

Special Site Dermoscopy: **Onychoscopy (nail unit)**

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Memorial Sloan Kettering
Cancer Center™



Welcome to

dermoscopedia

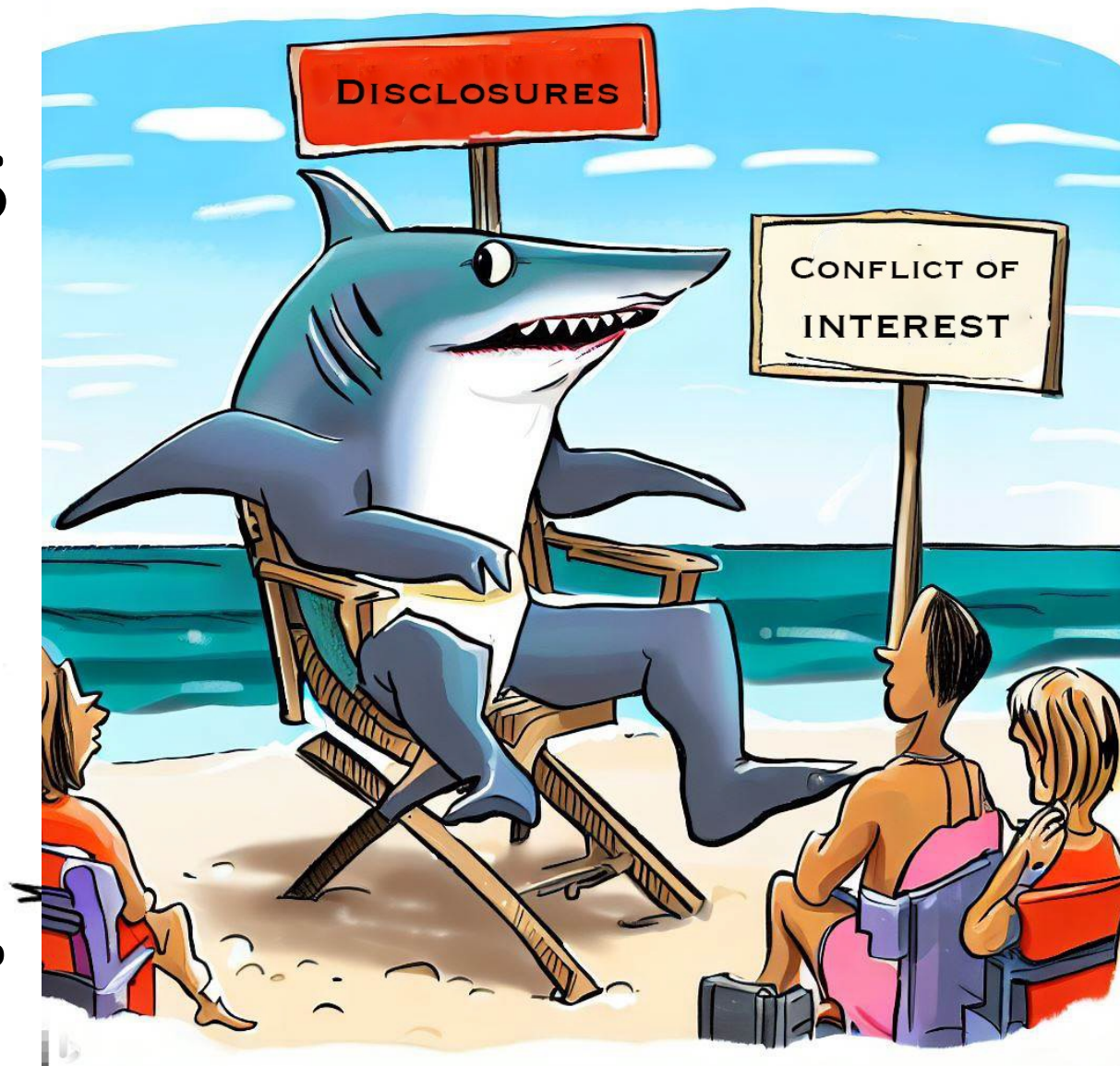


**AMERICAN
DERMOSCOPY
MEETING**

Disclosures

- Canfield
- DermLite
- Heine
- FotoFinder
- Casio

Microsoft Bing AI image generator (no need for copyright)





Basic nail dermoscopy criteria

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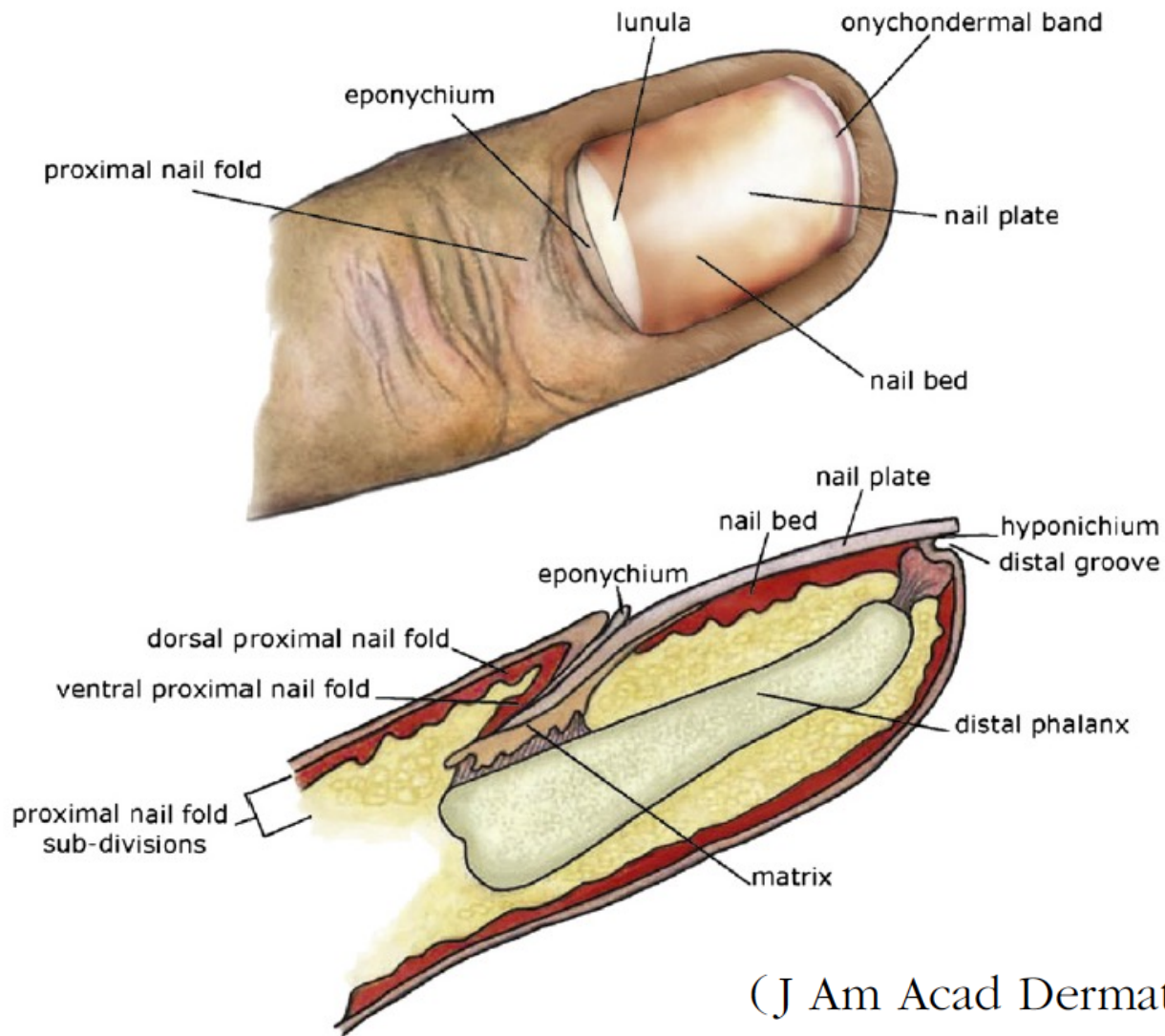
This chapter describes all dermoscopy criteria of nail dermoscopy

—

Diagnosis and management of nail pigmentations

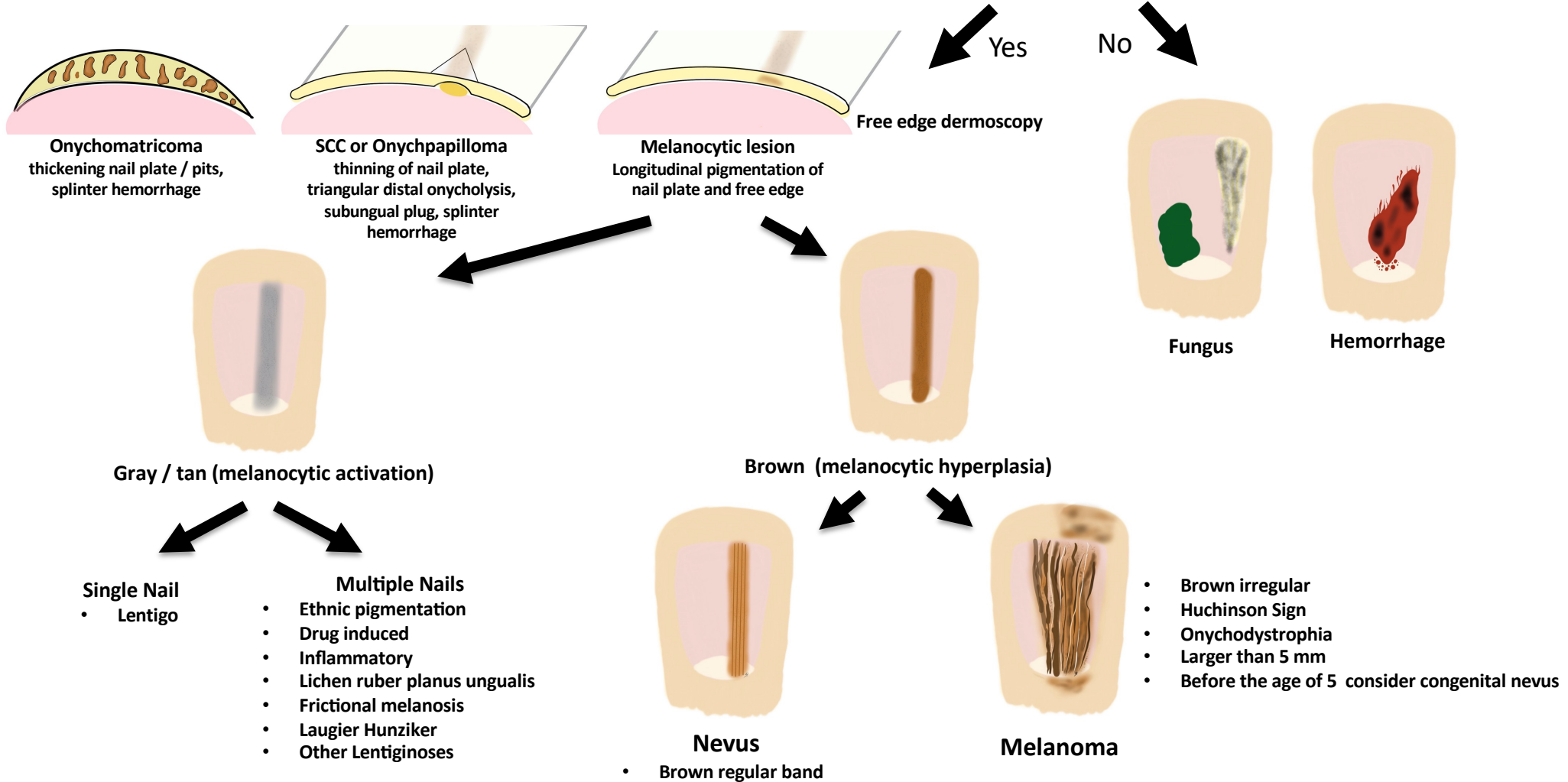
Ralph Peter Braun, MD,^a Robert Baran, MD,^b Frederique Anne Le Gal, MD, PhD,^a Stephane Dalle, MD,^c Sandra Ronger, MD,^c Roberta Pandolfi, MD,^c Olivier Gaide, MD,^a Lars Einar French, MD,^a Paul Laugier, MD,^a Jean Hilaire Saurat, MD,^a Ashfaq Ahmed Marghoob, MD,^d and Luc Thomas, MD, PhD^c
Geneva, Switzerland; Cannes and Lyon, France; and New York, New York

Longitudinal pigmentation of the nail is very common. The differential diagnosis varies from subungual hematoma, to a fungal infection, to a melanocytic lesion (lentigo, nevus melanoma, etc.) to others. Often, dermatologists do not feel at ease with these pathologies and management is often not clear. In many cases, a biopsy is not helpful because an inadequate technique was chosen. The use of noninvasive techniques such as dermoscopy has been described to be useful for the preoperative evaluation and the management decision. Using these technique, one will be able to reduce the number of unnecessary surgeries and to choose the most adequate biopsy technique. In this article, we will review the management, including diagnosis as well as differential diagnosis of nail pigmentations and propose a new algorithm for the non invasive diagnosis of nail pigmentation. (J Am Acad Dermatol 2007;56:835-47.)



(J Am Acad Dermatol 2007;57:1-27.)

Nail pigmentation: Acquired Pigmented band originating from lunula



NB: This algorithm excludes

- Inflammatory conditions
 - LP
 - Psoriasis
- Erythronychia

Longitudinal erythronychia: Suggestions for evaluation and management

Nathaniel J. Jellinek, MD

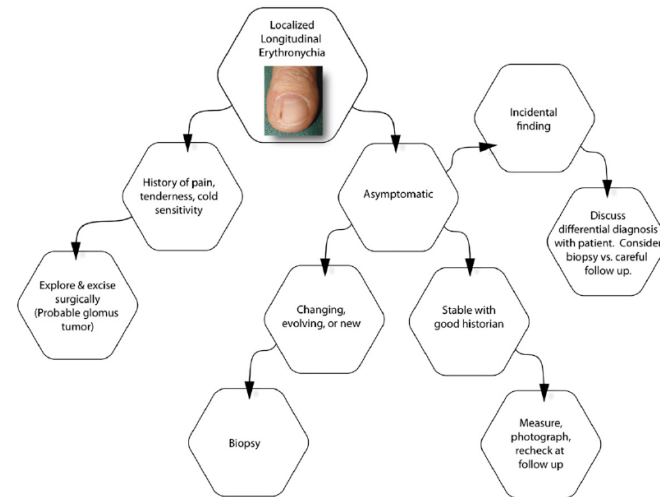


Fig 20. Proposed algorithm for evaluation of LLE.

Table I. Differential diagnosis of LLE

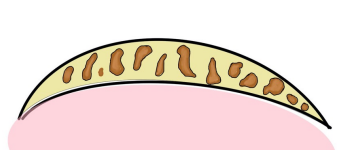
More common

- Onychopapilloma
- Glomus tumor
- Bowen's disease
- Wart

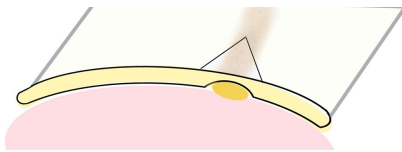
Less common

- Wart
- Warty dyskeratoma
- Benign vascular proliferation (increased glomus bodies, cirroid aneurysm)
- Lichen planus (isolated lesion)
- Nail melanoma
- Basal cell carcinoma

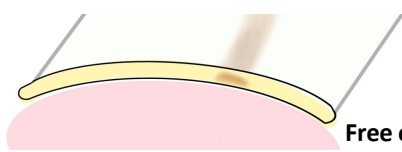
Nail pigmentation: Acquired **Pigmented band originating from lunula**



Onychomatricoma
thickening nail plate / pits,
splinter hemorrhage



SCC or Onychpapilloma
thinning of nail plate,
triangular distal onycholysis,
subungual plug, splinter
hemorrhage



Melanocytic lesion
Longitudinal pigmentation of
nail plate and free edge

Free edge dermoscopy

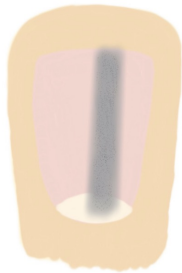
Yes No



Fungus



Hemorrhage



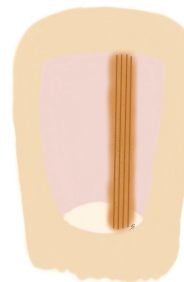
Gray / tan (melanocytic activation)

Single Nail
• Lentigo

- Multiple Nails**
- Ethnic pigmentation
 - Drug induced
 - Inflammatory
 - Lichen ruber planus unguialis
 - Frictional melanosis
 - Laugier Hunziker
 - Other Lentiginoses



Brown (melanocytic hyperplasia)



Nevus

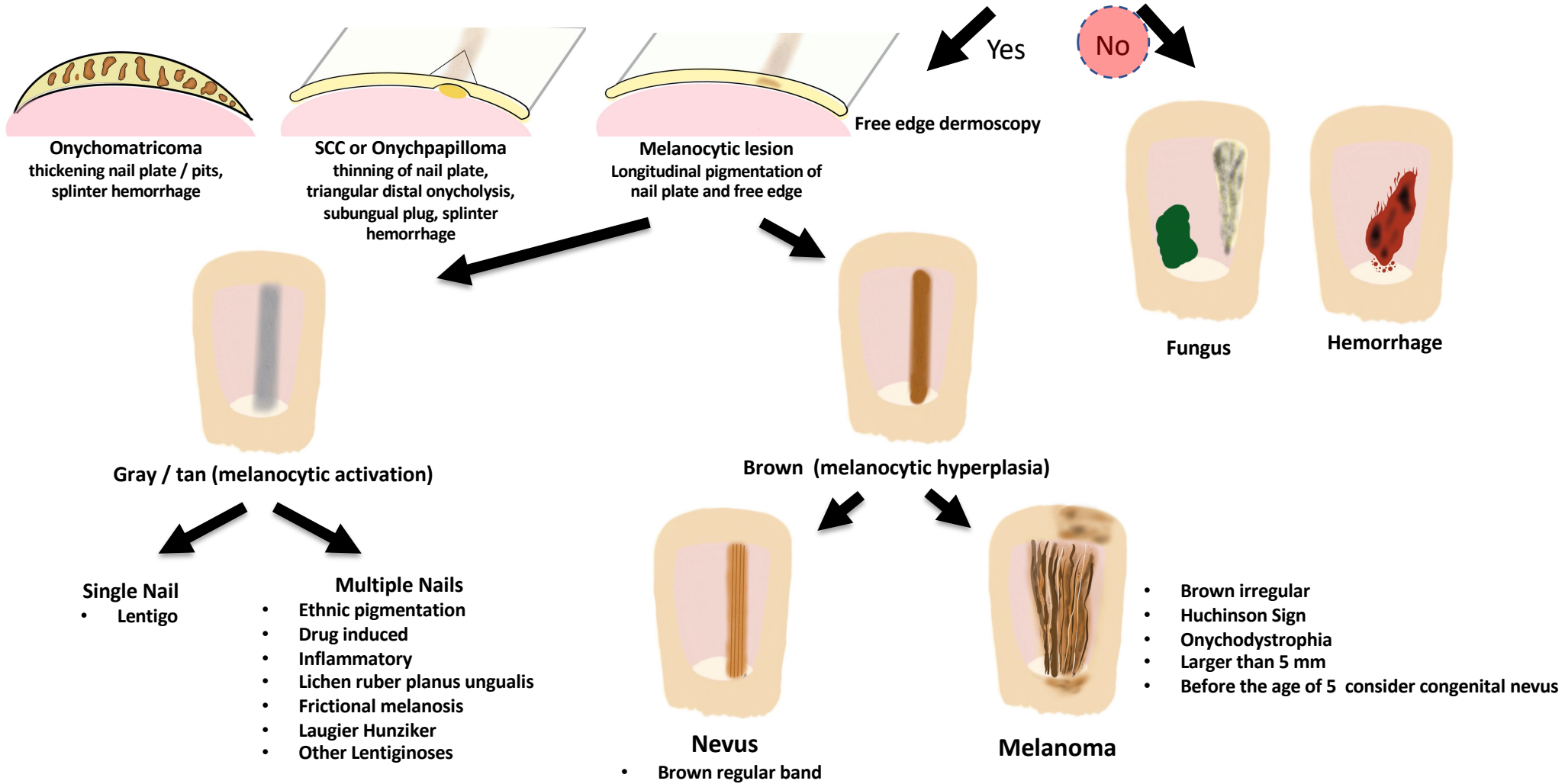
- Brown regular band



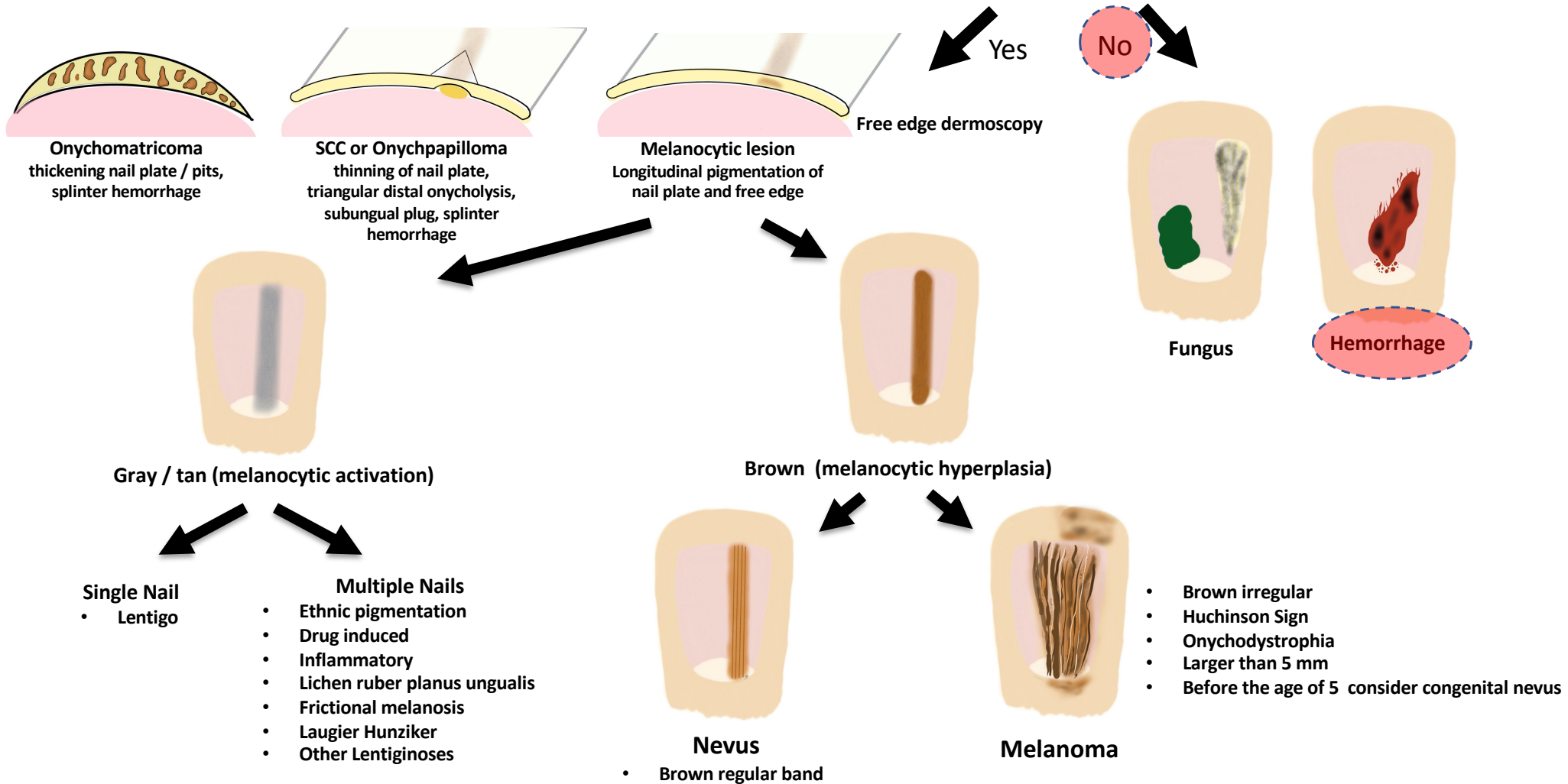
Melanoma

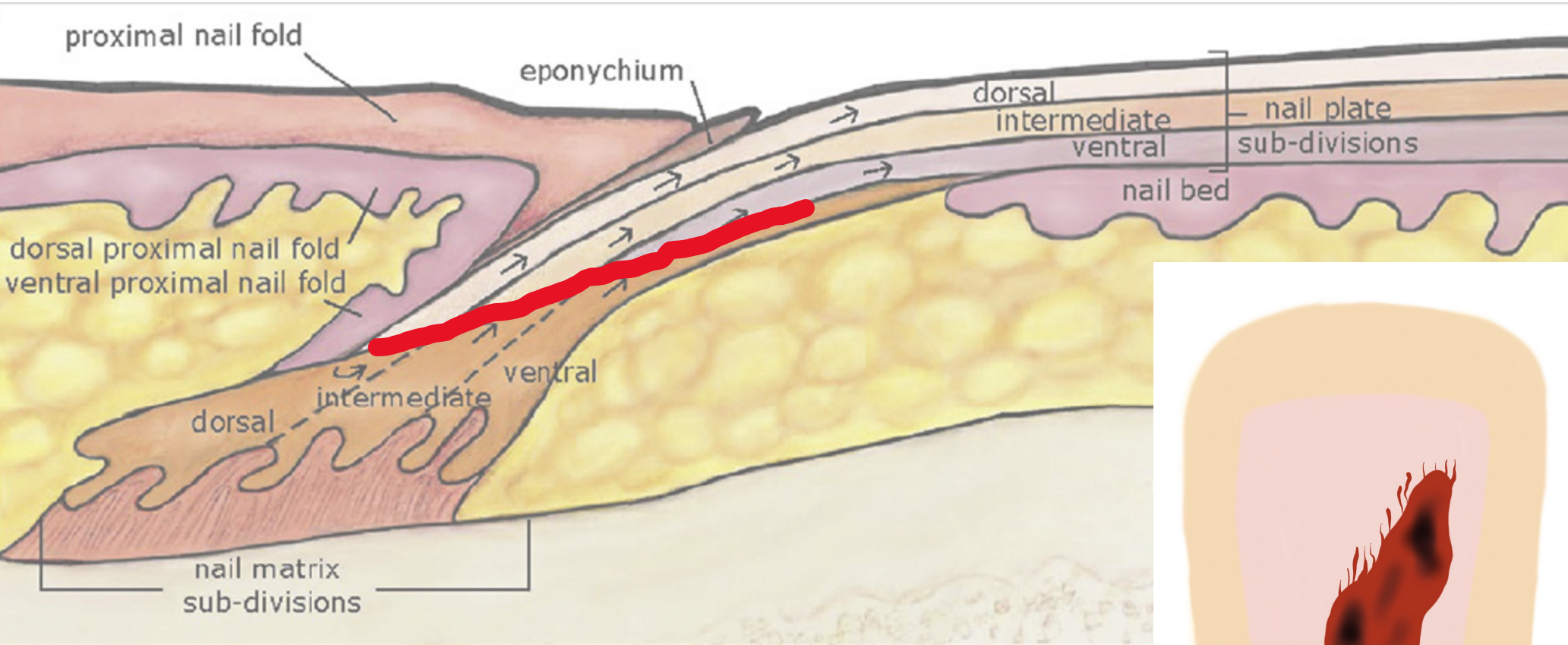
- Brown irregular
- Hutchinson Sign
- Onychodystrophia
- Larger than 5 mm
- Before the age of 5 consider congenital nevus

