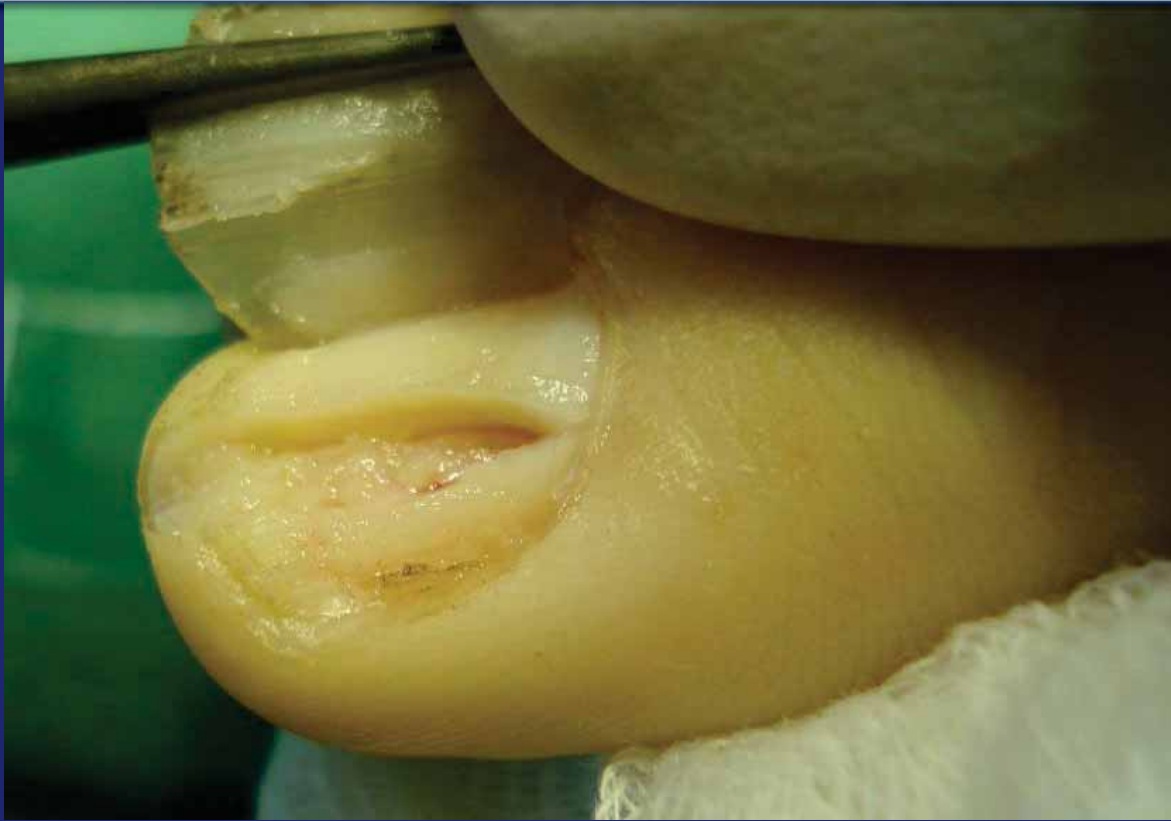




Clinical features	DSUHK	Distal fissuring	Distal onycholysis	Splinter haemorrhage	Punctiform haemorrhage	Longitudinal crest	Note in the lunula
LE (50)	45	27	25	19	4	0	33
Longitudinal melanonychia (6)	4	1	3	2	2	2	2
Longitudinal leuconychia (7)	5	2	3	4	0	0	3
LE + Chloronychia (1)	1	0	1	0	0	0	1
Erythematous halo (1)	0	0	1	0	0	0	0
No chromonychia (3)	1	3	1	1	0	1	0
Total (68)	56	33	34	26	6	3	39

Delvaux C, Richert B, Lecerf P, André J. Eur Acad Dermatol Venereol. 2018 ;32(11):2025-2030

ONYCHOPAPILLOME: TT

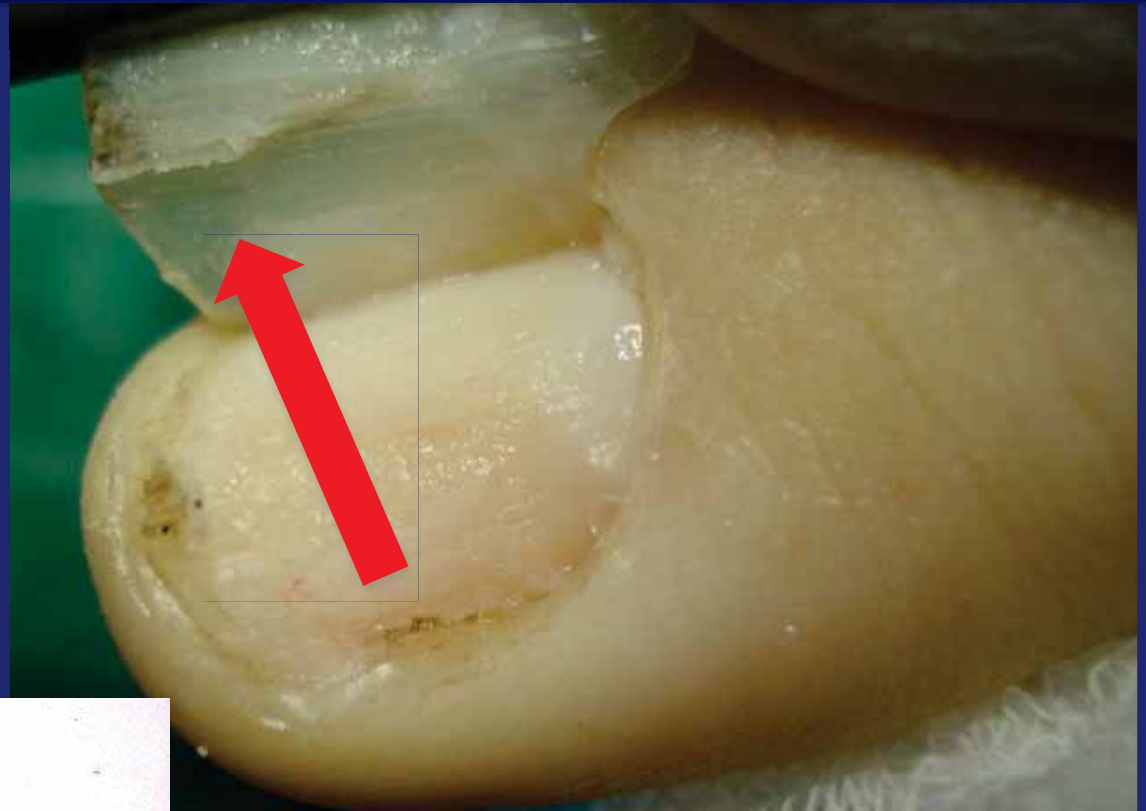


Longitudinal Excision of the lésion
coll B Richert

ONYCHOPAPILLOME: TT

Shave excision :

- Superficial part of the tumor stays attached to the nail plate .
- Recurrences 20%



Delvaux C, Richert B, Lecerf P, André J. Onychopapillomas: a 68-case series to determine best surgical procedure and histologic sectioning. J Eur Acad Dermatol Venereol. 2018;32:2025-2030.

Histopathological Aspect:

Typical 30.6%,

Suggestive 51.6%

Slightly suggestive 12.9%

Non contributive 4.8%

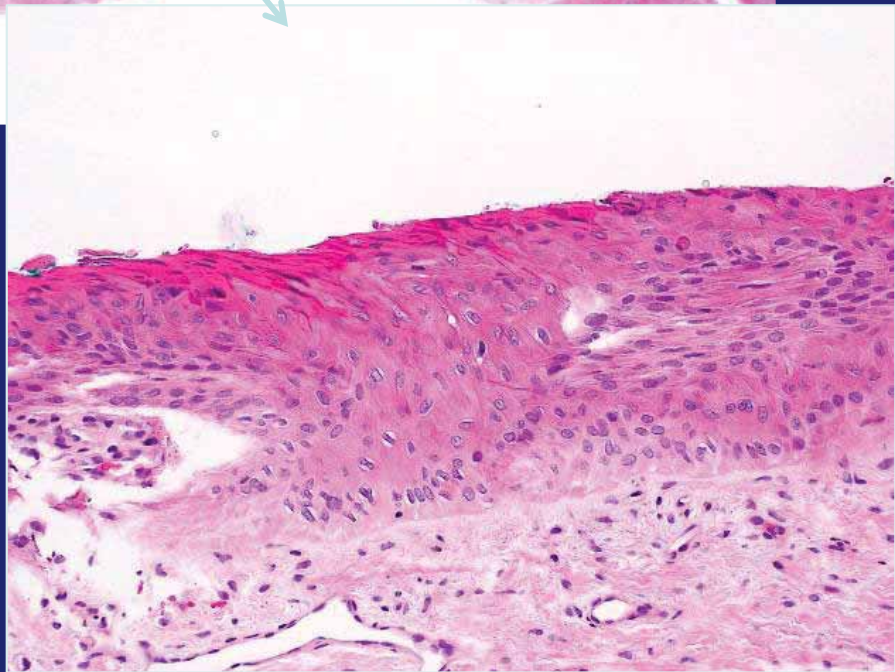
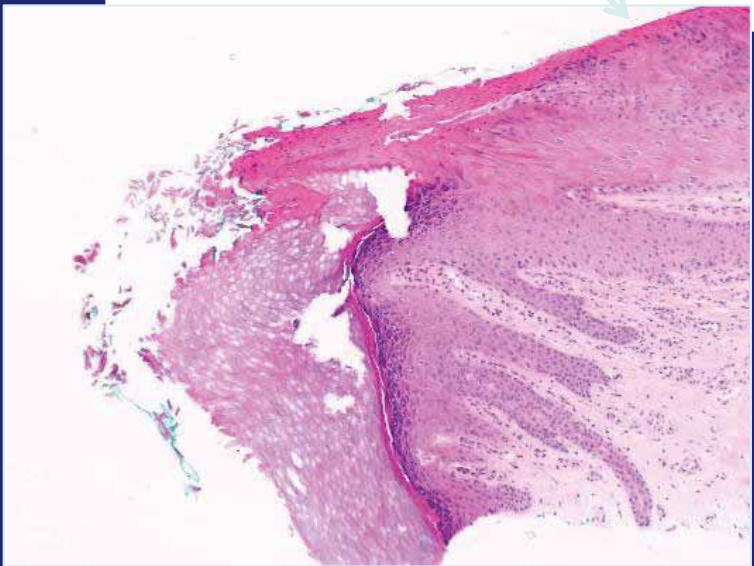
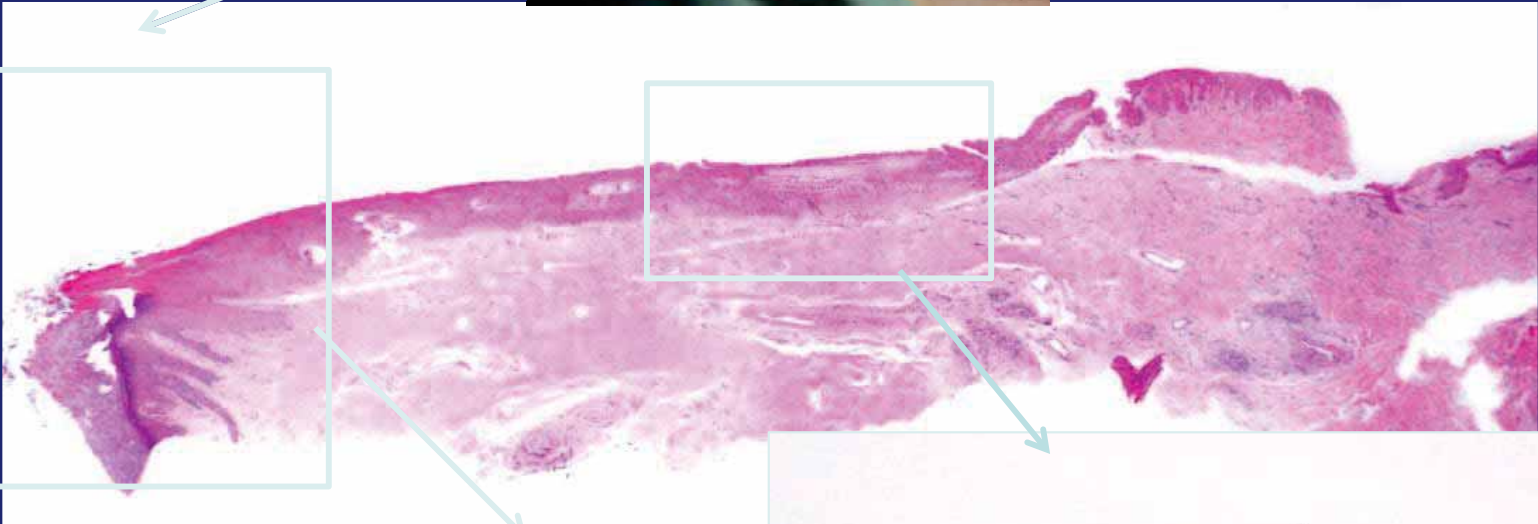
Onychopapillomas: a 68-case series to determine best surgical procedure and histologic sectioning

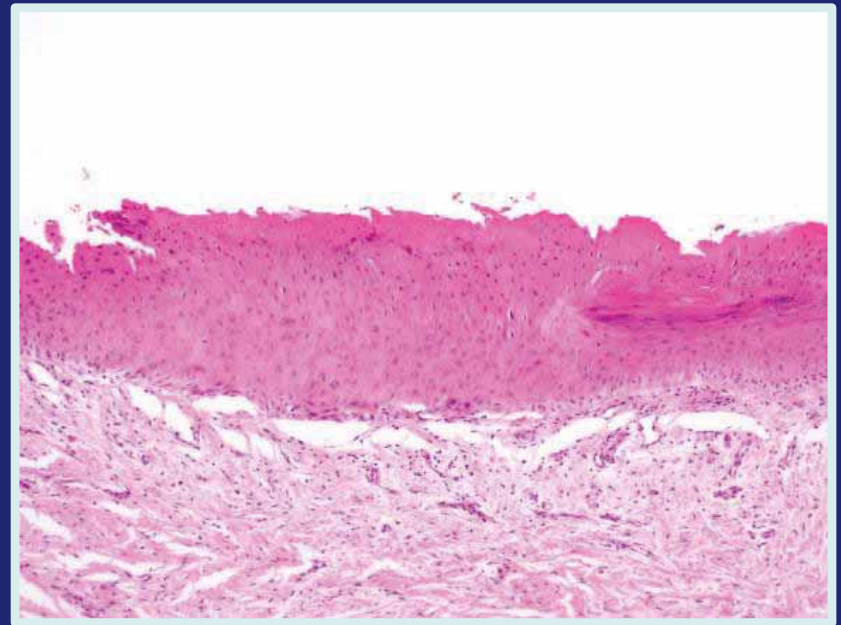
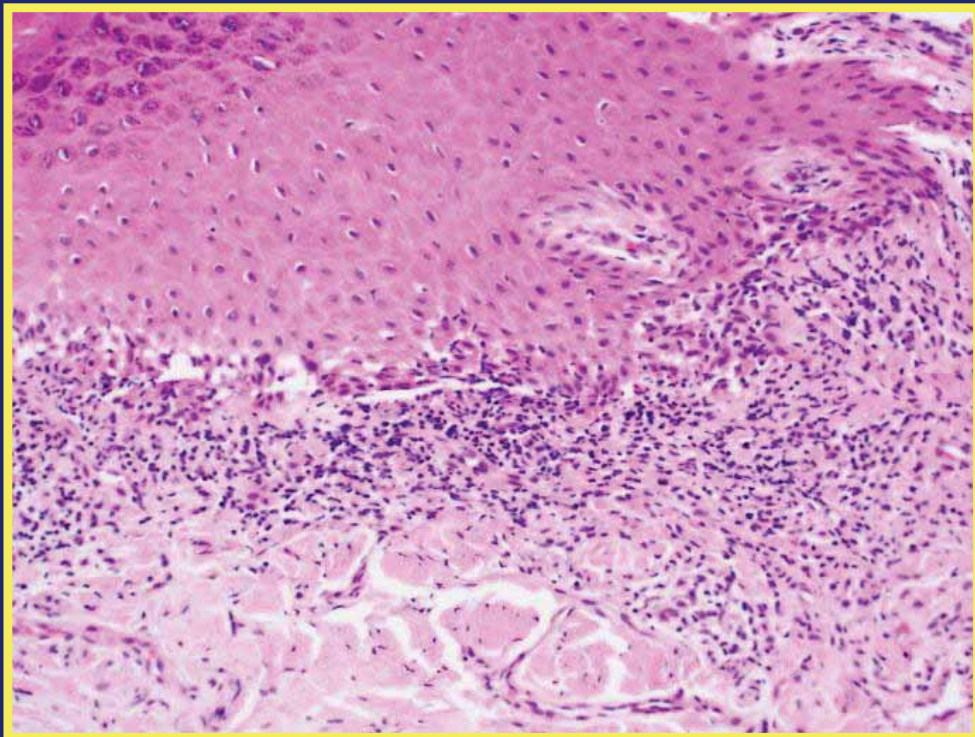
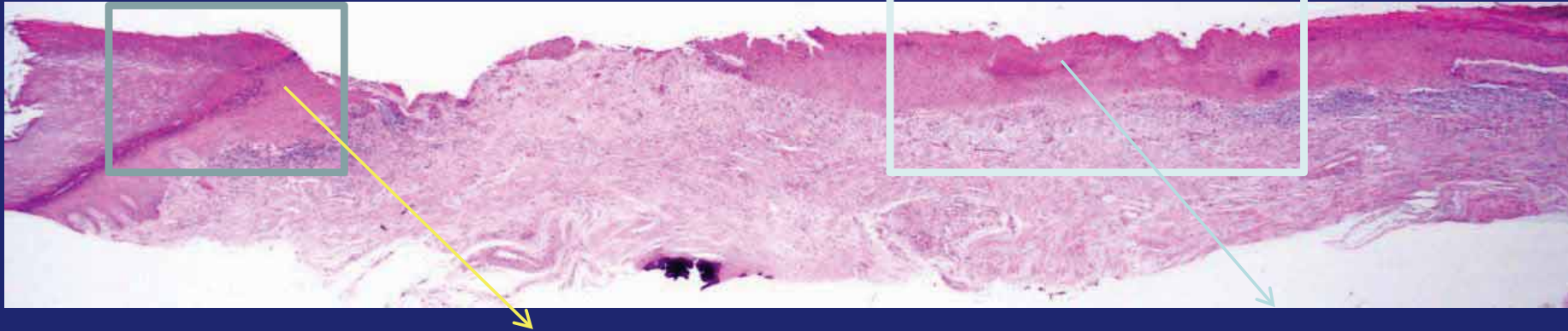
C. Delvaux, B. Richert, P. Lecerf, J. André*

Saint-Pierre – Brugmann University Hospital, Brussels, Belgium

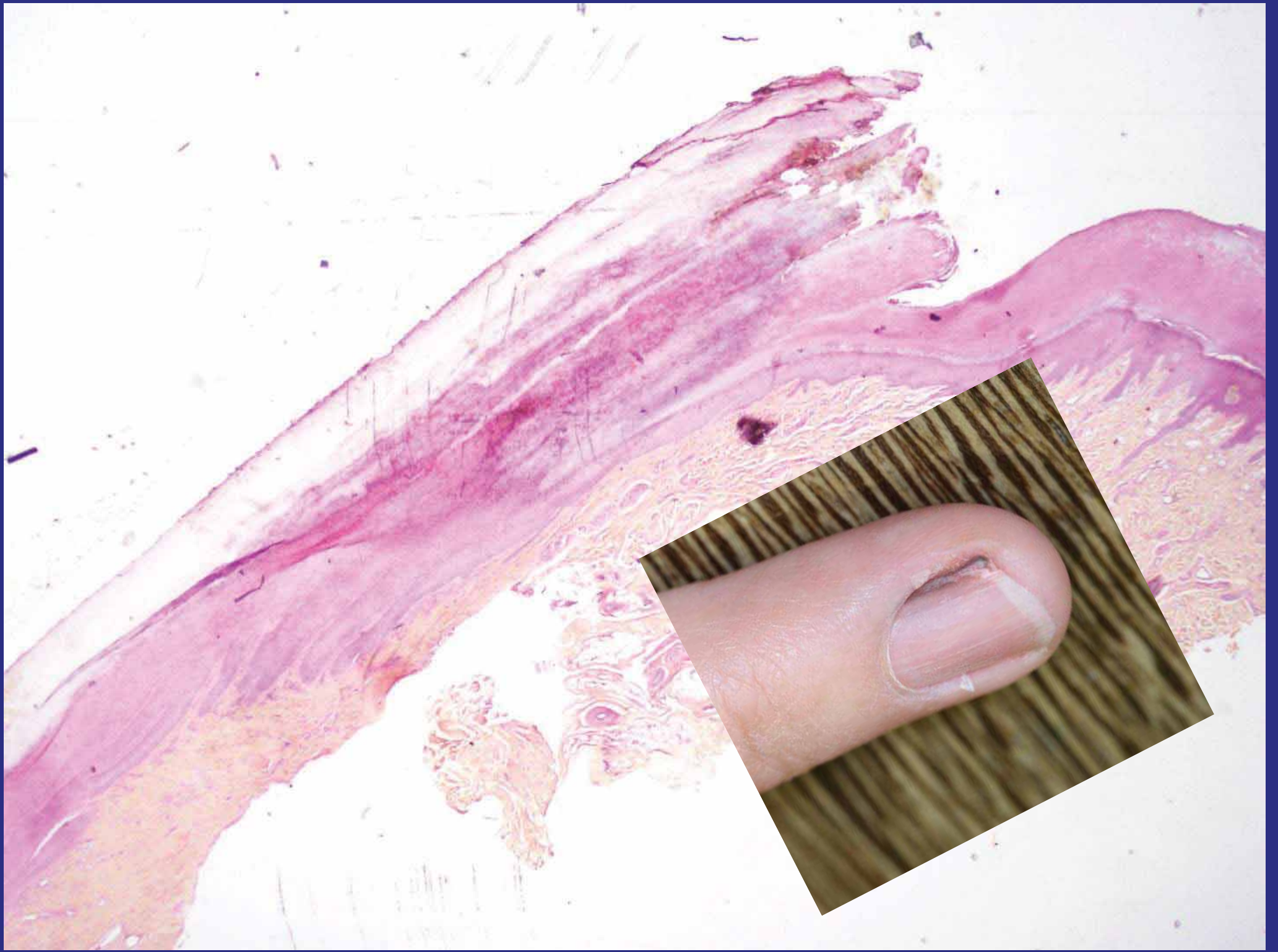
*Correspondence: J. André. E-mail: Josette_ANDRE@stpierre-bru.be

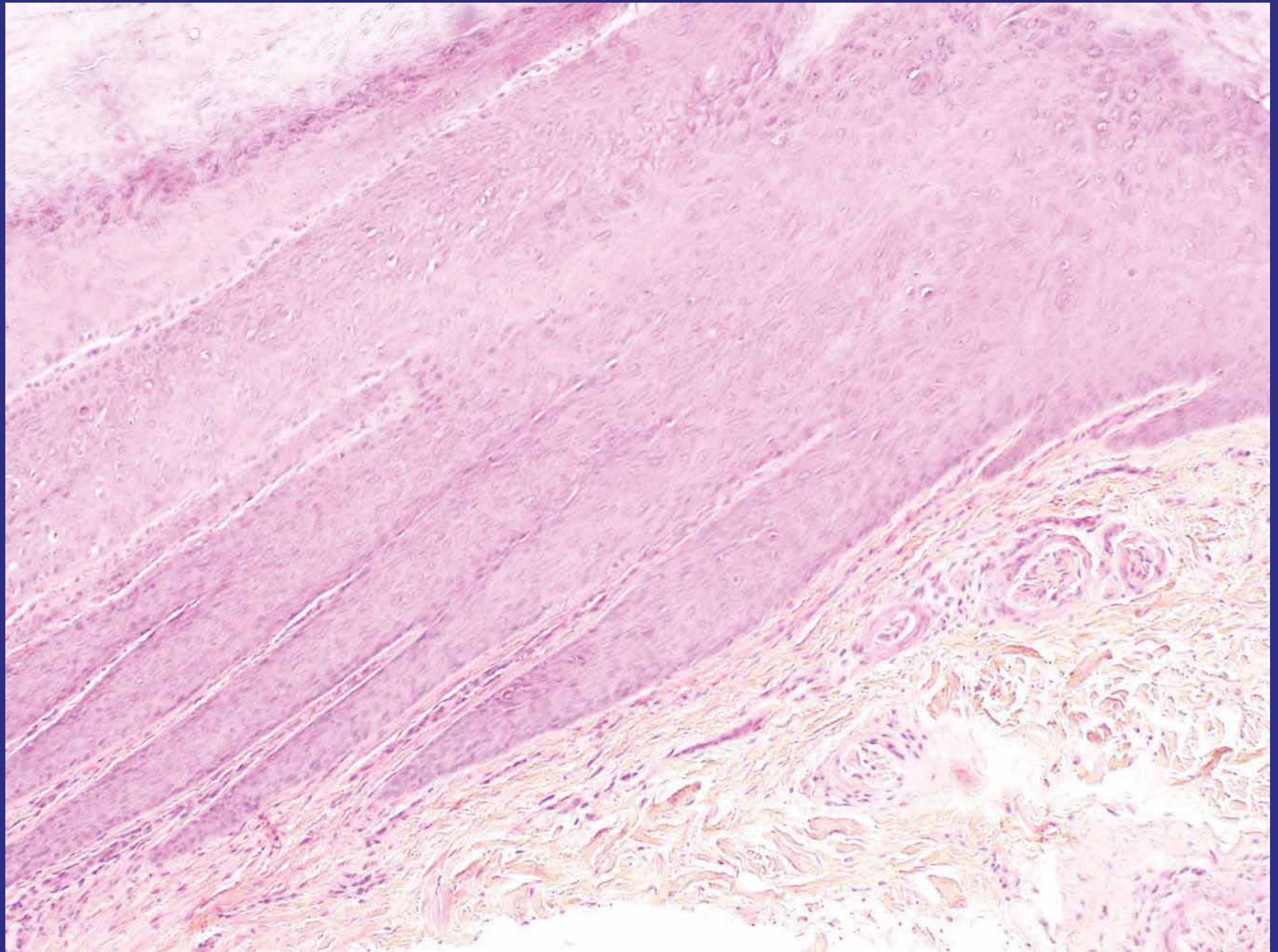
Delvaux C, Richert B, Lecerf P, André J. Eur Acad Dermatol Venereol. 2018 Nov;32(11):2025-2030