Nail pigmentation: Acquired Pigmented band originating from lunula

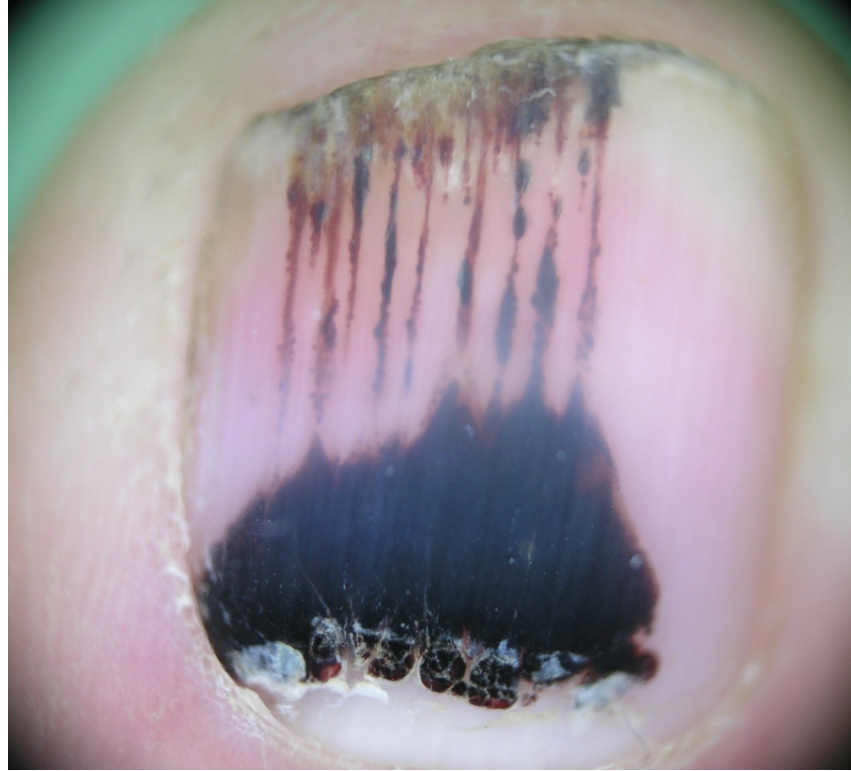


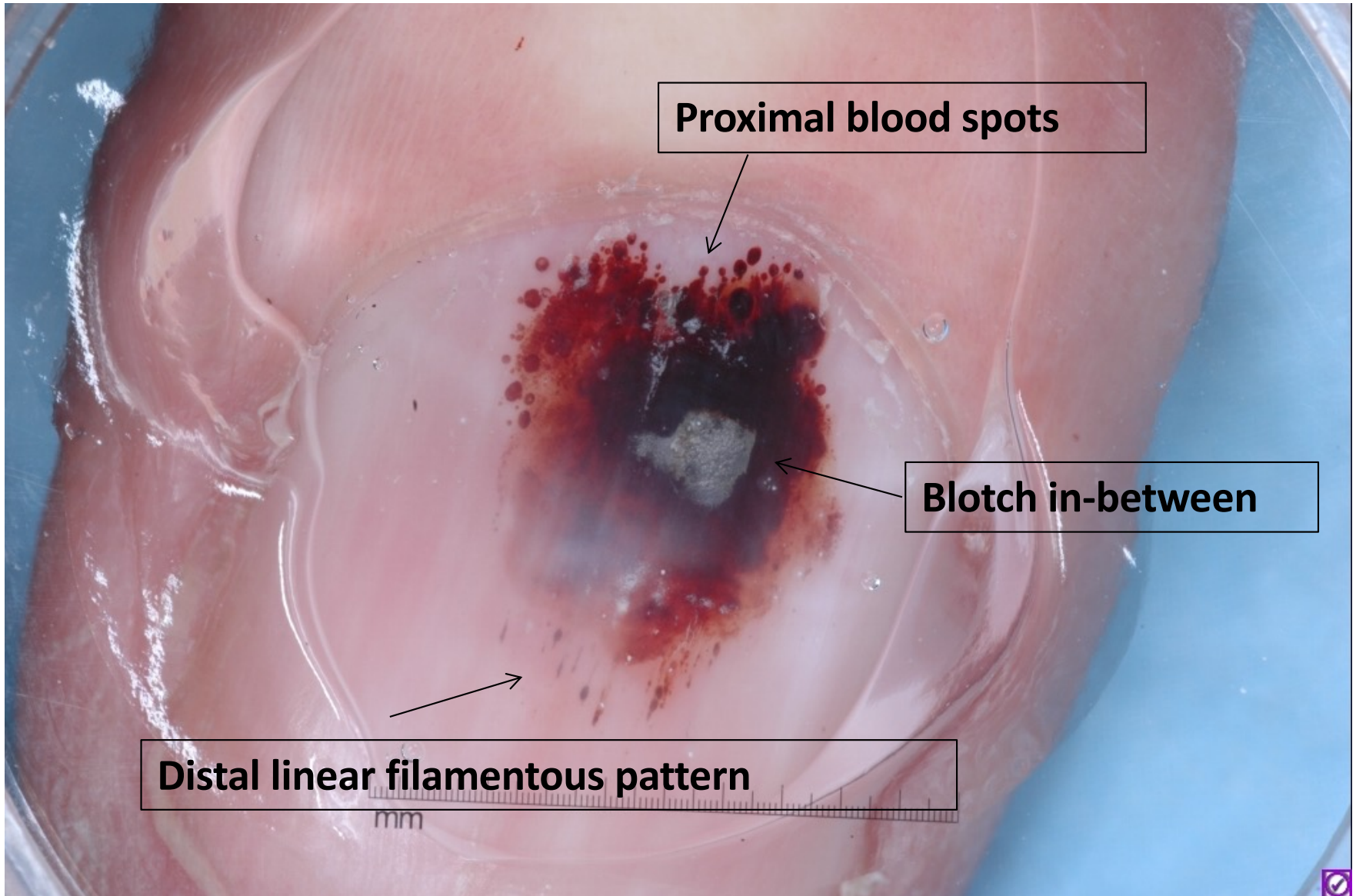
Nail pigmentation: Acquired Pigmented band originating from lunula





Hemorrhage





Proximal blood spots

Blotch in-between

Distal linear filamentous pattern

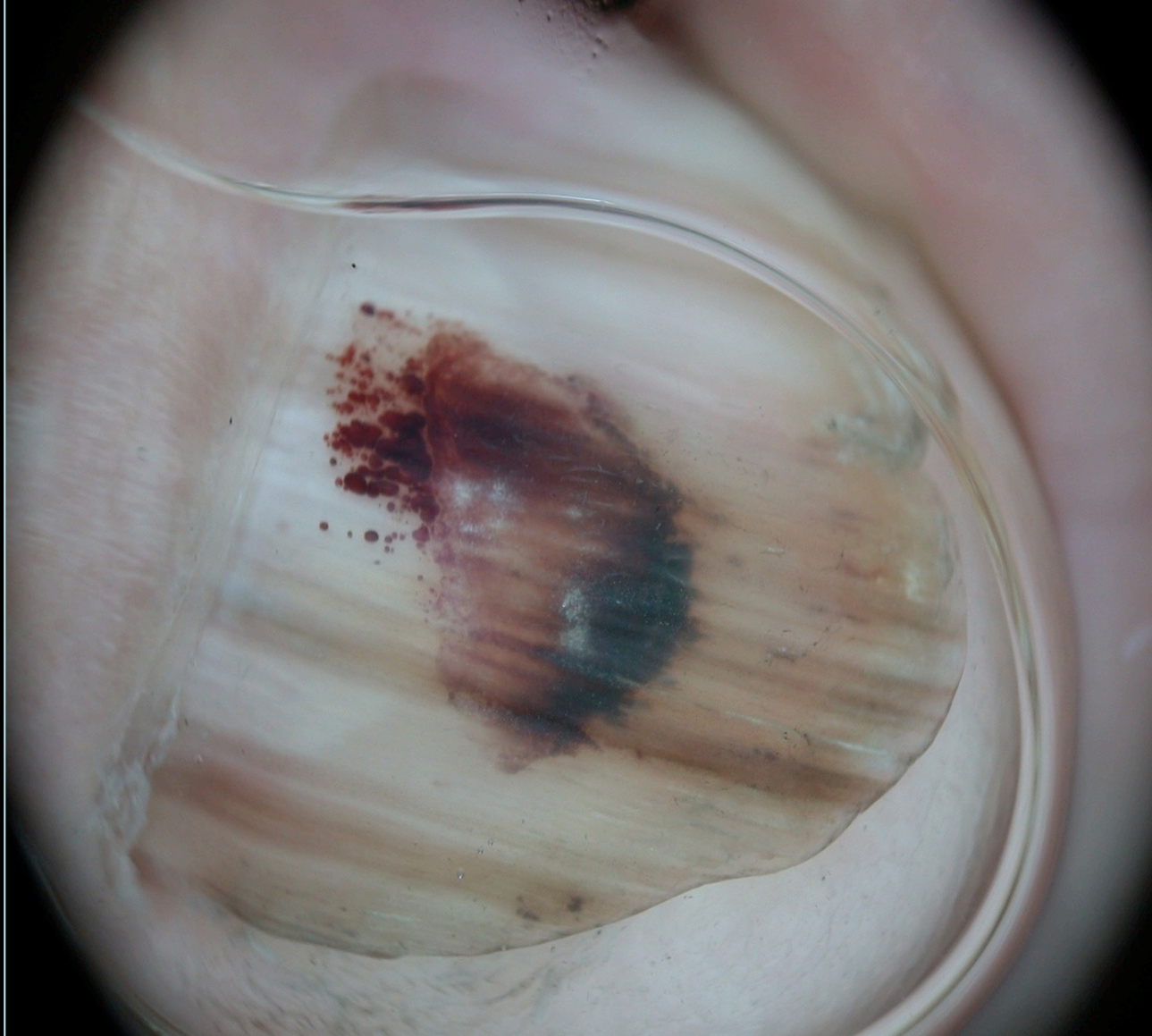
mm

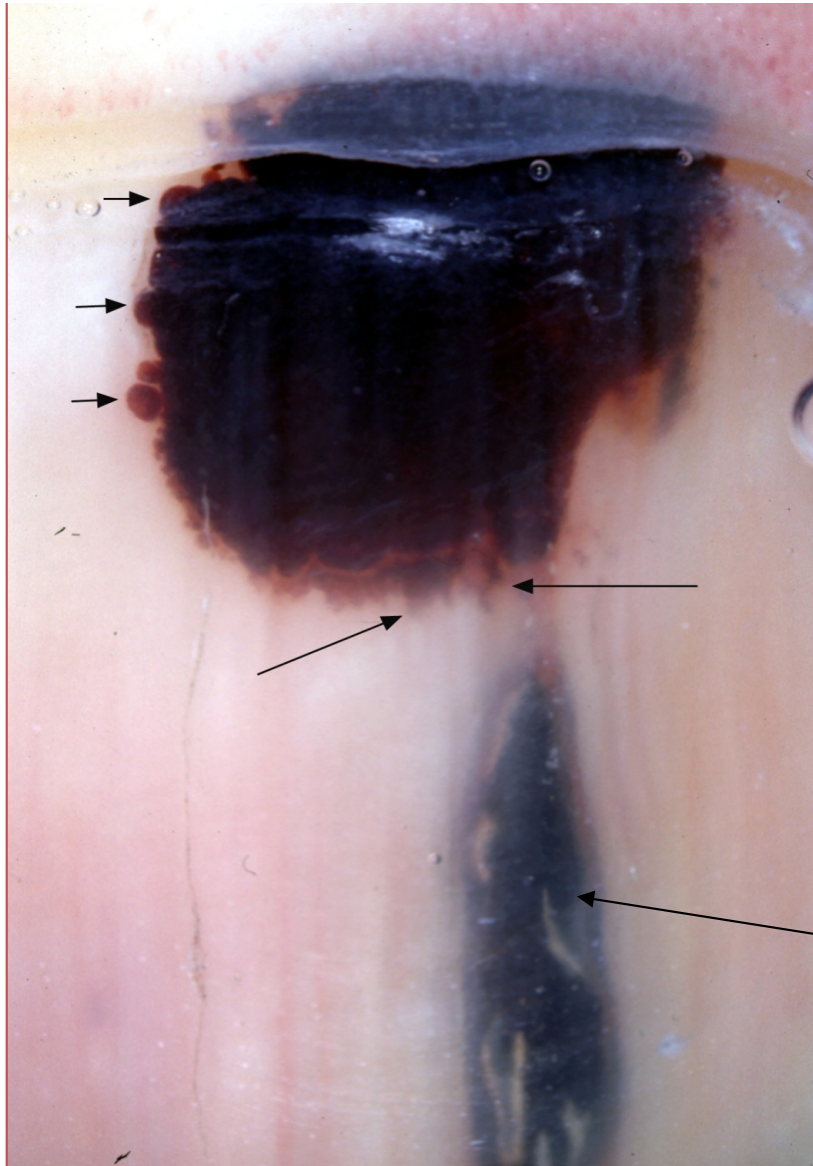


Caveat 1/2:



- insure there is nothing underlying the blood or originating from the area of the matrix – just below cuticle (may require follow-up)





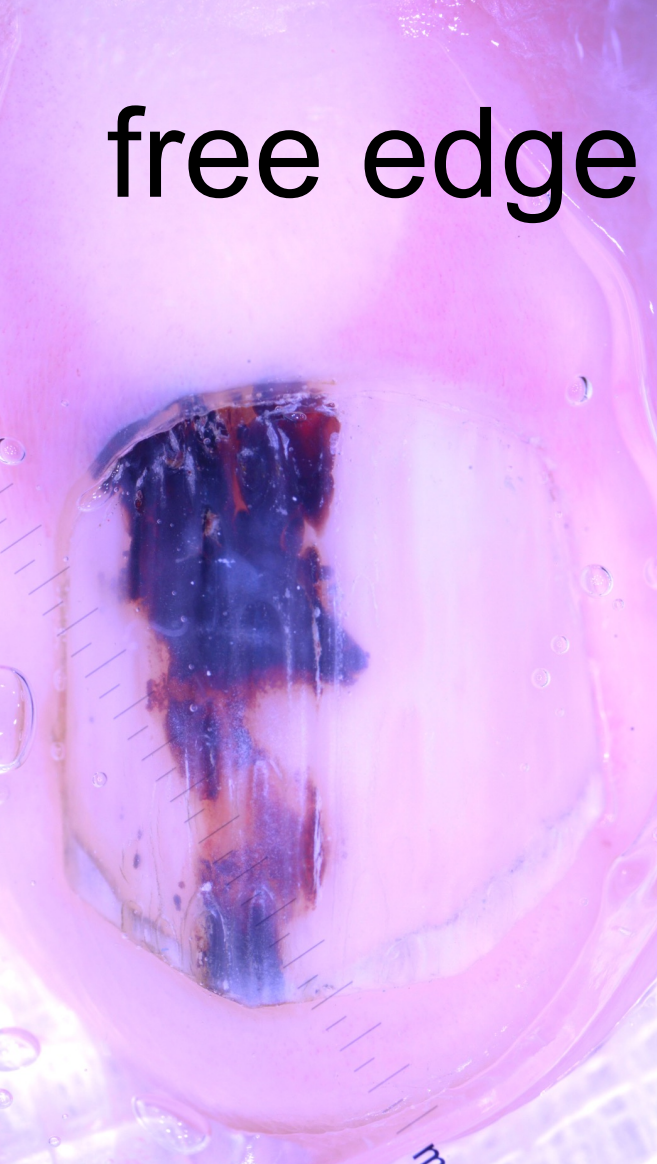
Sub-ungual hemorrhage

Globular blood spots towards proximal end of nail plate (short arrows) together with blotch.

'filamentous linear pattern' at distal end (long arrows)

NB: Need to follow this to ensure there is no underlying malignancy causing bleeding

free edge dermoscopy can help



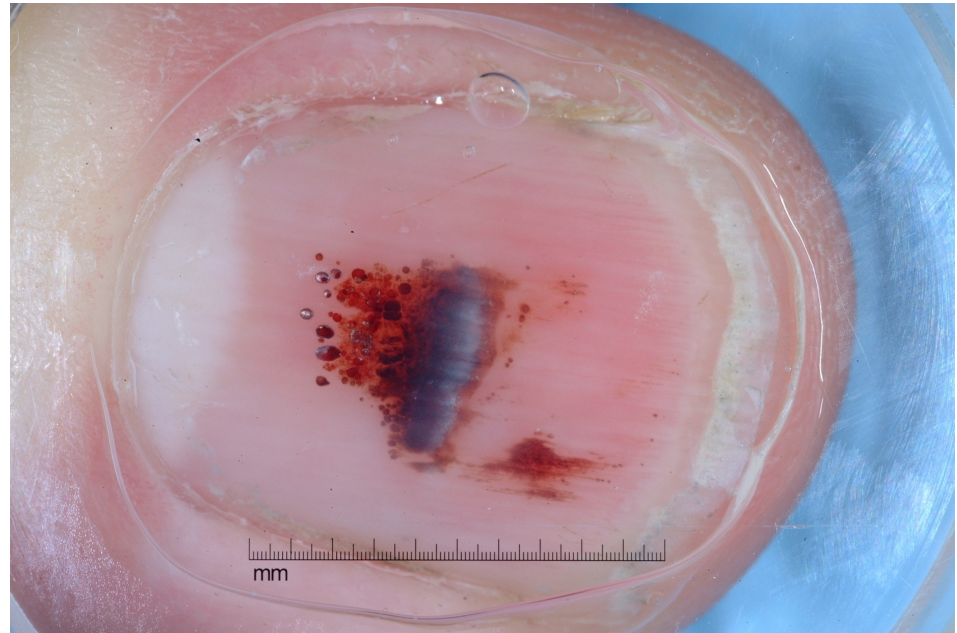
monitor



RESEARCH LETTER

Histologic Evidence of Melanocytes Isolated to the Nail Matrix

Rashek Kazi, PhD
Sara Moghaddam, MD
Paul Chu, MD
Ashfaq A. Marghoob, MD

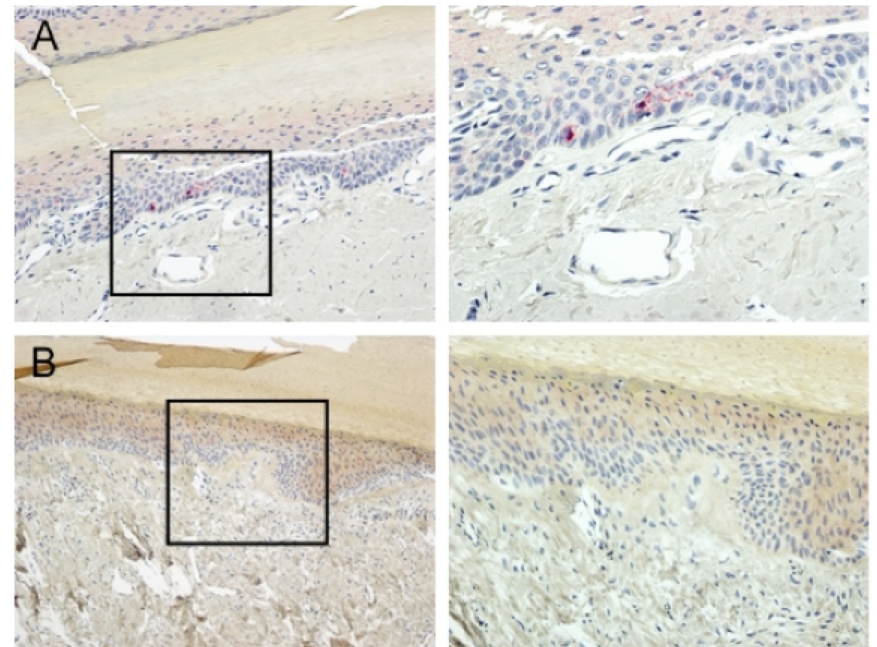


Caveat 2/2:

- Blood isolated to nailbed speaks against melanoma since there are no melanocytes in the nailbed.

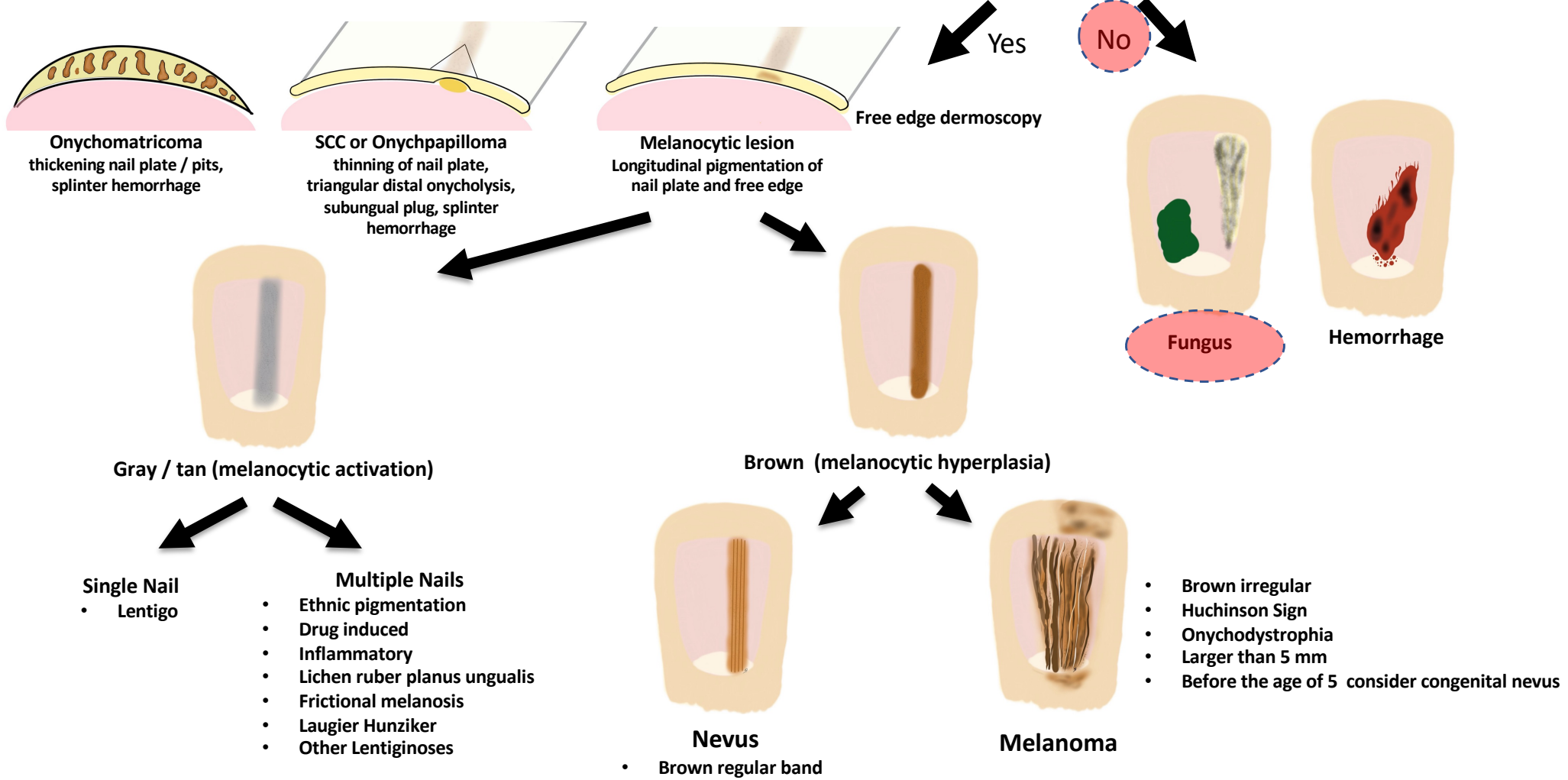
- Histological confirmation of melanocyte populations in the nail matrix but not in the nail bed

Antibodies used were anti-tyrosinase (Cell Marque, 1:400 dilution), anti-MelanA (Dako, 1:800 dilution), anti-MTIF (microphthalmia-associated transcription factor) (Cell Marque, 1:2000 dilution), and anti-Sox-10 (Sry-related HMG-BOX gene-10) (Cell Marque, 1:50 dilution).



Anti-tyrosinase staining of nail matrix (A) and nail bed (B). Magnification for both A and B is (left) and (right).

Nail pigmentation: Acquired Pigmented band originating from lunula



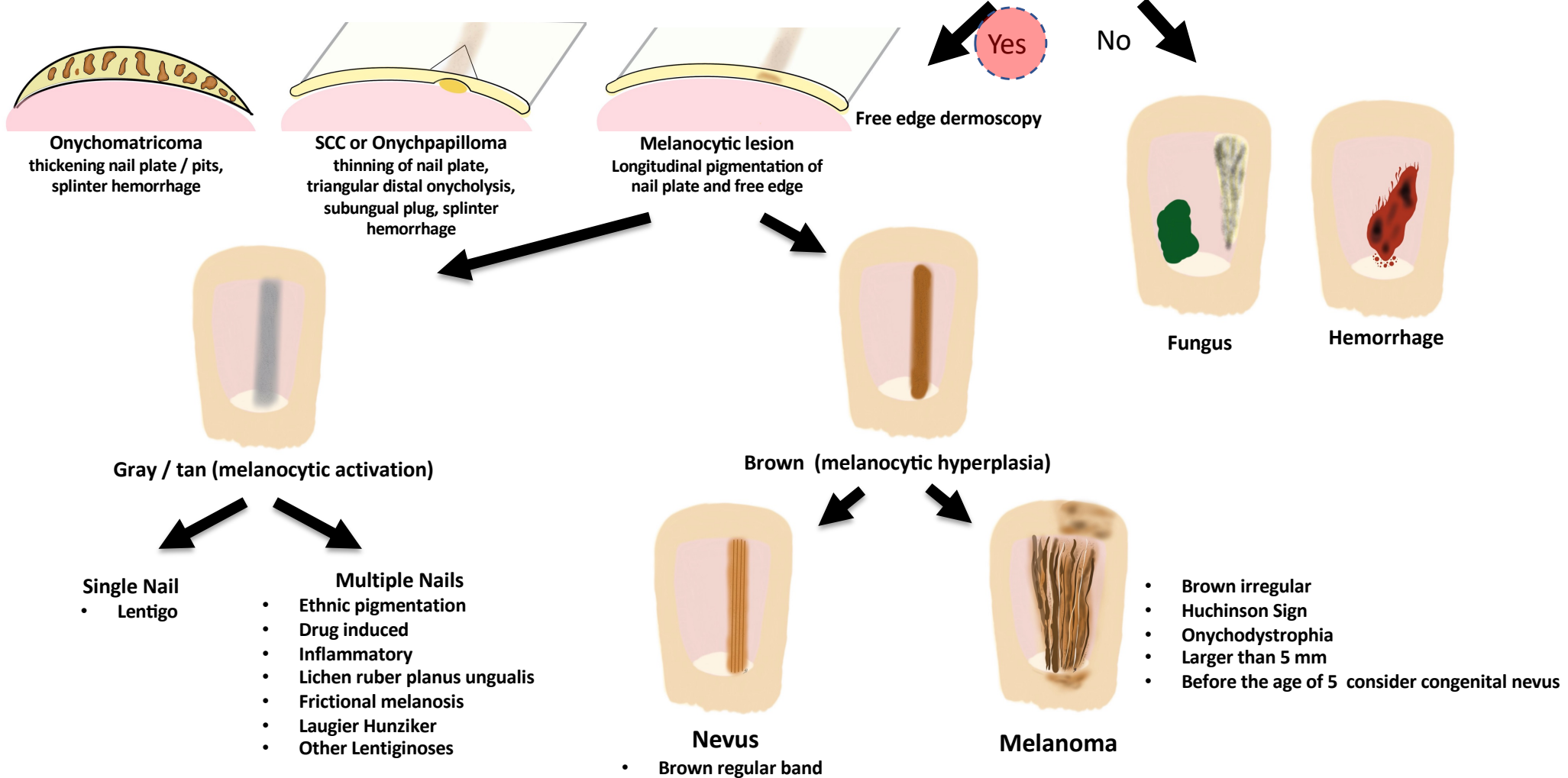
Onychomycosis:

subungual hyperkeratosis & surface scale

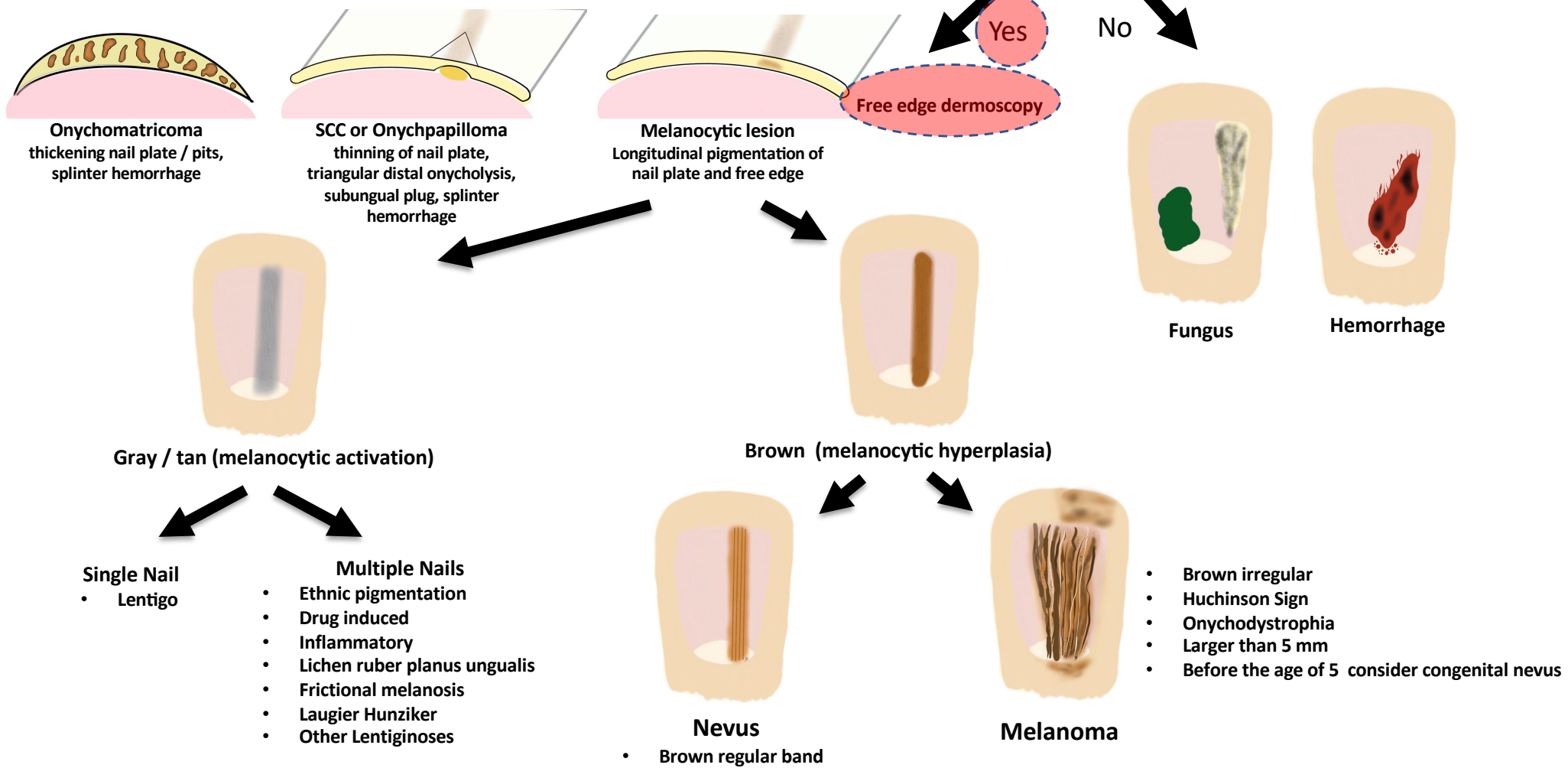
- white-yellow color / multicolor / white cloudy areas
- jagged proximal edge with spikes
- non-longitudinal streaks and patches (islands)
- brown-black pigmentation with reverse triangle