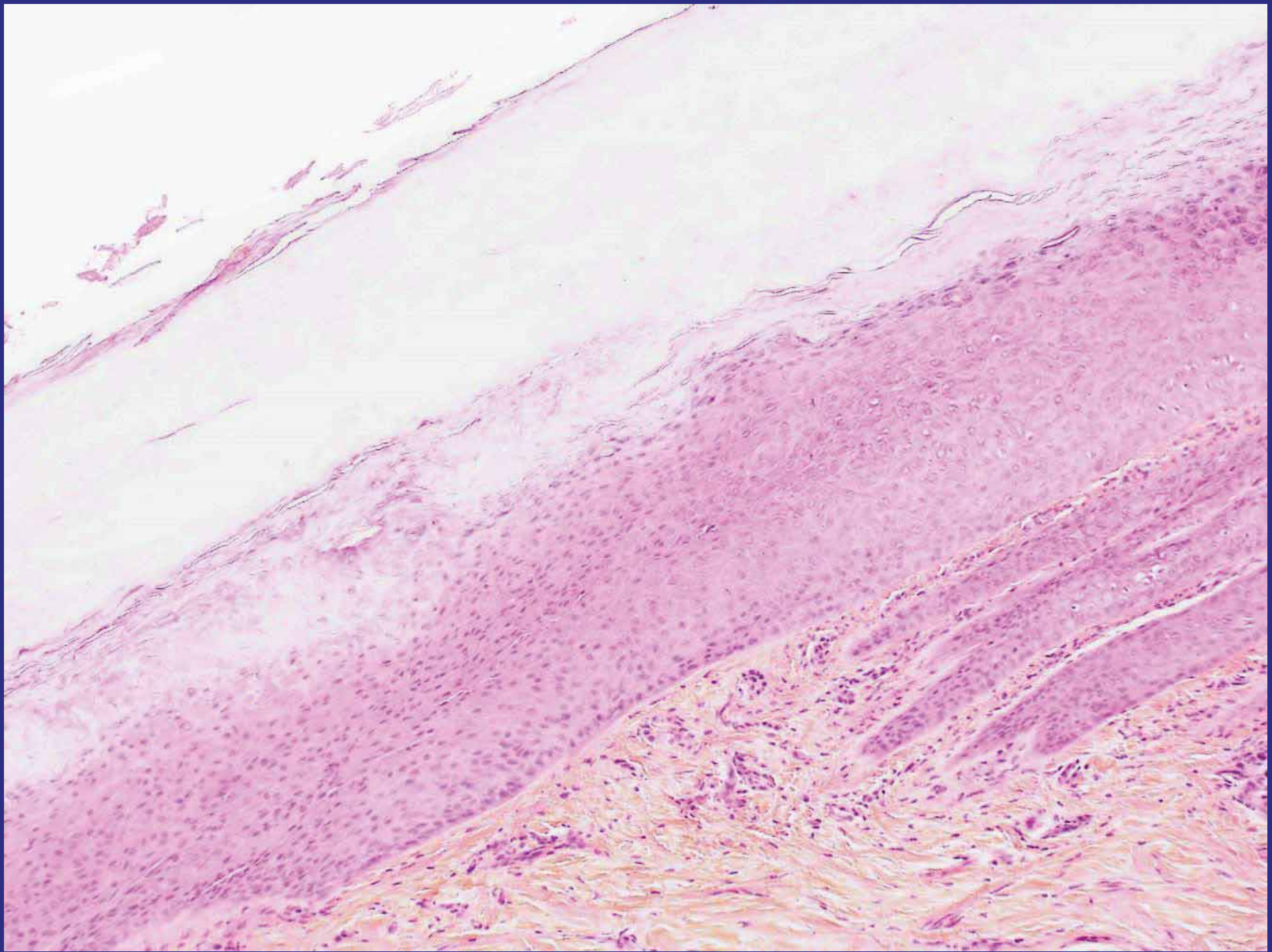




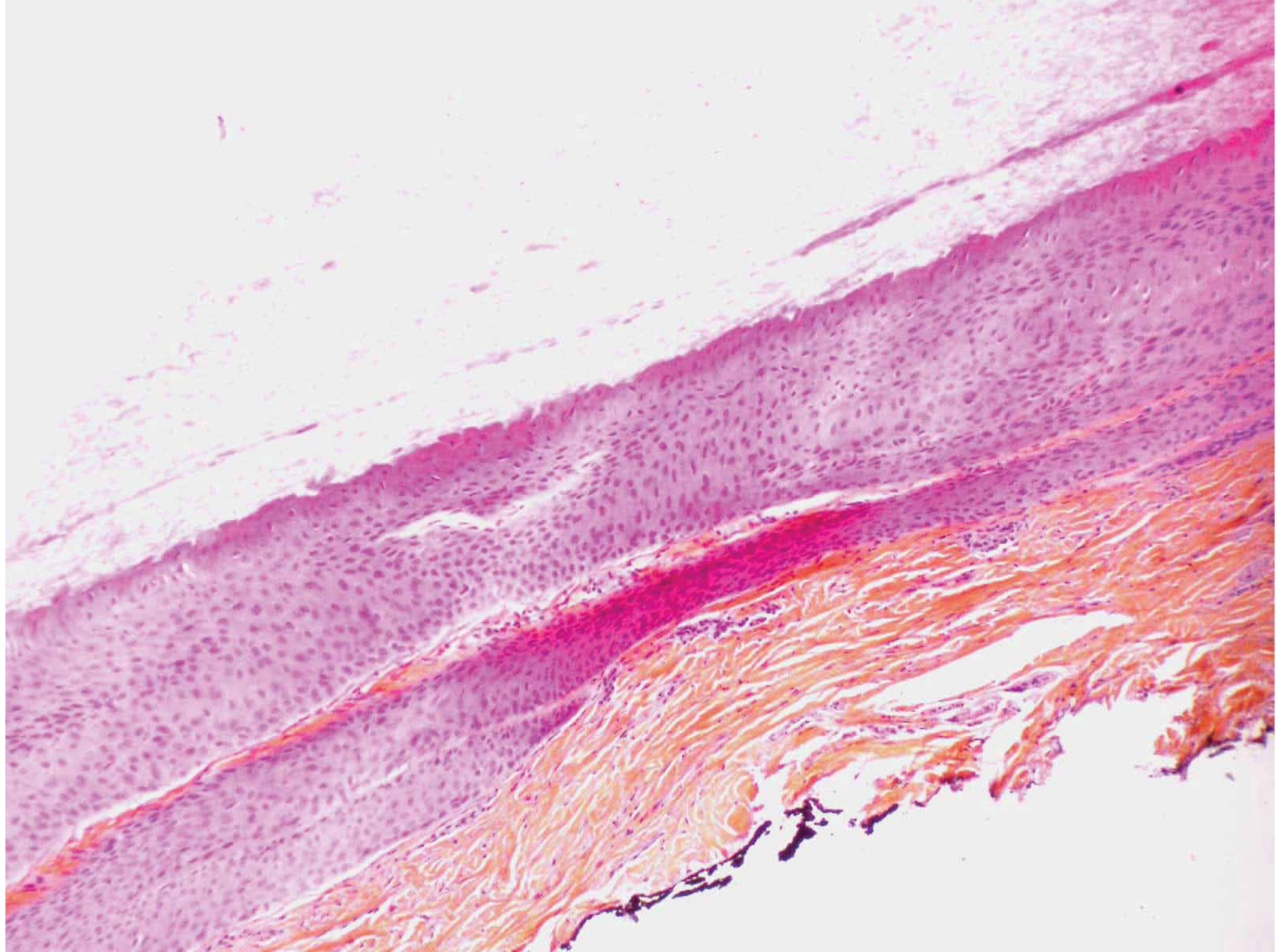
Case J Godenèche Cypath

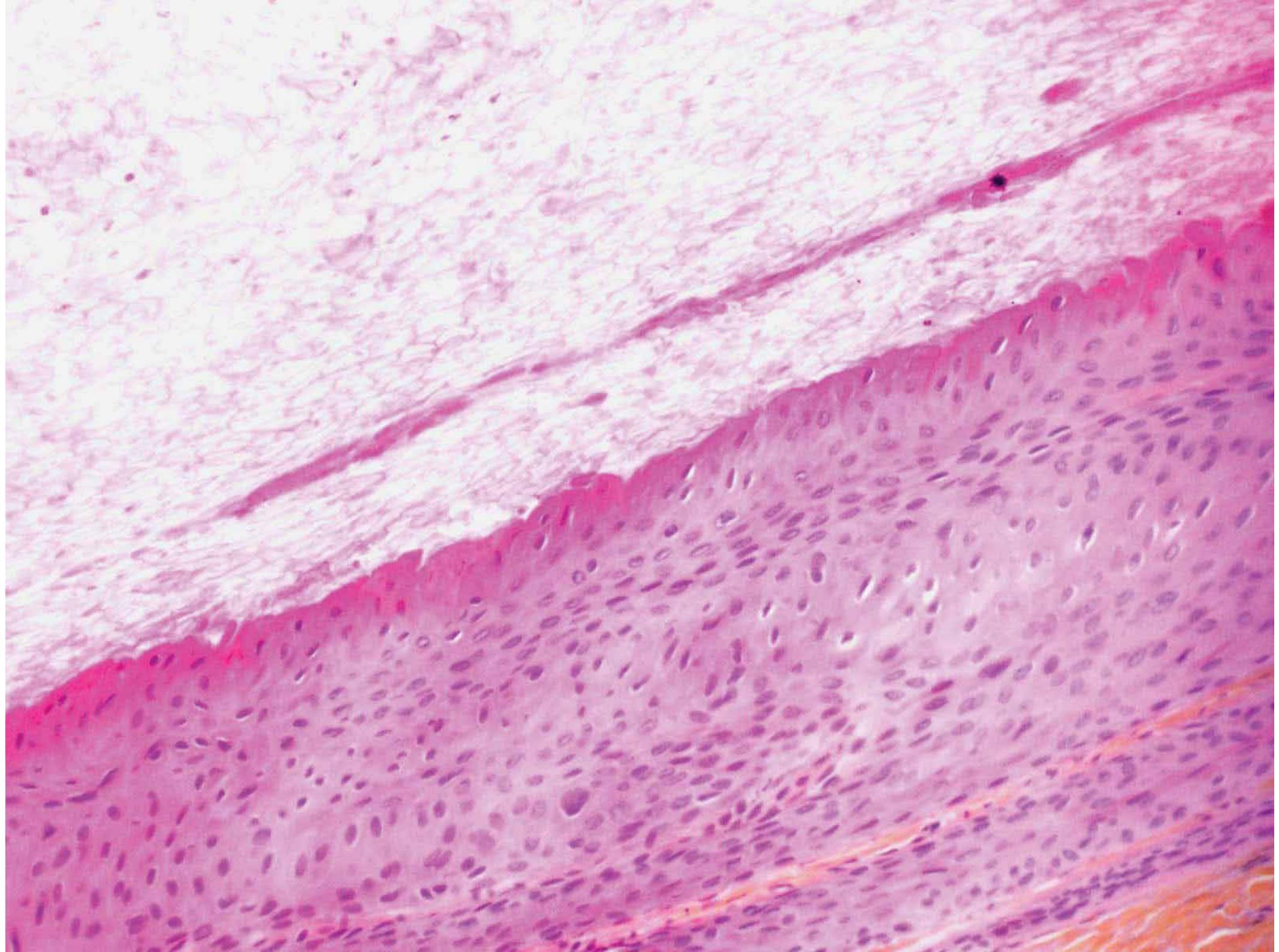


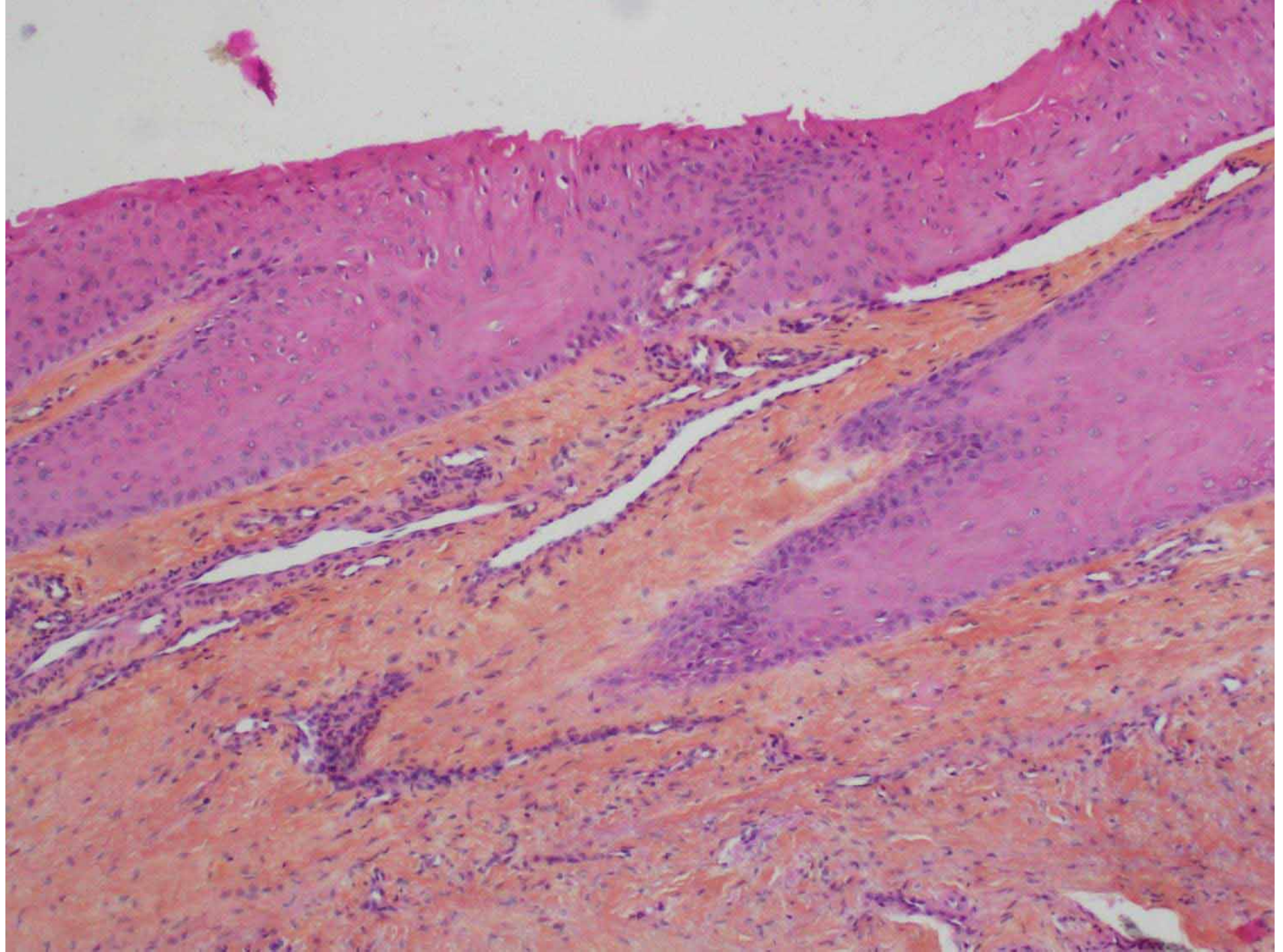


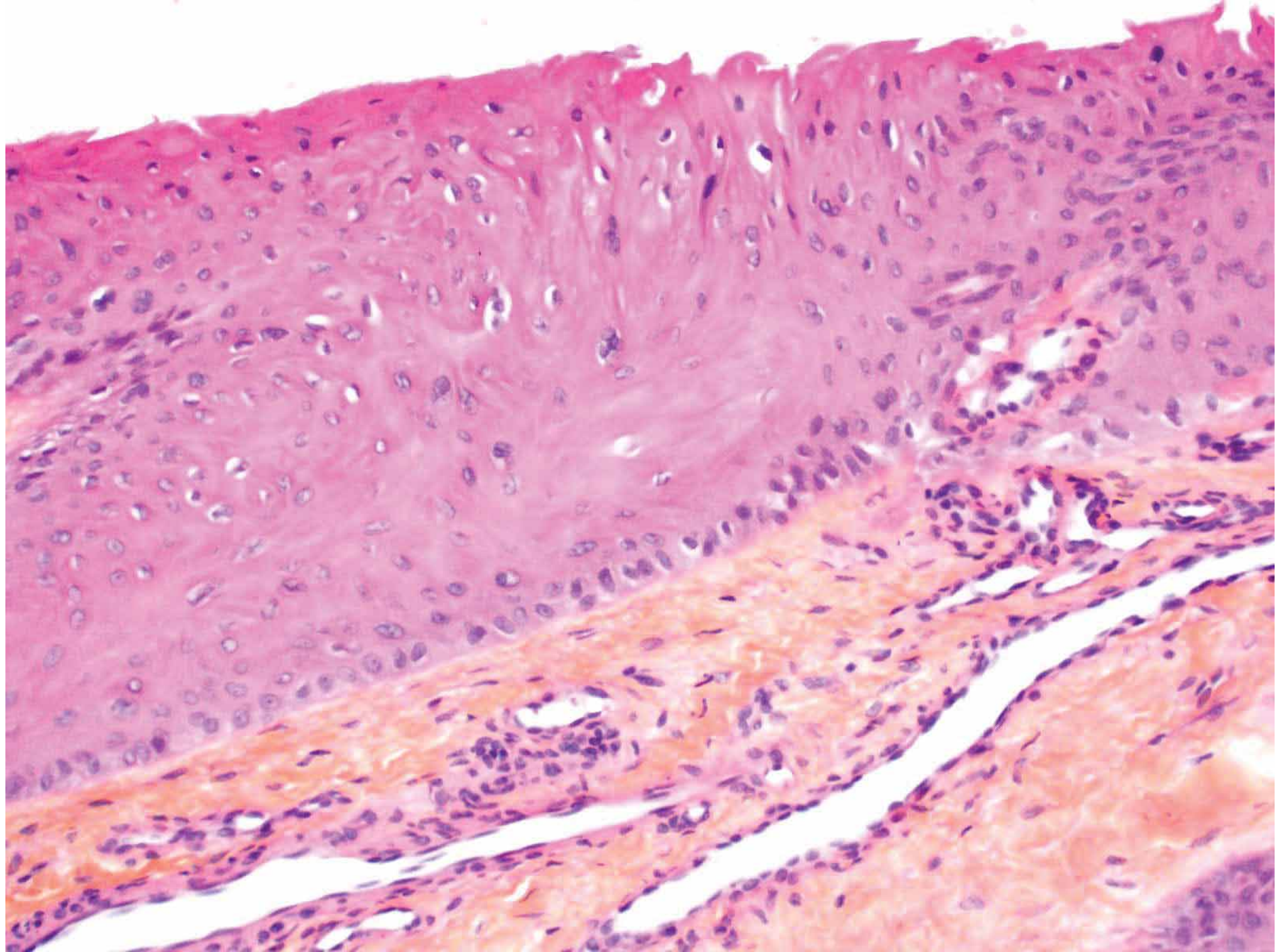


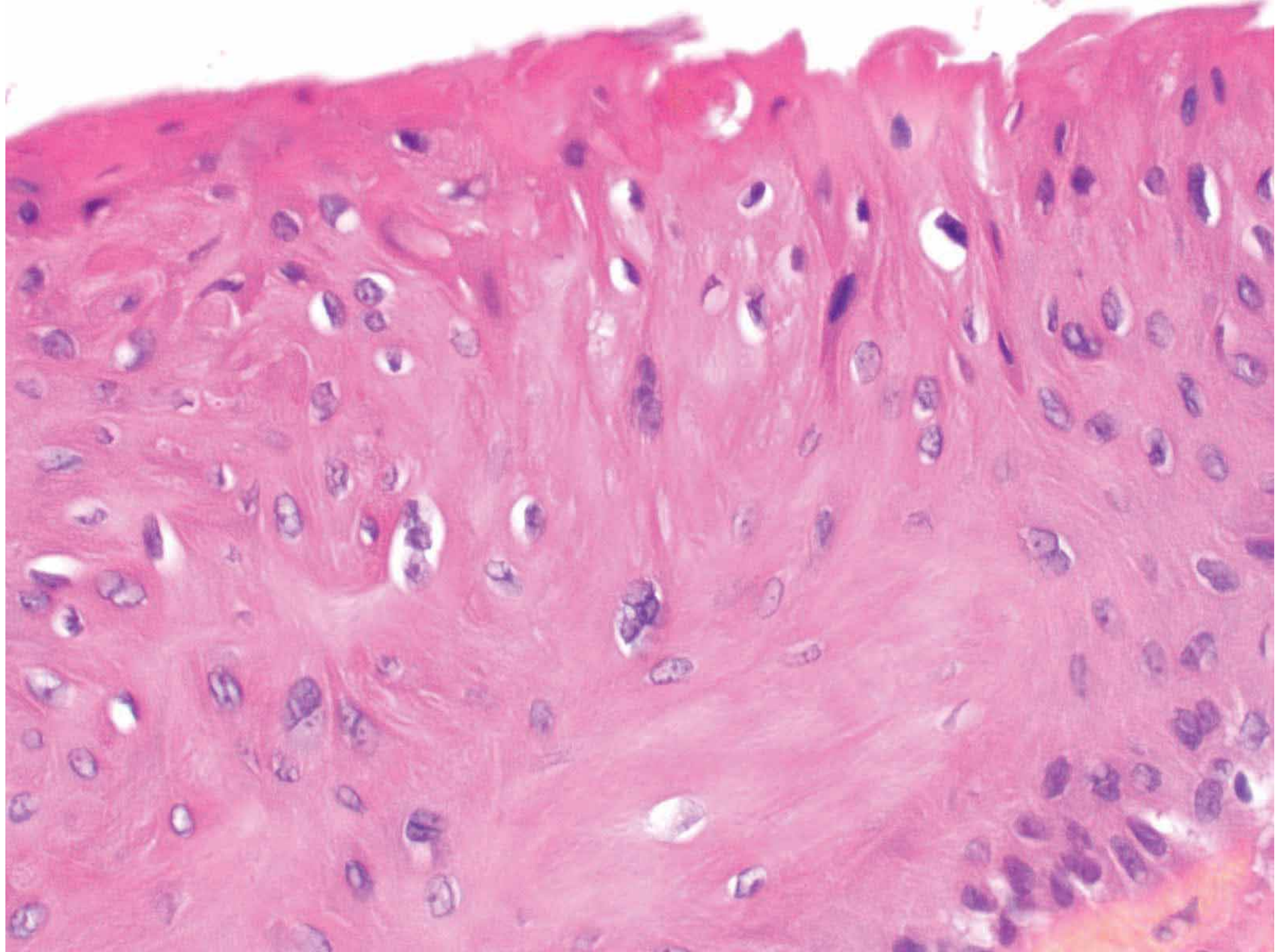




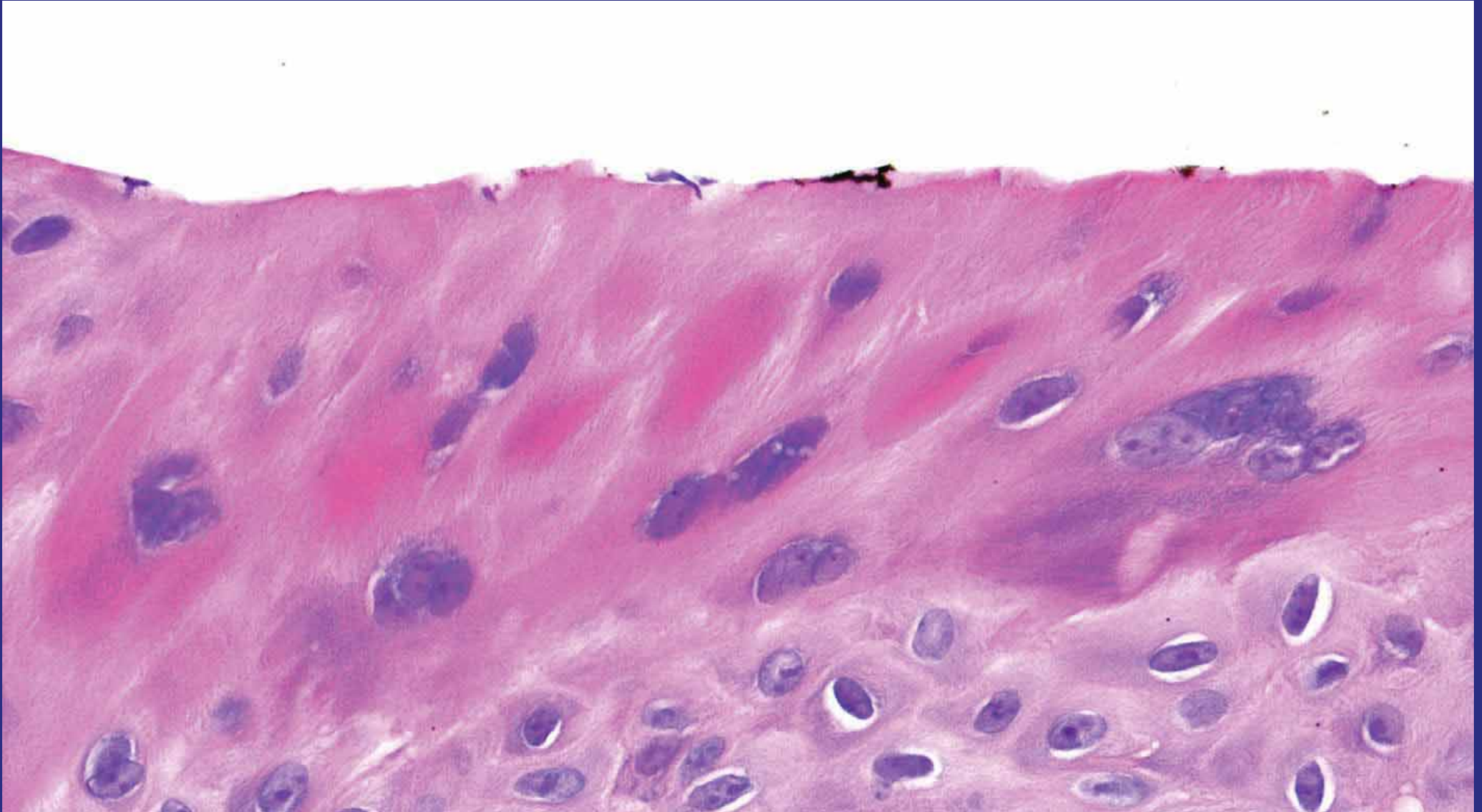




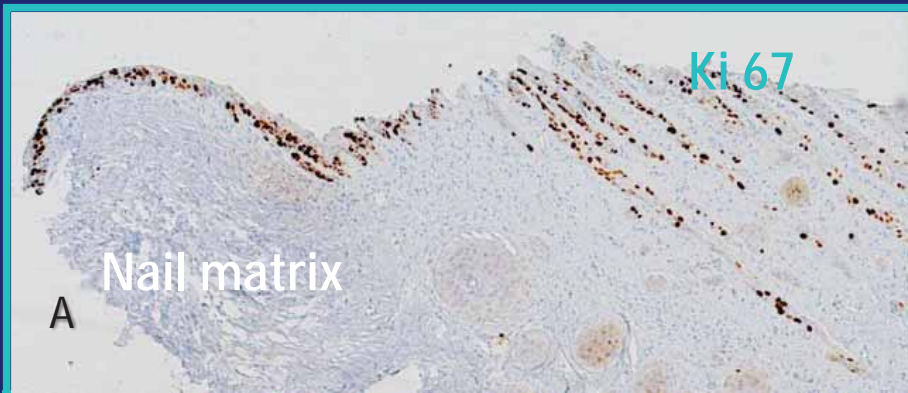




Multinucleated keratinocytes (29%)



« Classical onychopapilloma »



- **Ki67** less expression OP /pulp, matrix
- Absence of **p16** expression
- Light and heterogeneous nuclear staining of **p53**

Malignant onychopapilloma

Eckart Haneke^{1,2,3,4}  | Matilde Iorizzo⁵ | Max Gabutti¹ | Helmut Beltraminelli¹ 

58 year-old man, right thumb
EN with distal onycholysis and subungual
hyperkeratosis
Developed over a few years and became
painful leading to excision

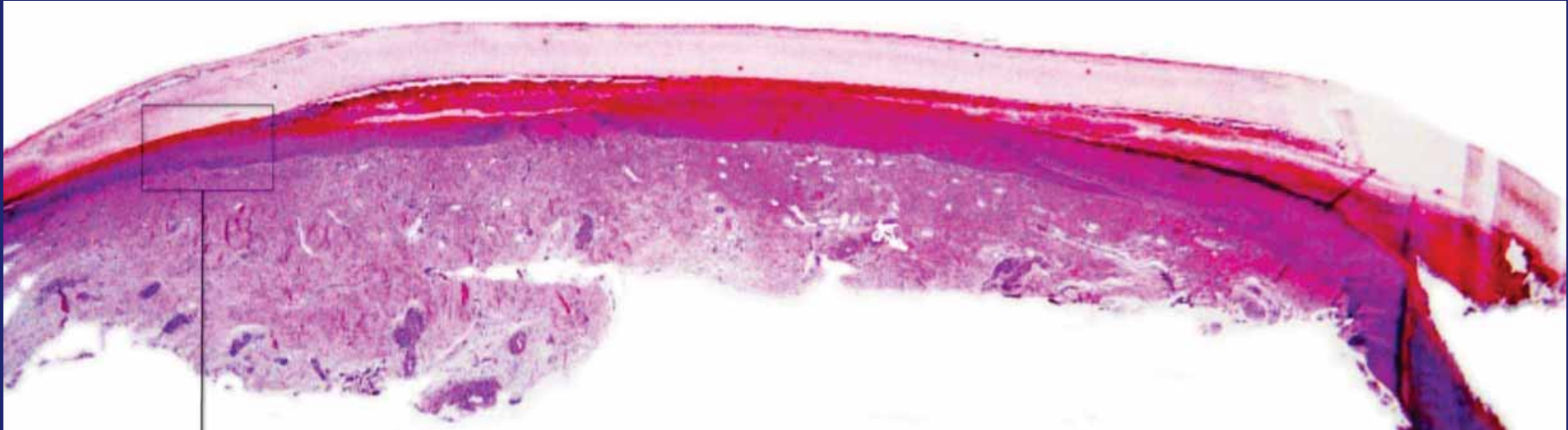
Haneke E, Iorizzo M, Gabutti M, et al. Malignant onychopapilloma.

J Cutan Pathol 2021; 8:174-179

Rubin AI, Lee D, Baran R. Malignant onychopapilloma: A new nail unit clinicopathologic entity. J Cutan Pathol 2021 ;

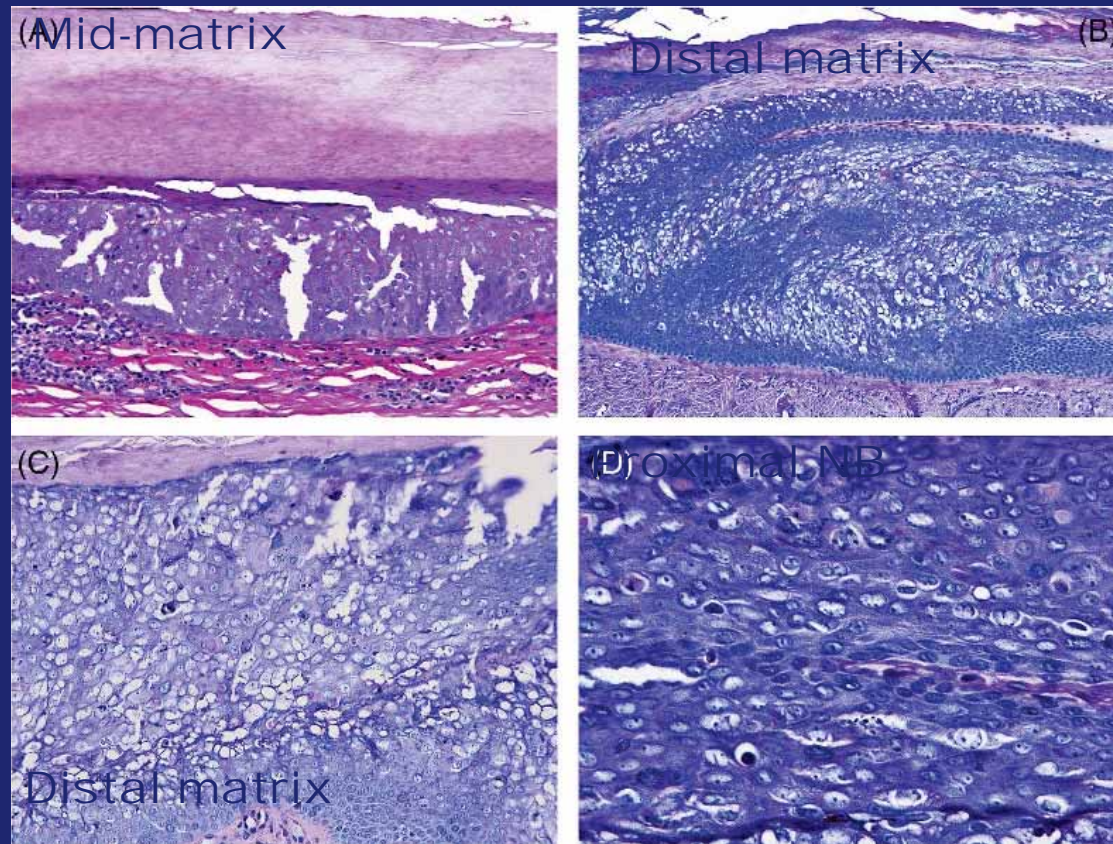
48: 347-348.





« Typical architecture of an OP starting in about the mid-matrix with extension to the distal end of the nailbed »

Haneke E, Iorizzo M, Gabutti M, et al. Malignant onychopapilloma. J Cutan Pathol 2021; 8:174-179



« Cellular atypia with pathological mitotic figures, many dyskeratoses, a large proportion of round, often clear-appearing cells and loss of orderly stratification of the epithelium »

Haneke E, Iorizzo M, Gabutti M, et al. Malignant onychopapilloma. *J Cutan Pathol* 2021; 8:174-179



Do we have atypical forms in our Lab???



- All OP cases diagnosed in the dermatopathology lab of Saint-Pierre University Hospital 2008 - 2022
- 91 cases available for pathological review.
- **88** cases : diagnostic of OP confirmed with a pathological aspect that was either typical, suggestive, or slightly suggestive
- Immunohistochemical analysis performed on **52** cases **p16, p53, Ki67**

3 Atypical Forms

André J, Ewbank A, Moulonguet I, Richert B Three atypical/malignant onychopapillomas in a 52-case series with immunohistochemical study J Cutan Pathol accepted for publication

Three atypical/malignant onychopapillomas in a 52-case series with immunohistochemical study

Josette André MD¹ | Alexandre Ewbank MD² | Isabelle Moulouguet MD³ | Bertrand Richert MD, PhD¹

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²Université Libre de Bruxelles, Brussels, Belgium

³Cabinet de Dermatopathologie Xpath, Paris, France

Correspondence

Josette André, Department of Dermatology, Saint-Pierre Brugmann University Hospitals, Université Libre de Bruxelles, Brussels, Belgium.
Email: josette.andre@ulb.be

Abstract

Background: Onychopapilloma (OP) is a benign tumor of the nail. Haneke reported one case of malignant OP in 2021. No systematic immunohistochemistry study has been conducted on OP. The aim of our study was to identify possible malignant OP in our series of OP and to describe the immunohistochemical expression of p16, p53, and Ki67 in typical and atypical/malignant ones.

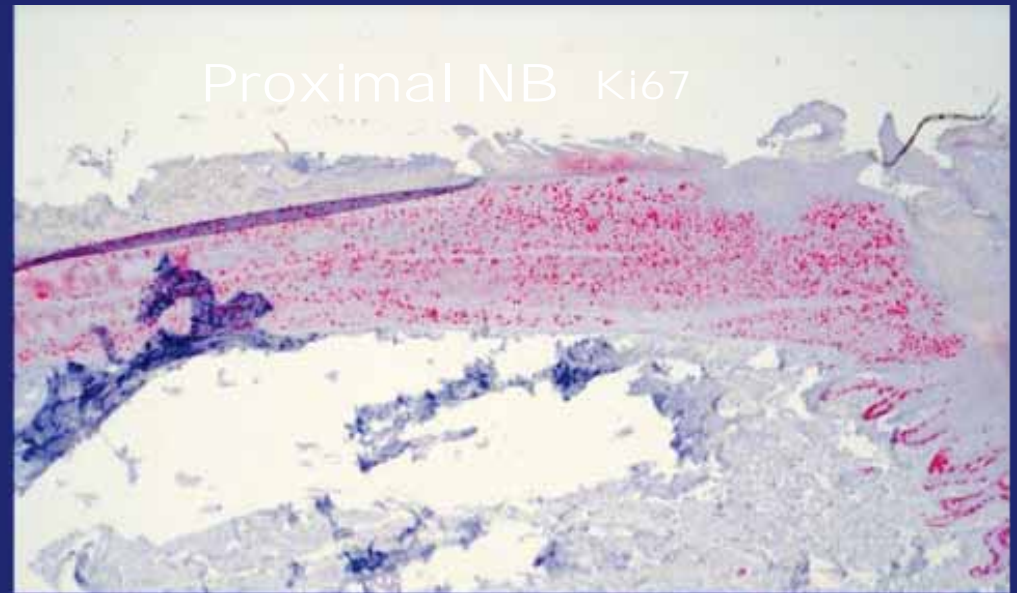
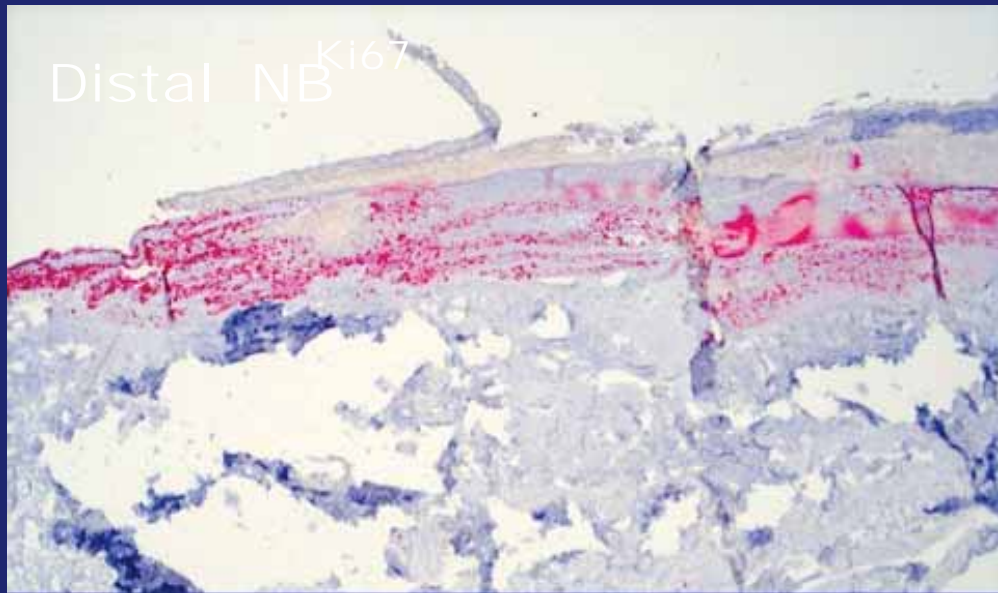
Methods: Ninety-one cases were available for pathological review. Immunohistochemical analysis could be performed on 52 cases.

Results: In 88 of 91 cases, the diagnosis of OP was confirmed. Three atypical/malignant cases were observed. No OP expressed p16. A normal p53 expression was observed in two thirds of the cases, an abnormal increased p53 expression in one third, including the three atypical cases. A normal Ki67 expression was observed in 84% of the cases, an abnormal Ki67 expression with focal heterogeneous expression in the suprabasal layers in 6% and in all suprabasal cell layers in 10%, including the three atypical cases.

Conclusions: The diagnosis of atypical/malignant OP may be underestimated. The expression of Ki67 and p53 in these tumors differs from the expression observed in conventional OP. The absence of p16 expression confirms that human papillomavirus does not play a role in the etiopathogenesis of OP.

KEYWORDS

immunohistochemistry, Ki67, malignant onychopapilloma, onychopapilloma, p16, p53



Case 3

- Abnormal **Ki67** expression within the OP, throughout the full thickness of the epithelium
- High **p53** expression within the lesion over the entire height of the epithelium, but less intense and more heterogenous than in both other cases
- **No p16** expression

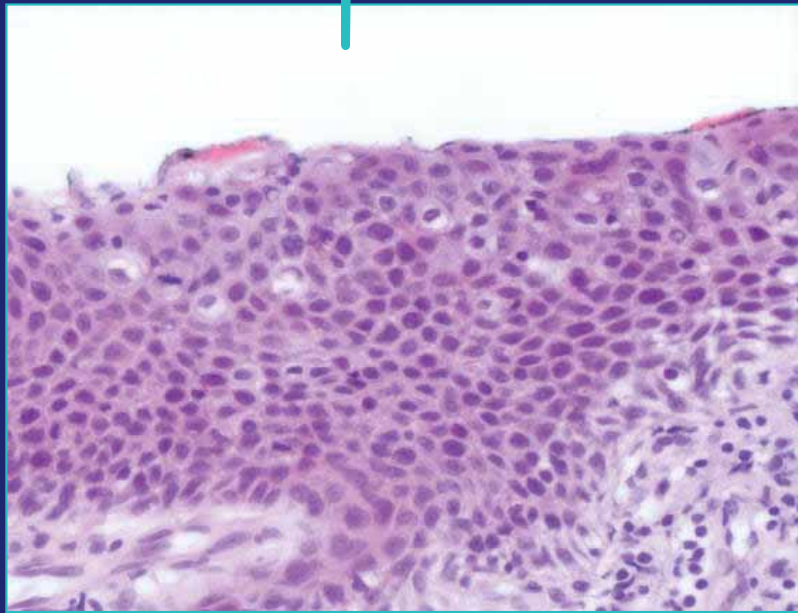
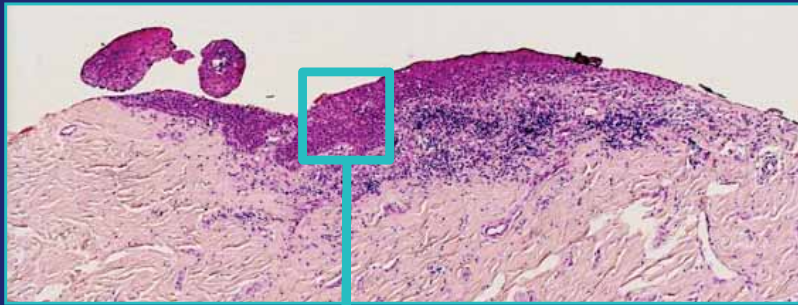


Figure 2

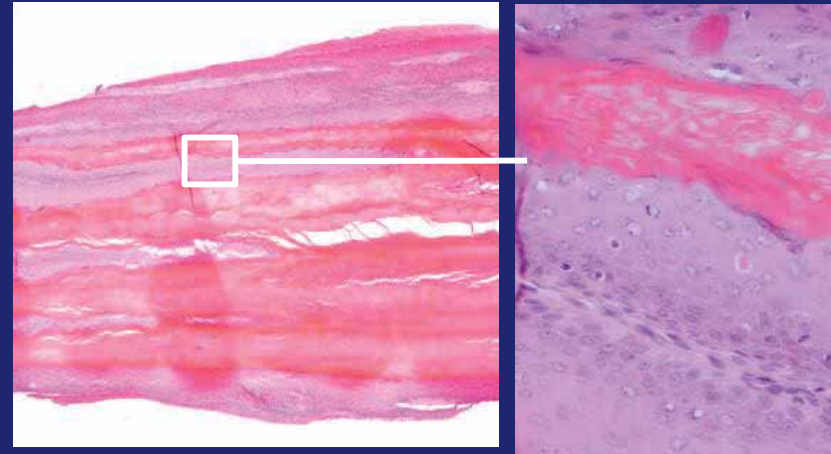
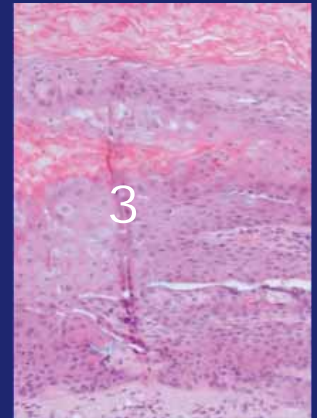
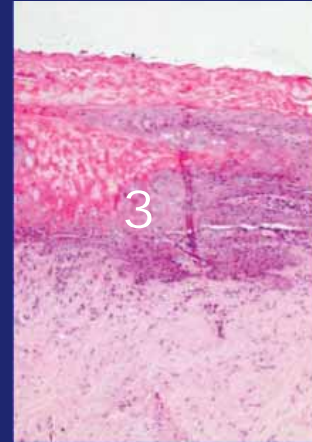
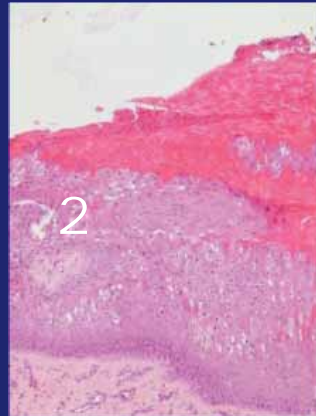
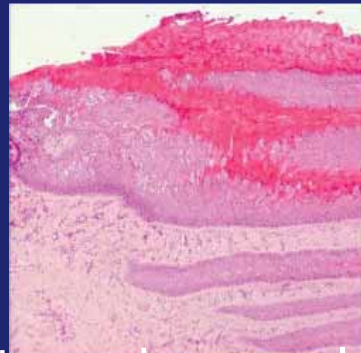
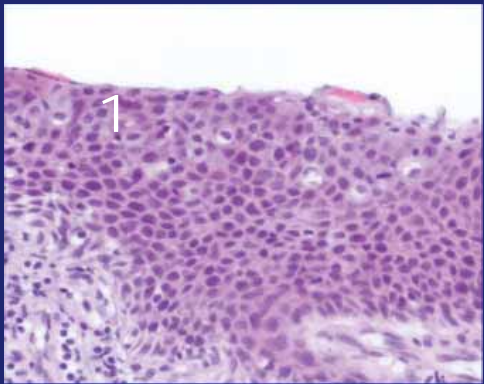


Figure 3
Nail Bed

Architecture in favor of an OP
Matrix : alterations of superior half :
mitotic figures, keratinocytes with clear
peri-nuclear halo and anisokaryosis,
dermal infiltrate.

NB : papillomatosis with onychogenous
areas, dyskeratosis and keratinocytes
with clear cytoplasm

- Similar to Haneke's case
- Changes suggesting malignancy predominate in the proximal part of the lesion (distal matrix/proximal nail bed)
- Cellular atypia, dyskeratosis, keratinocytes with clear abundant cytoplasm, loss of organization of the supra-basal layers, and mitotic figures, sometimes atypical



- Immunohistochemistry : abnormal expression of Ki67 and p53, absence of p16 expression
- 1 case recurred despite complete surgical removal
- No bone invasion nor metastasis described

Differential Diagnosis: Bowen disease

- Has not the typical architecture of OP
- No Onychogenous area
- Full Thickness atypia
- HPV+ (P16+)

Conclusion Onychopapilloma

- Vast majority of OP are benign. Clinical and dermoscopic follow-up of OP is recommended
- Surgical excision of lesions with atypical or evolving features.
- When facing histopathologic aspects suggesting malignancy, Ki67 immunostaining indicated and easier to interpret than p53.

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, MHS



Lebensohn A, Ghafoor A, Bloomquist L, Royer MC, Castelo-Soccio L, Karacki K, Hathaway O, Maglo T, Wagner C, Agra MG, Blakely AM, Schrump DS, Hassan R, Cowen EW. Multiple Onychopapillomas and BAP1 Tumor Predisposition Syndrome. JAMA Dermatol. 2024 17:e241804.