Nail pigmentation: Acquired Pigmented band originating from lunula



Nail pigmentation: Acquired Pigmented band originating from lunula

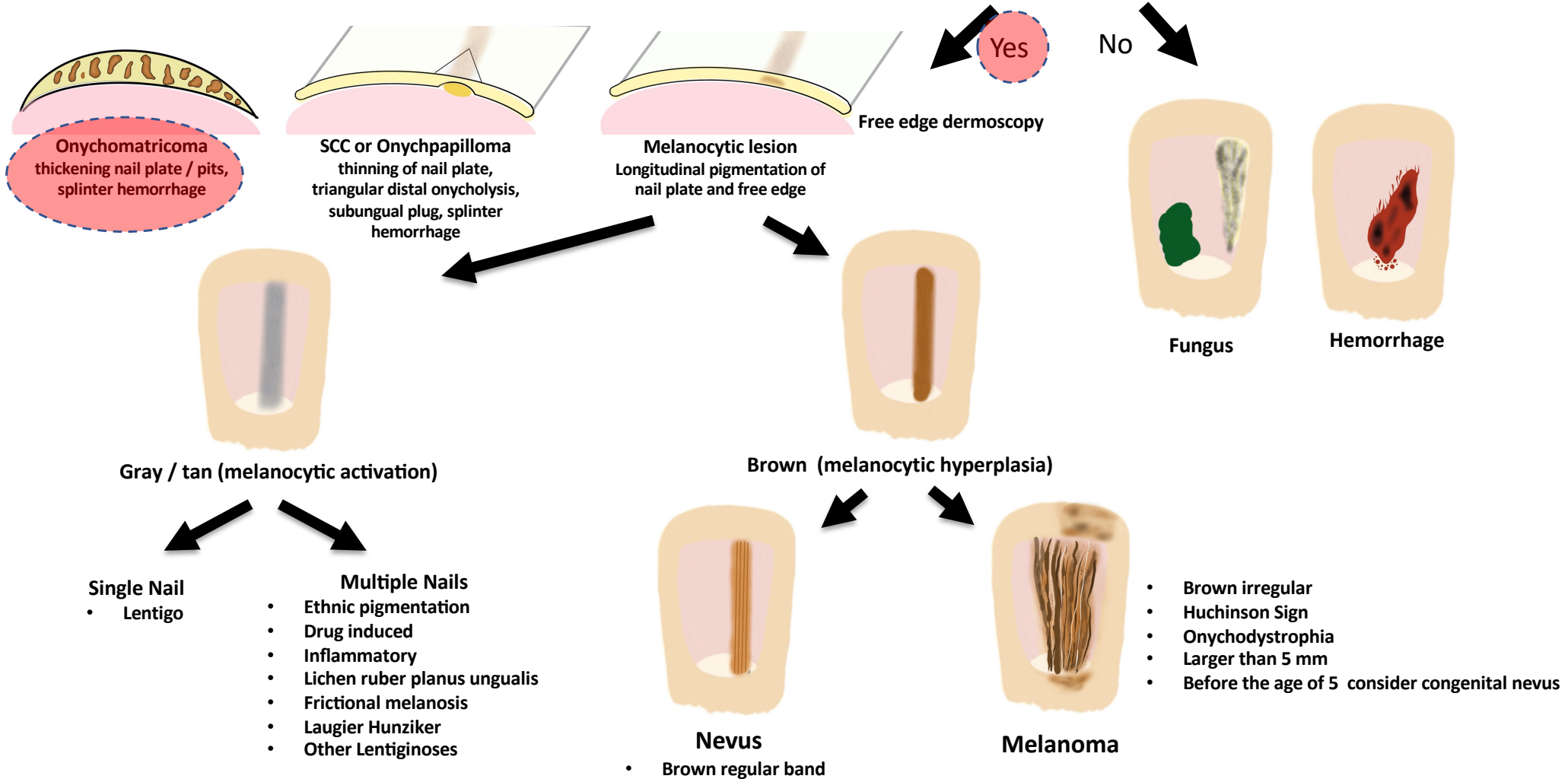




Braun et al. J.Am.Acad.Dermatol 2006

Dermoscopy of the free edge of the nail plate

Nail pigmentation: Acquired Pigmented band originating from lunula



Features of onychomatrixoma

Dermoscopic Features of Onychomatrixoma: A Study of 34 Cases

Cecile Lesort^a Sébastien Debarbieux^a Gerard Duru^c Stephane Dalle^{a,b}
Nicolas Poulhalon^a Luc Thomas^{a,b}

- ✓ Leukonychia/xanthonychia
- ✓ Splinter hemorrhages
- 1. Parallel longitudinal white lines
- 2. Over-curvature of plate with thickening of plate & end-on pits / dots

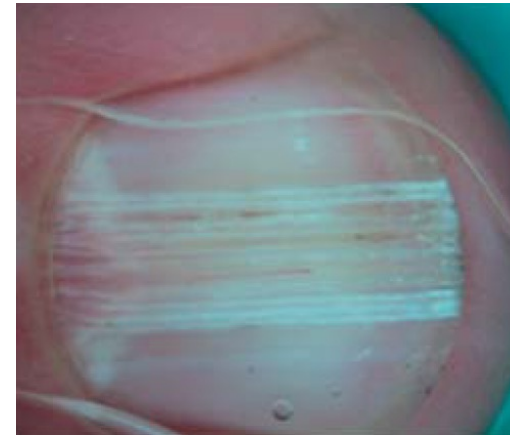
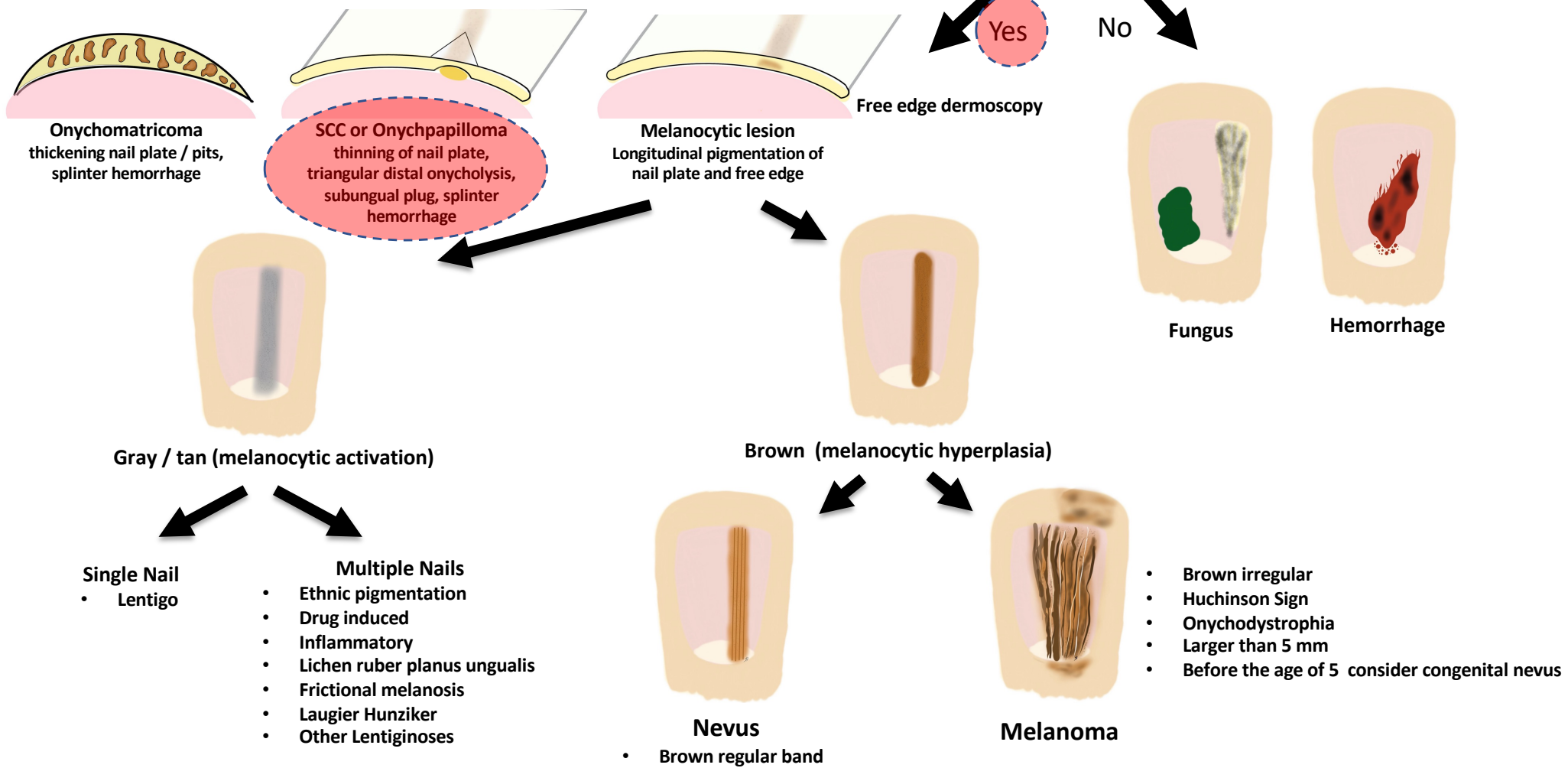


image of onychomatrixoma Dermoscopic enf:

Nail pigmentation: Acquired Pigmented band originating from lunula

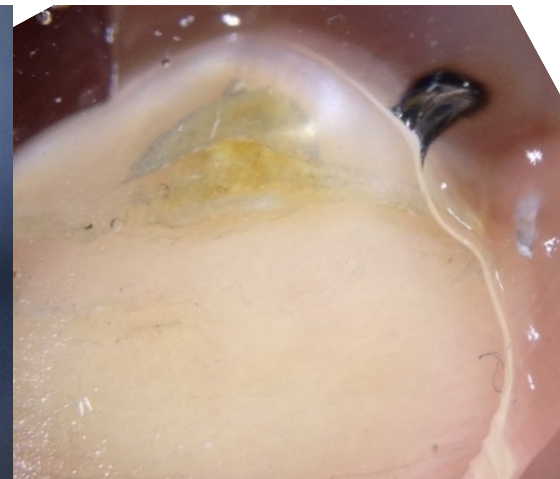
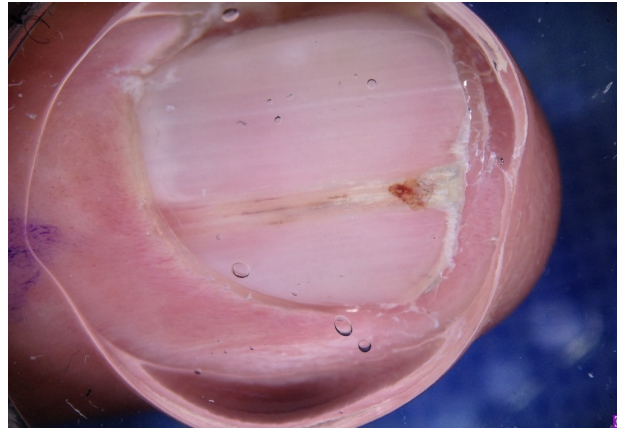


Features of onychopapilloma

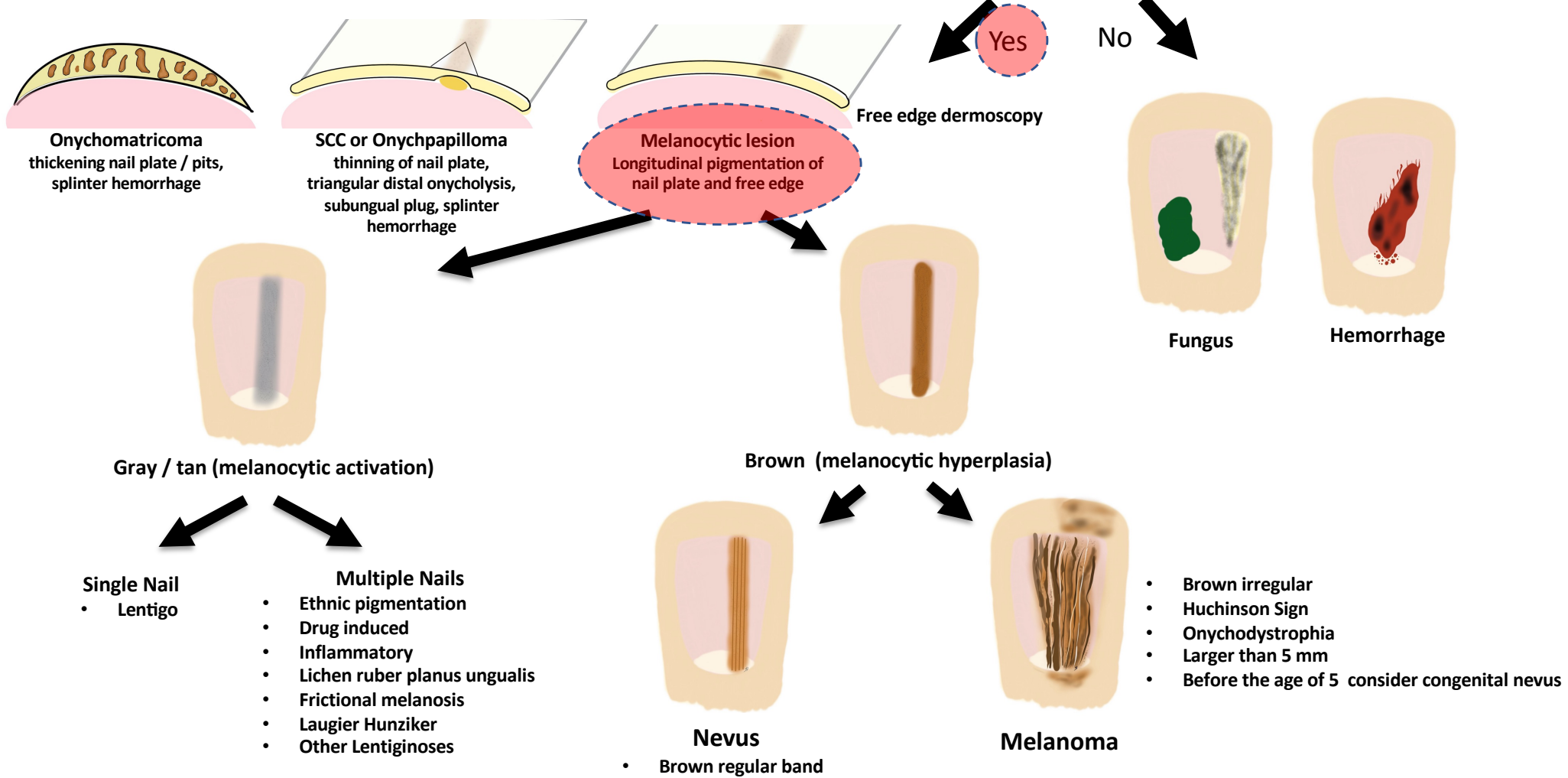
Clinical, dermoscopic, and pathologic features of onychopapilloma: A review of 47 cases

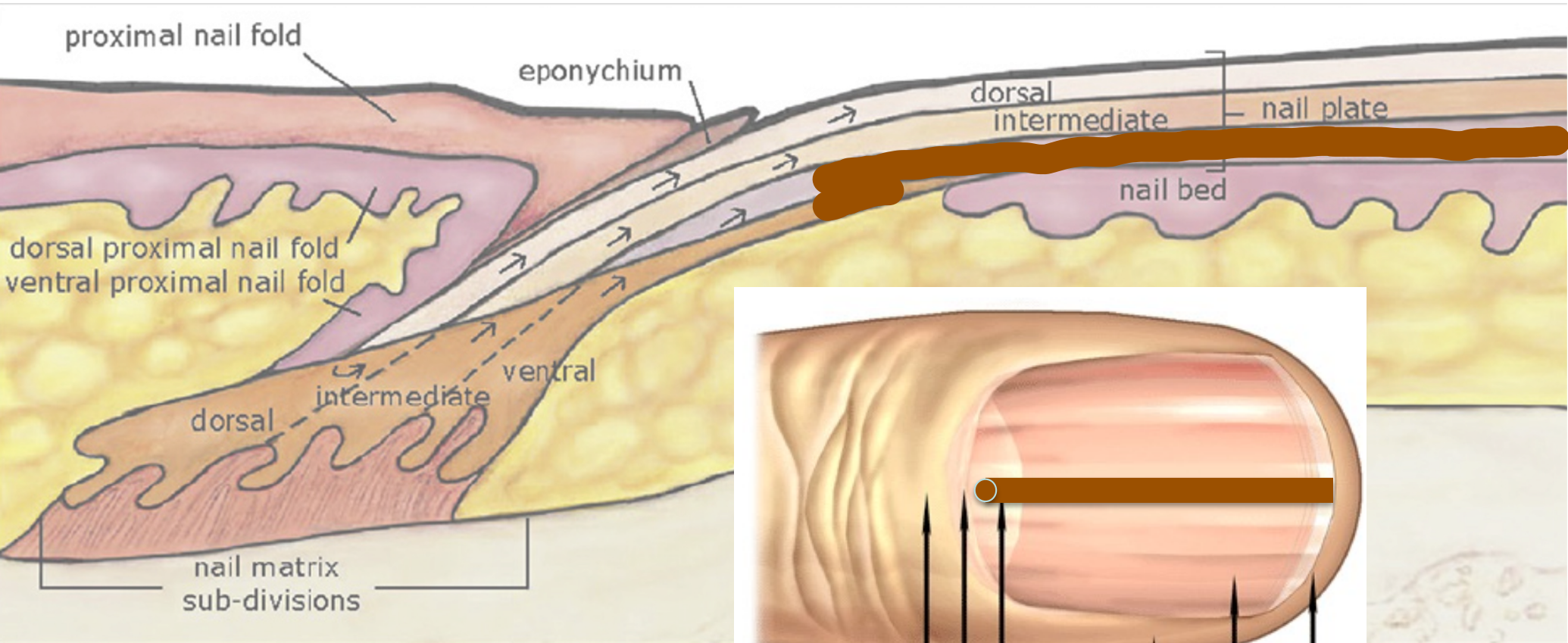
Antonella Tosti, MD,^a Samantha L. Schneider, MD,^b Mae N. Ramirez-Quizon, MD,^c
Martin Zaiac, MD,^d and Mariya Miteva, MD^a

- ✓ Leukonychia/xanthonychia
- ✓ Splinter hemorrhages
- 1. V-shaped distal notch with focal distal subungual hyperkeratosis (rest of nailplate is not dystrophic as in SCC)

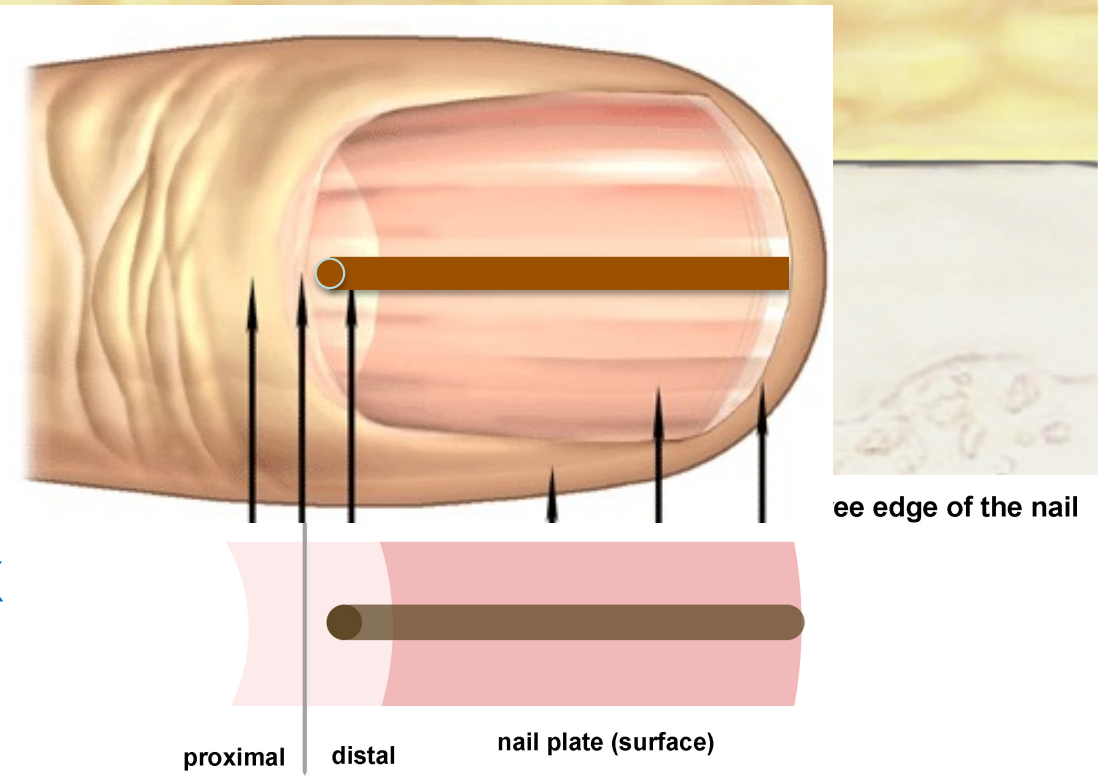


Nail pigmentation: Acquired Pigmented band originating from lunula



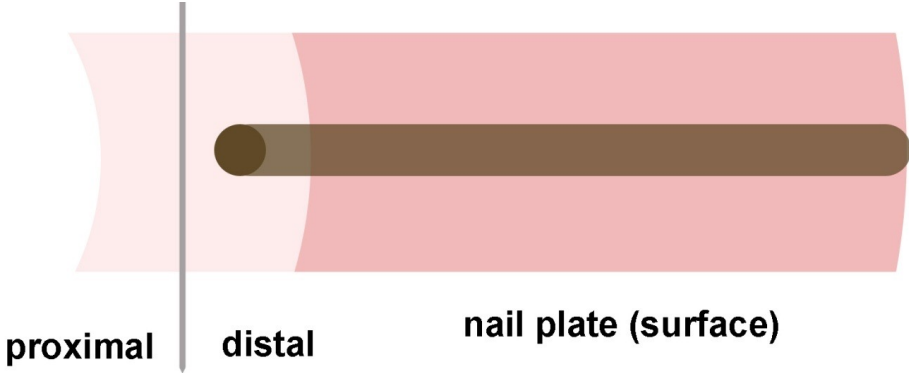


Origin in the distal matrix
Lower part in free edge



nail matrix

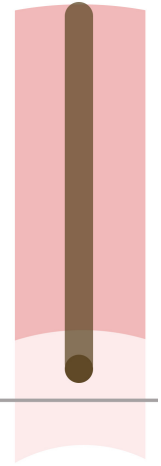
free edge of the nail

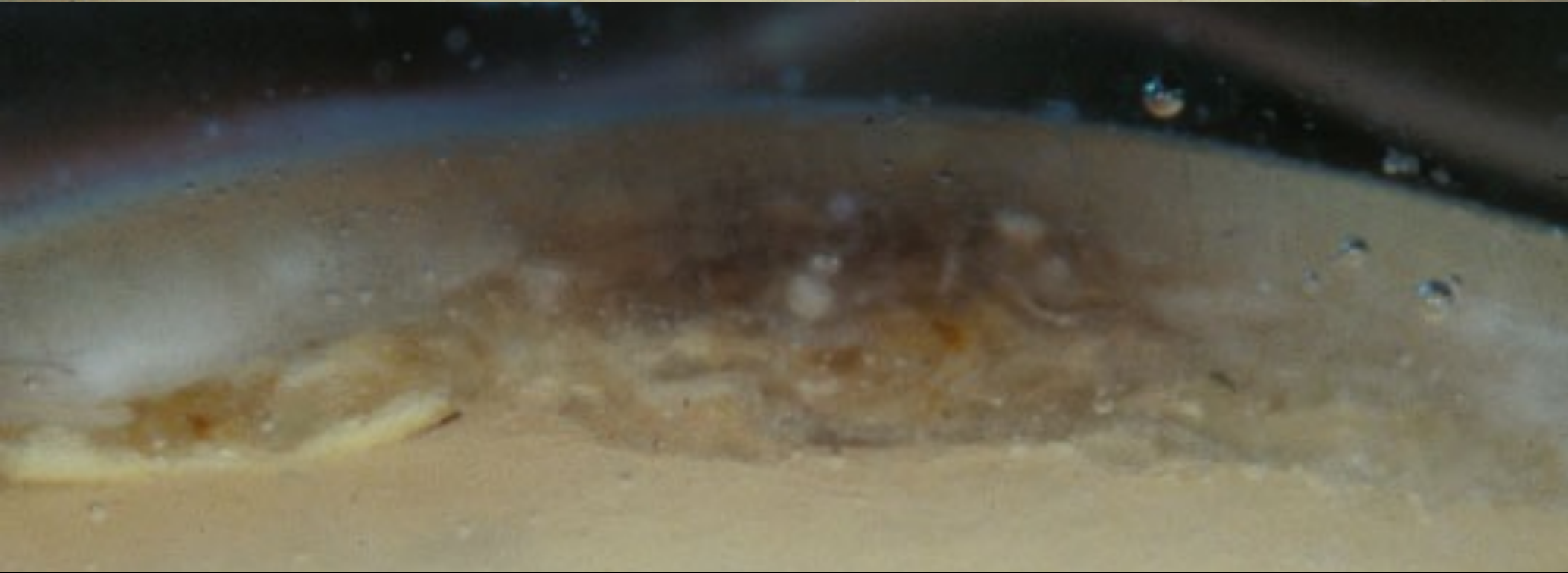
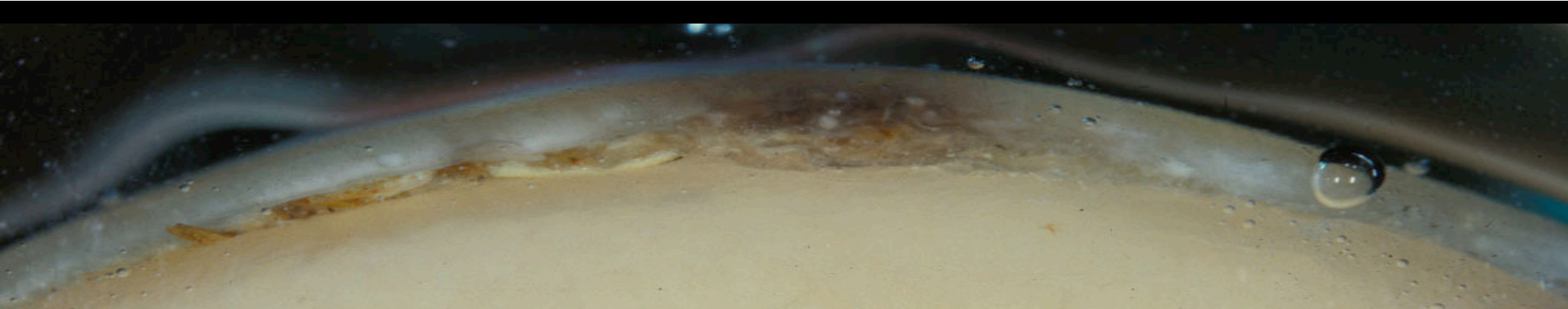


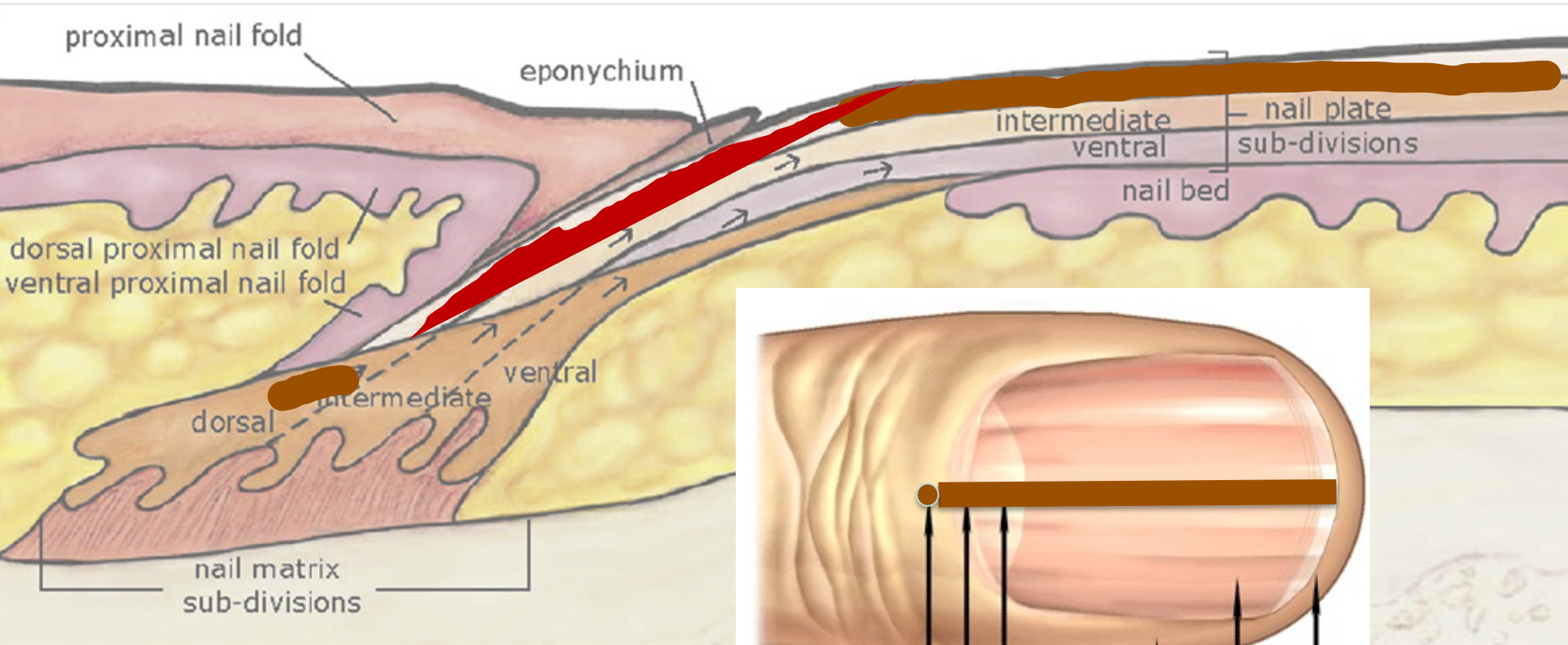
proximal

distal

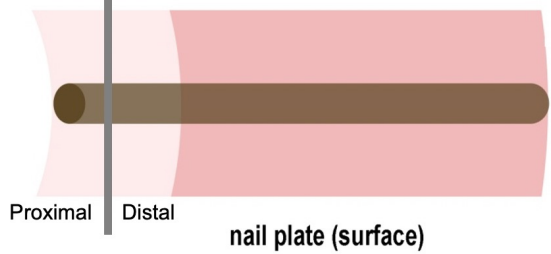
nail plate (surface)

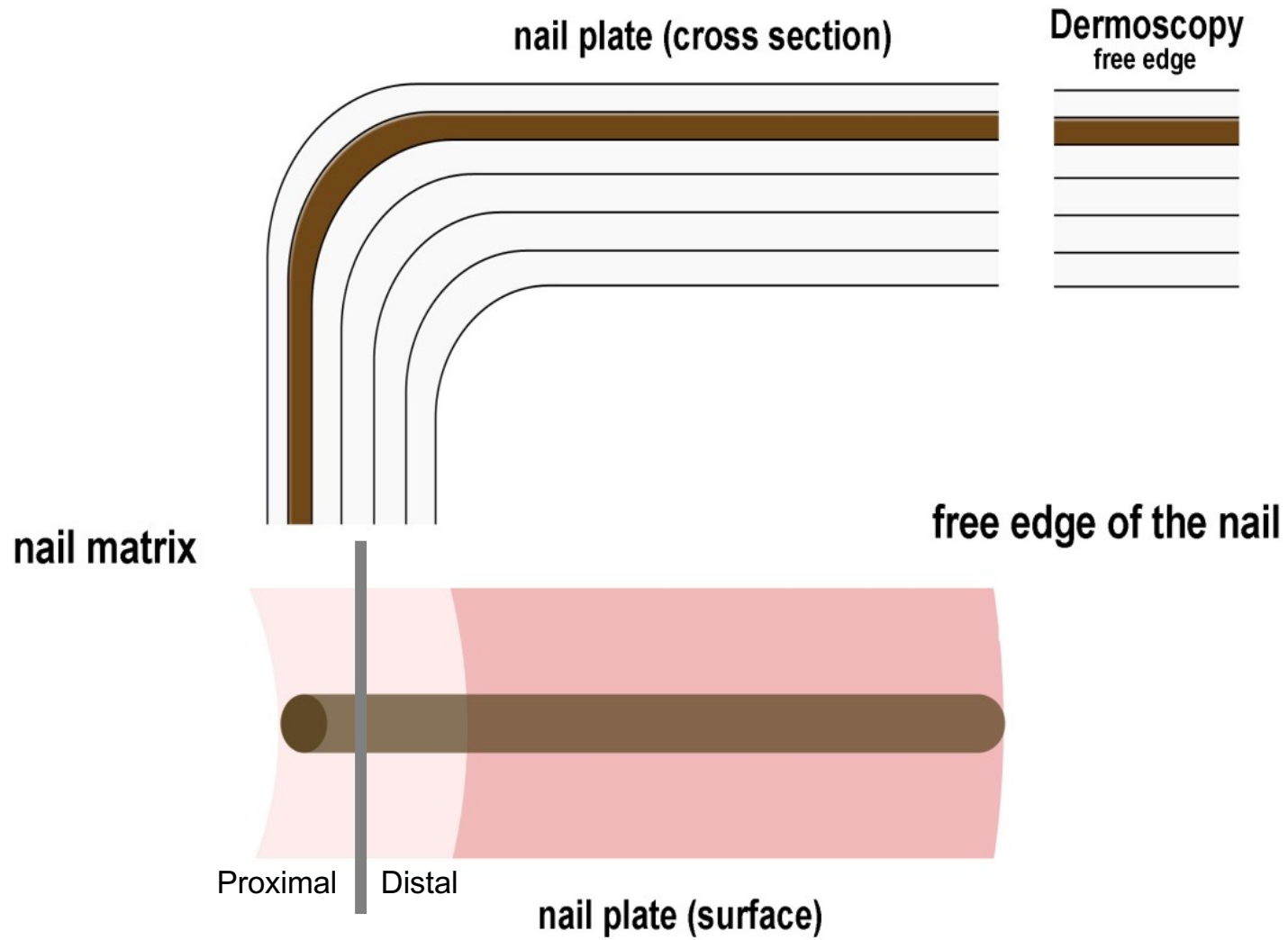


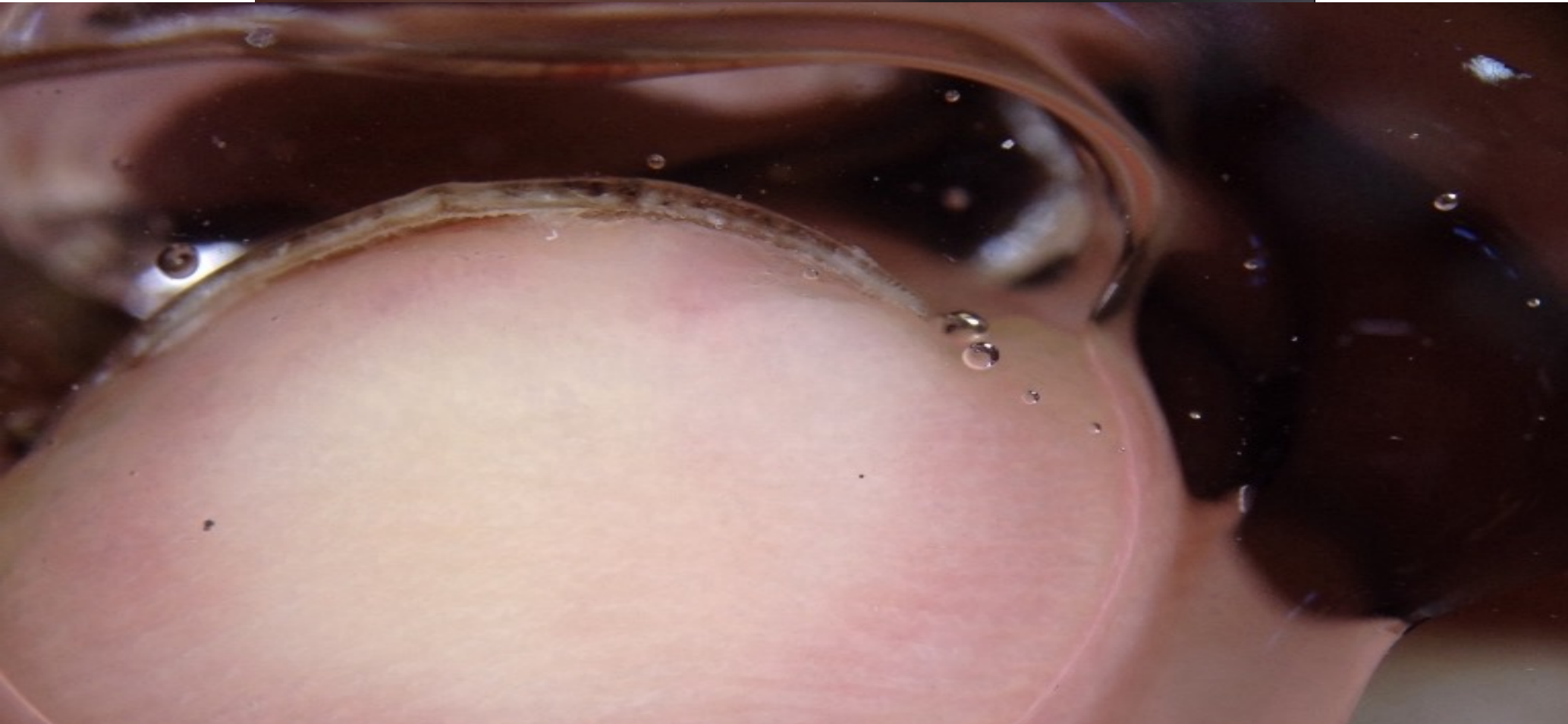




Origin in the proximal matrix
Upper part in free edge

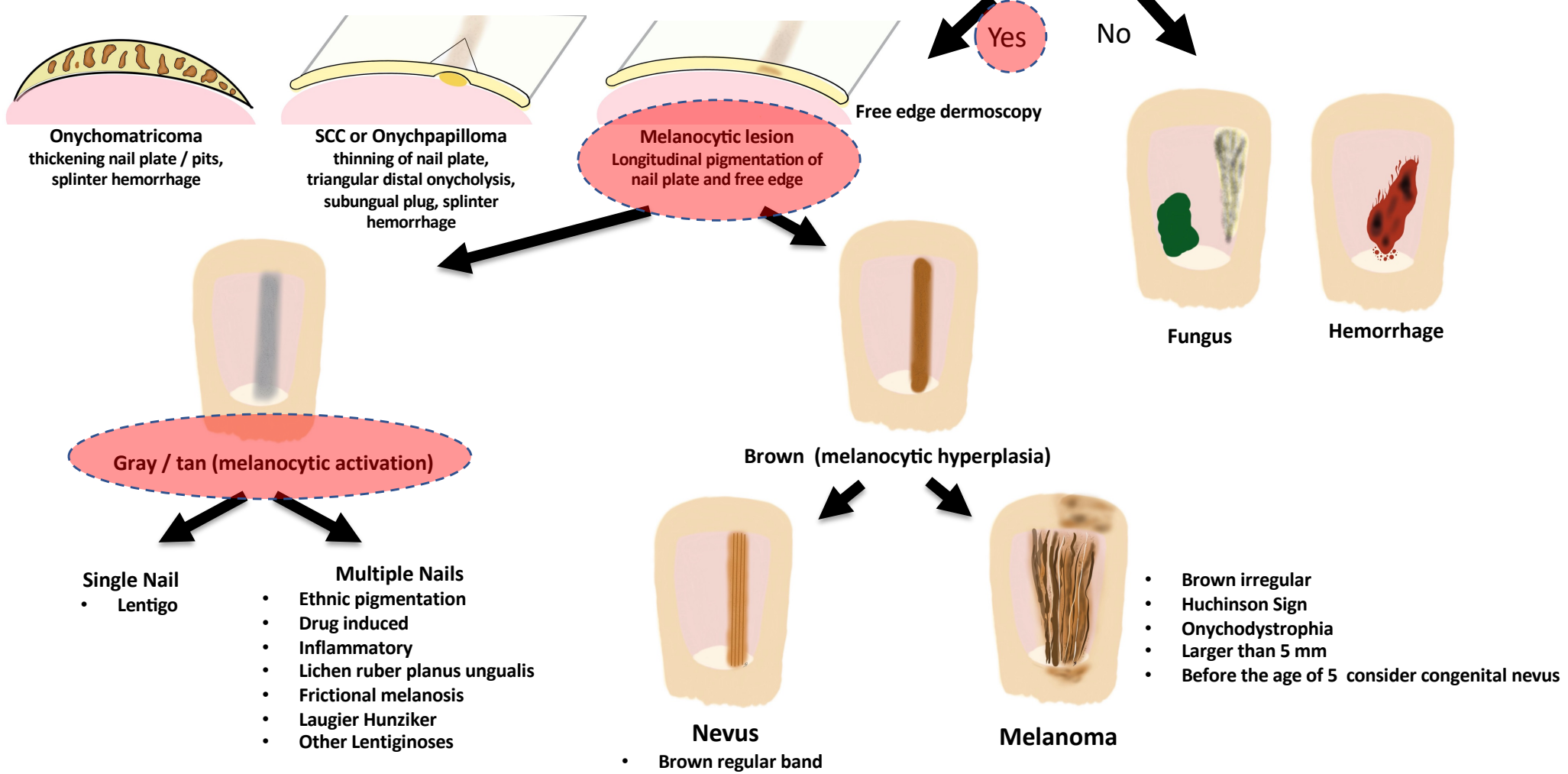






Top of nail = proximal nail matrix

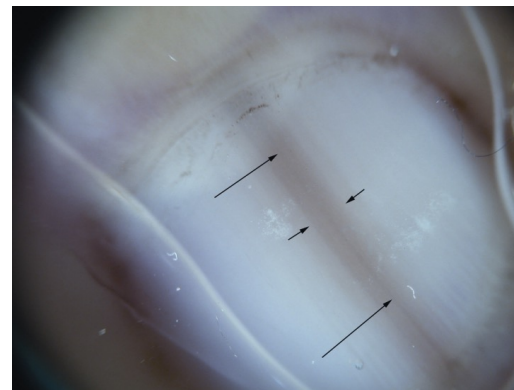
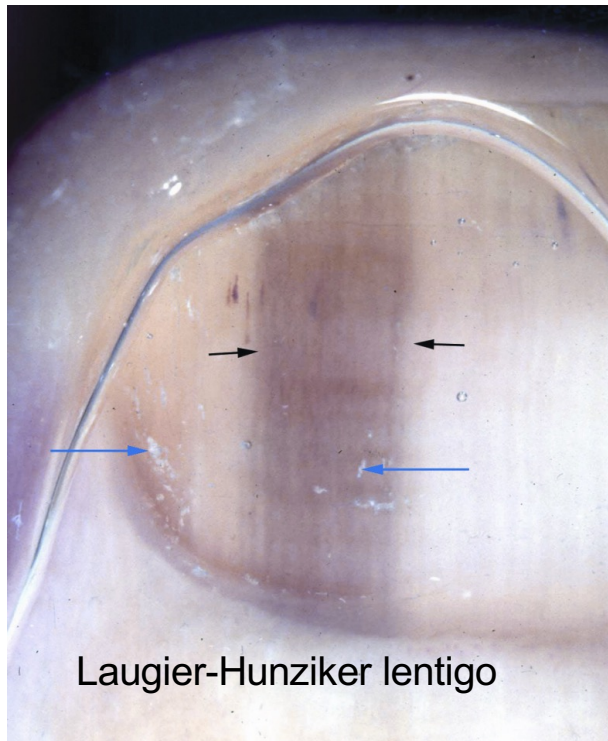
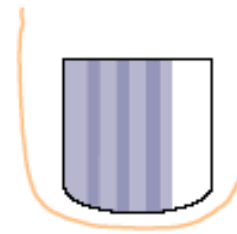
Nail pigmentation: Acquired Pigmented band originating from lunula

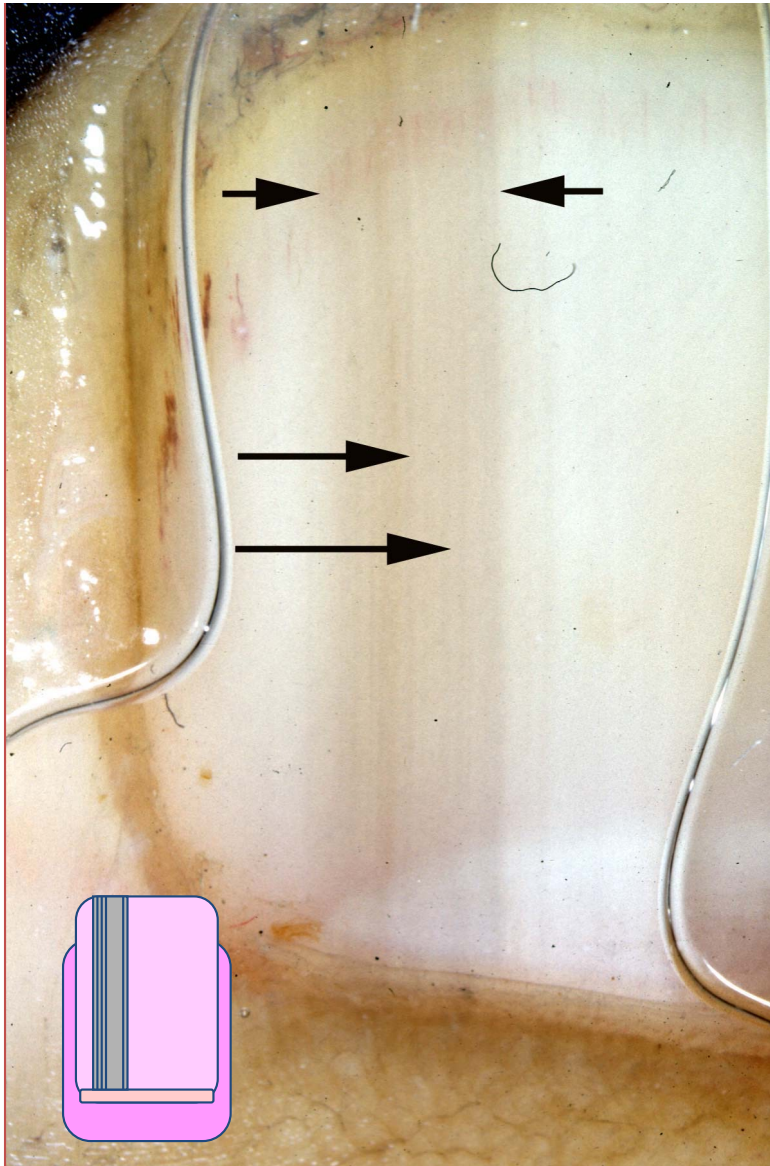


Features indicating non-melanocytic lesions

Homogeneous greyish lines and grey background:

1. Characteristic of nail apparatus lentigo,
2. drug-induced nail pigmentation and
3. ethnic-type nail pigmentation

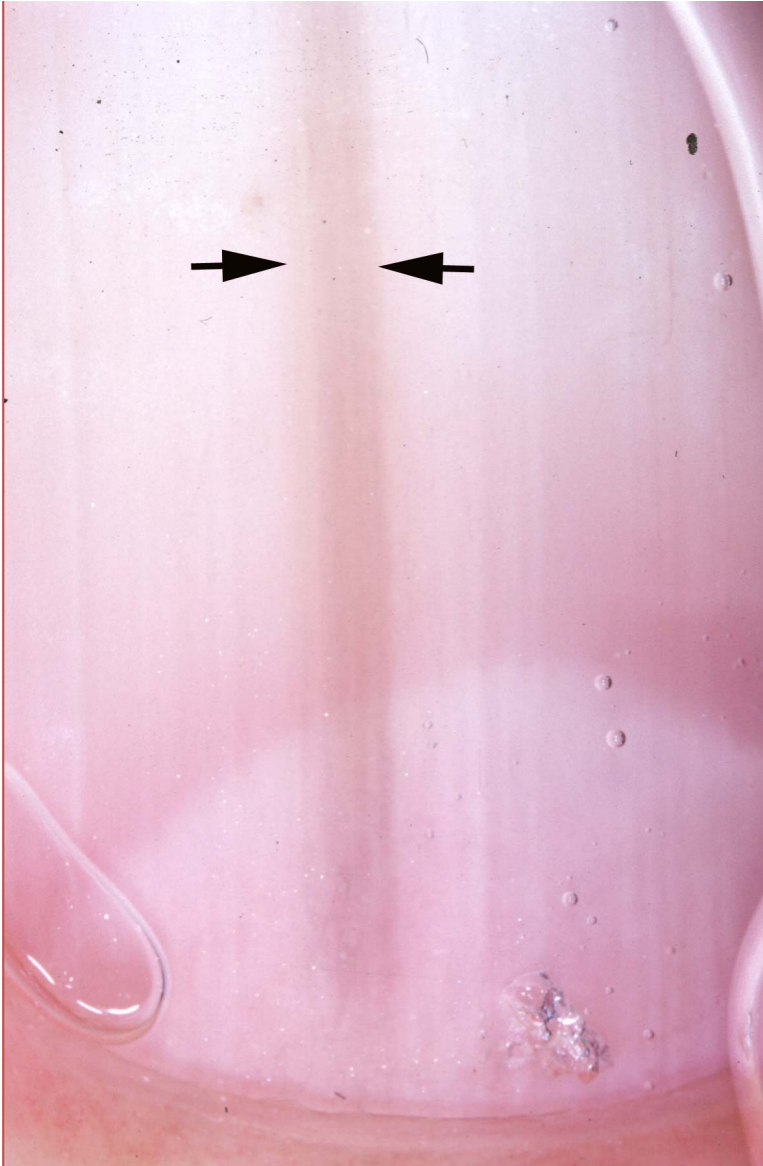




Nail apparatus lentigo

Gray homogeneous longitudinal band (between short arrows)

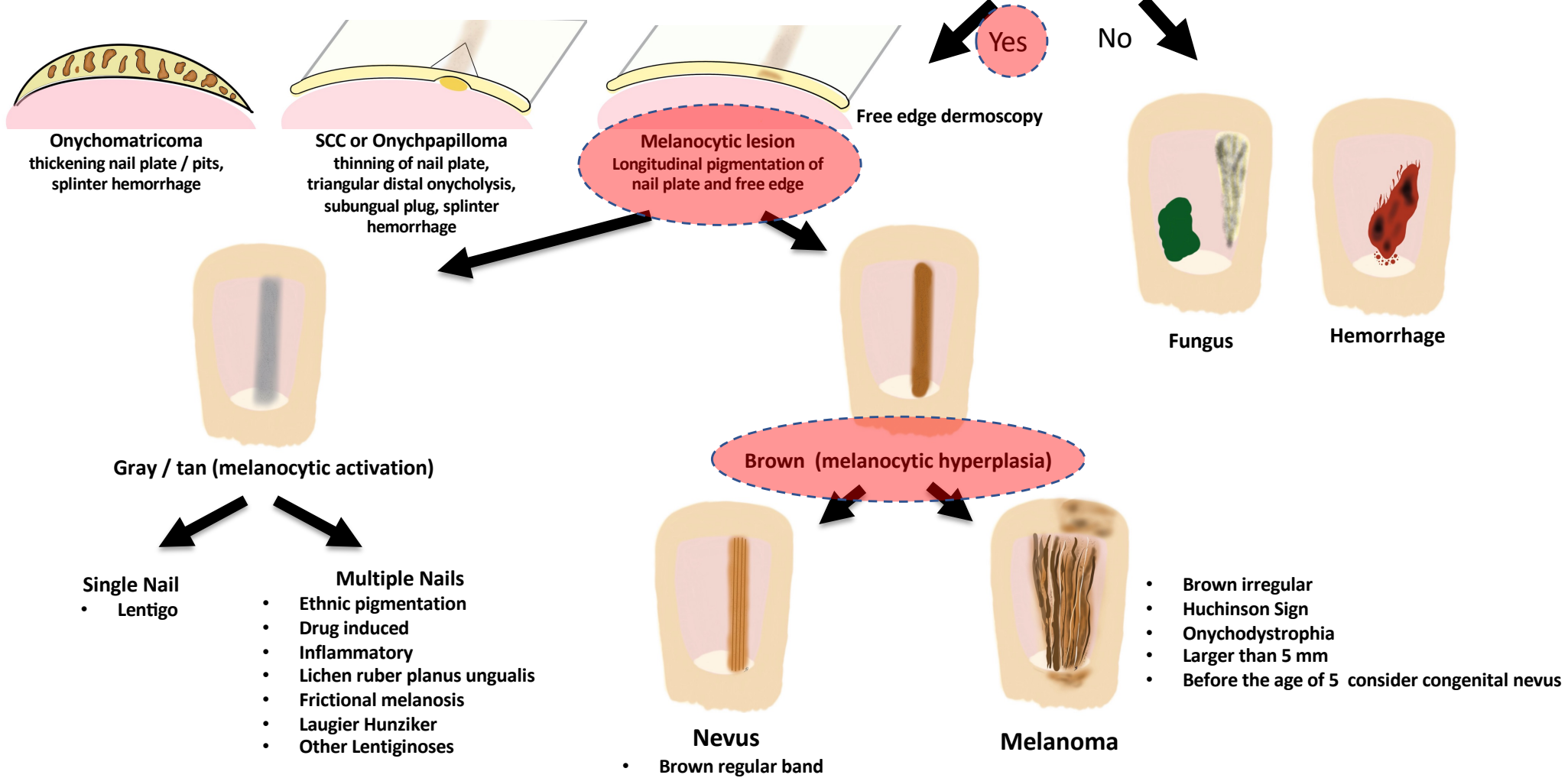
Thin overlying longitudinal lines (long arrows)