Case VIII





Coll B Richert

ONYCHOMATRICOMA

Benign matrix tumor described in 1992 by Baran

Synonyms: Onychoblastoma, Unguinoblastoma

- Adults, 50year
- Finger (75%) – (Major) >> Toes
- Xanthonychia
- Thickening of the nail and pronounced longitudinal ridging
- Transverse overcurvature
- Filiform hemorrhages



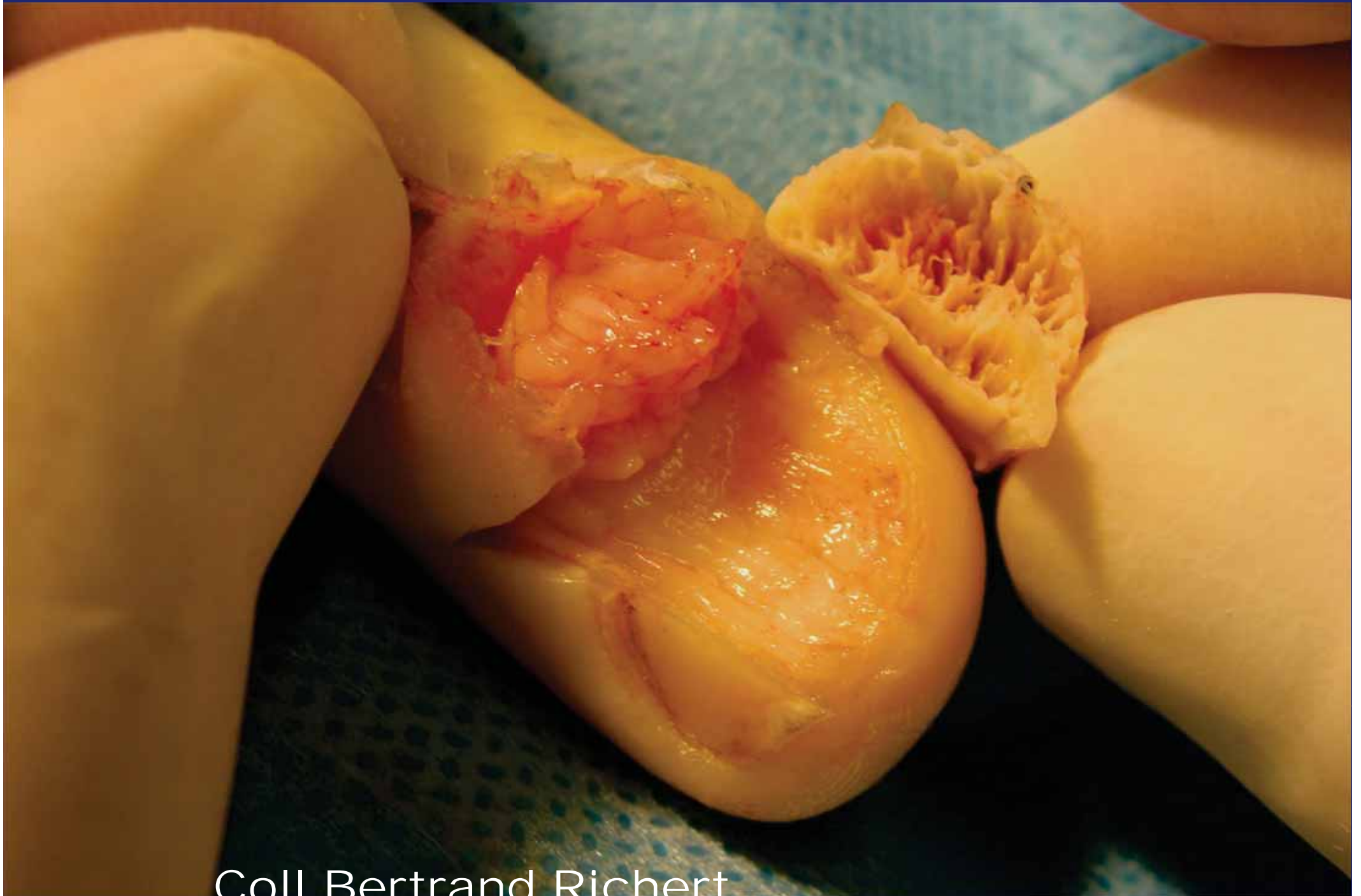
Coll B Richert

Coll B Richert



Nail avulsion discloses a pedunculated villous tumor of the matrix with characteristic distal digitations extending into multiple holes in the proximal nail plate





Coll Bertrand Richert



45 YEAR_OLD MAN
Coll S Goettmann



- Anemone flower like aspect



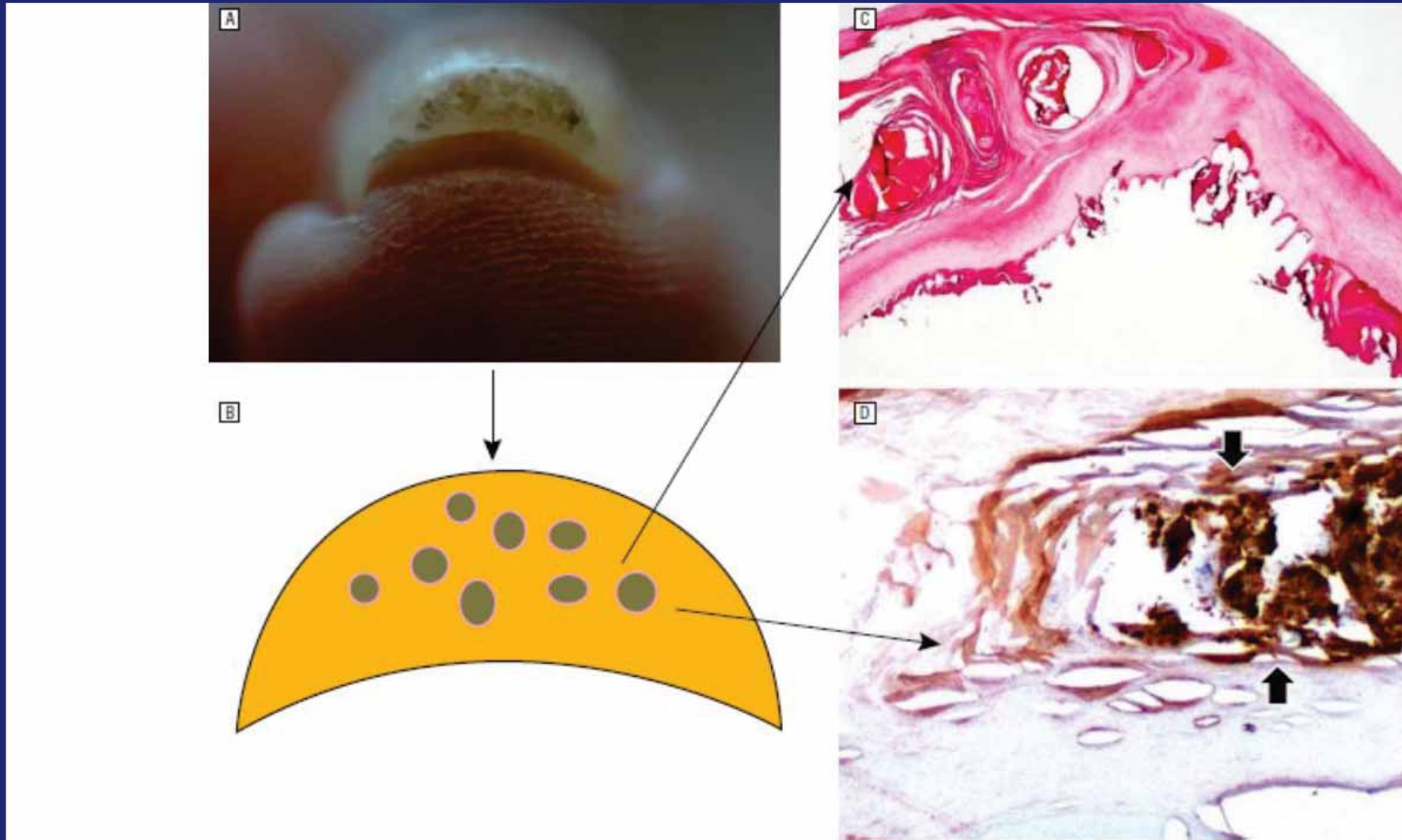
*Joo HJ, Kim MR, Cho BK, Yoo G, Park HJ.
Ann Dermatol. 2016 A;28(2):237-41.*



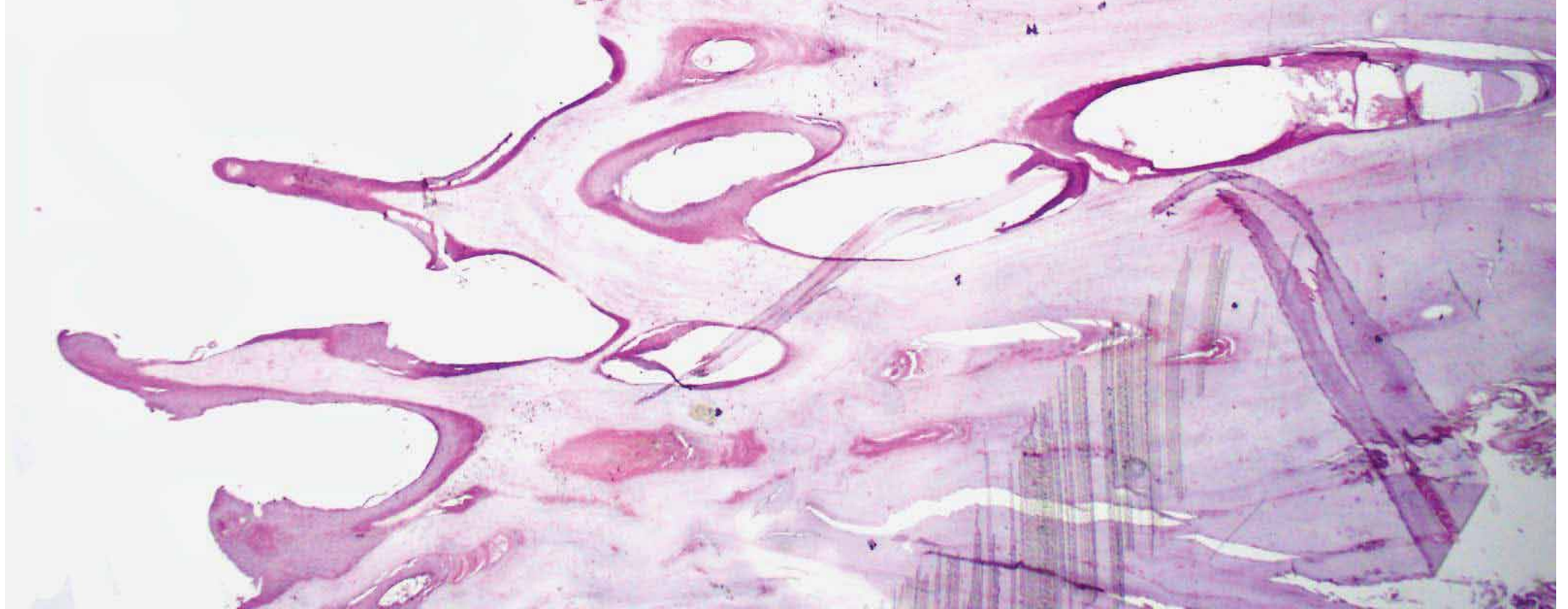
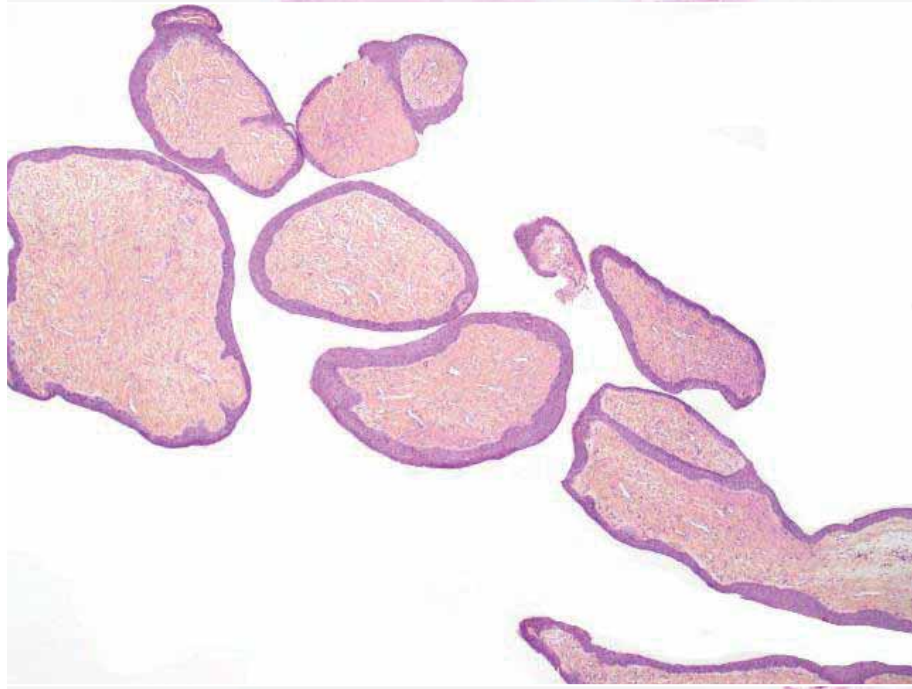


L Goldlust Okon, A case of onychomatricoma: Classic clinical, dermoscopic, and nail-clipping histologic findings JAAD 2017: 76: S19-S21

Distal nail clipping showing multiple lacunar spaces may be a clue for the diagnosis



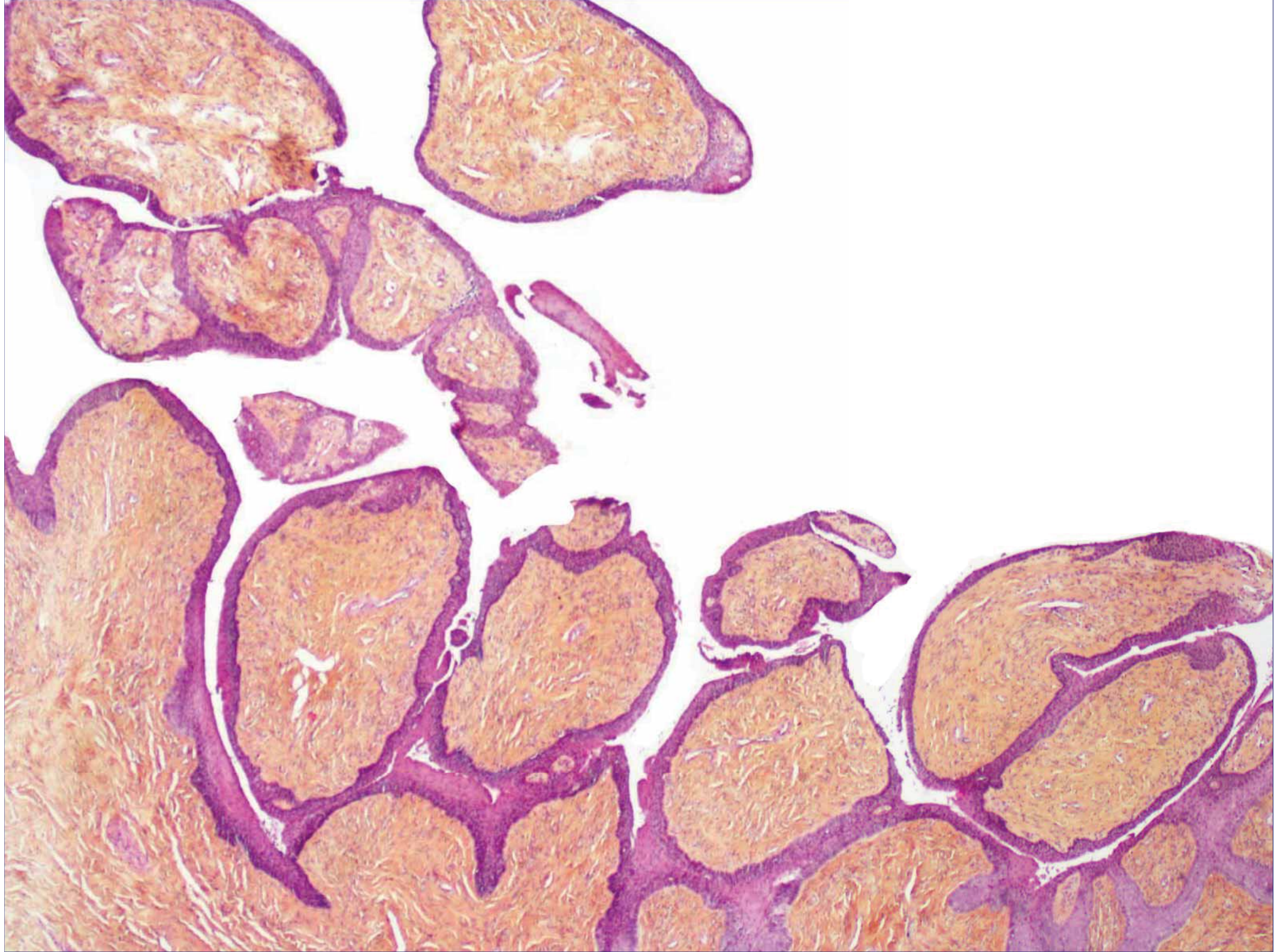
Miteva M, de Farias DC, Zaiac M, Romanelli P, Tosti A. Nail clipping diagnosis of onychomatricoma. *Arch Dermatol.* 2011 ;147(9):1117-8.



Matrical fibro-épithélial Tumor

Distal part: Glove-Finger papillary projections , lined by matrix type epithelium

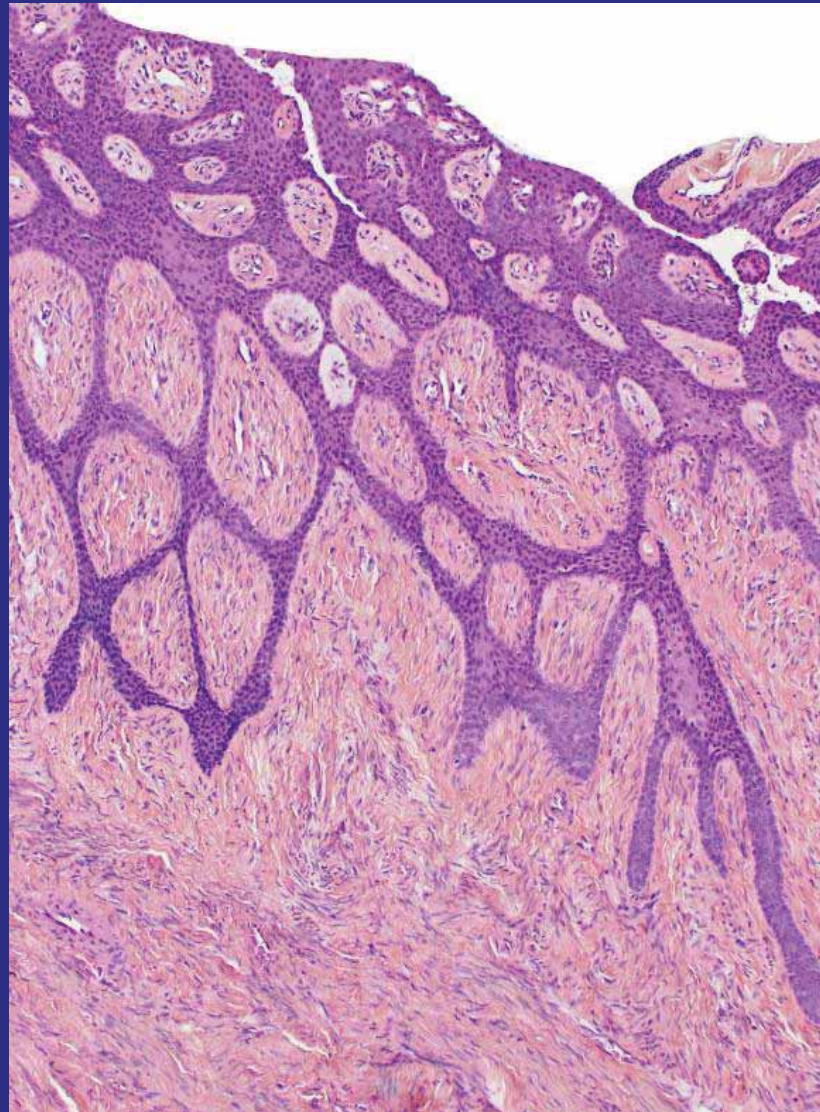




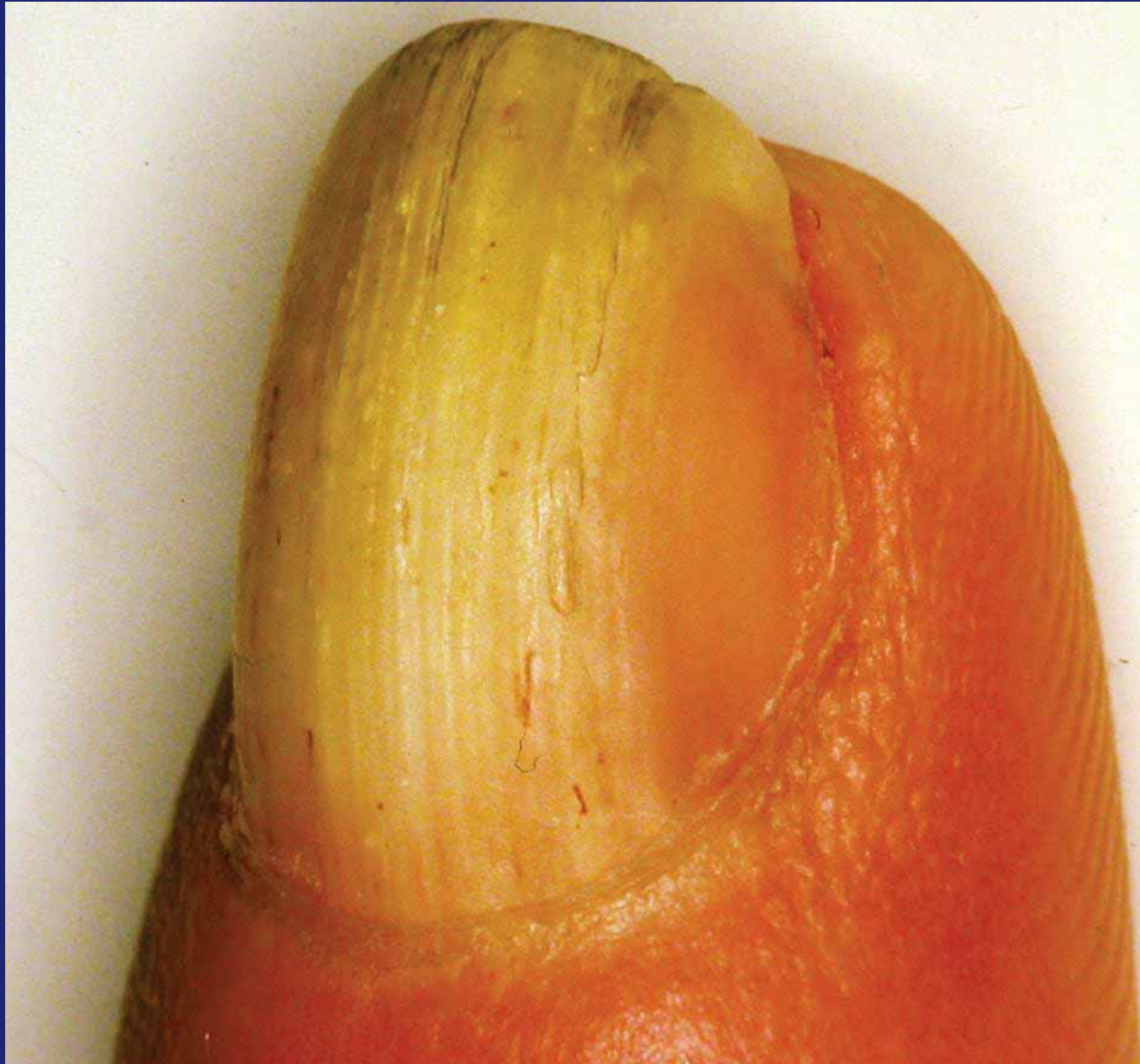
Proximal part:

Papillomatous matrix-type epithelium with characteristic vertically orientated ***V-shaped invaginations***

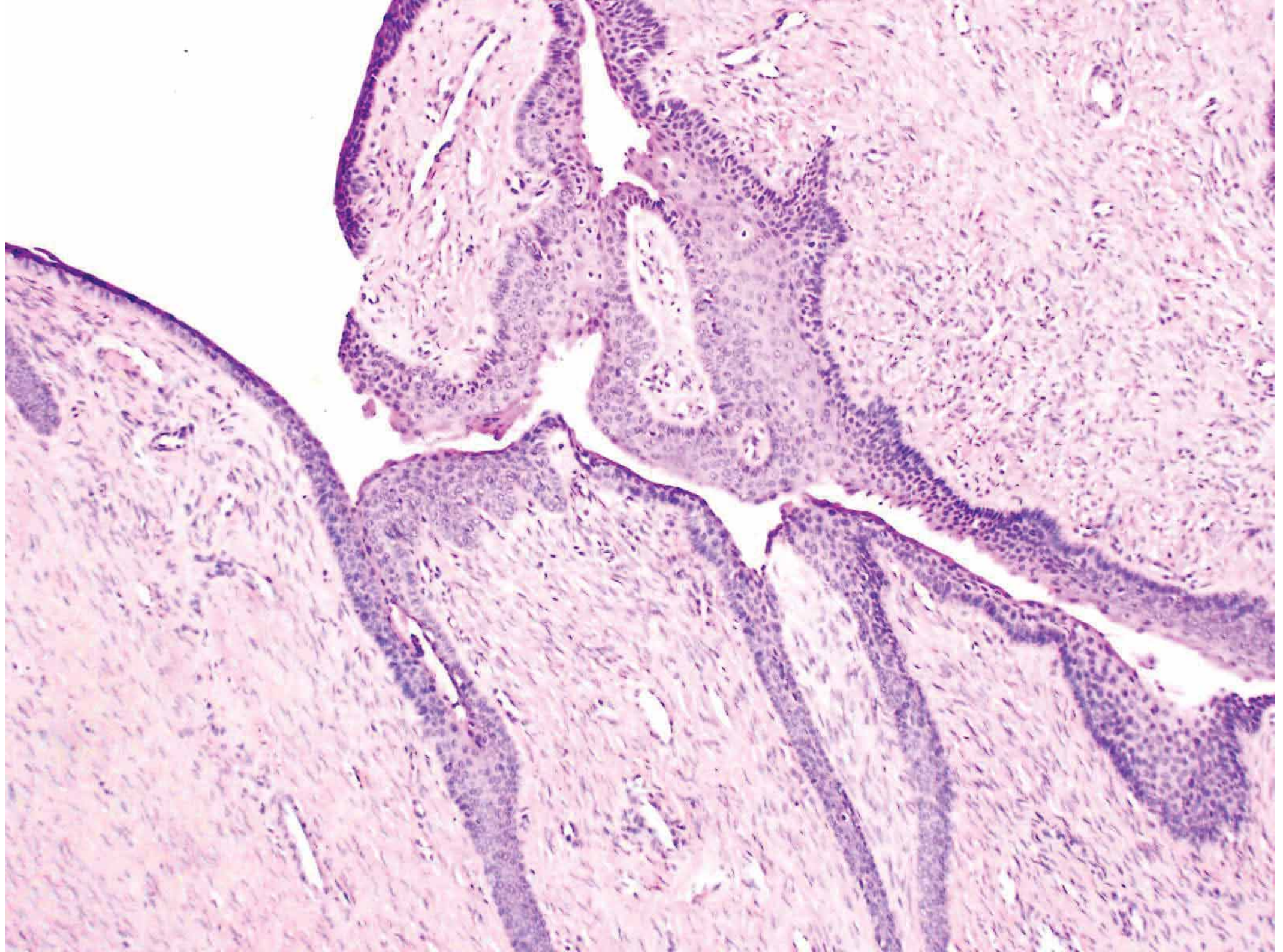
Stroma is highly cellular, CD 34+ fibroblasts with random nuclear pleomorphism



ONYCHOMATRICOME







Onychomatricoma

- Recently loss of RB1 (13q) was reported as a possible driver molecular event in OM

Perrin C. et al Onychomatricoma : a clinicopathological, immunohistochemical, and molecular study of 10 cases highlighting recurrent RB1 deletion and the potential diagnostic value of LEF-1.
Histopathology 2023

- Atypical (pleomorphic) and proliferative variants are described

Case IX



Soft non pigmented tumor close to the nail apparatus

coll Dr O Cogrel

Superficial Acral FIBROMA

Fetsch JF, Laskin WB, Miettinen M. Superficial acral fibromyxoma: a clinicopathologic and immunohistochemical analysis of 37 cases of a distinctive soft tissue tumor with a predilection for the fingers and toes.