Ethnic-type pigmentation

Gray homogeneous
longitudinal band

Nail pigmentation: Acquired Pigmented band originating from lunula



Assessment of a Predictive Scoring Model for Dermoscopy of Subungual Melanoma In Situ

Jungyoon Ohn, MD; Gwanghyun Jo, MD; Youngjoo Cho, PhD; Sarah Lee Sheu, MD; Kwang Hyun Cho, MD, PhD; Je-Ho Mun, MD, PhD

Table 2. Univariate Analysis of Dermoscopic Variables Associated With SMIS vs Benign LM in 45 South Korean Patients

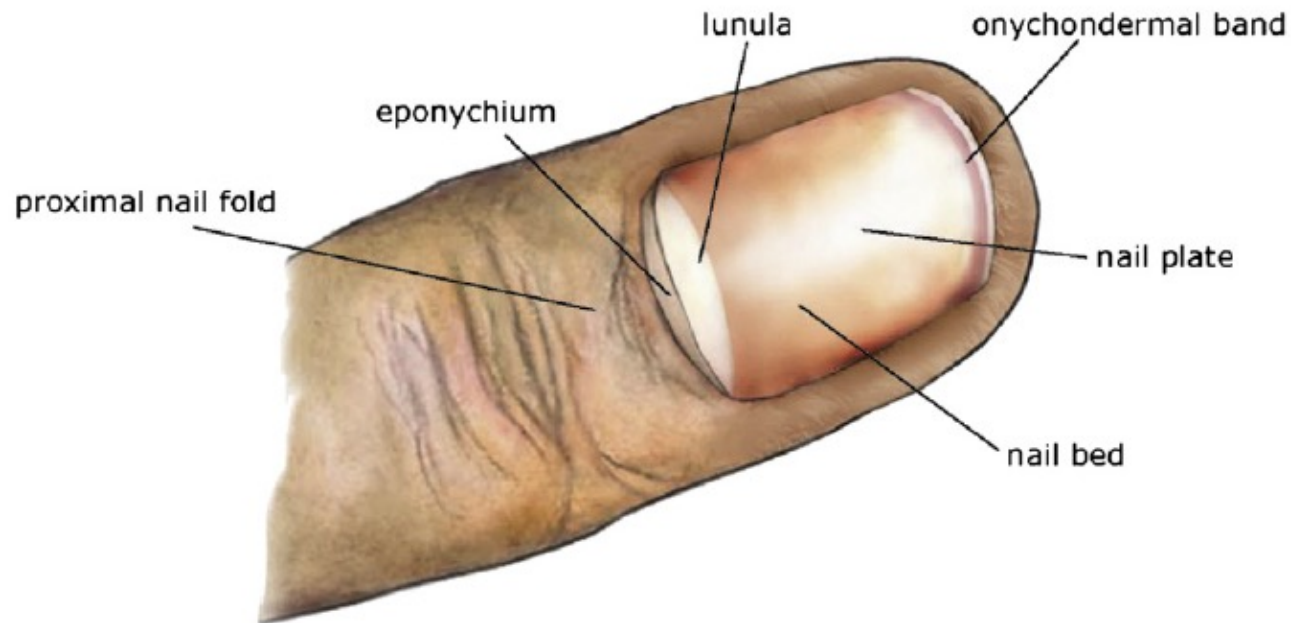
Dermoscopic Variable	No. (%)		Sensitivity for SMIS	Specificity for SMIS	Overall Accuracy	OR (95% CI)	P Value
	SMIS (n = 19)	Benign LM (n = 26)					
Width of pigmentation, mean (SD), mm	9.03 (3.96)	3.94 (3.07)					.001
≥3	17 (89)	16 (62)	0.90	0.38	0.60	5.31 (1.01-28.07) ^a	.05
≥6	16 (84)	4 (15)	0.84	0.85	0.84	29.33 (5.75-149.65) ^a	<.001
Pigmentation							
Multicolor	17 (89)	11 (42)	0.90	0.58	0.71	11.59 (2.21-60.89) ^a	.004
Unicolor	2 (11)	15 (58)	0.11	0.42	0.29	0.09 (0.02-0.45) ^a	
Pattern							
Asymmetry	18 (95)	9 (35)	0.95	0.65	0.78	34.00 (3.88-297.70) ^a	.001
Border fading	14 (74)	6 (23)	0.74	0.77	0.76	9.33 (2.37-36.70) ^a	.001
Triangular pattern	4 (21)	1 (4)	0.21	0.96	0.64	6.67 (0.68-65.37)	.10
Dots or globules	2 (11)	1 (4)	0.11	0.96	0.60	2.94 (0.25-35.06)	.39
Hutchinson sign ^b	8 (42)	1 (4)	0.42	0.96	0.73	18.18 (2.02-163.52) ^a	.01
Nail plate dystrophy	4 (21)	2 (8)	0.21	0.92	0.62	3.20 (0.52-19.67)	.21

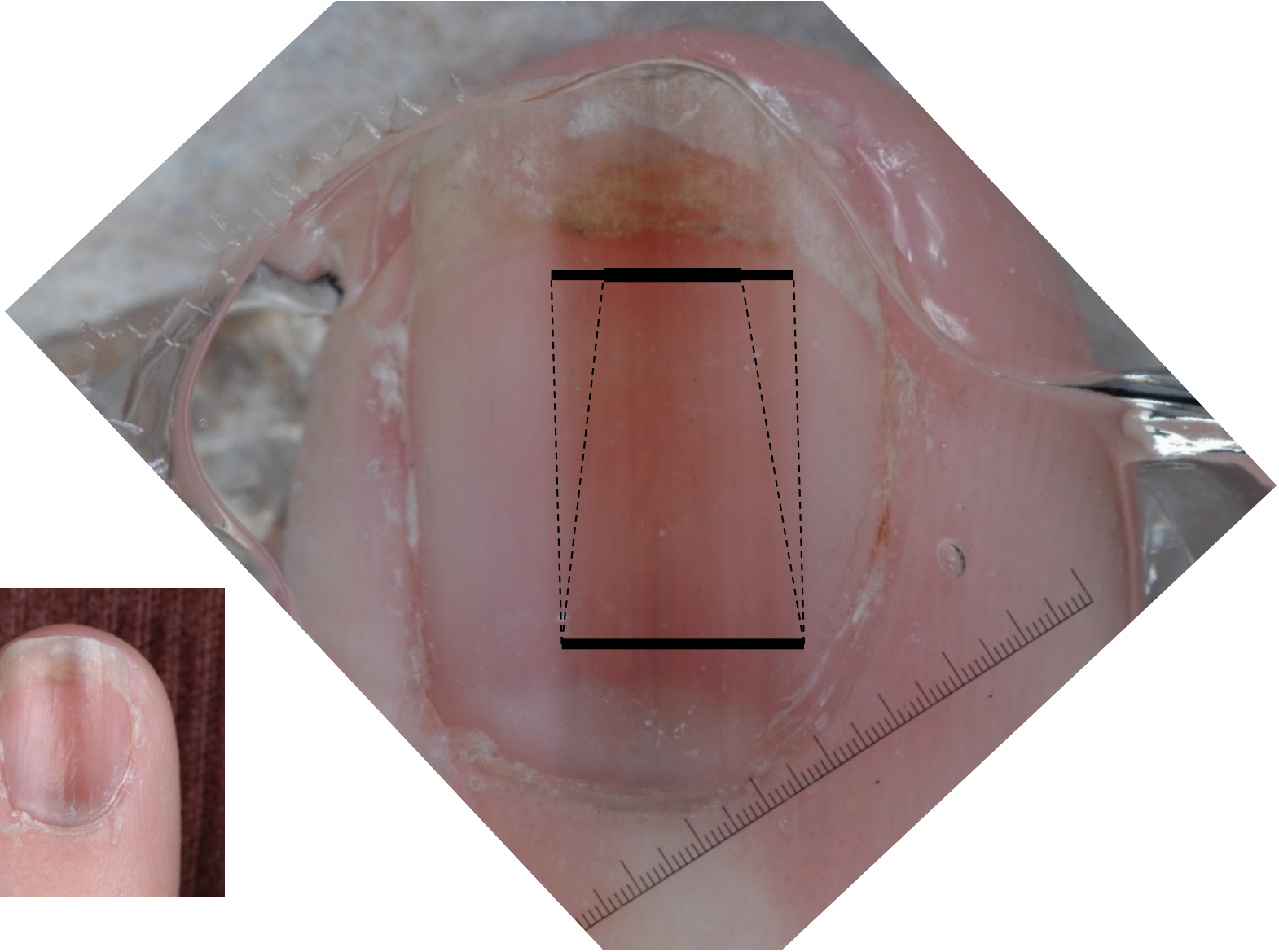
Abbreviations: LM, longitudinal melanonychia; OR, odds ratio; SMIS, subungual melanoma in situ.

^b Defined as periungual pigmentation of the nail fold or hyponychium.

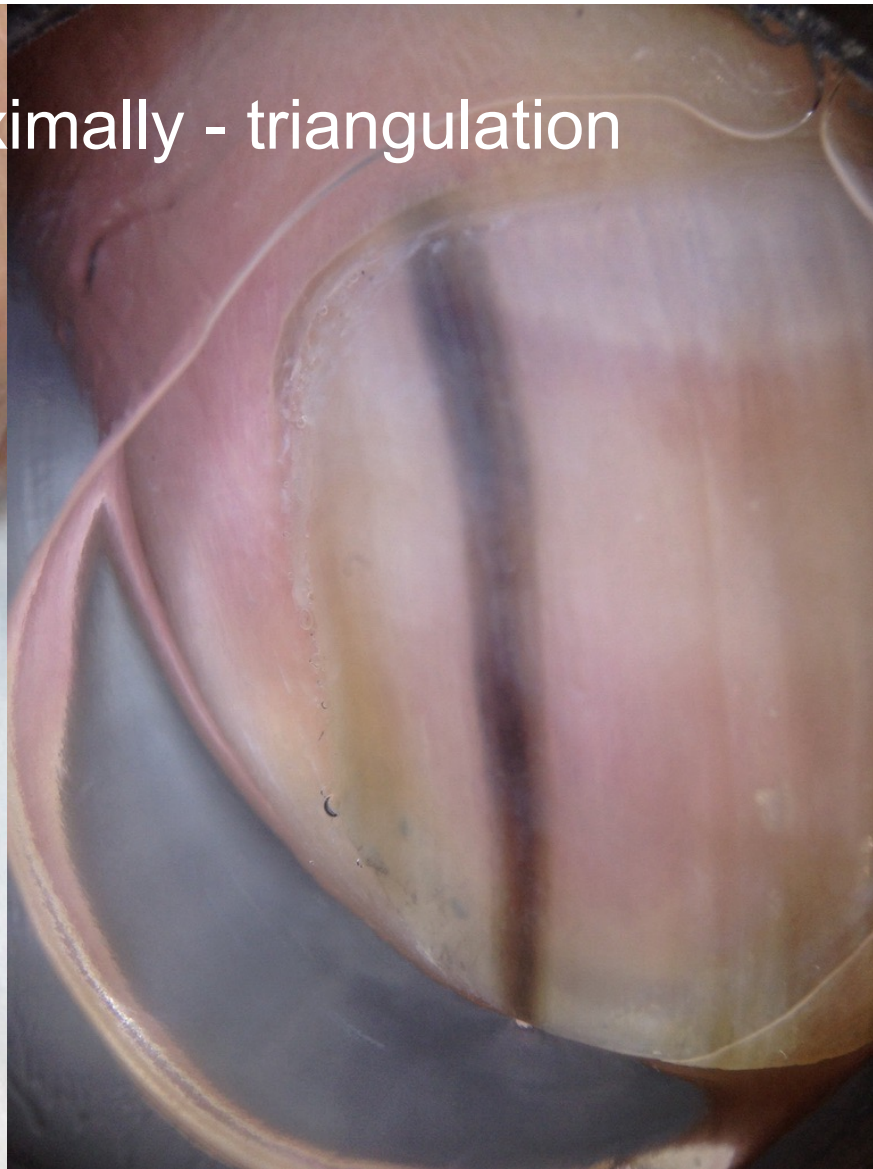
^a Indicates ORs that are significantly different.

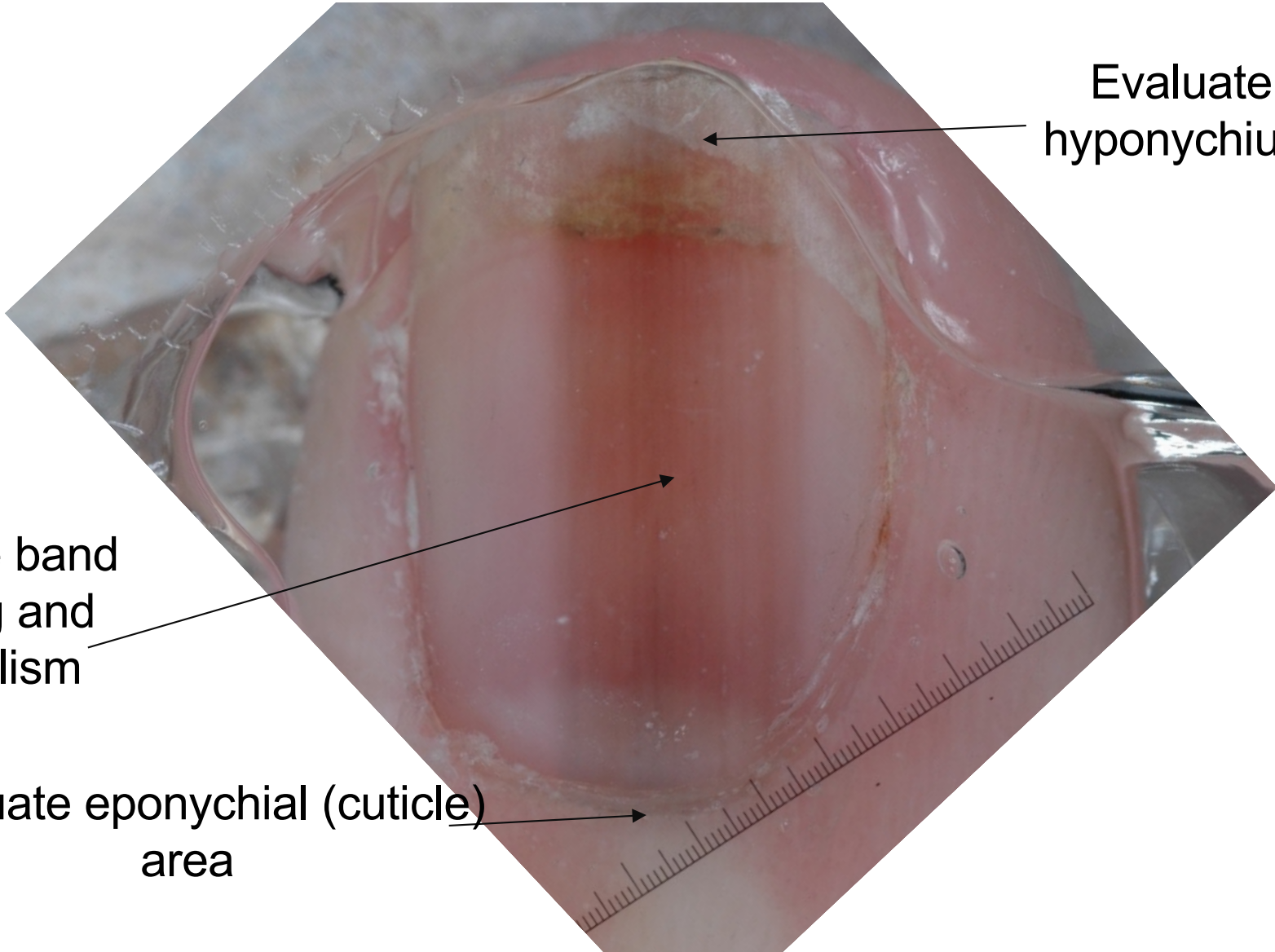
- General examination should focus on the following





- Band becomes wider proximally - triangulation



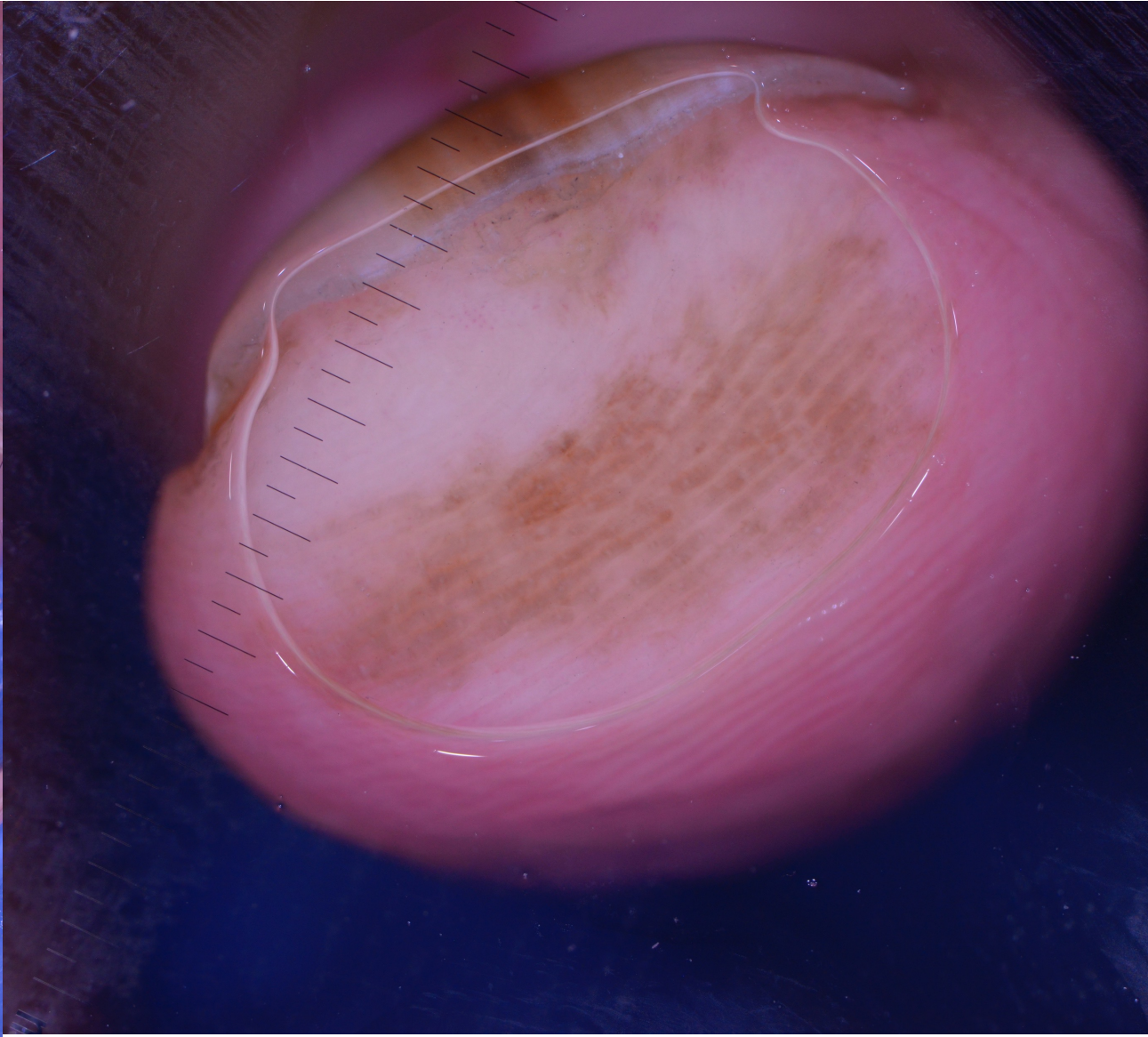


Evaluate
hyponychium

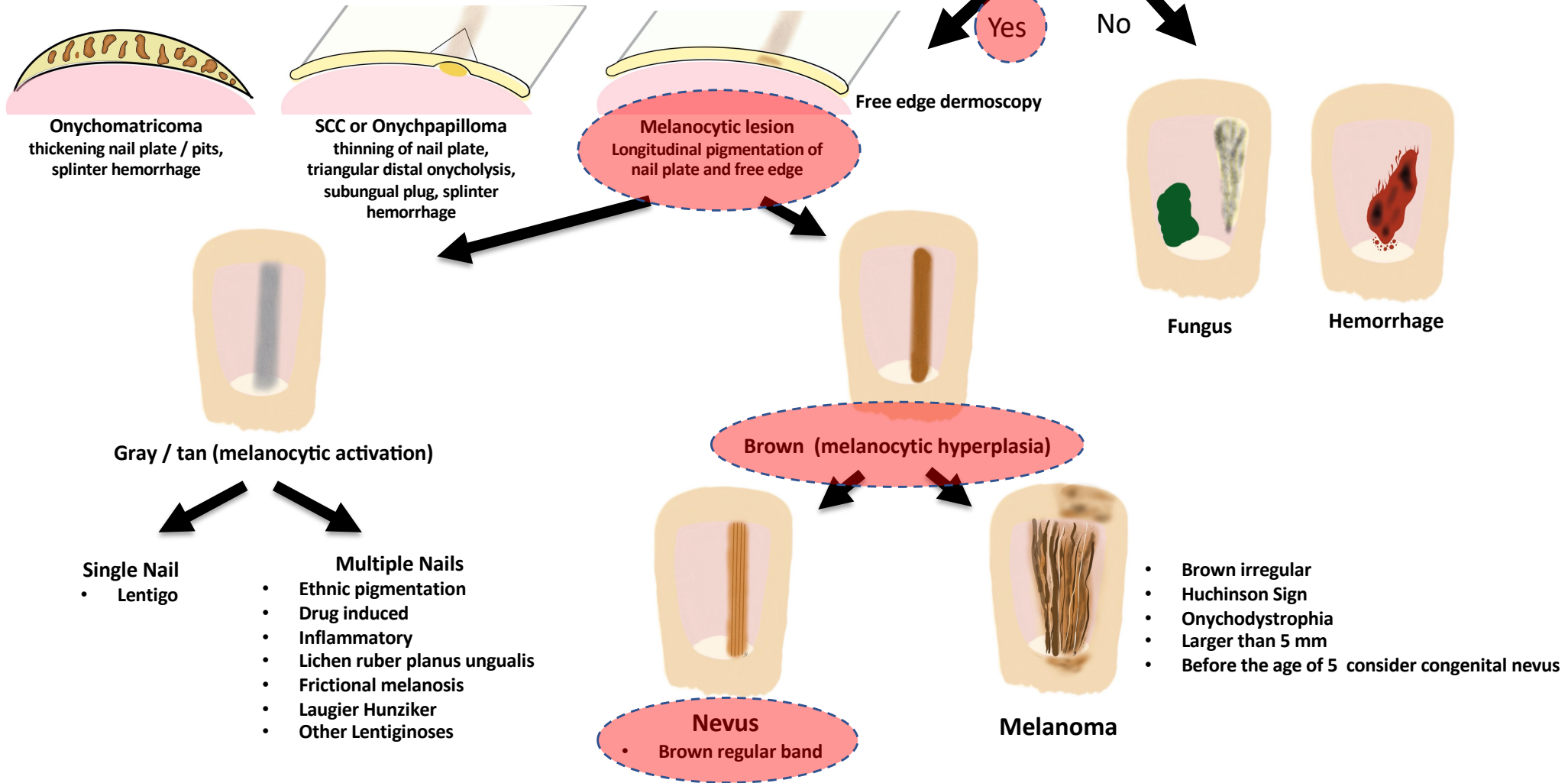
Evaluate band
spacing and
parallelism

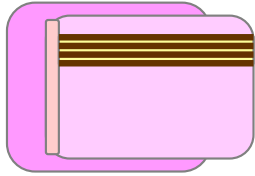
Evaluate eponychial (cuticle)
area





Nail pigmentation: Acquired Pigmented band originating from lunula



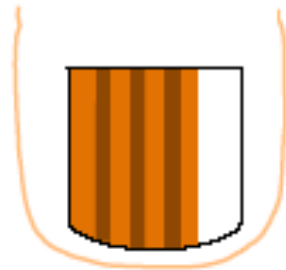


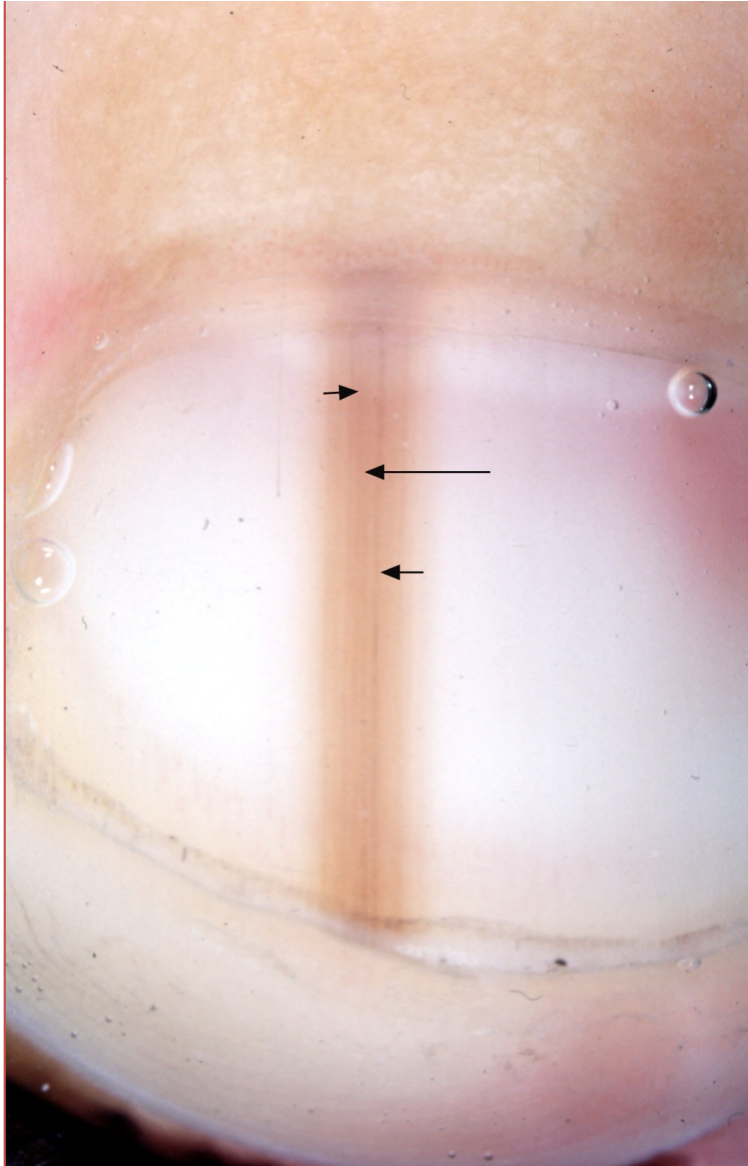
Regular brown bands

- **Background brown color**
- **Parallel lines**
- **Regular spacing and thickness of lines**
- **Symmetric pattern & colors**

Features indicating nevus

Brown longitudinal parallel lines that are regular in coloration, spacing and thickness throughout the whole lesion