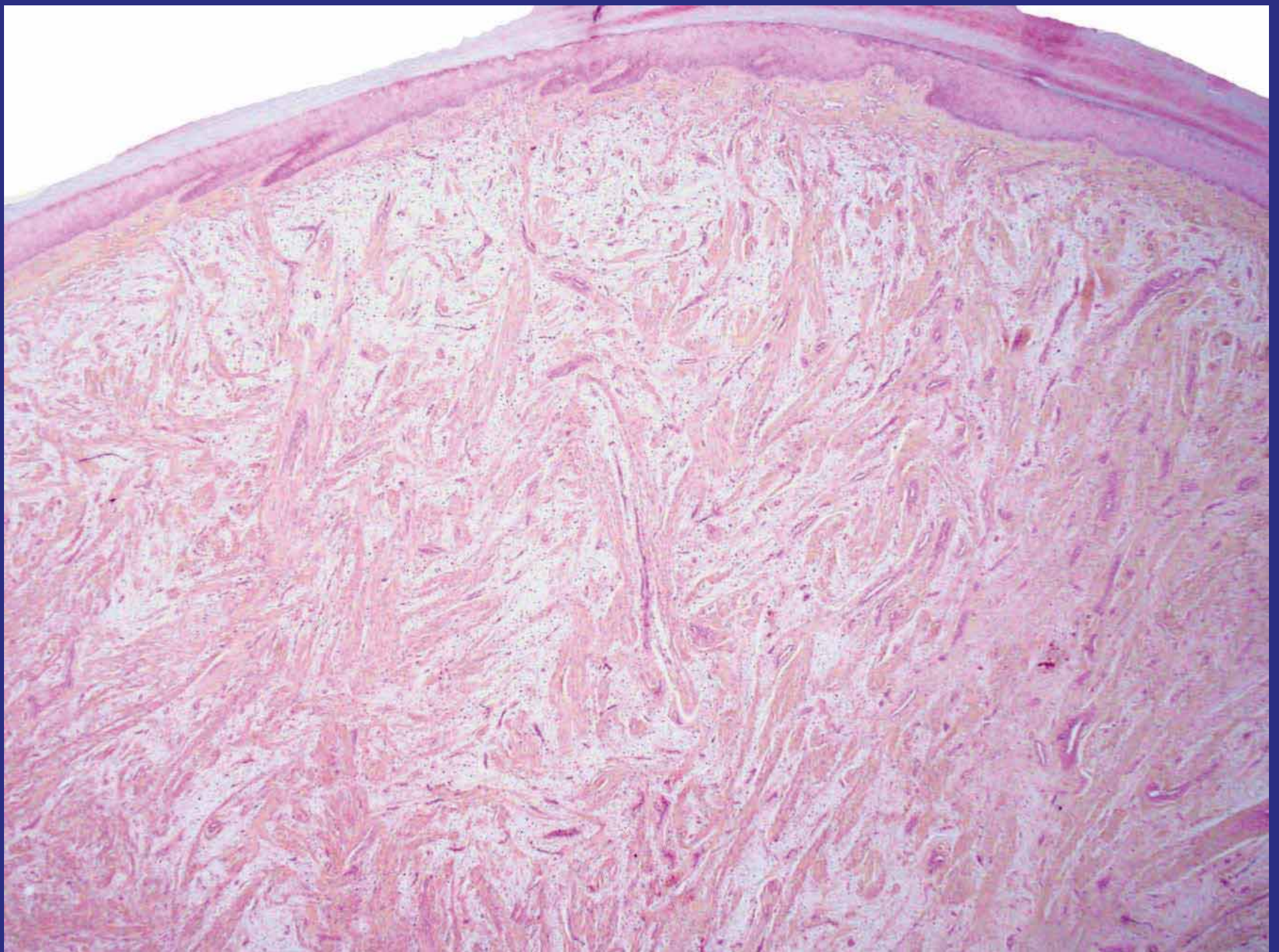
Hum Pathol. 2001;32(7):704-14.

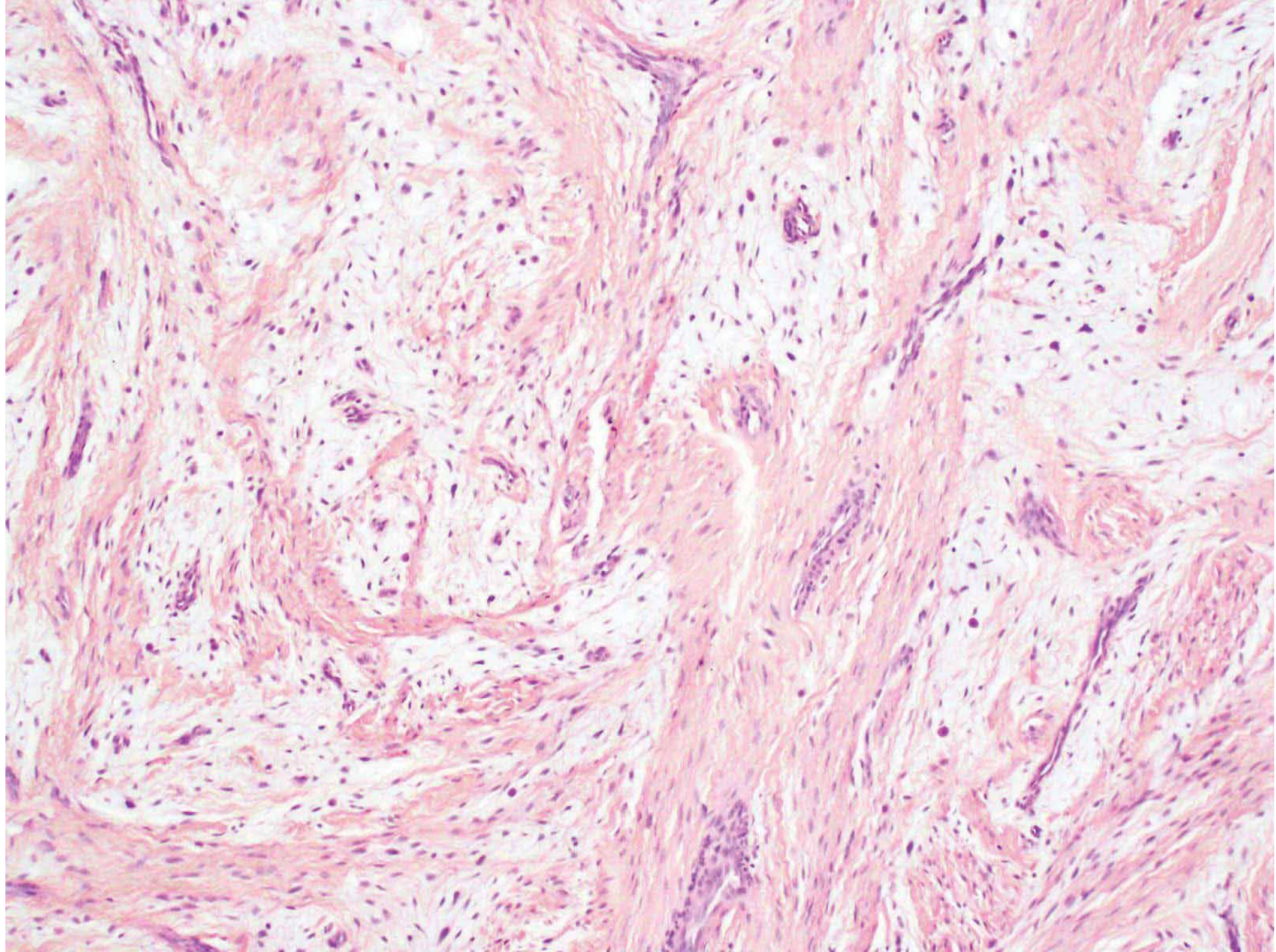
Superficial Acral FIBROMYXOMA

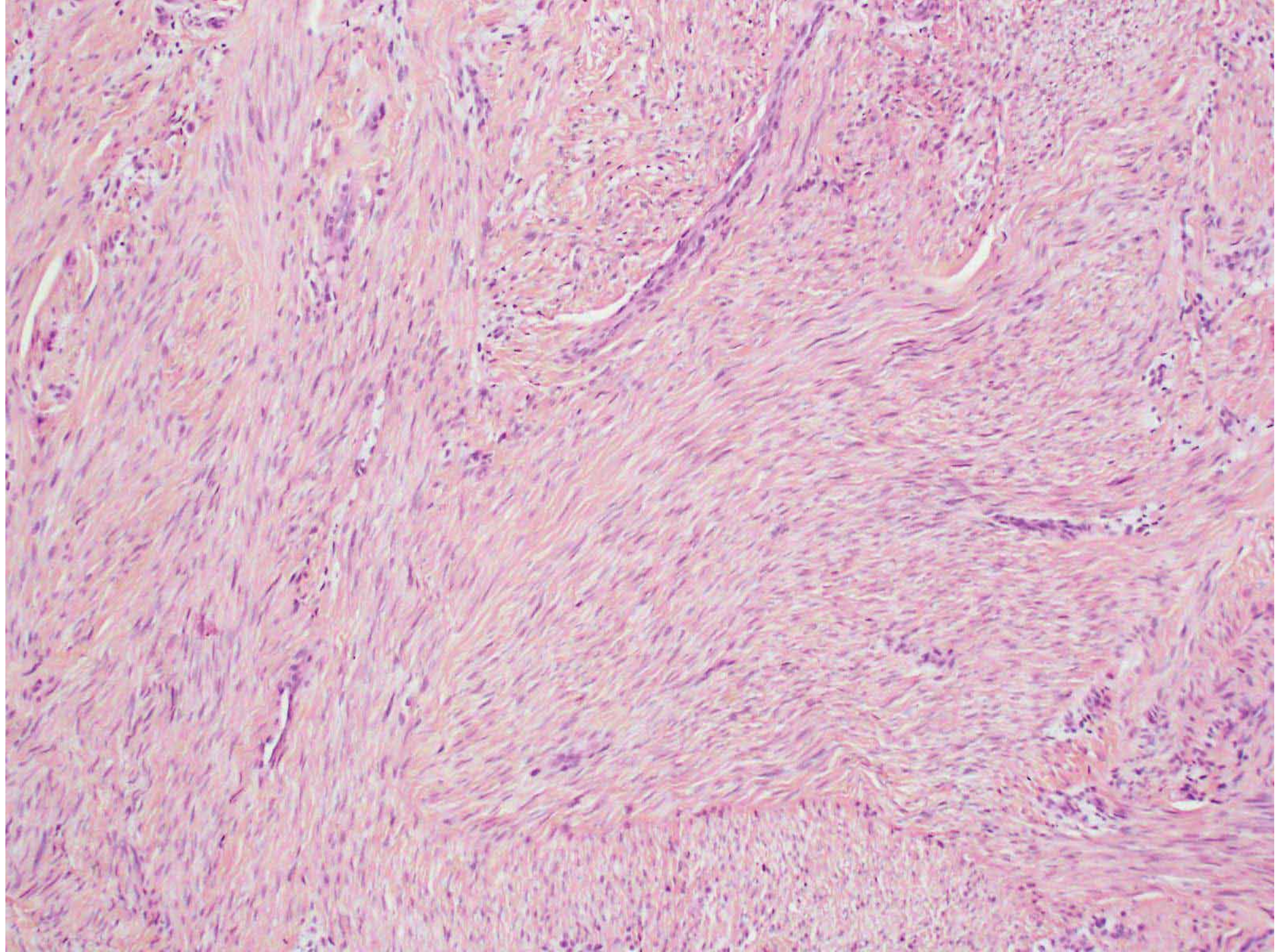
- Sex ratio 1,3 H : 1 F
- Median age 48 y (4-86 y)
- Localised at the hands (52%), fingers (94%), Nail apparatus (97%)
- Localised at the feets (45%), toes (82%), Nail apparatus (96%).
- Pain in 41% of the cases

-Hollmann TJ, Bovée JV, Fletcher CD. Digital fibromyxoma (Superficial acral fibromyxoma): a detailed characterization of 124 cases. Am J Surg Pathol. 2012;36(6):789-98

-Cullen D, et al:Superficial Acral Fibromyxoma: Report of 13 cases with new immunohistochemical findings Am J Dermatopathol 2017







Superficial Acral FIBROMA Histology

- Spindle cells, moderately cellular
- Myxoid stroma
- Mast cells
- Increased blood vessels
- Occasional multinucleated cells
- CD 34+
- CD 99(-), EMA (-)
- Nestin

Superficial Acral FIBROMA

Differential Diagnosis

- Myxoid Neurofibroma: *Prot S100+*
- Sclerosing Perineurinoma: *EMA +*
- Superficial Angiomyxoma: lobulated, neutrophils
- Myxoid Dermatofibrosarcoma protuberans : *almost never occurs on the toes and fingers, COL1 A1 fusion*
- Myxo-inflammatory fibroblastic sarcoma: *inflammatory infiltrate, bizarre-tumor cells with vesicular nuclei and inclusion-like nucleoli*

Superficial Acral FIBROMA

- Loss of immunoeexpression of RB1
- Occasional cases with atypical features have been reported but no malignancy
- Recurrence if incomplete excision (24 %)

ORIGINAL STUDY

Superficial Acral Fibromyxoma: Report of 13 Cases With
New Immunohistochemical Findings

Daniella Cullen, MD, José Luis Díaz Recuero, MD,* Roberto Cullen, MD,*
José Luis Rodríguez Peralto, MD,† Heinz Kutzner, MD,‡ and Luis Requena, MD**

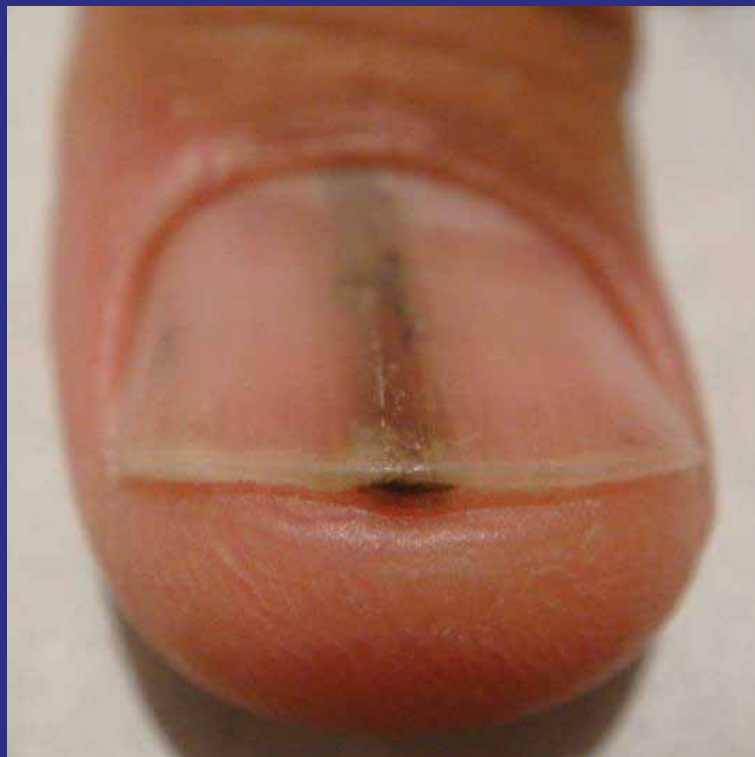
CASE X

65 y-old man, thumb; Bowen??



Longitudinal Acanthoma of the nail bed (onychocytic matricoma)

Coll Dr R Baran



Pigmented lesion with a thickened nail tablet

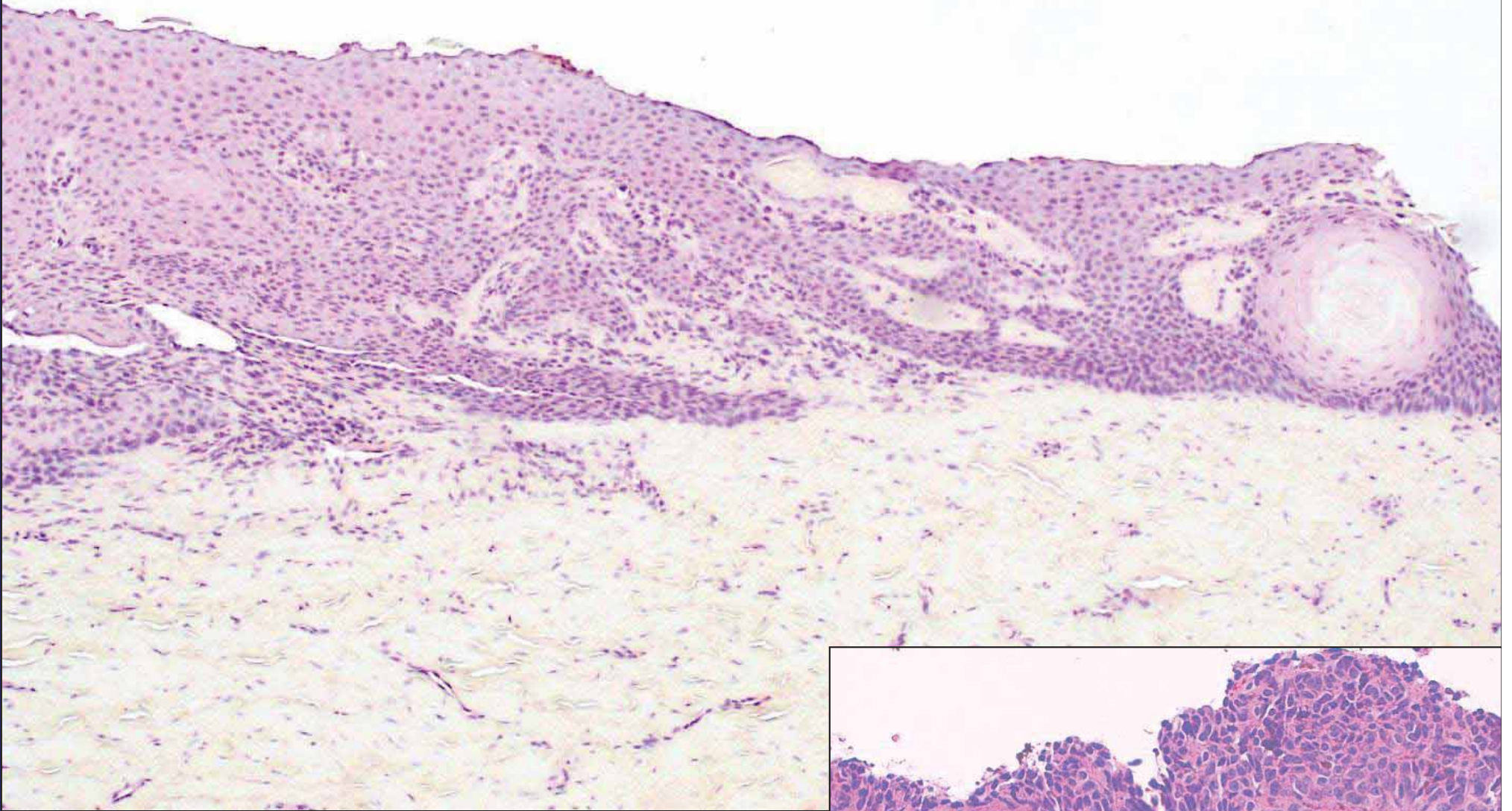
Baran R, Moulouquet I, Goettmann-Bonvallot S, Encaoua R, Robert C. Longitudinal subungual acanthoma: one denomination for various clinical presentations. J Eur Acad Dermatol Venereol. 2018 Sep;32(9):1608-1613.

Longitudinal Acanthoma of the nail bed

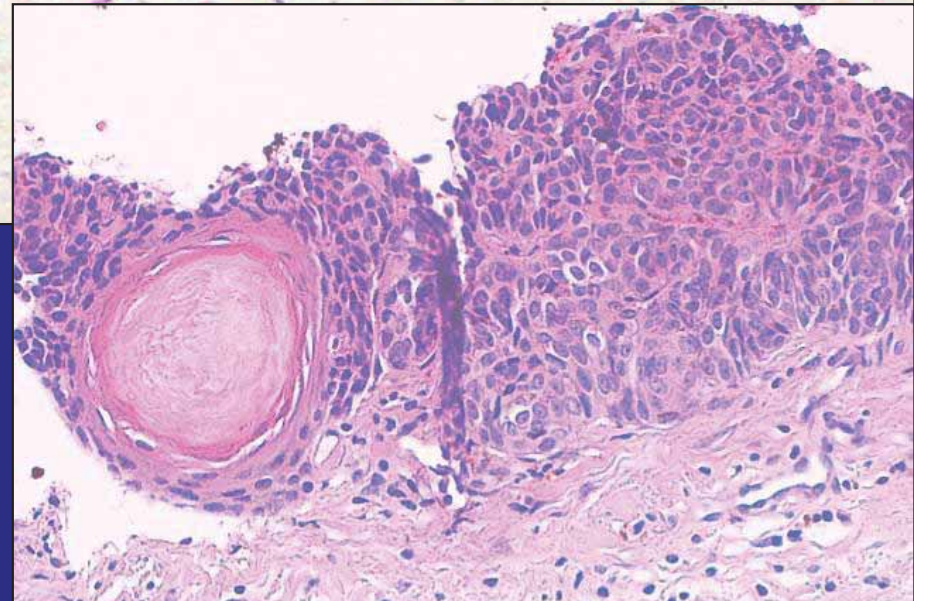


leucoxanthonychia

Coll Dr R Baran



Resembles irritated seborrheic keratosis
with endophytic proliferation



Longitudinal Acanthoma of the nail bed



“Subungual keratosis” of the “nail bed and onychocytic matricoma” have been described separately. Considering their similarities, they are best considered to lie in a spectrum of a single benign entity

Baran R, Perrin C. Linear melanonychia due to subungual keratosis of the nail bed : a report of 2 cases. Br J Dermatol 1999; 140:730-733.

Longitudinal Acanthoma of the nail bed

Black streak with nail plate thickening or a leucoxanthonychia



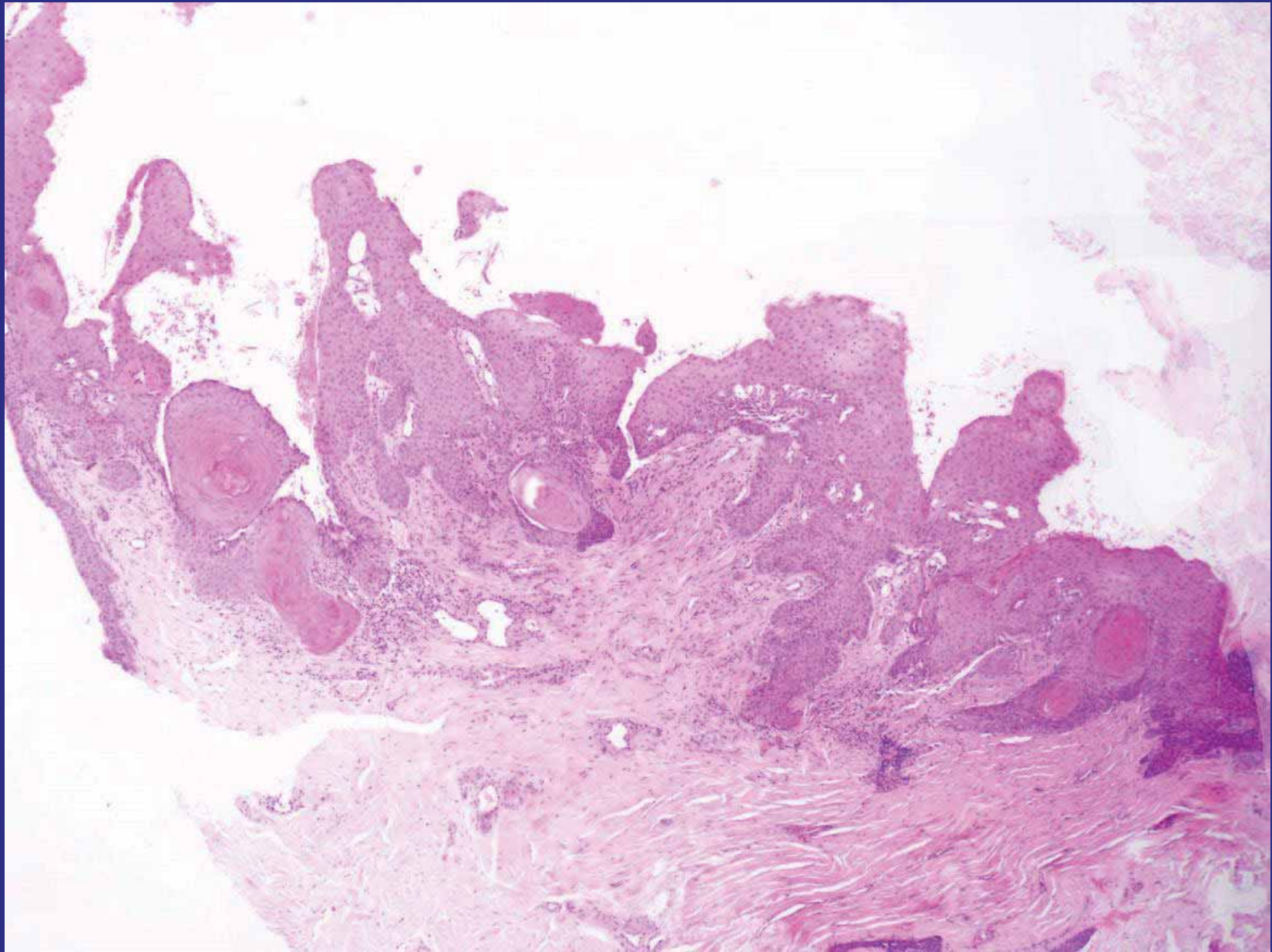
- Wanat KA, Reid E, Rubin AI. Onychocytic matricoma: a new, important nail-unit tumor mistaken for a foreign body. *JAMA Dermatol.* 2014 ;150(3):335-7.
- Perrin C, Cannata GE, Bosssard C, Grill JM, Ambrossetti D, Michiels JF. Onychocytic Matricoma Presenting as Pachymelanonychia Longitudinal. A New Entity. *Am J Dermatopathol* 2012; 34: 54-9.



Coll Dr V Blatière



Coll Dr V Blatière



Case XI

- 60-year-old male
- Left 3rd finger
- Painful, rapidly growing, distal subungual tumour
- Radiological examination: osteolysis of the distal phalanx

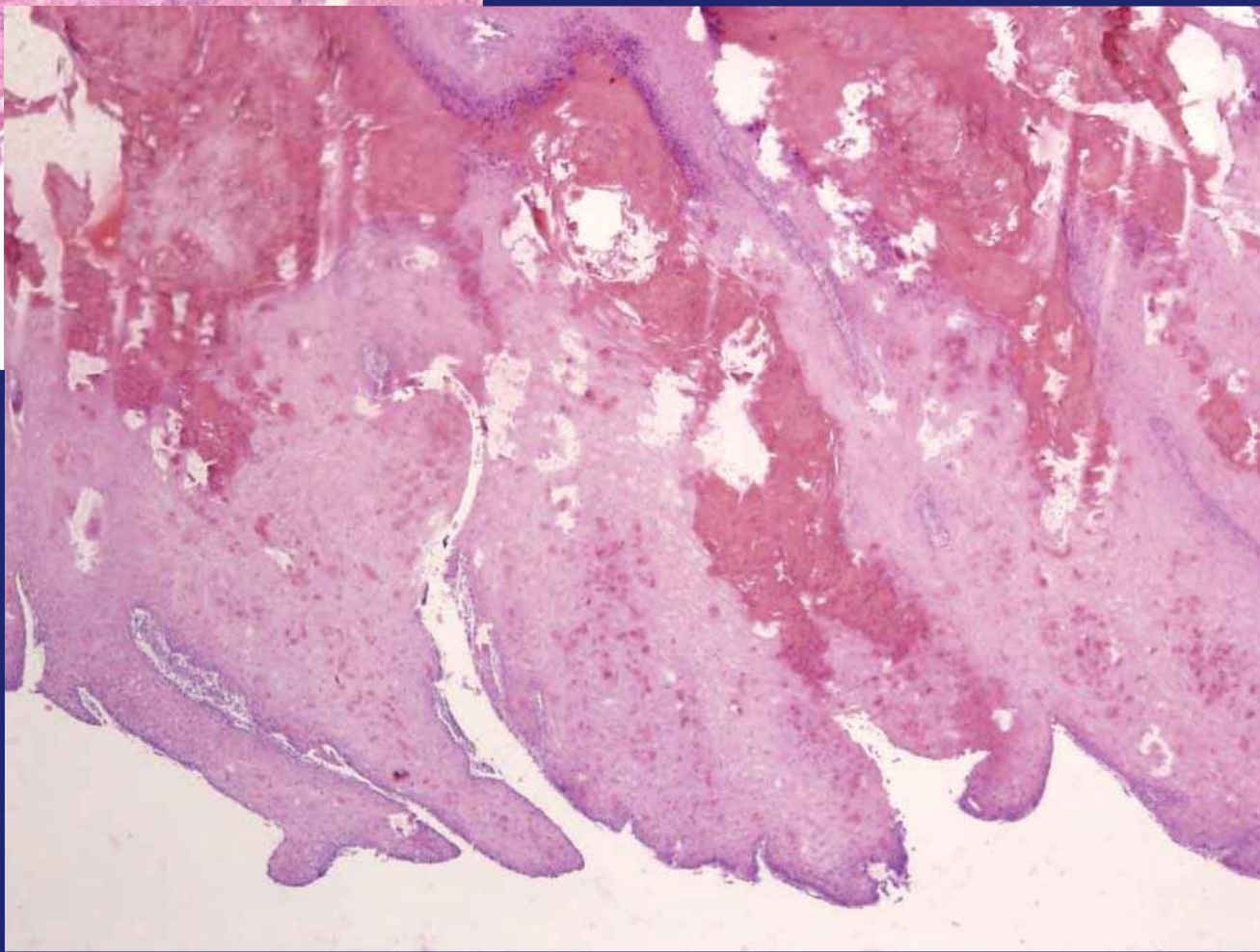
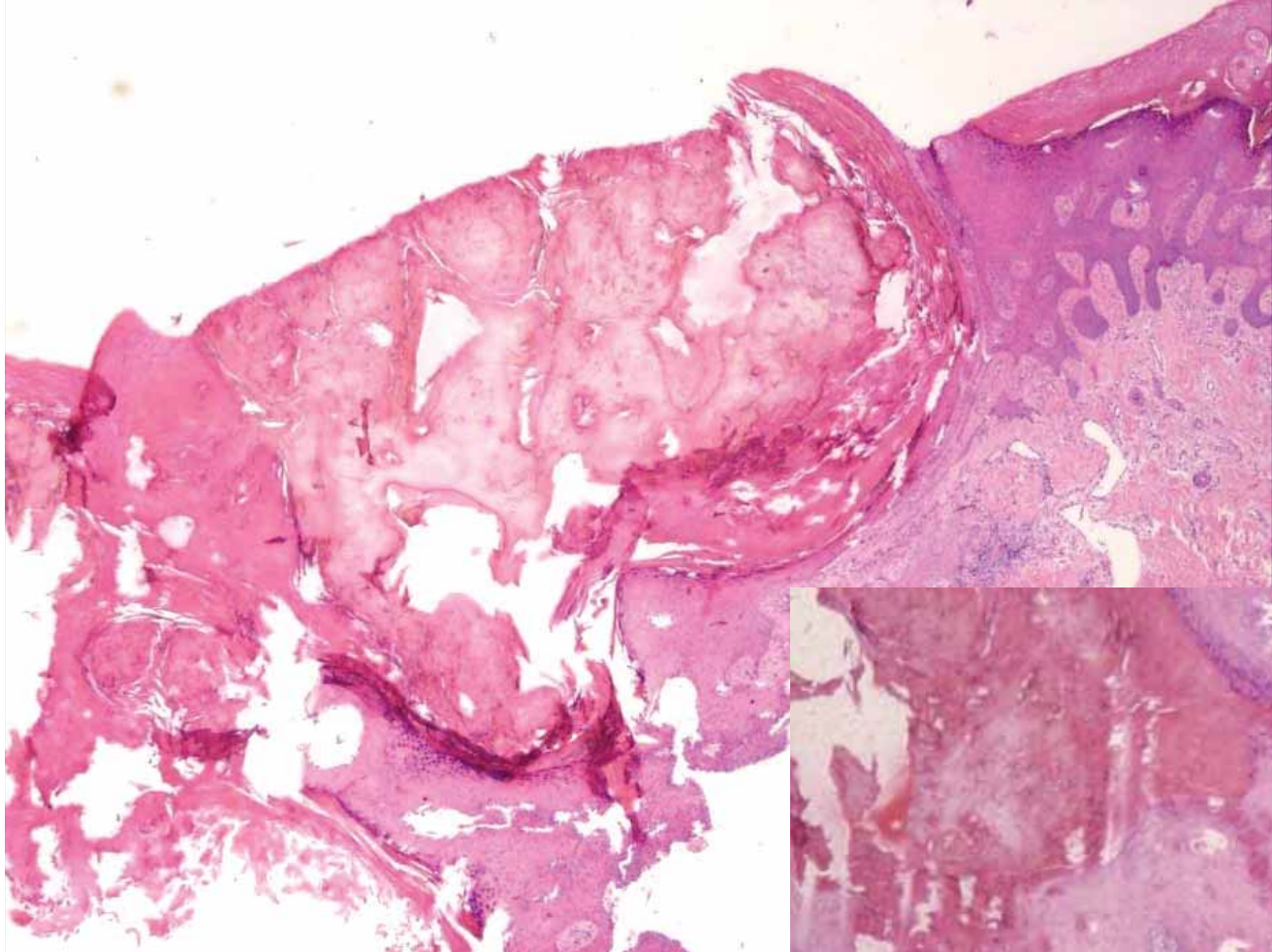


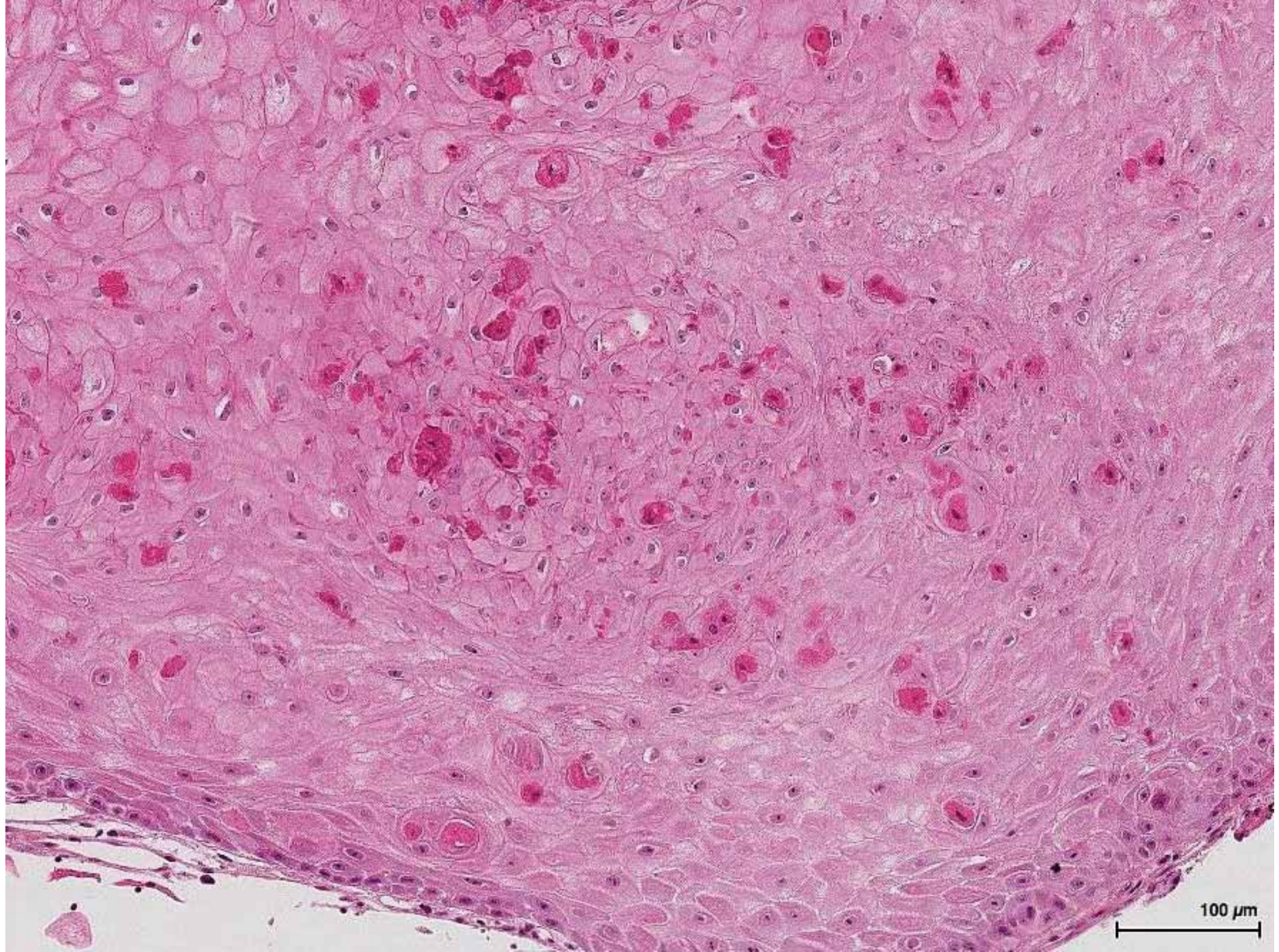
Radiological examination

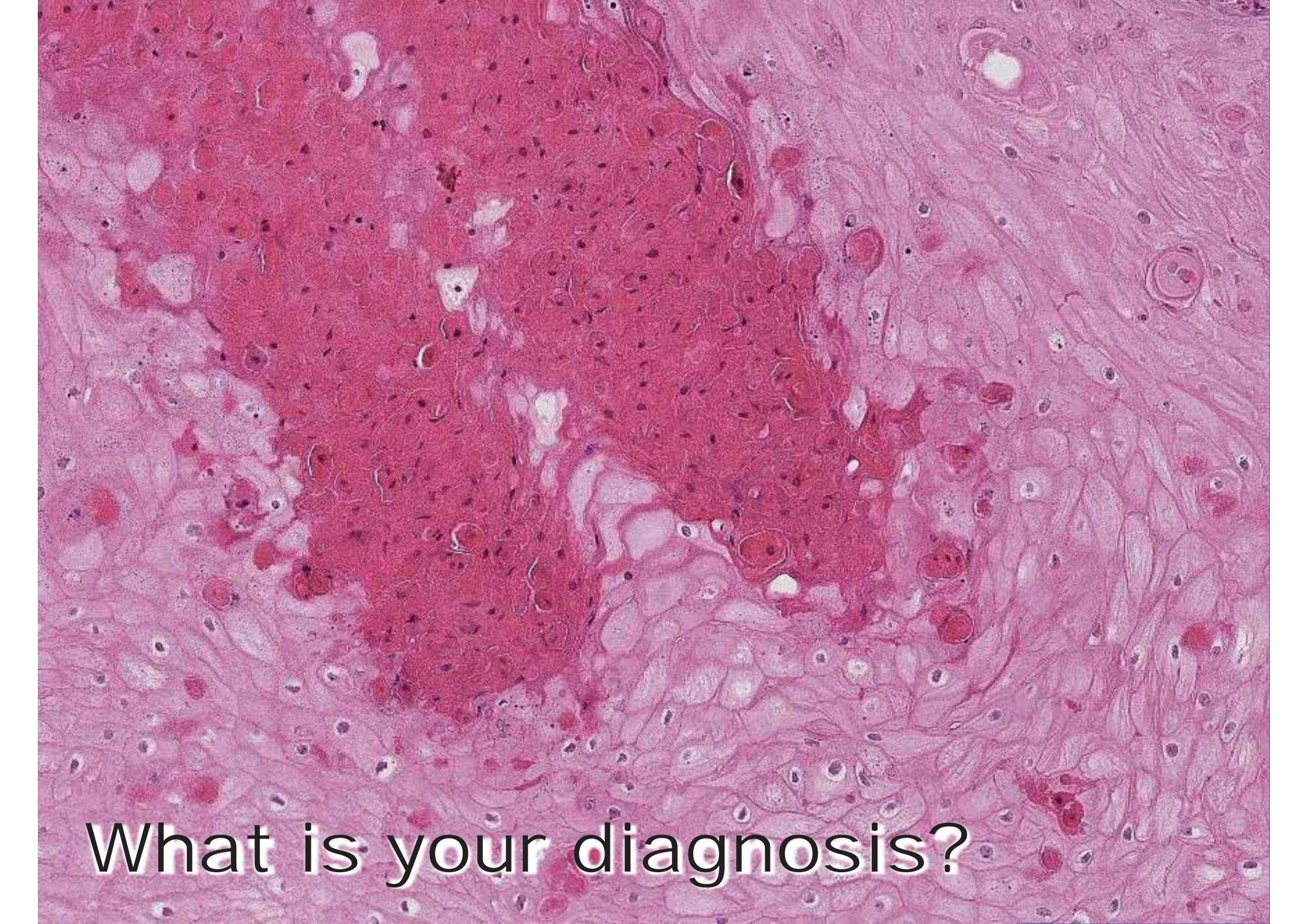
- Well circumscribed osteolytic area
- No sclerosis
- No periosteal reaction



*Coll B. Richert
Belgium*







What is your diagnosis?

Subungual (distal digital) Keratoacanthoma

- Review of 61 cases
Baran R, Mikhail G, Costini B, Tosti A, Goettmann-Bonvallot S. Distal digital keratoacanthoma: two cases with a review of the literature. *Dermatol Surg* 2001;27:575-9.
- Male predominance (75% of the cases)
- 28 – 76 year-old
- Fingers, 3 first digits
- Fiche thématique : André J, Richert B. *Kératoacanthome sous-unguéal*. *Ann Dermatol Veneréol* 2012; 139(1) : 68-72.

Distal digital (or subungual) Keratoacanthoma

- Painful, rapidly growing tumour
- Distal nail bed
 - Onycholysis
 - Keratotic crusted nodule
 - Erythema and oedema

X-Ray Examination

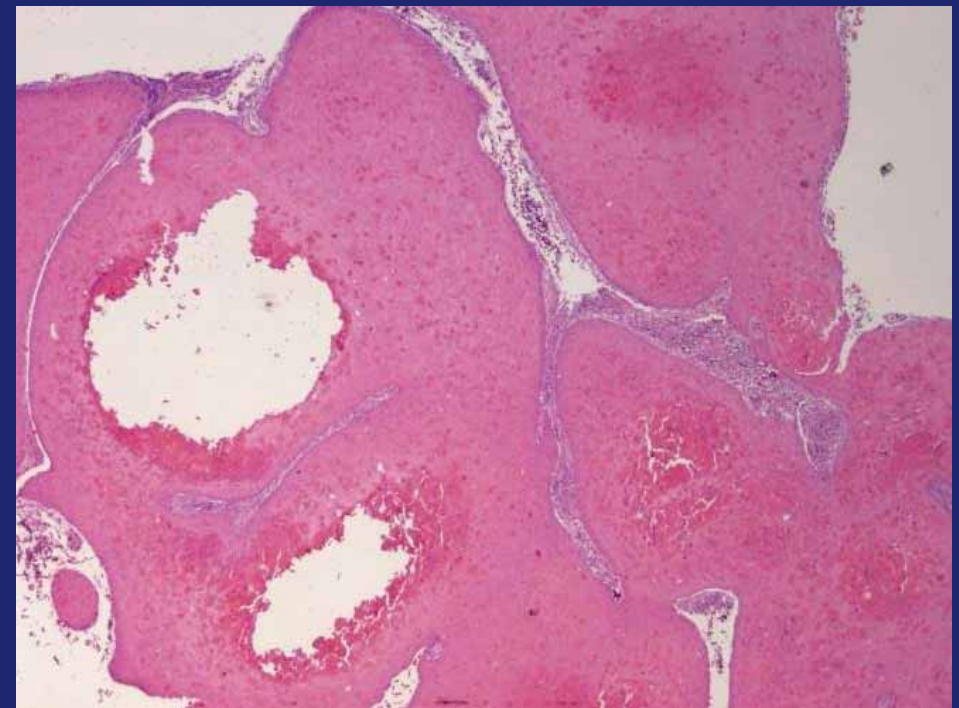
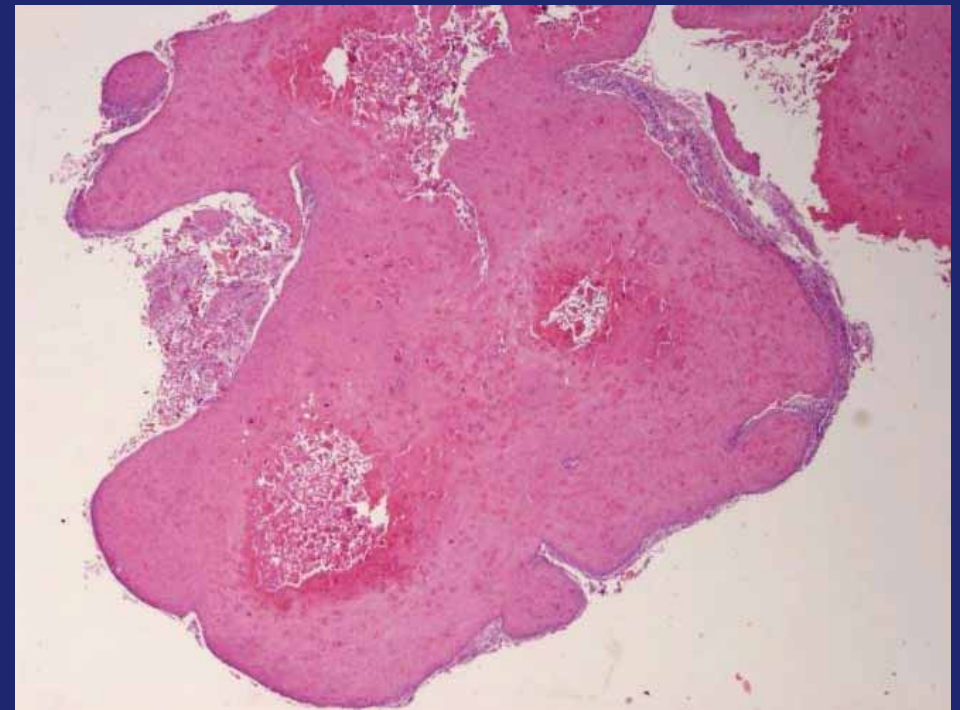