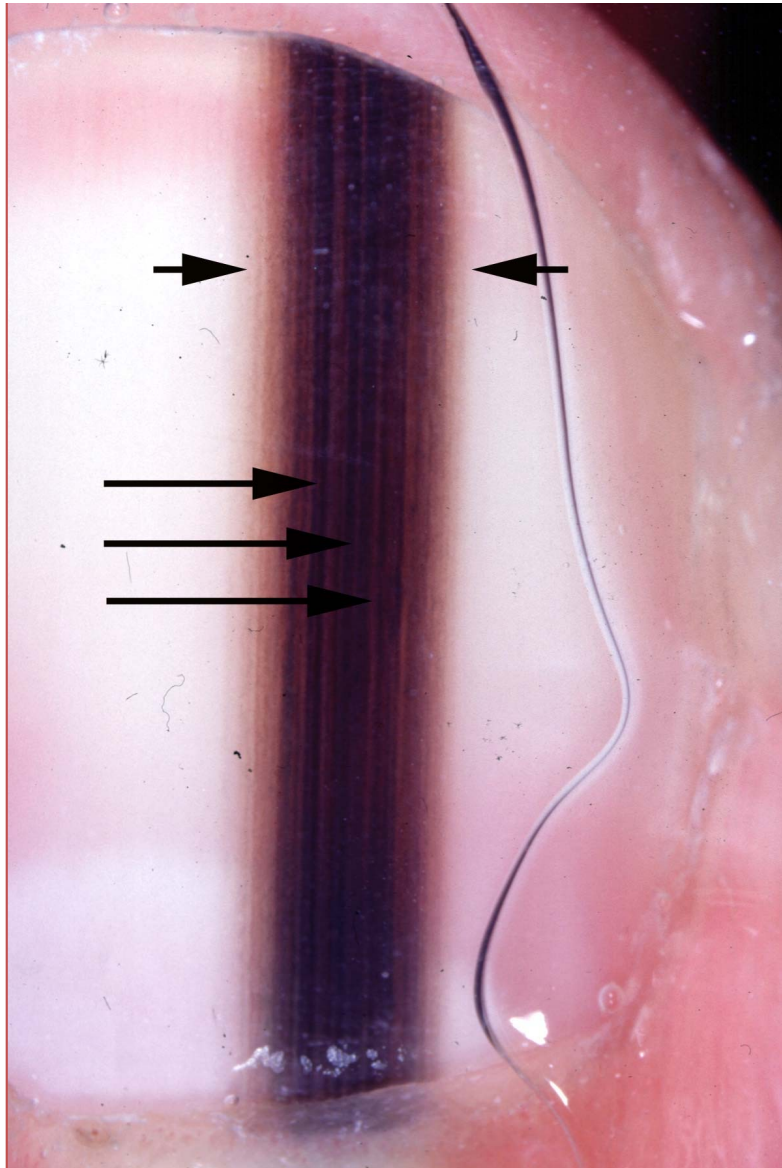




Nail Matrix Nevus

Brown coloration of the background (between short arrows)

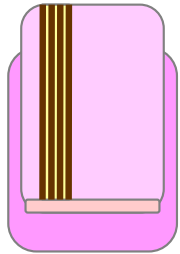
Thin regular lines (regular in thickness, color and spacing) - long arrow



Nail matrix nevus

Brown coloration of the background (between short arrows)

Thin regular lines (regular in thickness, color and spacing)
- long arrows

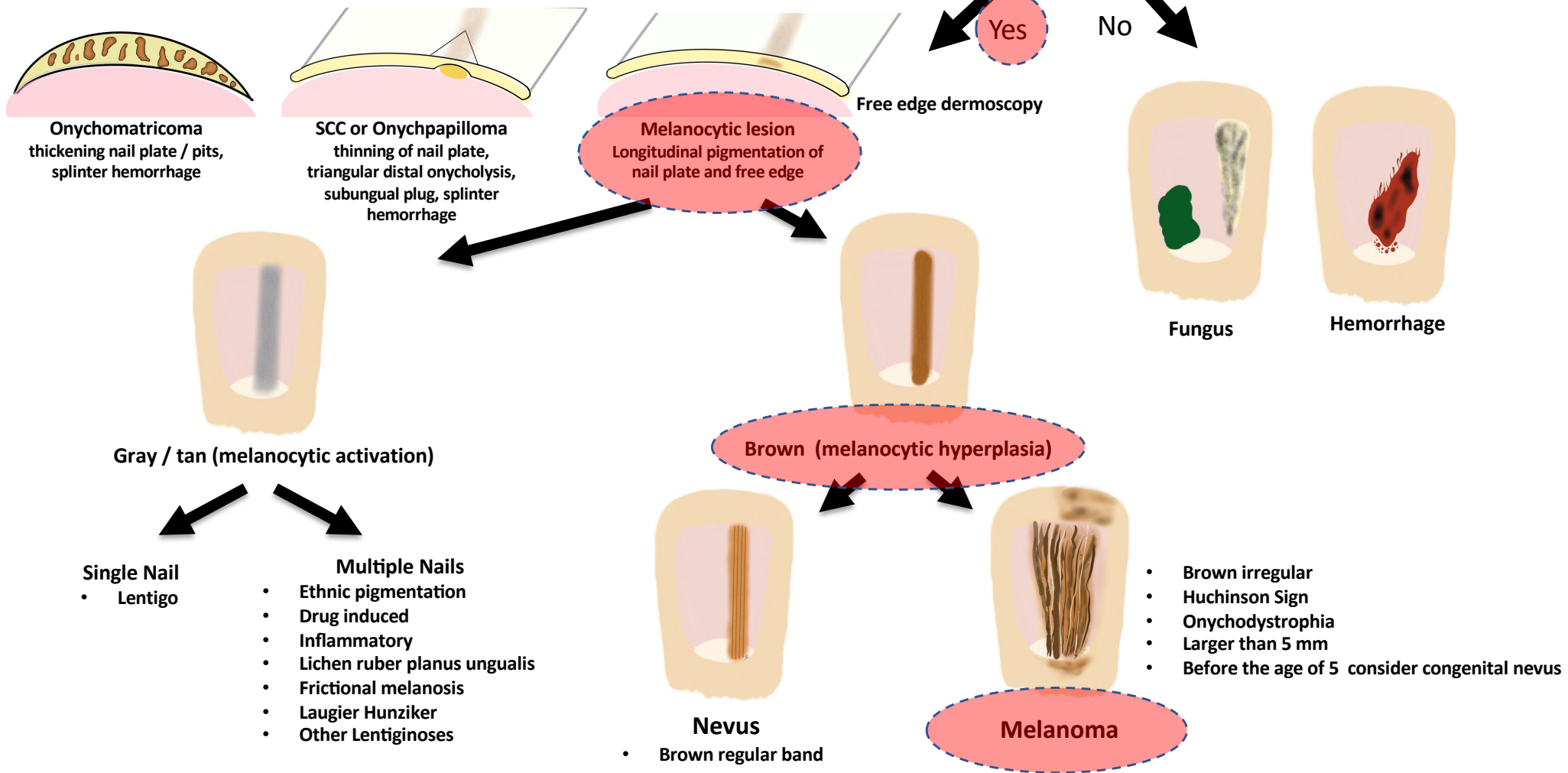


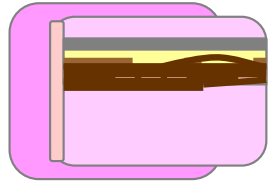
Nevus of the nail matrix



Thomas L et al, Dermatol Ther 2007

Nail pigmentation: Acquired Pigmented band originating from lunula





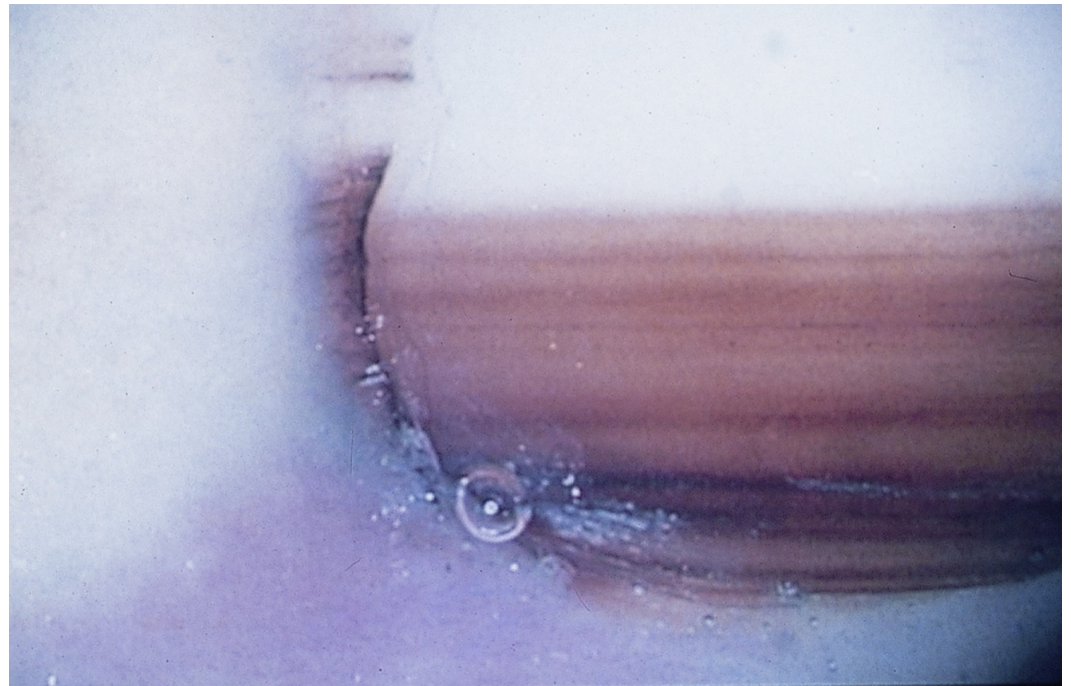
Irregular brown bands

- **Disorganized pattern (asymmetry) – OR 34**
 - Disruption of parallelism
 - Irregular spacing and thickness of lines
- **Multiple colors (>2 colors) – OR 11**

Ohn J, Jo G, Cho Y et al . Assessment of a Predictive Scoring Model for Dermoscopy of Subungual Melanoma In Situ. JAMA Dermatol. 2018 Aug 1;154(8):890-896.

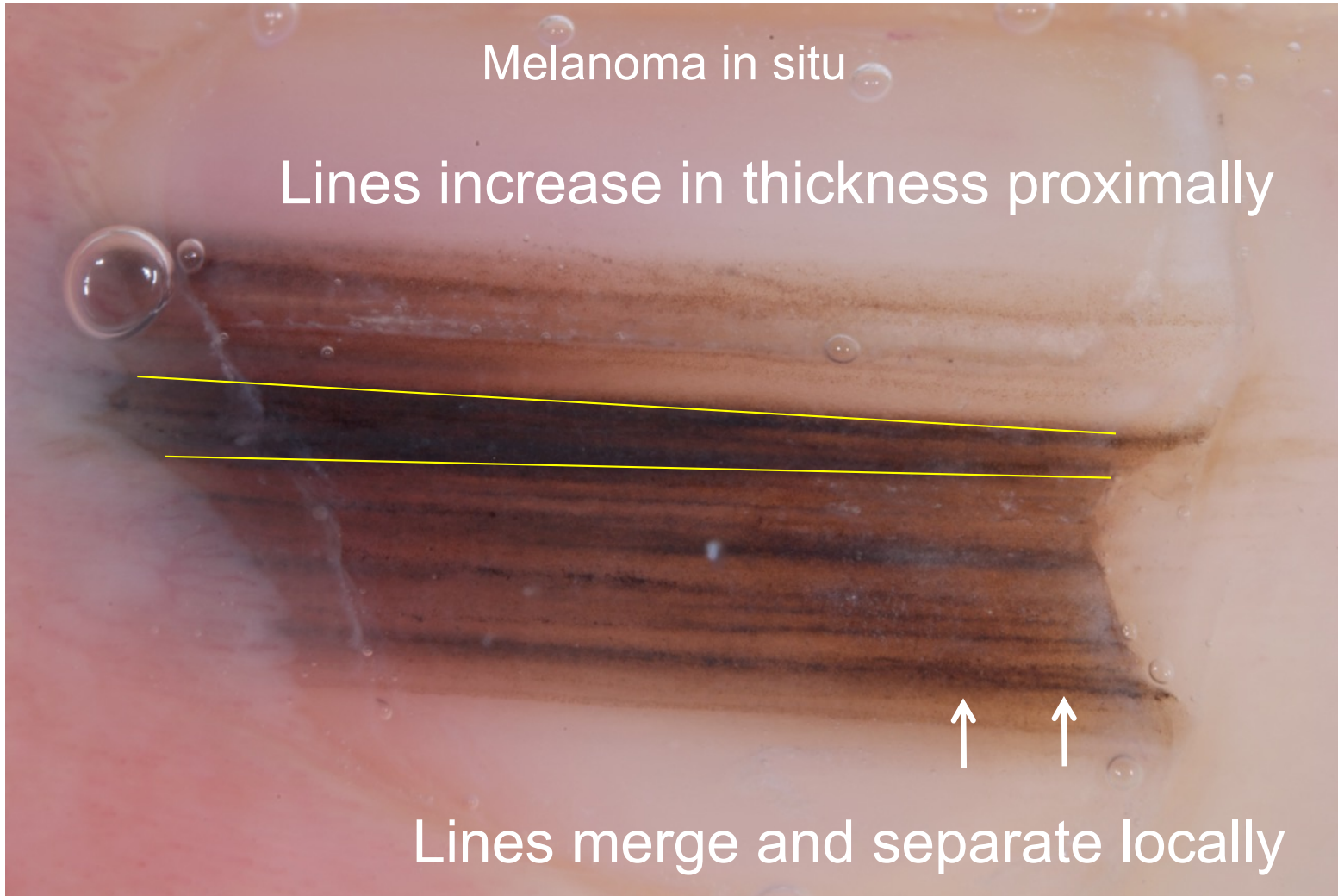
Features indicating melanoma

Brown to black longitudinal lines,
irregular in coloration, spacing and
thickness disrupting the normal parallel
pattern



Melanoma in situ

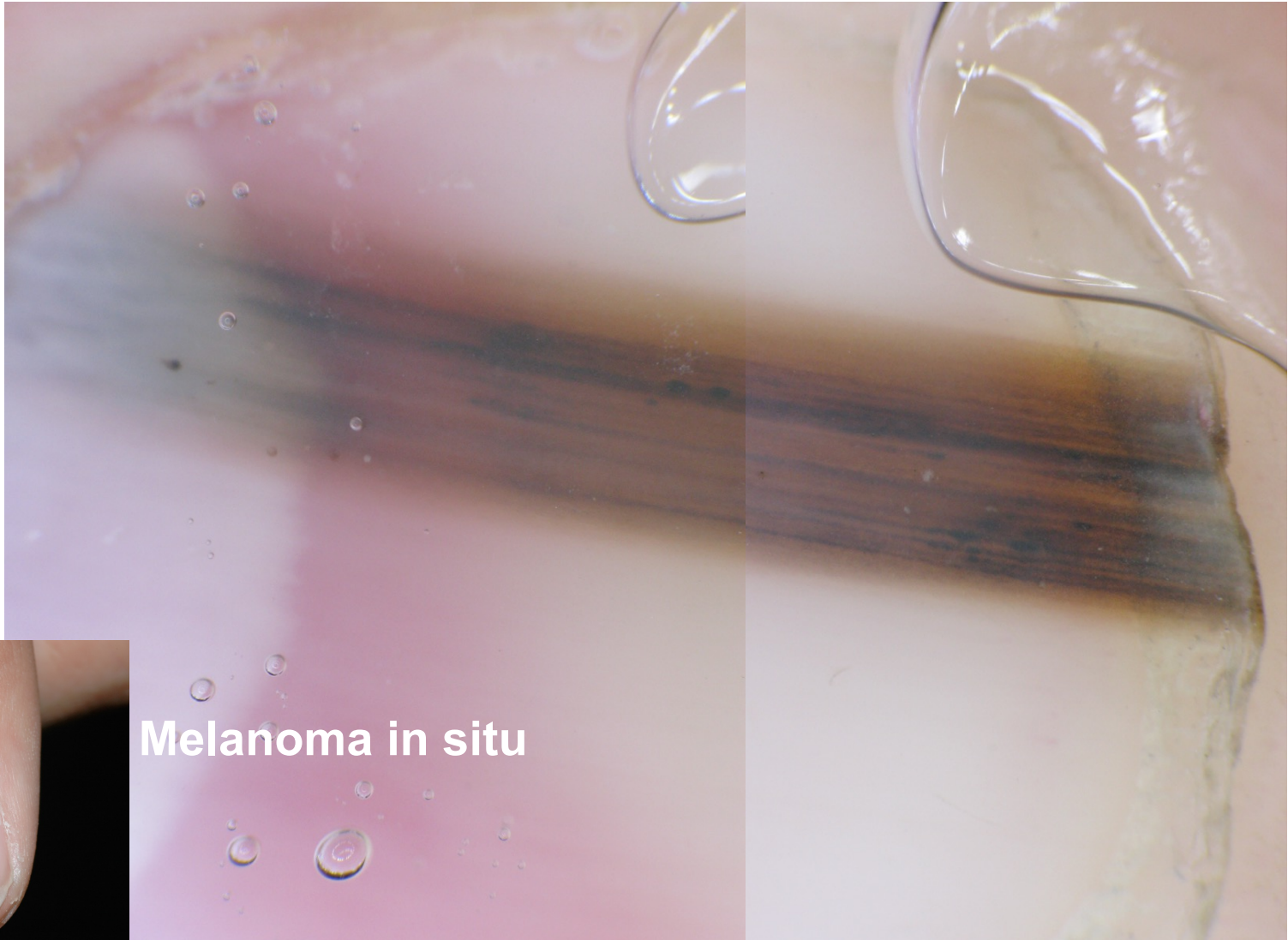
Lines increase in thickness proximally



Lines merge and separate locally



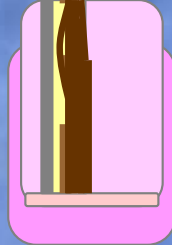


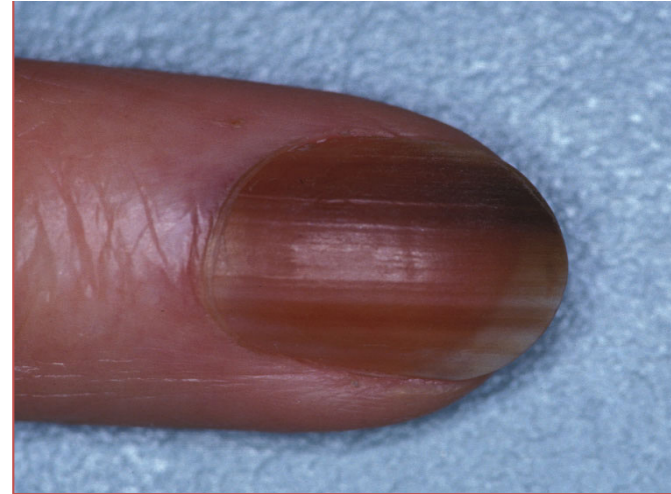
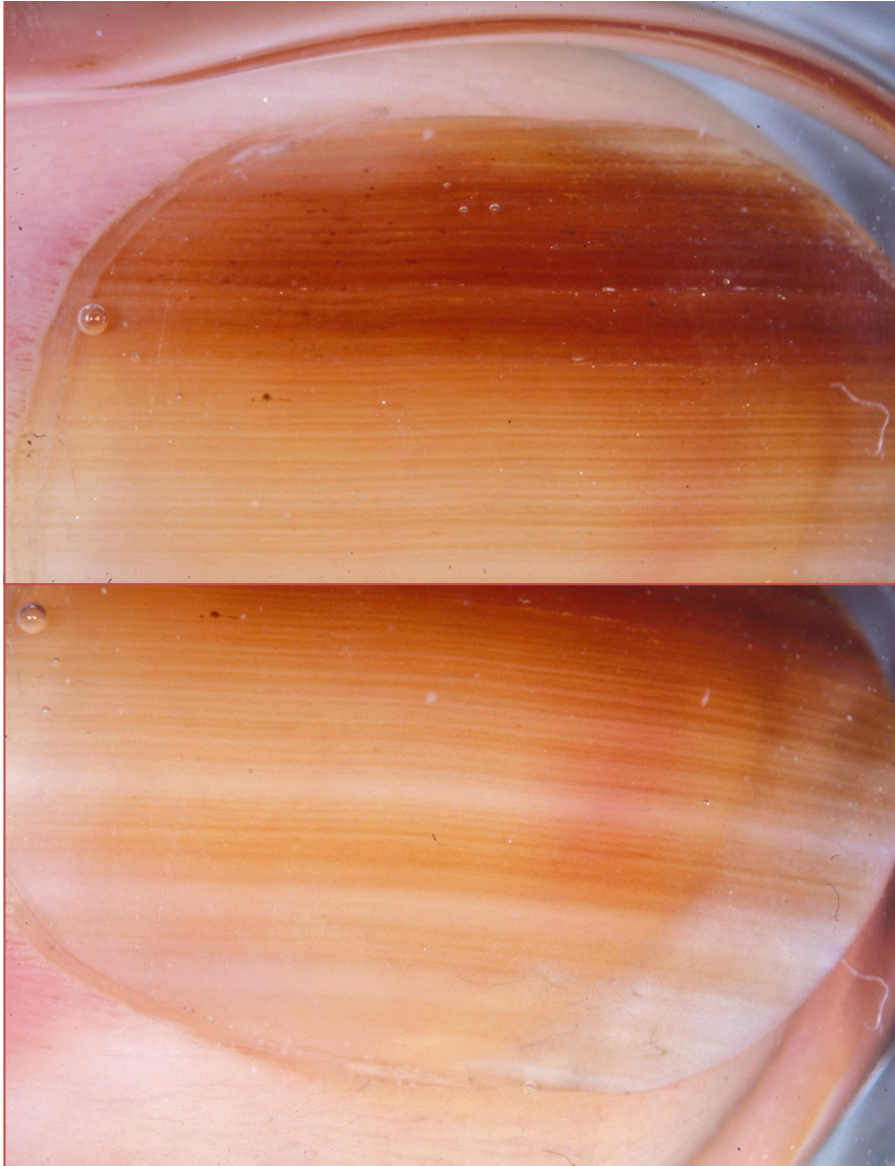


Melanoma in situ



Melanoma





Nail matrix in situ melanoma

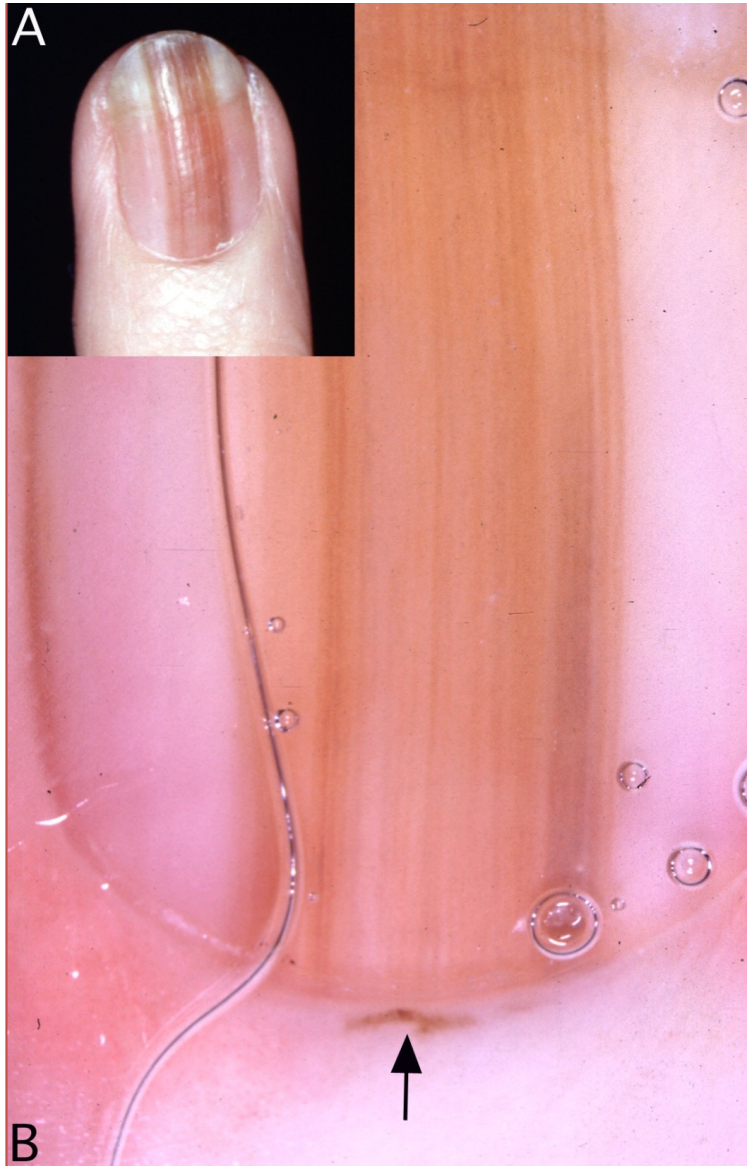
If the entire nail plate is involved then melanoma must always be ruled out!

1. Band >6mm OR for MM 29

Pearl:
“Micro-Hutchinson Sign”
OR = 18

- Seen only with dermoscopy
- Pigmentation of cuticle
- Suspicious for malignant melanoma but not completely specific

Ohn J, Jo G, Cho Y et al . Assessment of a Predictive Scoring Model for Dermoscopy of Subungual Melanoma In Situ. JAMA Dermatol. 2018 Aug 1;154(8):890-896.

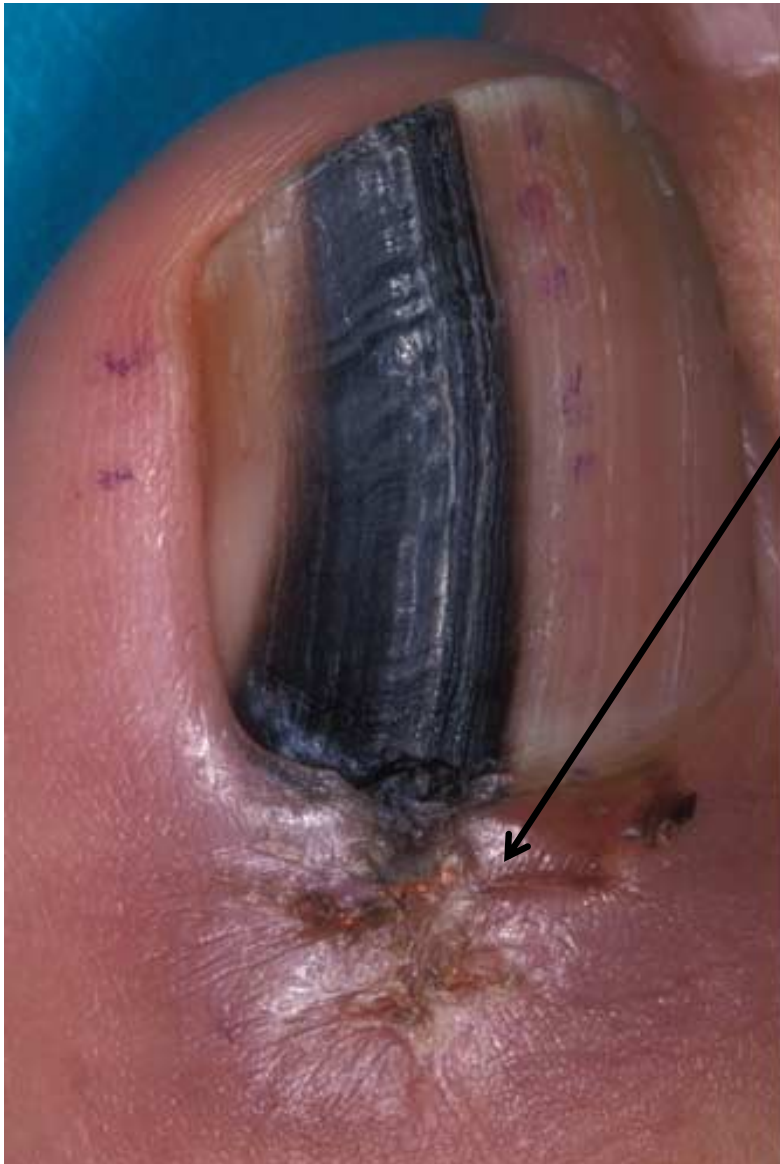


Nail matrix melanoma

Brown coloration of the background

Micro Hutchinson's sign (arrow)

Irregular pattern of the lines in terms of their thickness, color and spacing



N.B: Biopsy of **Hutchinson** sign cannot be used to r/o melanoma

Review

The Potential of Nail Mini-Organ Stem Cells in Skin, Nail and Digit Tips Regeneration

Anna Pulawska-Czub , Tomasz D. Pieczonka , Paula Mazurek and Krzysztof Kobiela 

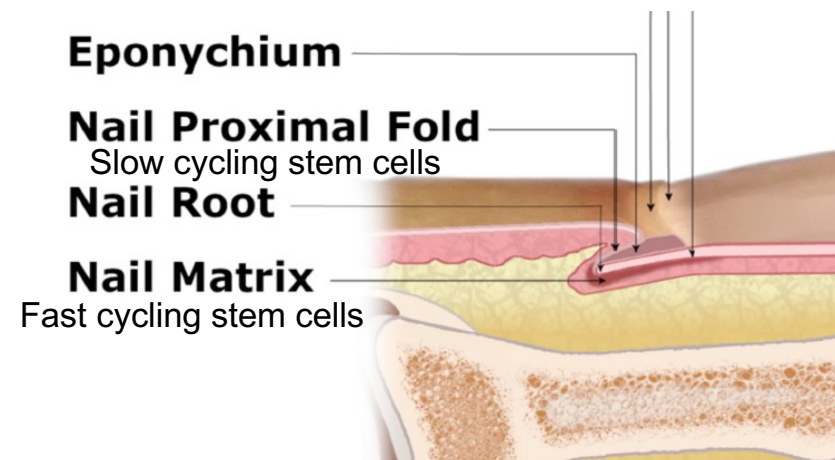


Table 3. Predictive Scoring Model for the Diagnosis of Subungual Melanoma In Situ

Dermoscopic Variable	β Coefficient (95% CI)	Score ^a
Width of pigmentation, mm		
$\geq 3^b$	1.67 (0.00-3.33)	1
≥ 6	3.38 (1.75-5.01)	2
Multicolor pigmentation	2.45 (0.79-4.11)	1
Pattern		
Asymmetry	3.53 (1.36-5.70)	2
Border fading	2.23 (0.86-3.60)	1
Hutchinson sign ^c	2.90 (0.70-5.10)	2

^a Scores were rounded to the nearest integer.

^b Used as reference regression unit for score standardization.

^c Defined as periungual pigmentation of the nail fold or hyponychium.

eTable. Sensitivity and Specificity of the Different Cutoff Score for the Subungual Melanoma In Situ

Cutoff Score	Number	Sensitivity	Specificity	1 – Specificity
0	45	1.00	0.00	1.00
1	39	1.00	0.23	0.77
2	32	1.00	0.50	0.50
3	27	0.89	0.62	0.38
4	23	0.84	0.73	0.27
5	21	0.84	0.81	0.19
6	17	0.79	0.92	0.08
7	8	0.42	1.00	0.00
8	6	0.32	1.00	0.00

Amelanotic melanoma

Disappearance of the lunula (80%)

Polychromia – remnant pigmentation (80%)

Disruption of parallelism, disappearance of the nail (nail dystrophy), blood spots and irregular vessels (60%)

Linear micro-hemorrhages, purple-blue spots and red spots (40%)

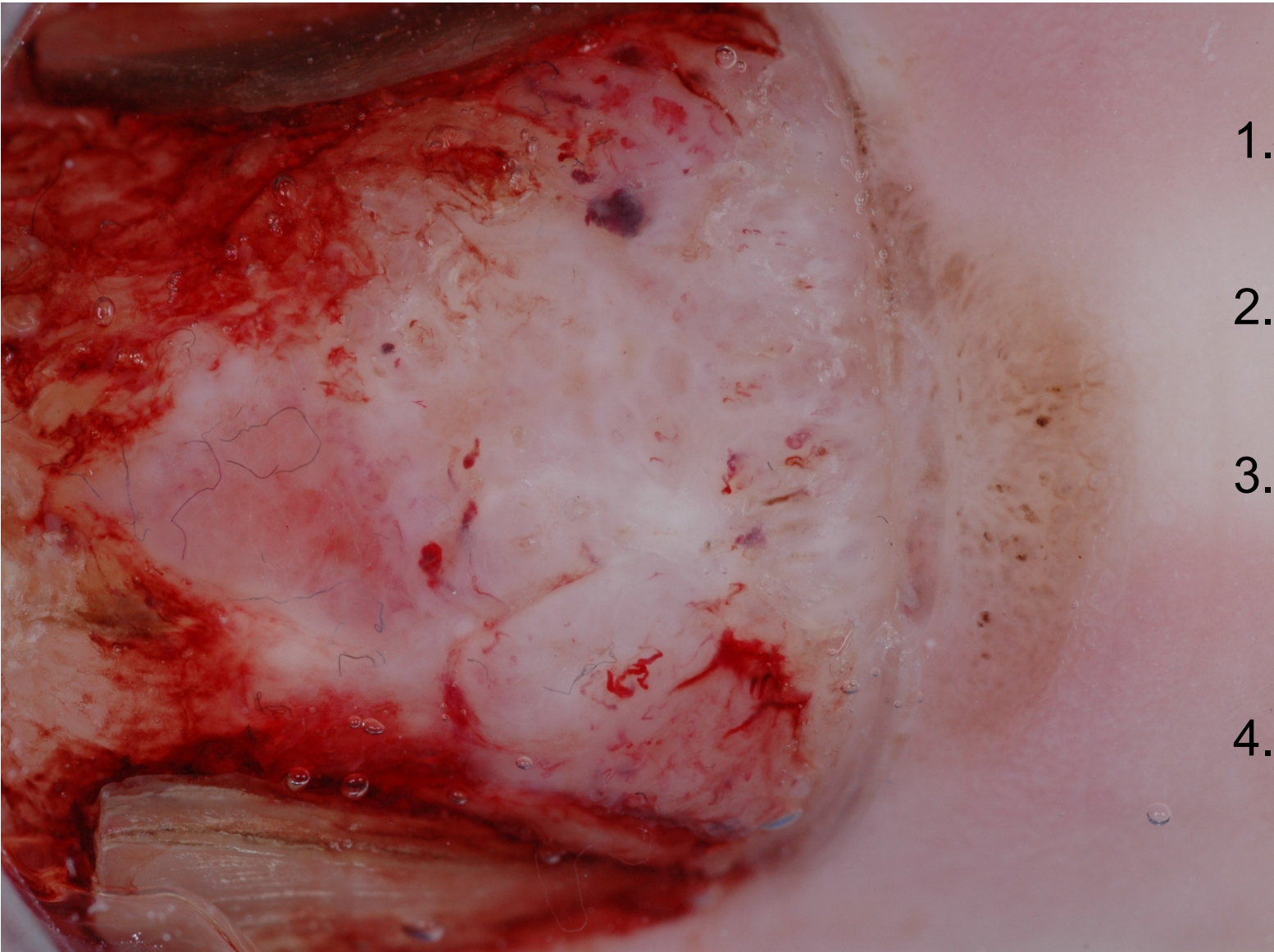


Disruption of the lunula
Polychromia

Disruption of parallelism, blood spots

Linear micro-hemorrhages, purple-blue spots and red spots

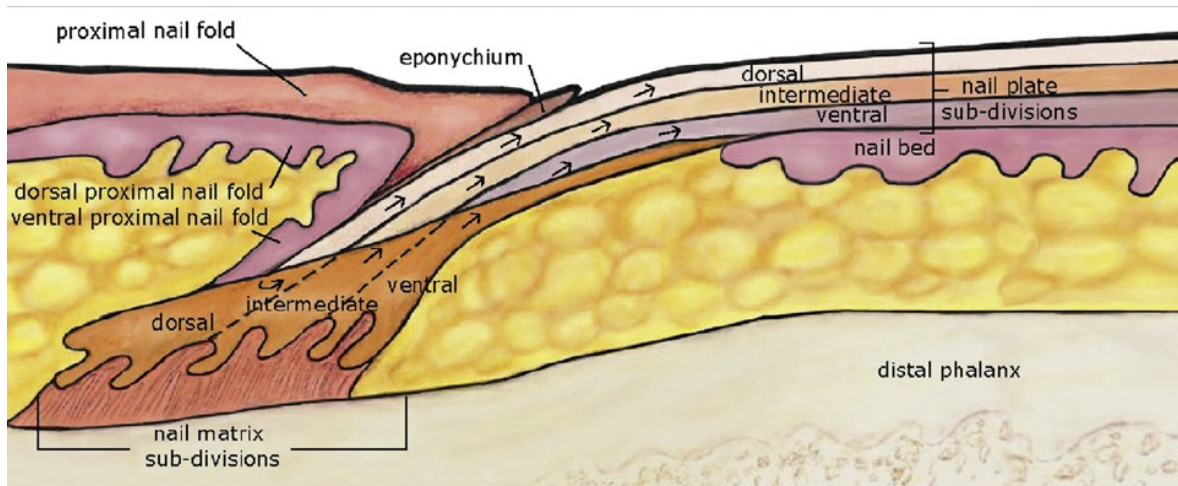




1. Disappearance of the lunula
2. Remnants of pigmentation
3. Disappearance of the nail, and irregular vessels
4. Hutchison's sign

Caution

- We are evaluating a shadow and
- Using the shadow to predict what the lesion (hidden under the nail fold) actually looks like.



Limitations and challenges of nail unit dermoscopy in longitudinal melanonychia

Thomas Knackstedt, MD,^{a,d} and Nathaniel J. Jellinek, MD^{a,b,c}

Special attention:

1. Isolated pigmentation on a single digit developing during adulthood; especially concerning if band:

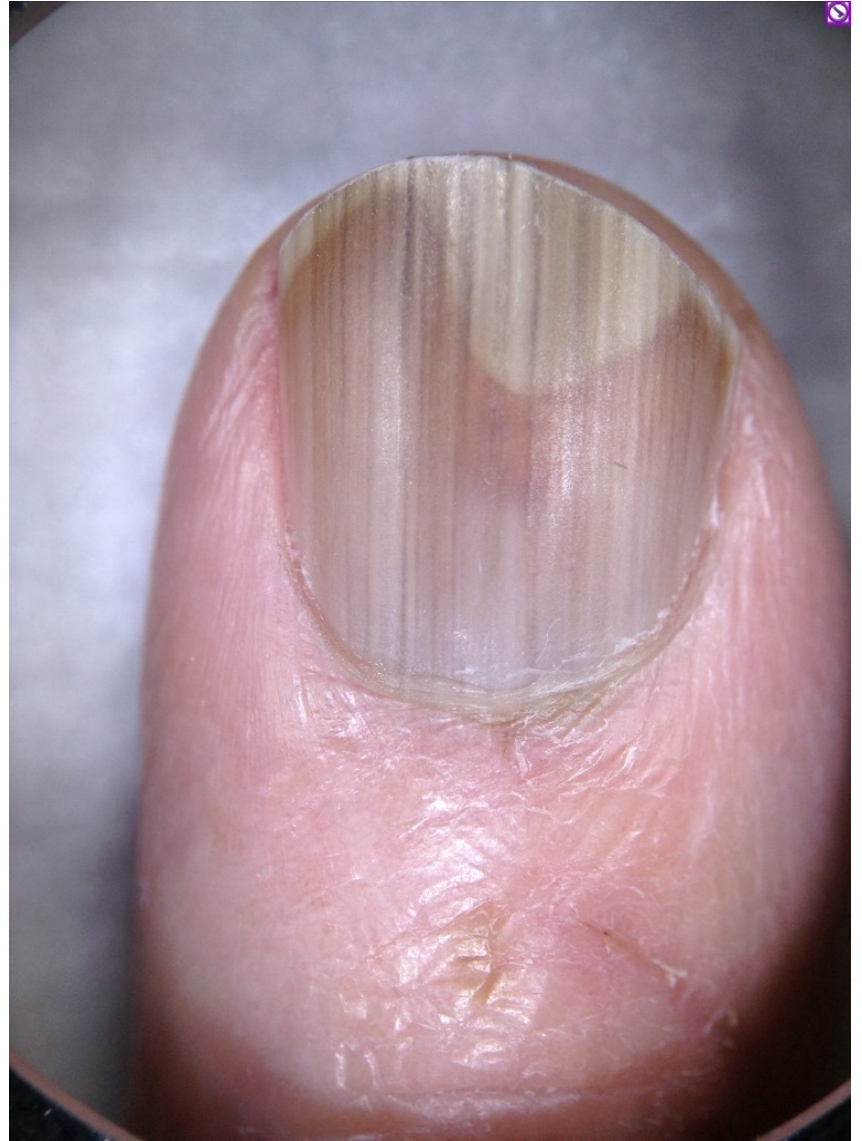
- Is >6mm in width or encompassing the entire nail plate (OR 29.33)
- Has a triangular shape (OR 6.67)
- Has multiple colors (OR 11.59)
- Presence of nail dystrophy or Hutchinson's sign (OR 3.2, 18.18)

2. Changing pigmentation (OR 9.33)

Ohn J, Jo G, Cho Y et al . Assessment of a Predictive Scoring Model for Dermoscopy of Subungual Melanoma In Situ. JAMA Dermatol. 2018 Aug 1;154(8):890-896.

Despite these limitations,
Dermoscopy can provide insights

A case to highlight some of the points discussed...



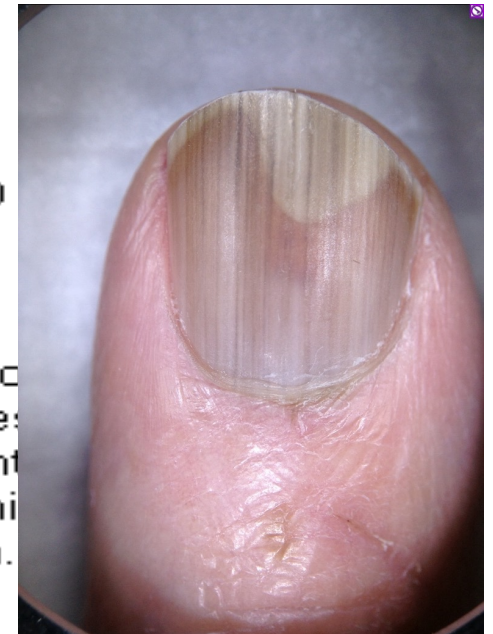
- Patient had biopsy done
- developed persistent distal onycholysis
- over next 6 months the pigment got darker (??)

DIAGNOSIS:

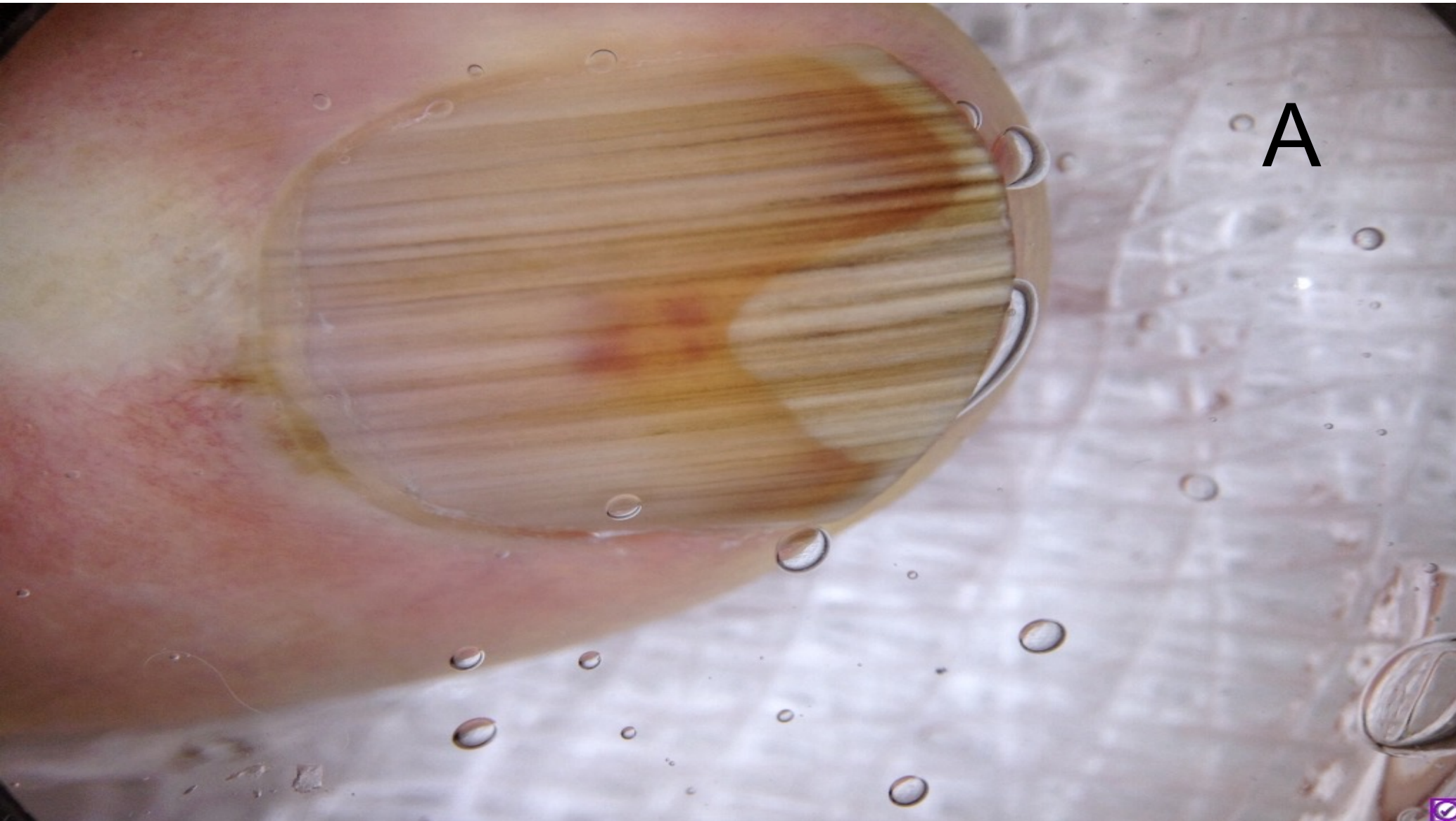
1. Right Lt fifth nail ([REDACTED] 1, 7/16/14, 3 H/E AND IMMUNOSTAINED):

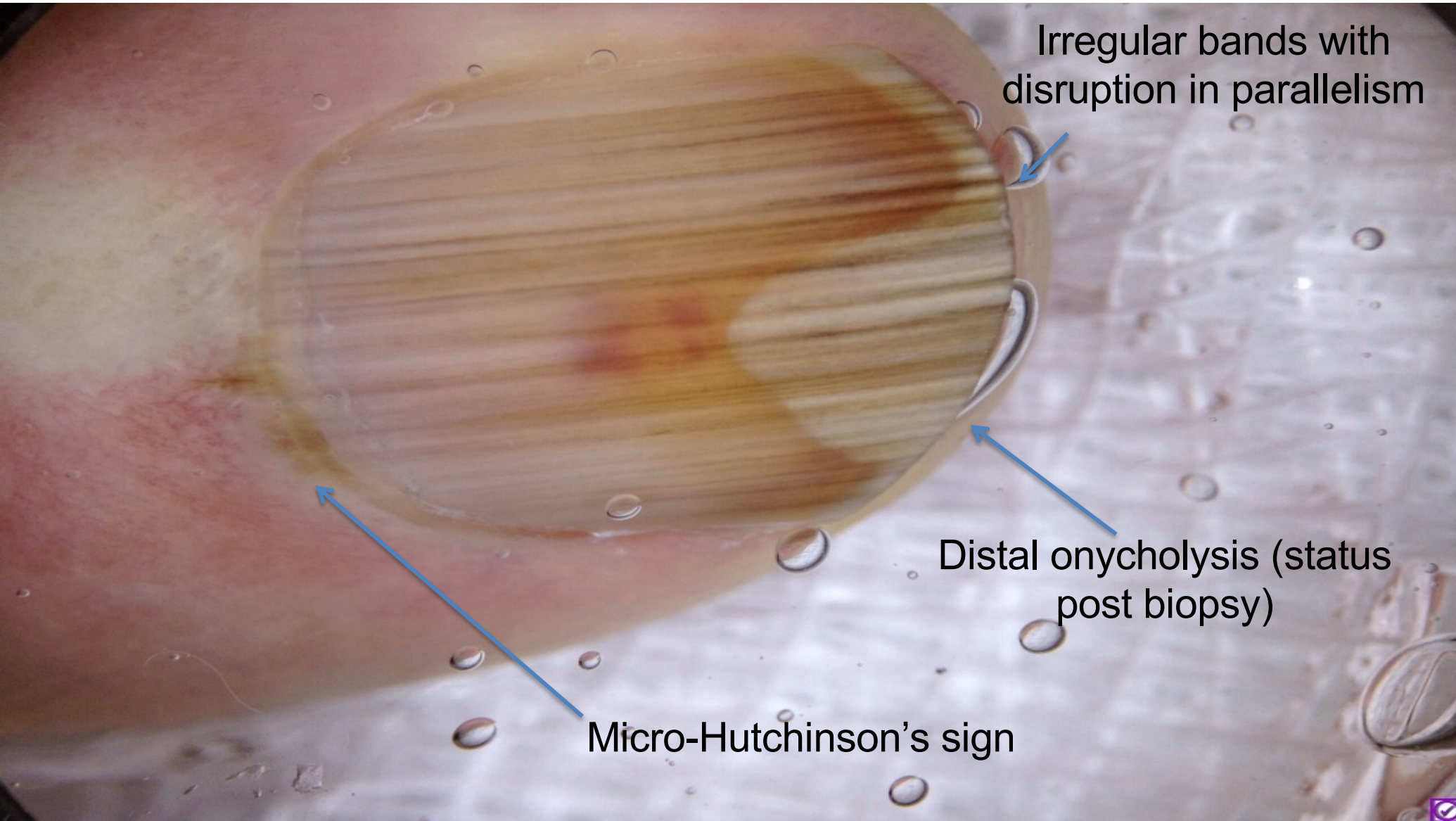
- Melanonychia; see note.

Note: Submitted immunohistochemical stains for MART-1 show density of melanocytes at the dermoepidermal junction in the Fontana-Masson stains show an increase in melanin pigment. The findings are in keeping with a benign melanonychia. Clinical is needed to ensure adequate sampling of the clinical lesion. also reviewed the case and agrees.



A





Irregular bands with disruption in parallelism

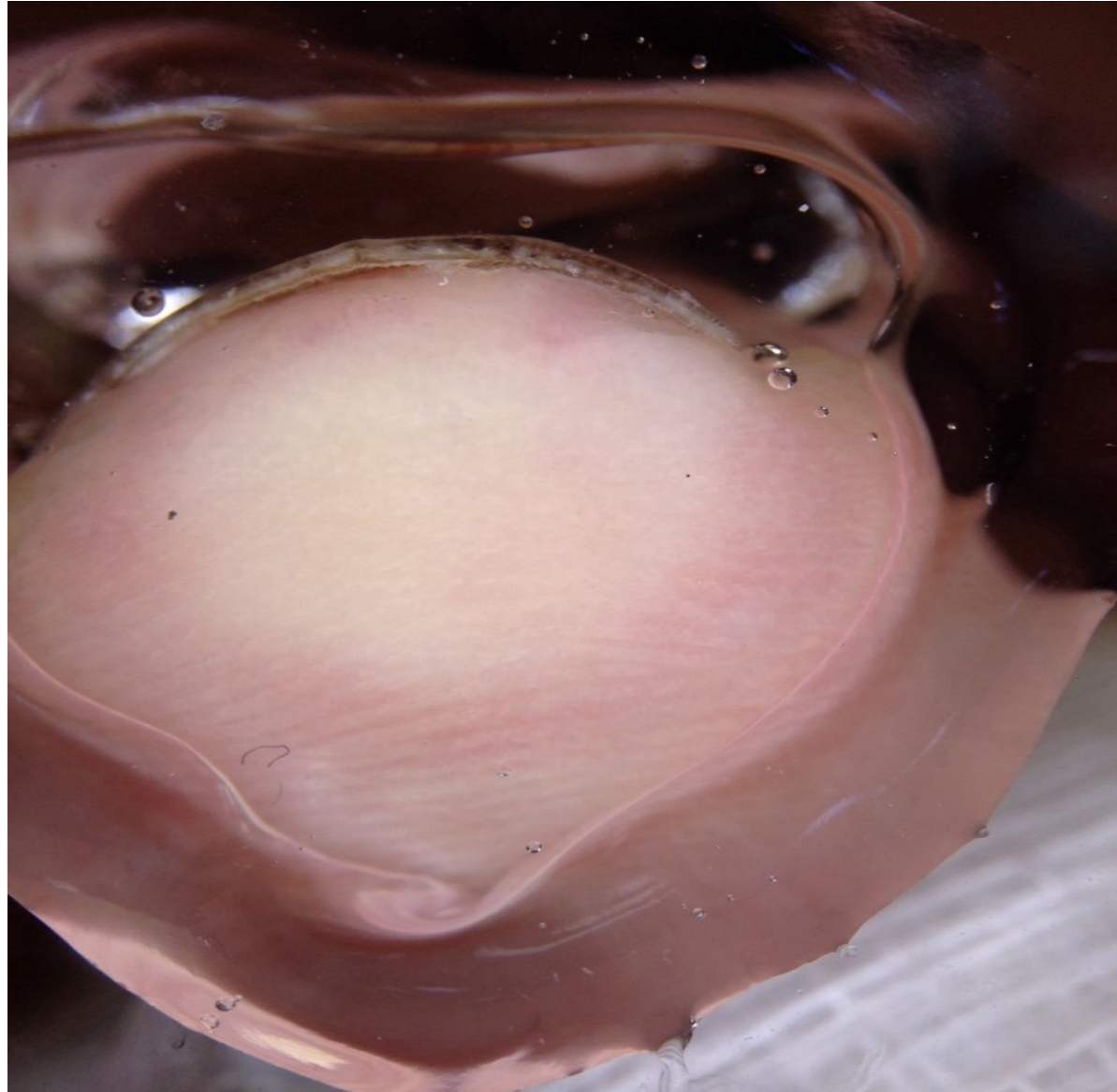
Distal onycholysis (status post biopsy)

Micro-Hutchinson's sign

B

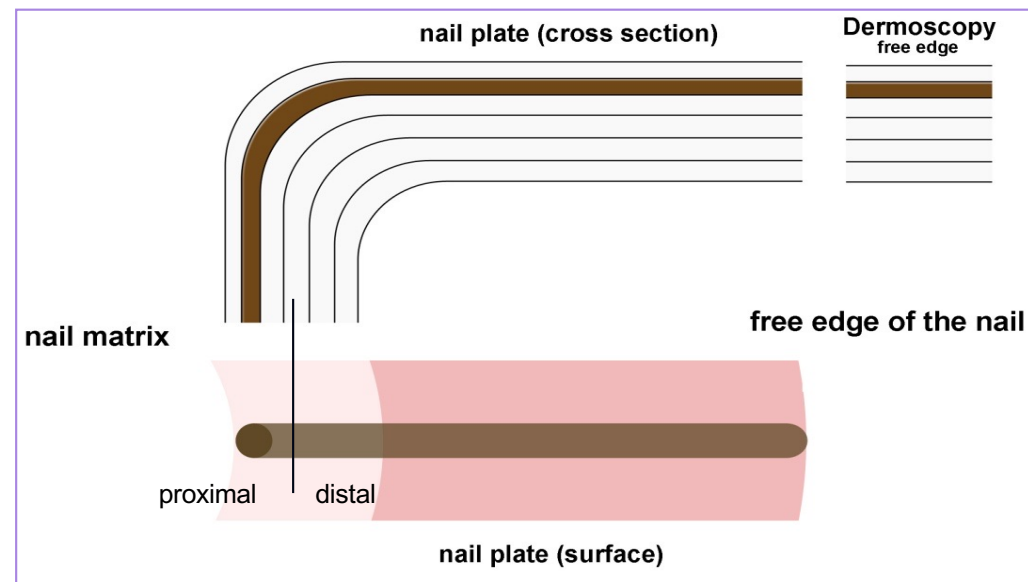
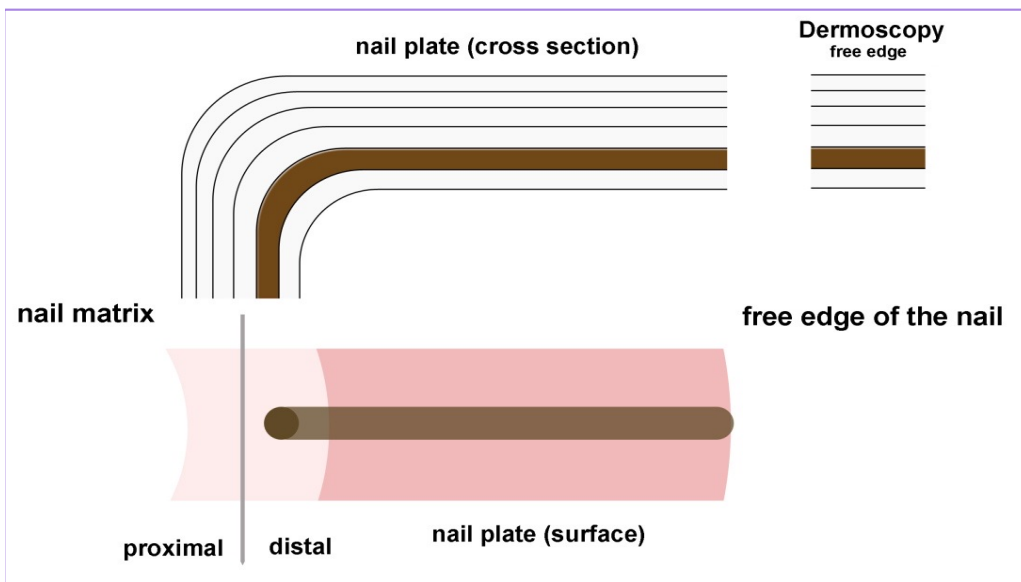
Where is the pathology?