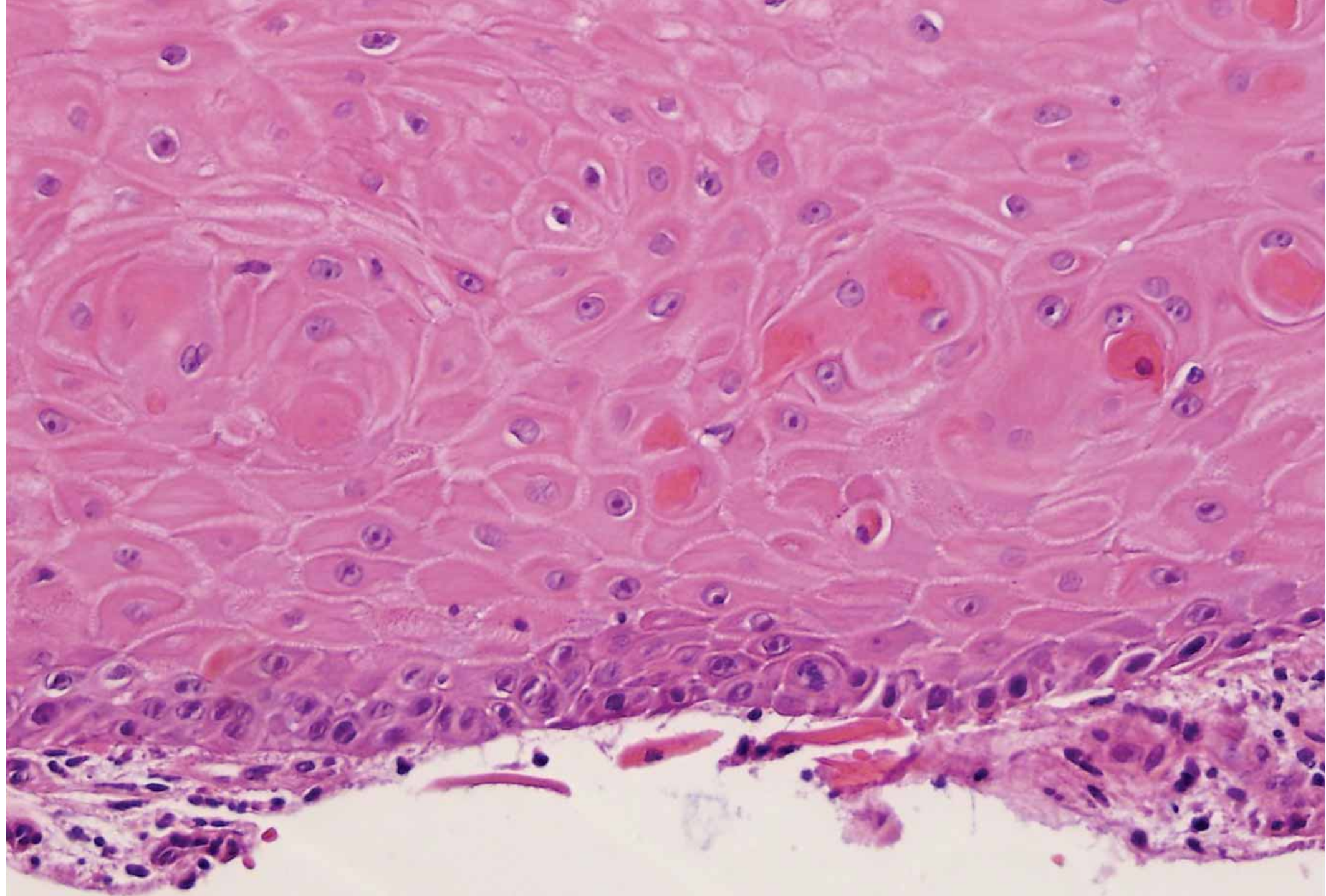
Distal digital Keratoacanthoma - Pathology

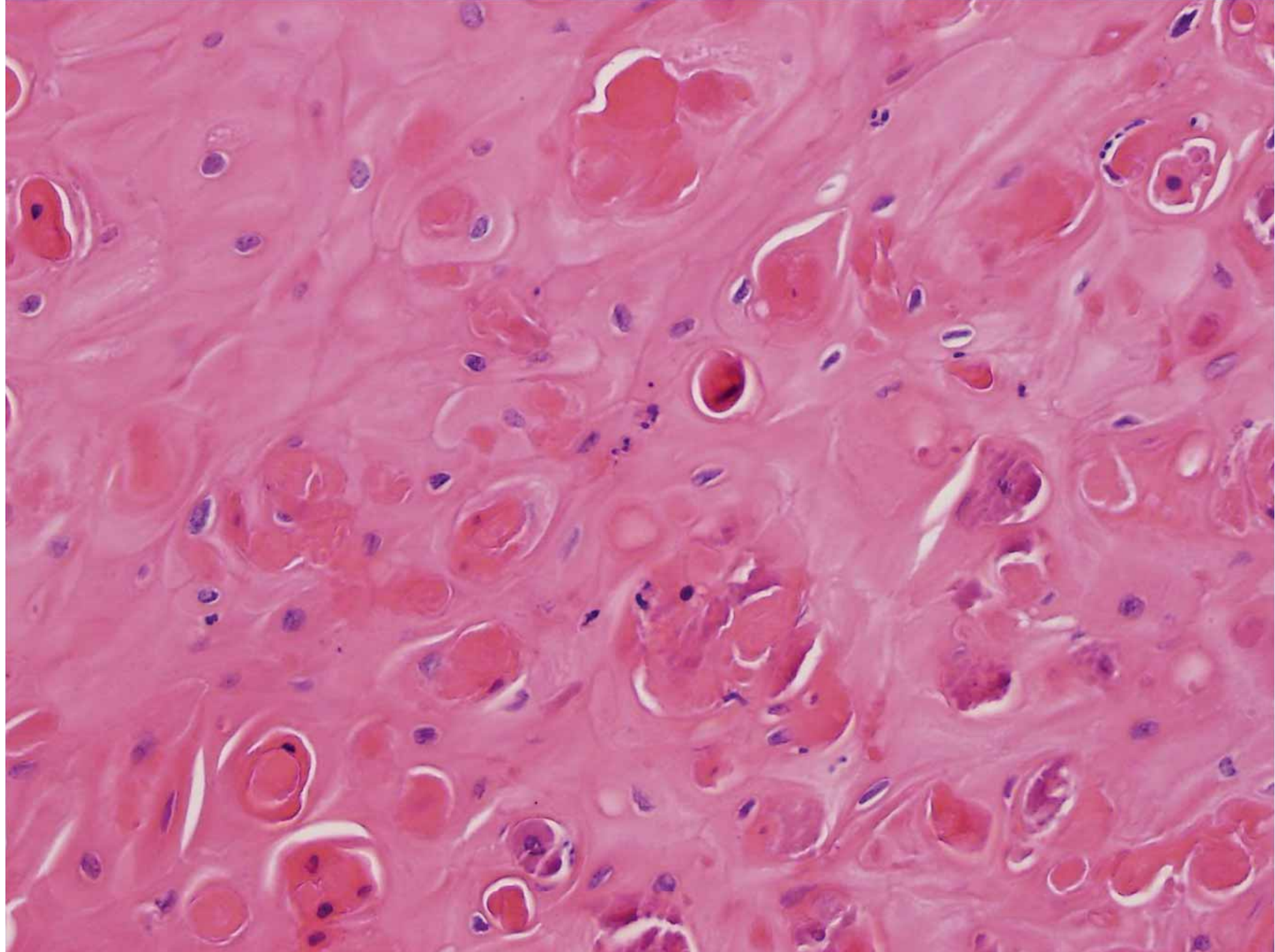
- Well differentiated epithelial lobules
- Central keratin-filled crater
- Dyskeratotic cells are frequent
- Atypia and mitotic figures are rare

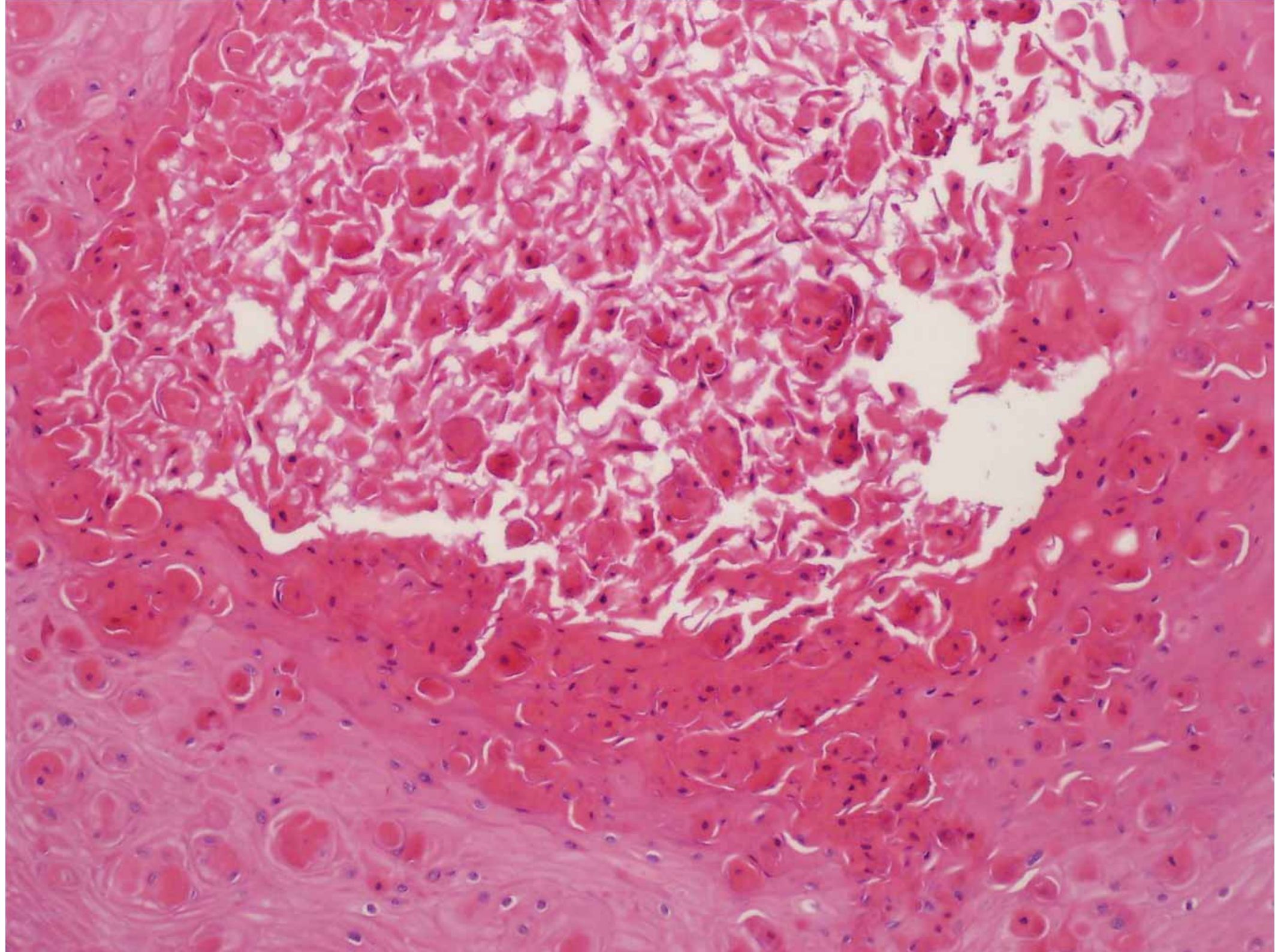


- Curettage
- Subungual tumour with osteolytic area
- Left thumb
- LF, 32-year-old male
- Duration of evolution : 2 years
- *Dr F. Petit - France*



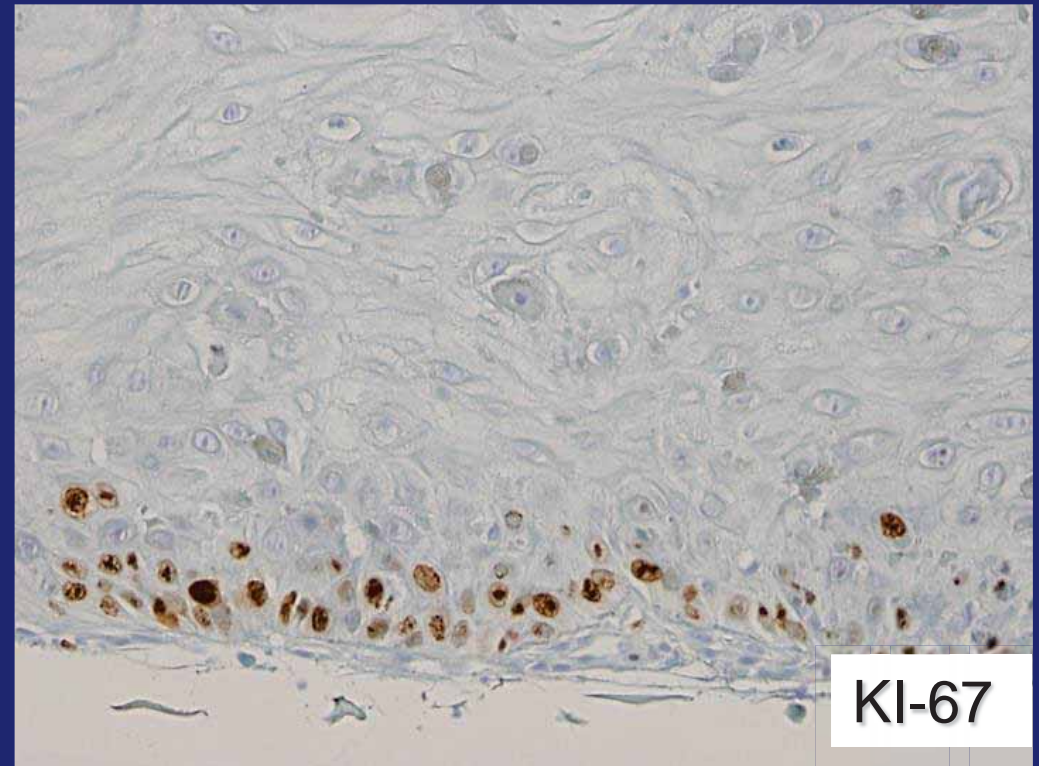






Subungual (distal digital) Keratoacanthoma

- Differential diagnosis
 - Invasive squamous cell carcinoma
 - Verrucous carcinoma
 - Onycholemmal carcinoma
- p53 and KI-67 immunohistochemistry may be useful



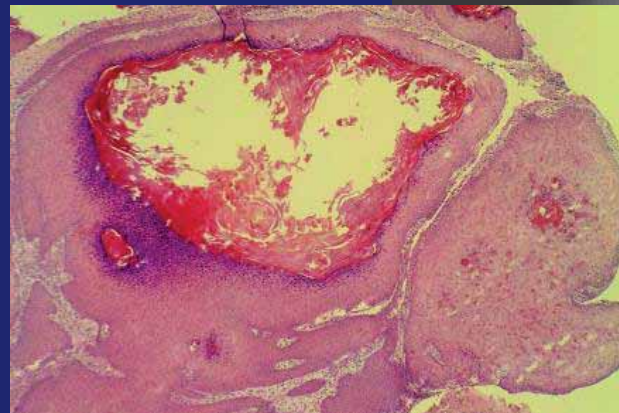
Connolly M, Narayan S et al.
Clin Exp Dermatol. 2008; 33:
625-628.

Subungual (distal digital) Keratoacanthoma

- Evolution: Rare spontaneous regression
- Management: surgical excision & curettage of the bone cavity – Follow up
- *Baran R et al. Dermatol Surg 2001; 27: 575-579.*
- *Fernandez-Florez A. Et Al; Ungual Keratoacanthome with features of Regression. Am j Dermatopathol. 2023*

Subungual (distal digital) Keratoacanthoma

- Diagnosis: correlation of clinical, radiological and pathological findings
- ≠ invasive squamous cell carcinoma
- Avoid unnecessary amputation



Multiple subungual "Keratoacanthoma"

- Women
- Late manifestation of incontinentia pigmenti
- Subungual tumours of incontinentia pigmenti
- Mutations in the NEMO gene / Apoptosis

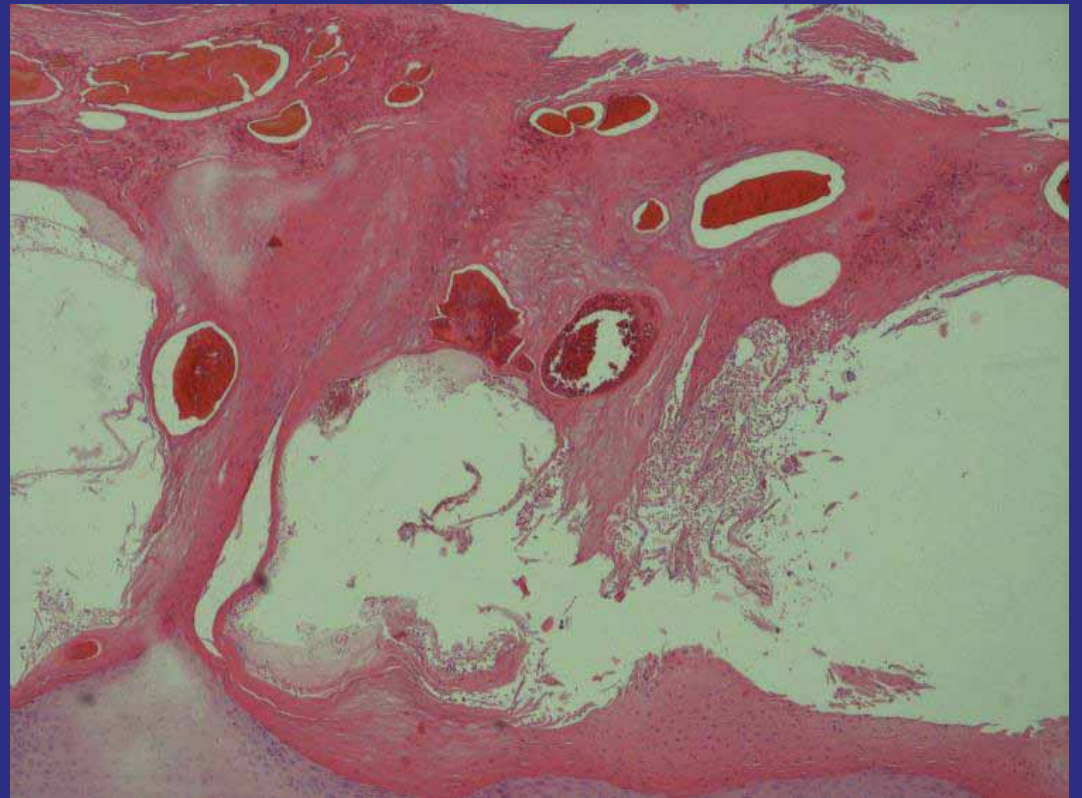
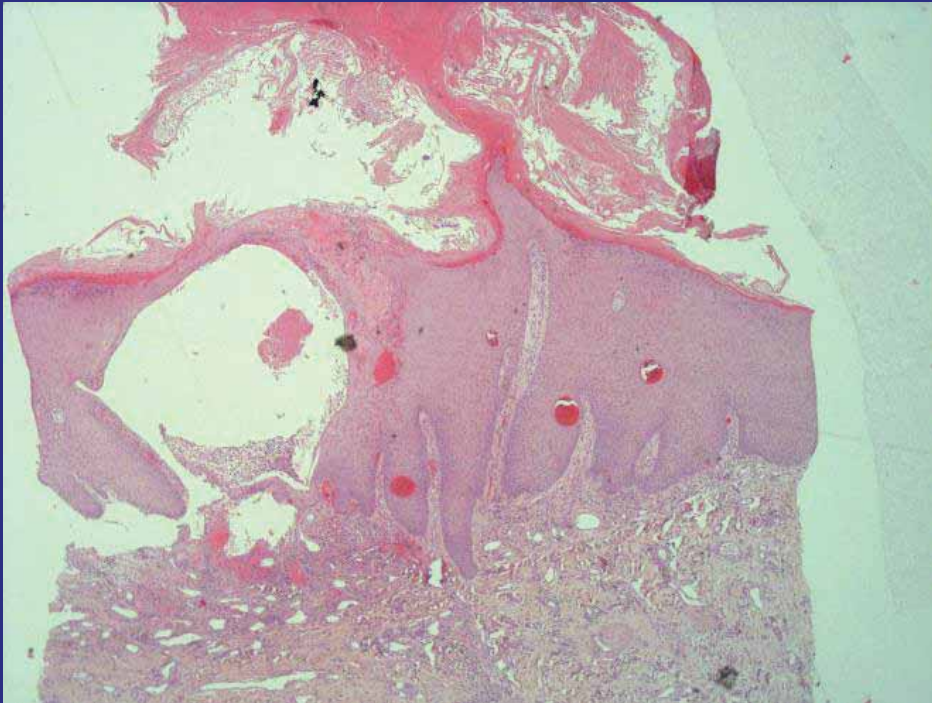
- *Montes CM, Maize JC, Guerry-Force ML: Incontinentia pigmenti with painful subungual tumors. J Am Acad Dermatol 2004; 50: S45-52.*
- *Young A, Manolson P, Cohen B, Klapper M, Barrett T: Painful subungual dyskeratotic tumors in incontinentia pigmenti. J Am Acad Dermatol 2005; 52: 726-729.*

Case XII

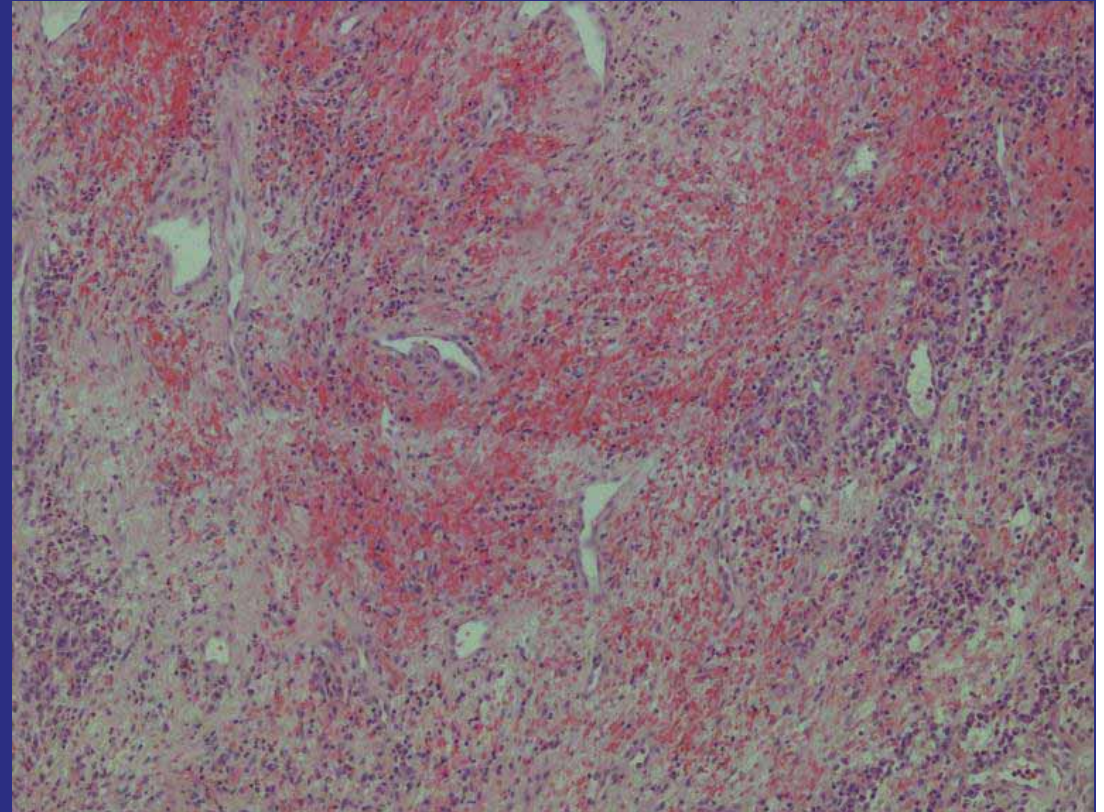
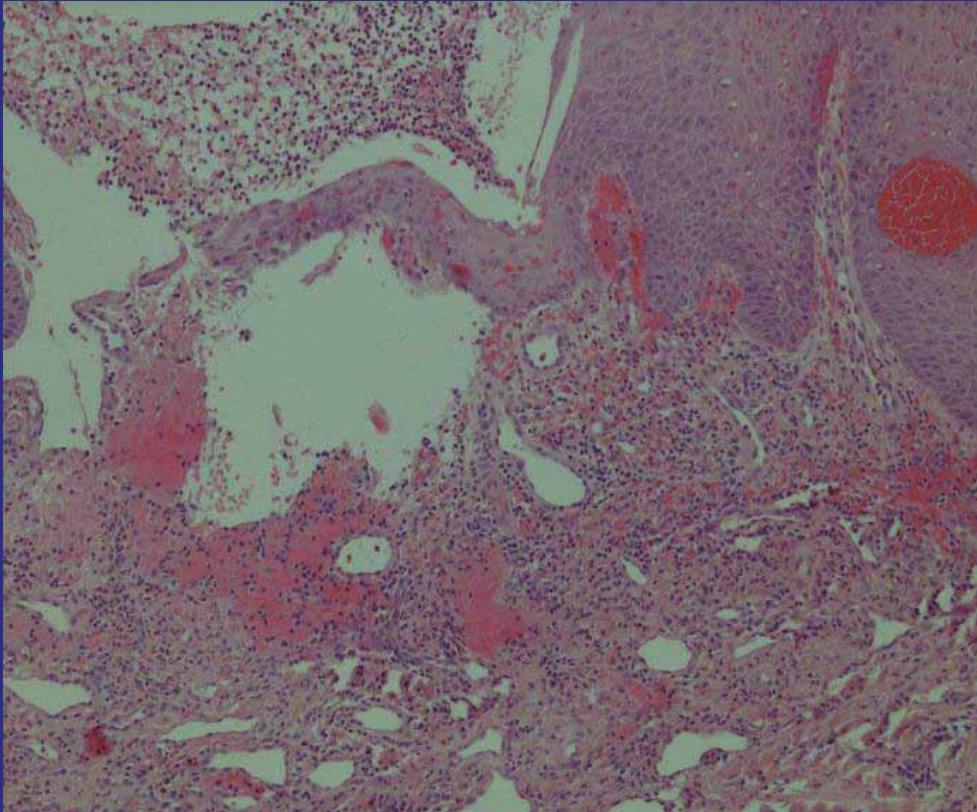
- Old man
- Right big toe
- More than 5 years
- Pigmented and ulcerated subungual tumor
- Pain++
- Clinical diagnosis:
Melanoma



Angiokeratoma

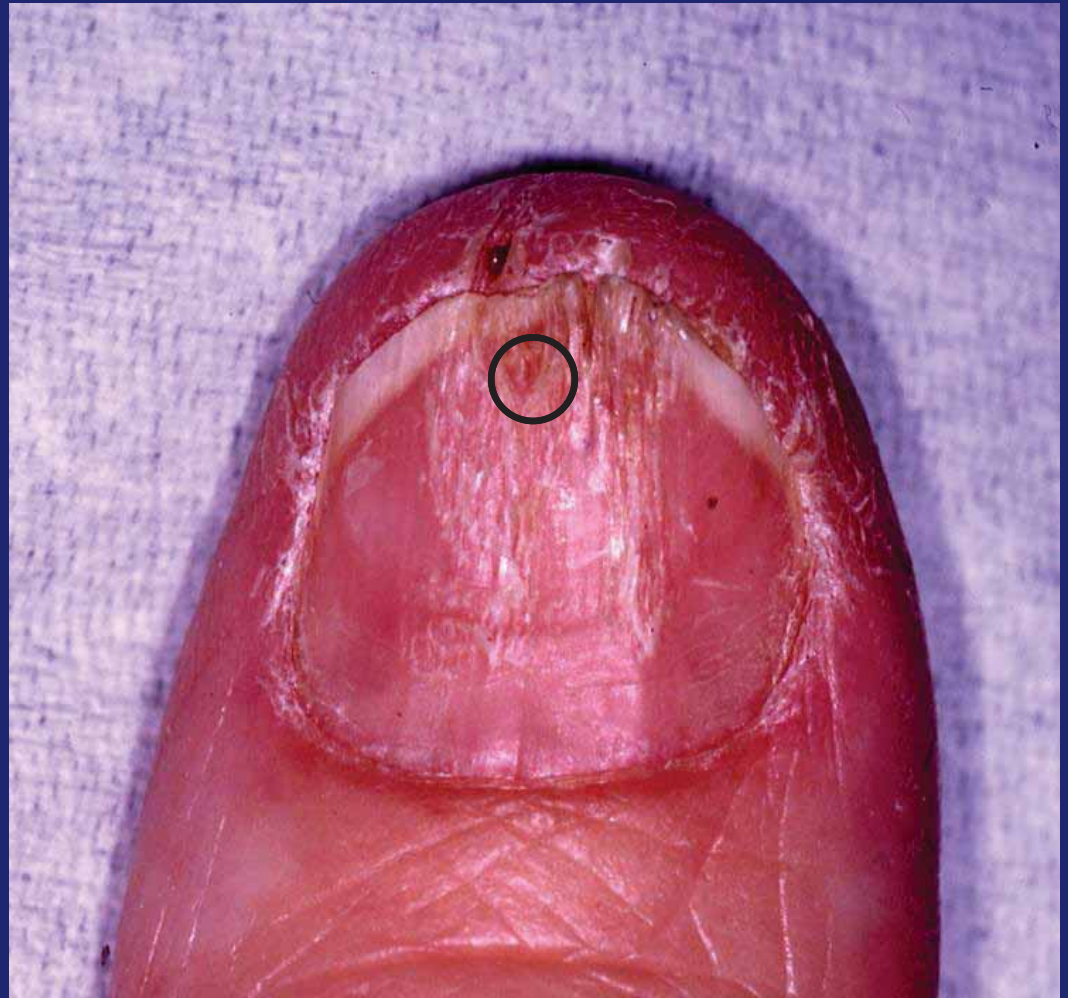


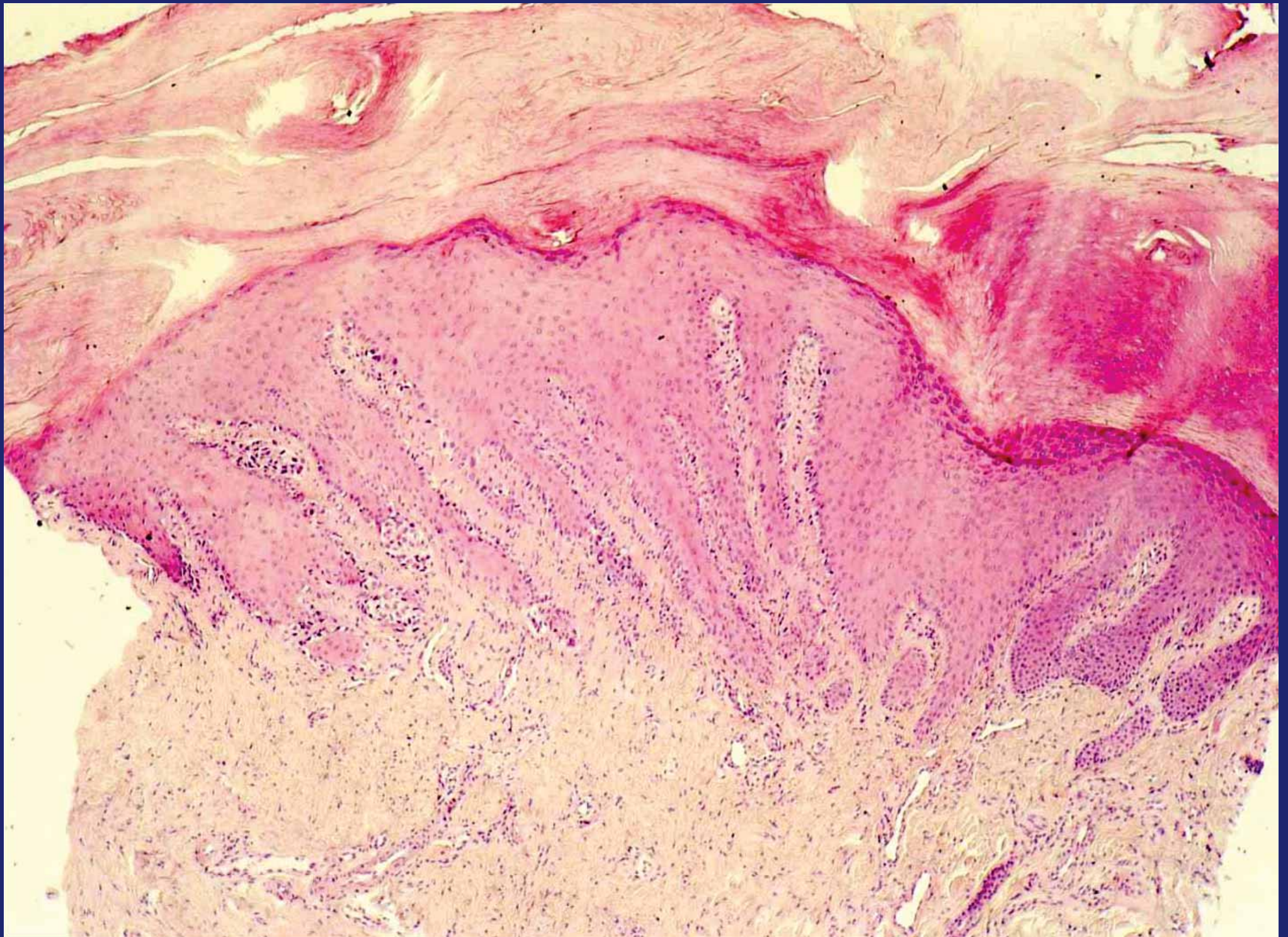
HHV 8(-)

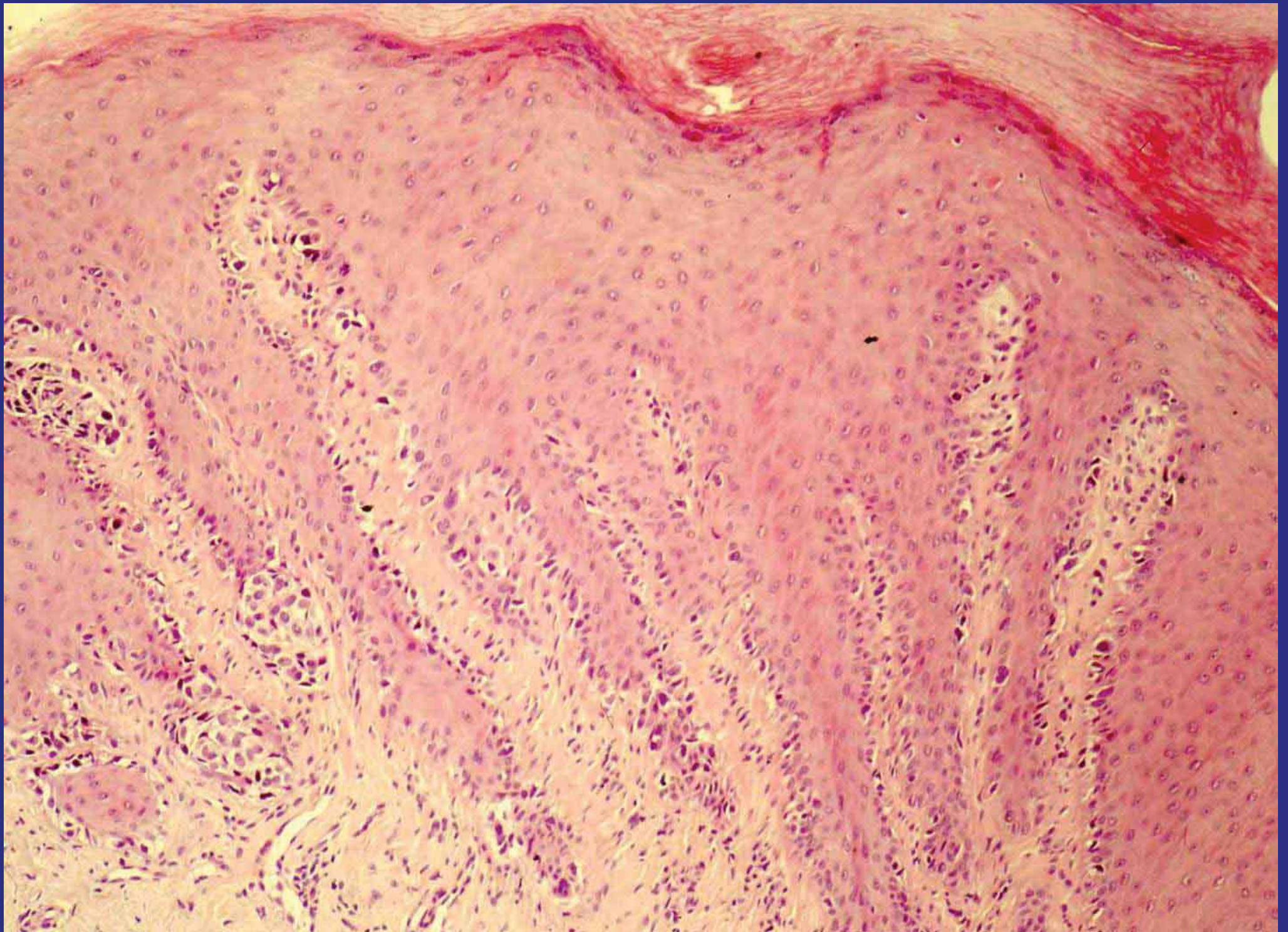


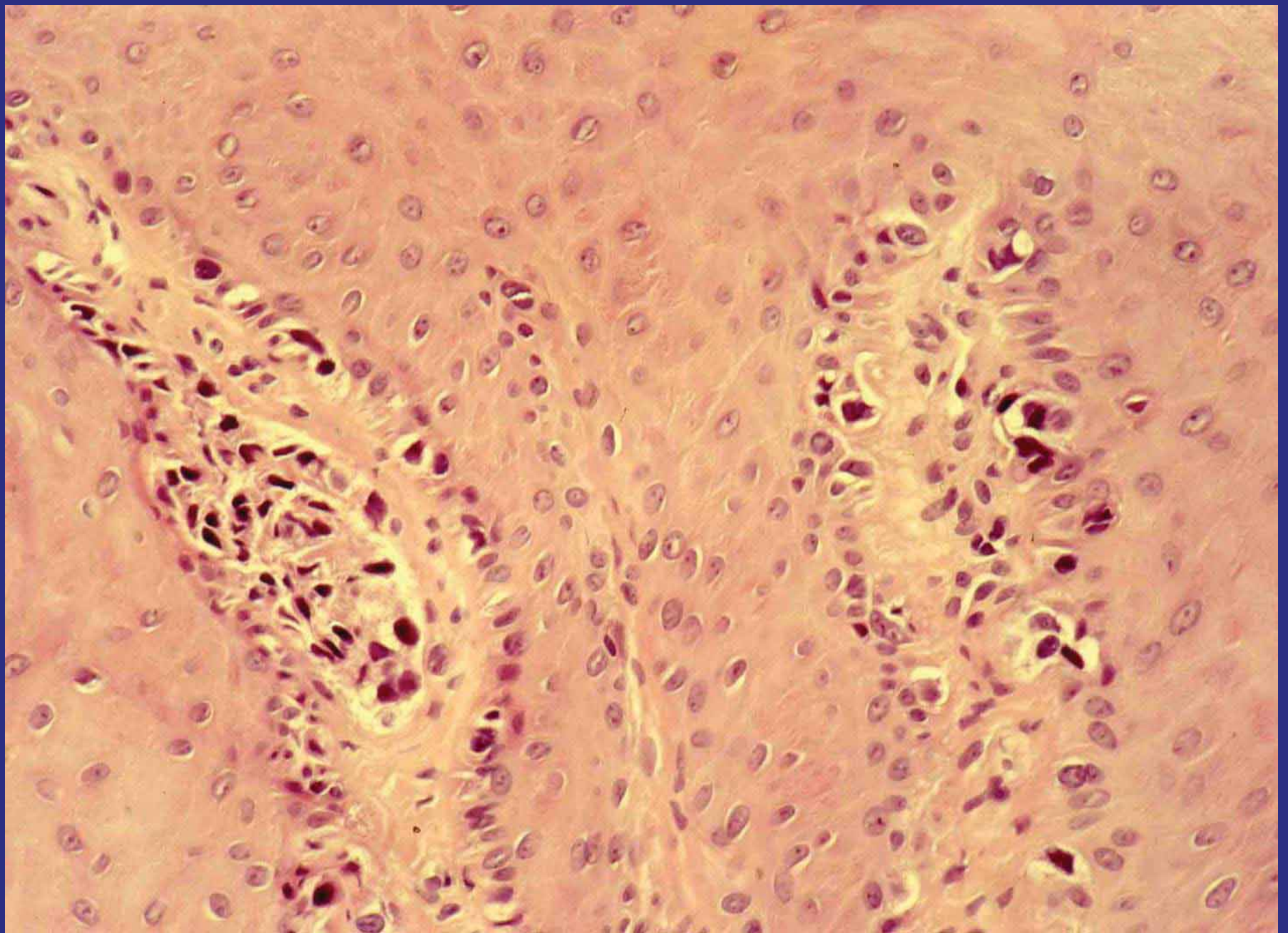
Case 13

- 51-year-old female
- Medical history of scalp psoriasis
- Right thumb
- For 1.5 year
- Punch biopsy at the border
“detached/attached”
nail plate





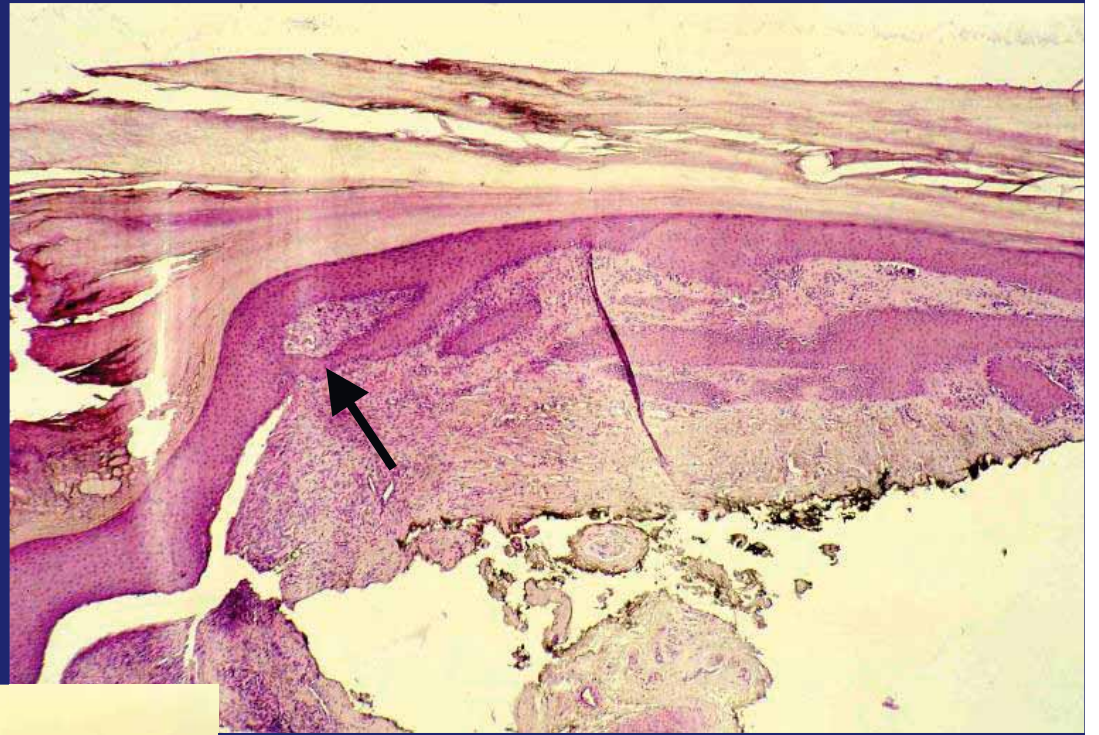
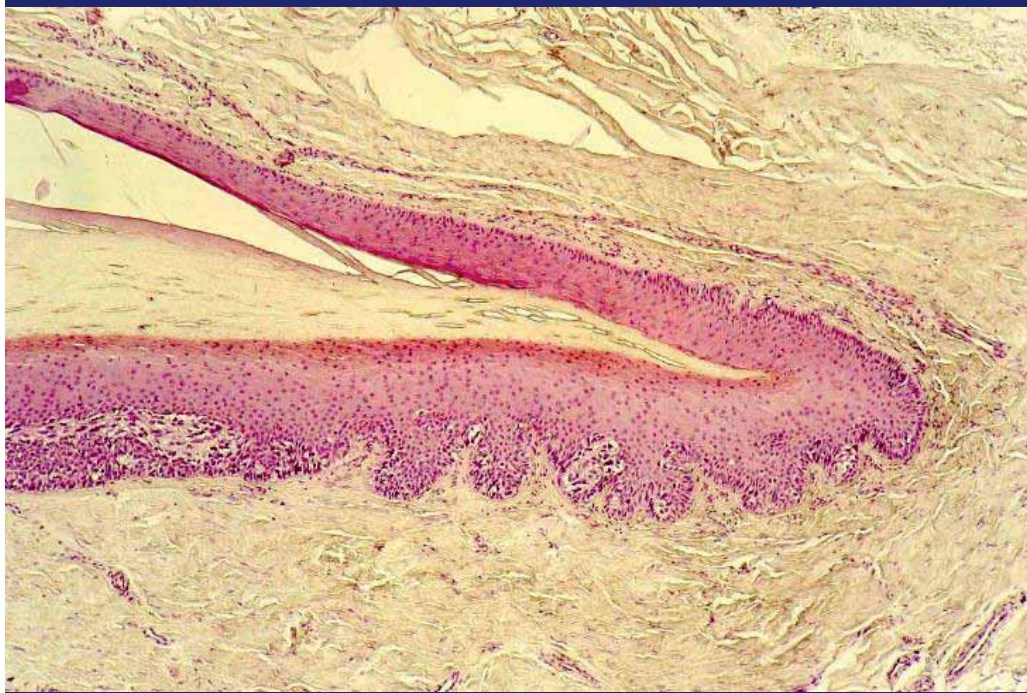




Diagnosis

- Amelanotic melanoma
- Complete excision of the nail apparatus

André J, Moulonguet I, Goettmann-Bonvallot S. In situ amelanotic melanoma of the nail unit mimicking lichen planus. Arch Dermatol 2010; 46: 418-21.





Coll S. Goettmann, Paris

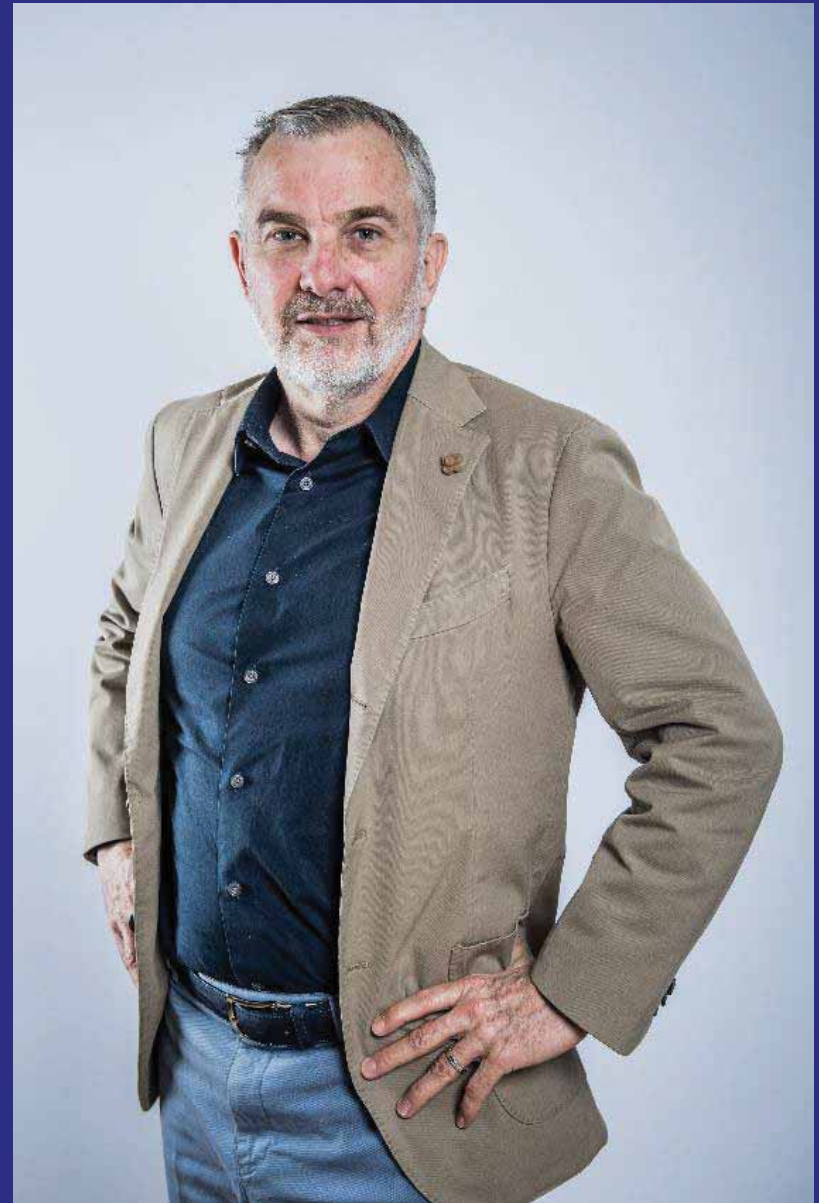
Evolution

- Total excision of the nail apparatus.
- Amelanotic, in situ, acral lentiginous melanoma, extending from the proximal matrix up to the distal nail bed.
- No recurrence after a 2 to 7 year follow-up.

André J, Moulonguet I, Goettmann-Bonvallot S. In situ amelanotic melanoma of the nail unit mimicking lichen planus. *Arch Dermatol* 2010; 46: 418-21.

TO END

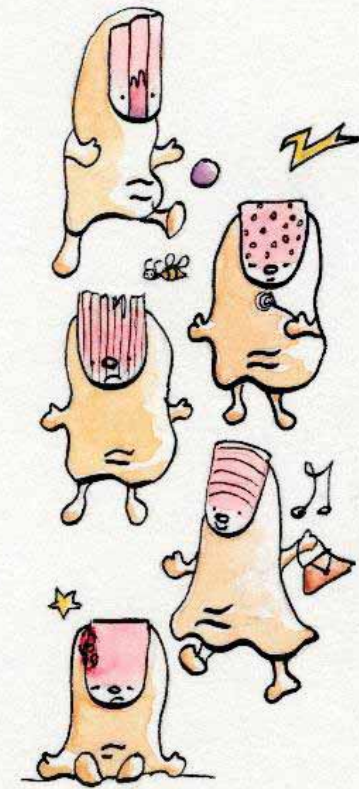
- There is no good nail dermatopathologist without a good nail clinician and surgeon
- Special thanks to Bertrand RICHERT



Bertrand Richert

Vars 2023





S.Goettmann