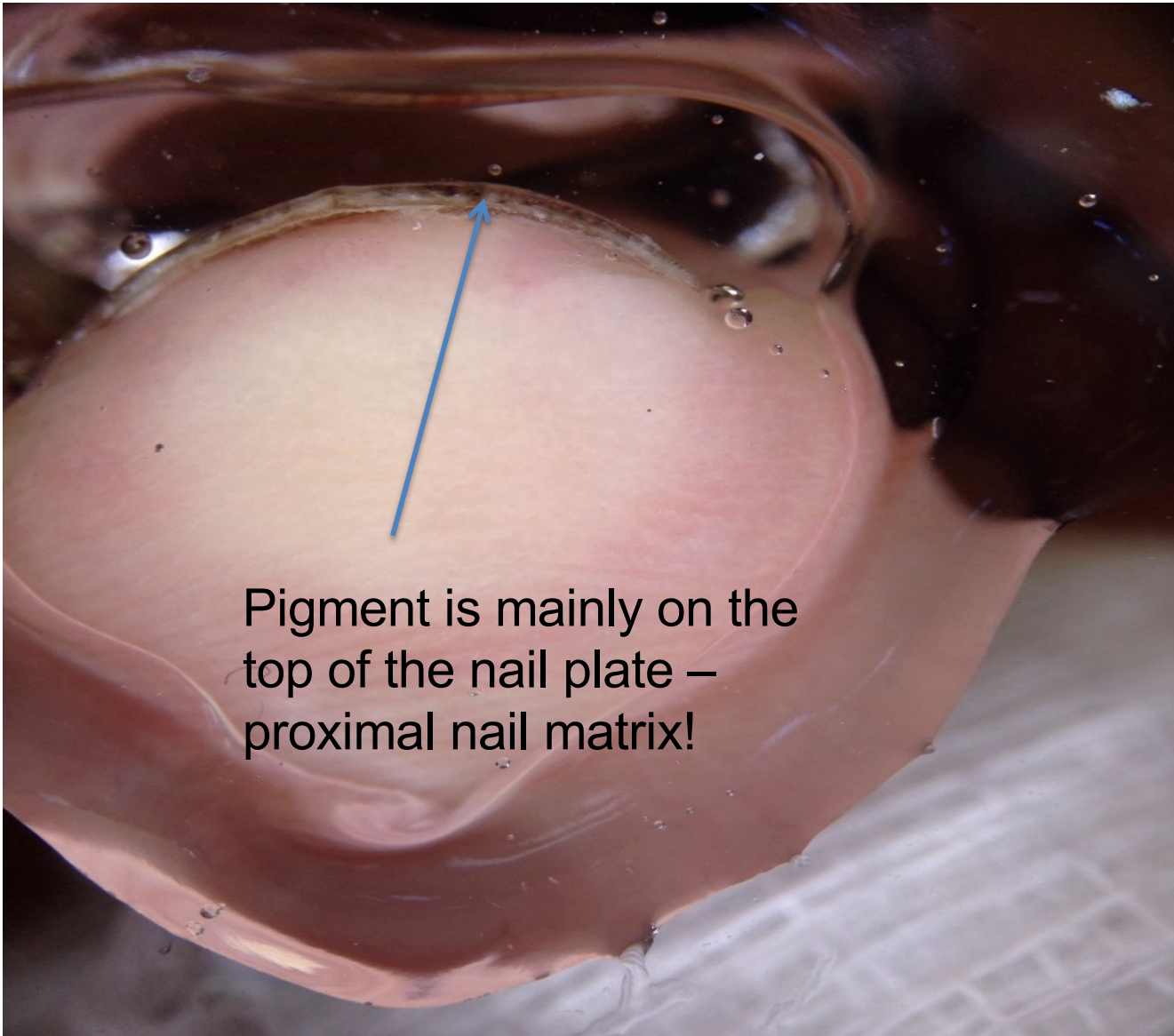
1. Proximal nail matrix
2. Distal nail matrix
3. Both proximal & distal



Nail dermoscopy

Free-edge dermoscopy





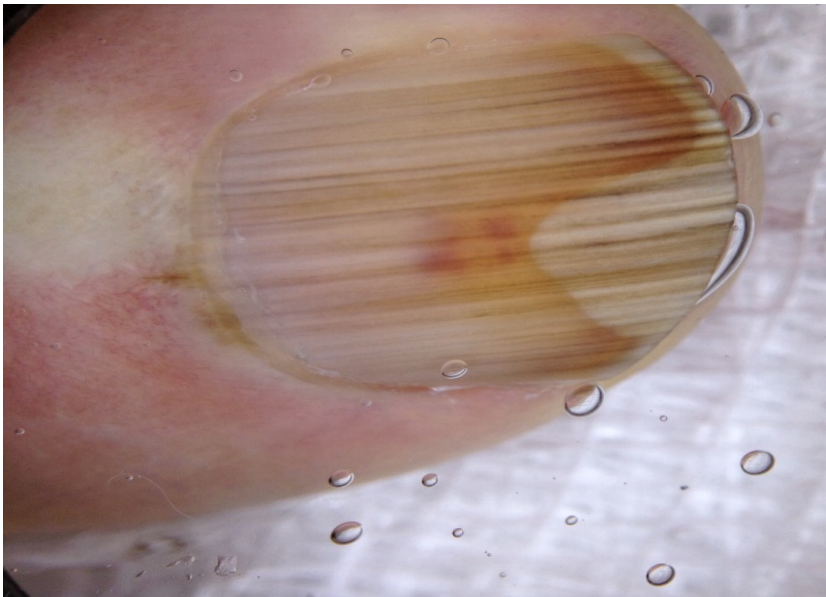
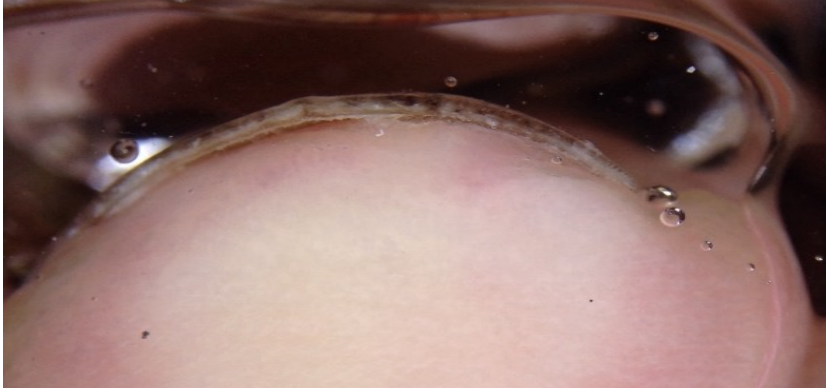
Pigment is mainly on the top of the nail plate – proximal nail matrix!

A microscopic view of a nail plate. The nail plate is a large, oval-shaped structure with a distinct longitudinal striation pattern. It is surrounded by a clear, gelatinous substance. The nail plate is attached to the underlying tissue, and there is a clear demarcation between the normal nail plate and the distal onycholysis. The letter 'C' is visible in the upper right corner of the image.

C

Based on the appearance of a normal superficial nail plate & distal onycholysis that developed after the biopsy, where was the biopsy taken from?

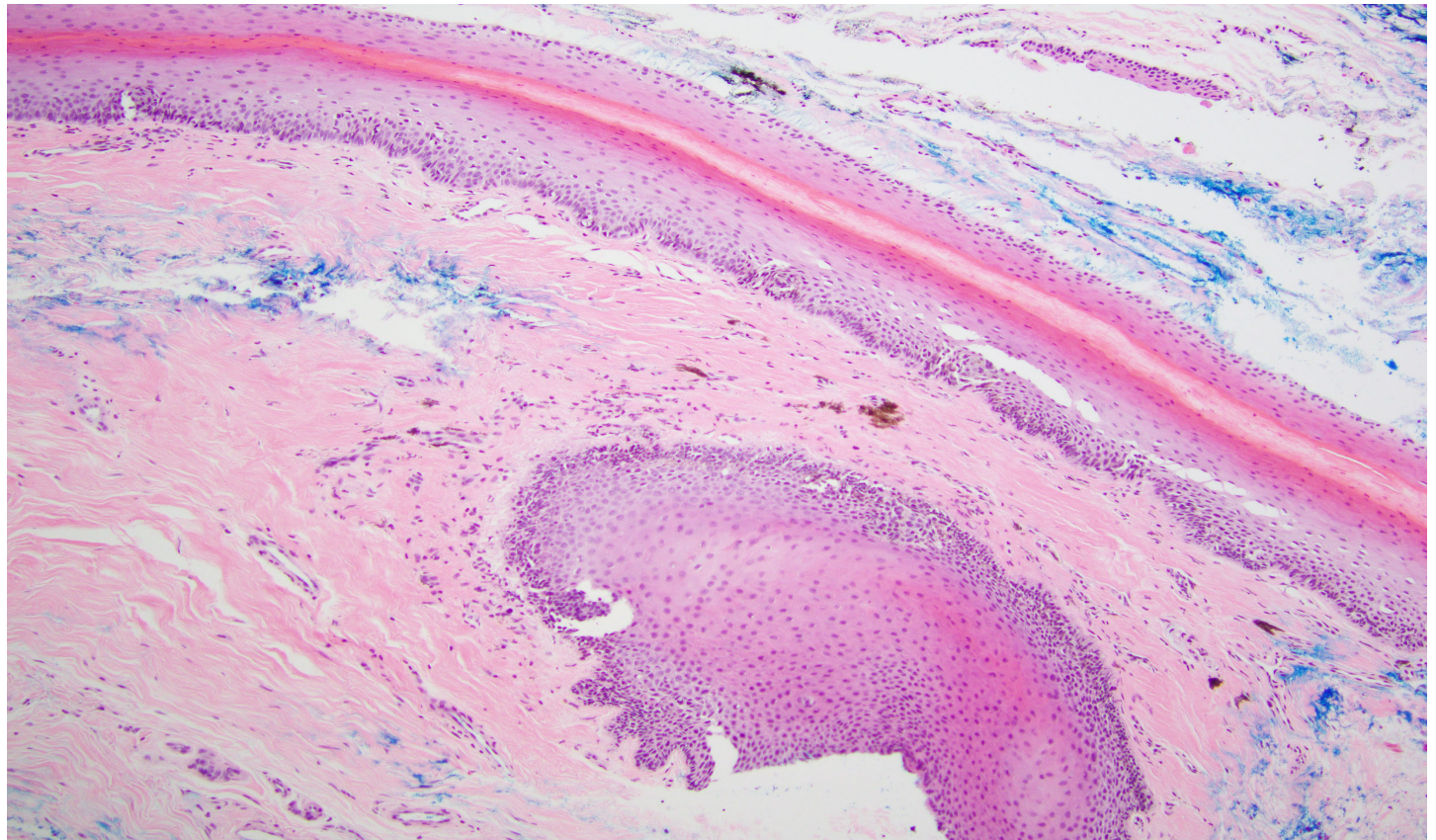
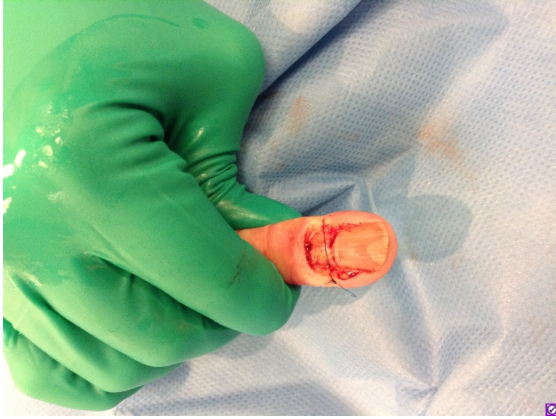
1. Proximal nail matrix
2. Distal nail matrix
3. Entire matrix



Based on the findings we now know:

1. Lesion pathology is located in proximal nail matrix
2. Original biopsy done of distal nail matrix
3. The dermoscopic findings are consistent with MM
4. Need to re-biopsy!!!

Re-biopsy of entire matrix:
Melanoma in proximal matrix

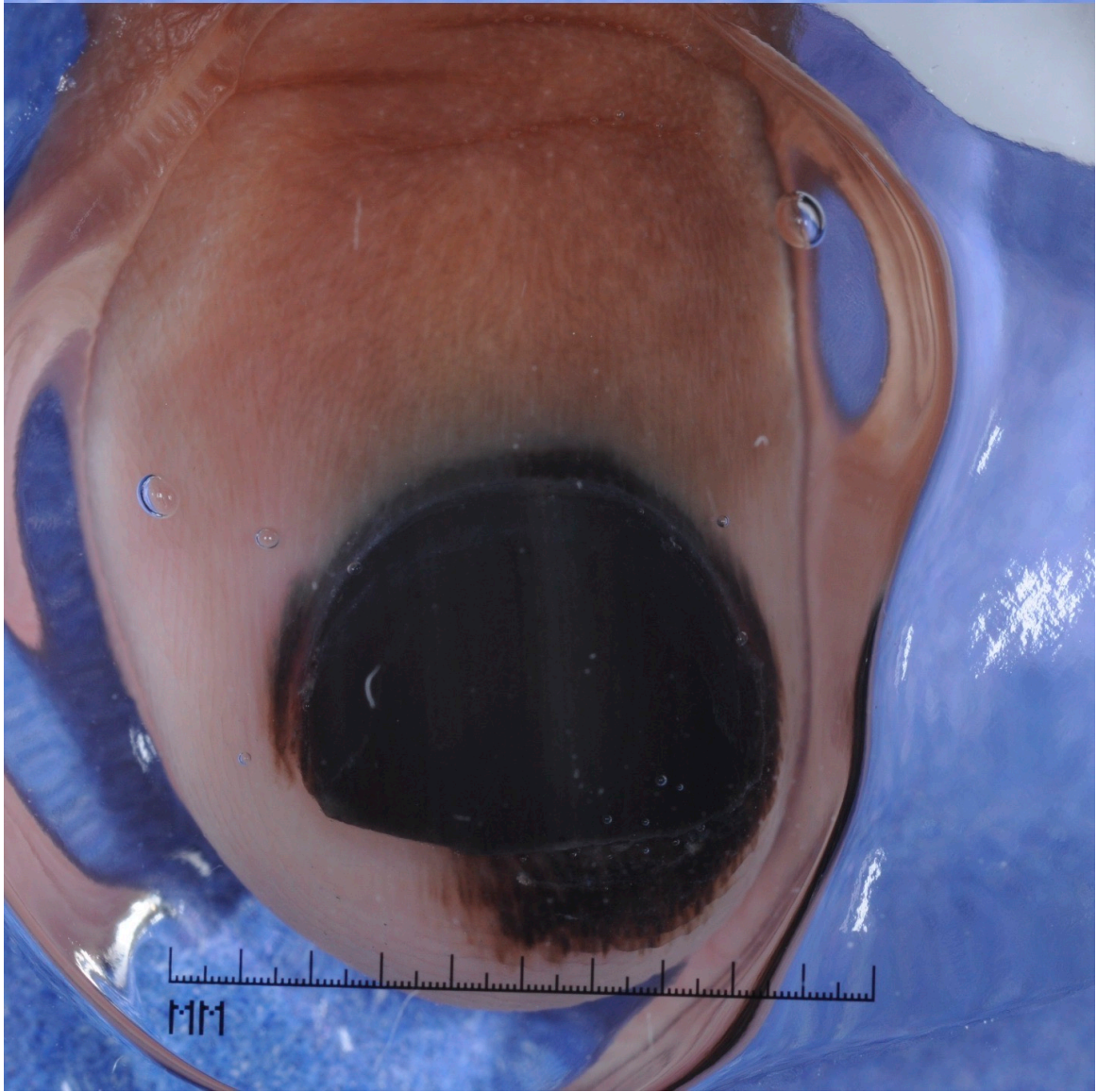


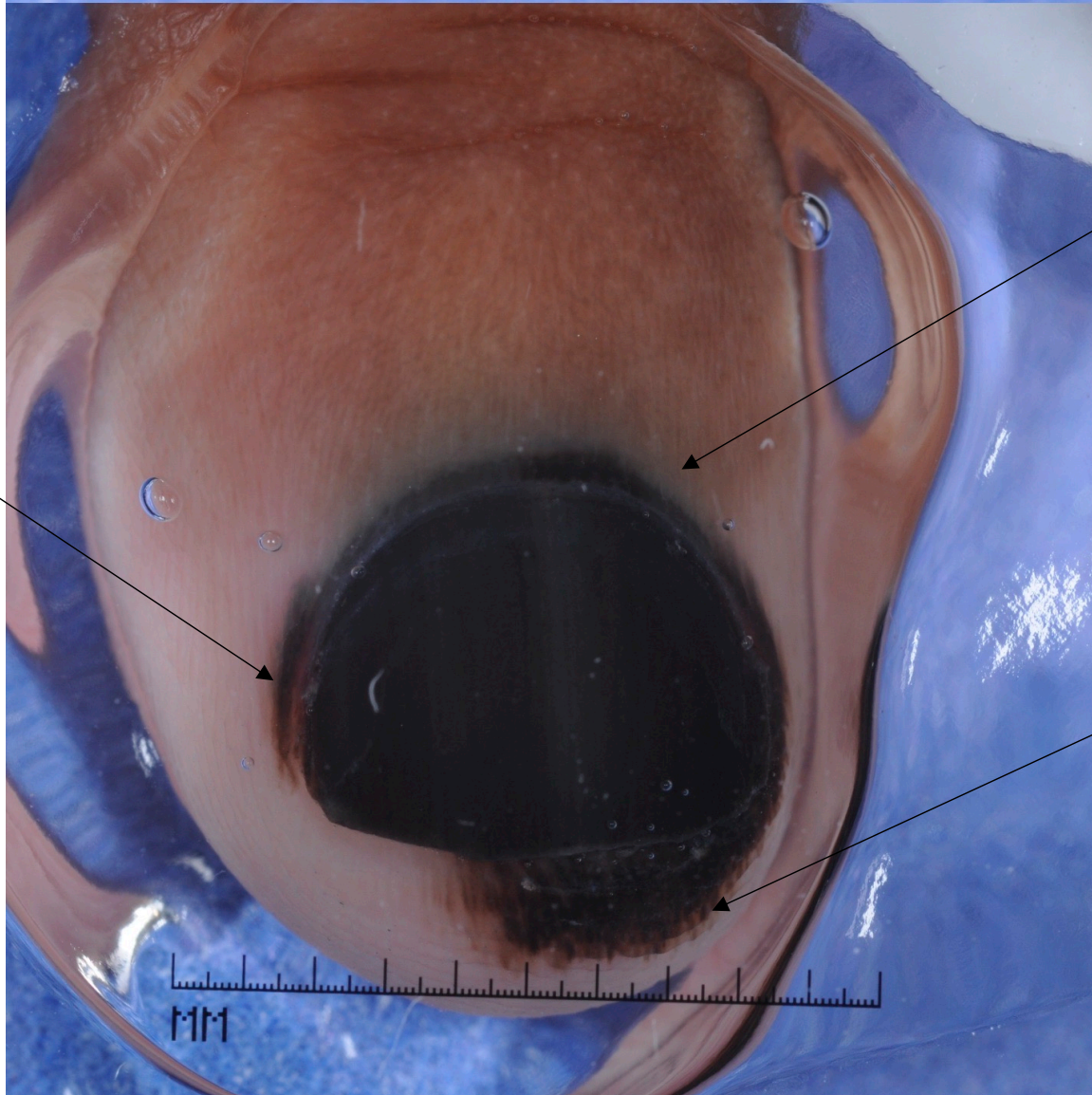
Note Bene:

**No algorithm can reliably differentiate CMN
(including tardive CMN) from melanoma!**

- 2-yo child with melanonychia striata x 1 year





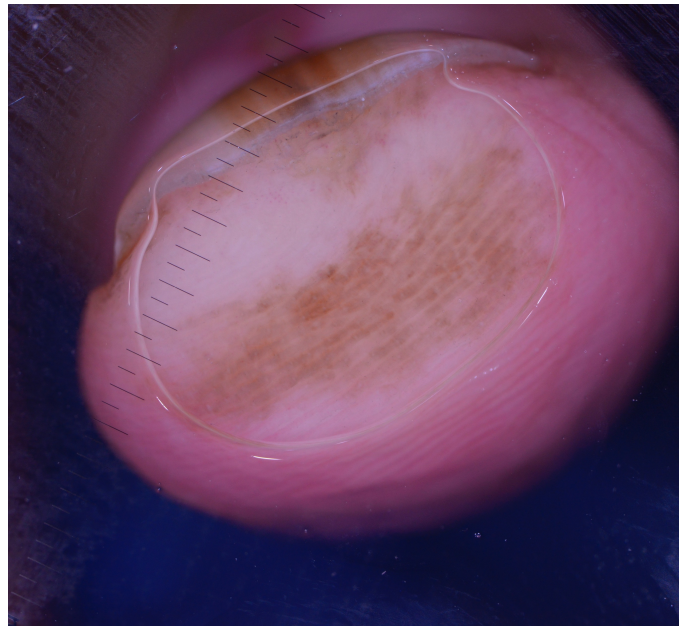


Pigment on
cuticle /
paronychia skin

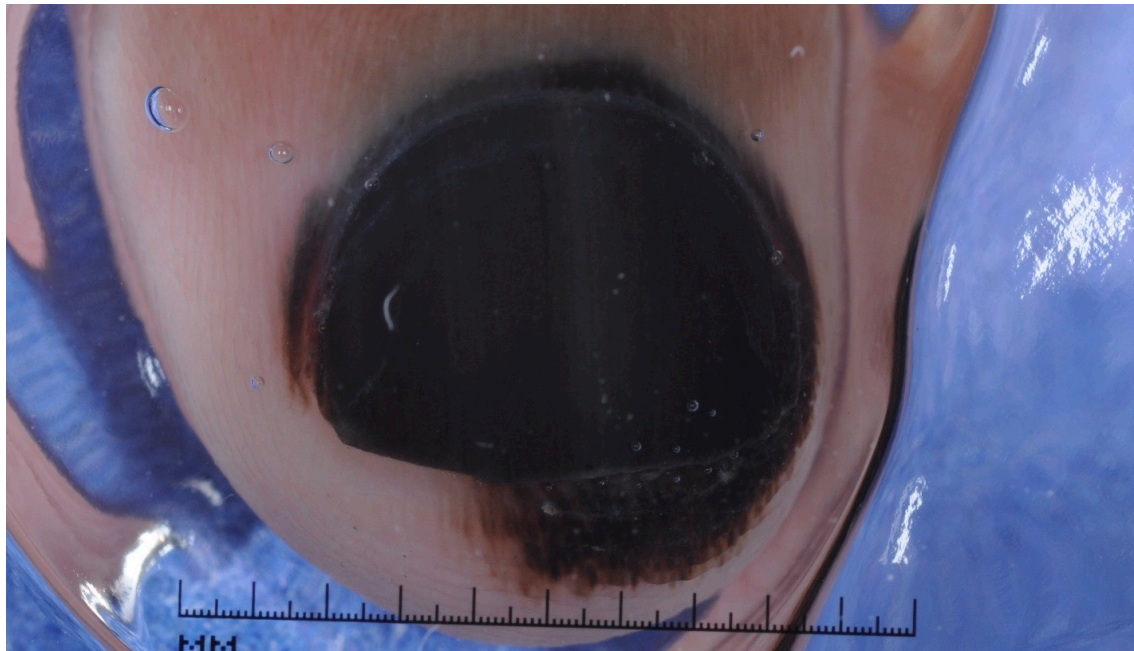
Entire nail plate
pigmented w/o
disruption in
parallelism

Fibrillar pattern
on hyponychium

- Pigment involving the cuticle, the entire nail bed/plate, with pigment extending onto the hyponychium can occur in both melanoma and congenital melanocytic nevi.
- In melanoma involving the nail unit the pigment on the hyponychium usually displays a parallel ridge pattern.



- In congenital melanocytic nevi involving the nail unit the pigment on the hyponychium often displays a fibrillar (brush-like) pattern as seen in the case presented. Based on the age of the patient and the presence of a fibrillar pattern of pigment on the hyponychium, the most probable diagnosis is that of a congenital melanocytic nevus.



Longitudinal brush pigmentation on the hyponychium, a dermoscopic feature observed in pediatric nail matrix nevi

Jongeun Lee, MD,^a Sewon Park, MD,^a Dongyouun Lee, MD, PhD,^a Kee-Taek Jang, MD, PhD,^b and Eun Ji Kwon, MD^c

J AM ACAD DERMATOL
JUNE 2021



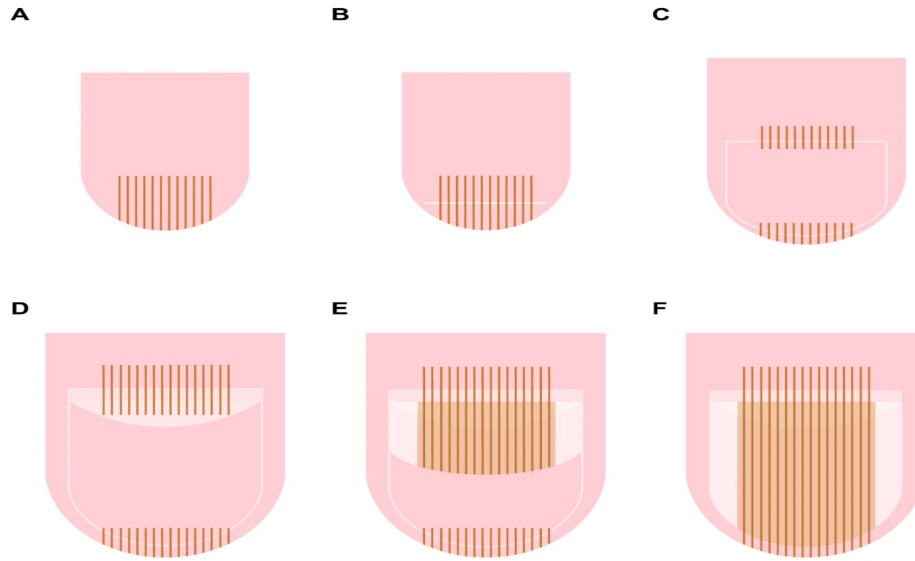
Fig 1. Dermoscopic images of patient 1. Dermoscopy shows the Hutchinson sign at the hyponychium with longitudinal brush pigmentation aligned parallel to the longitudinal direction.

Table I. Demographic and clinical data of 15 melanonychia cases

Patient no.	Age of onset, mo	Sex	Affected nail*	Width of melanonychia (% of nail width)	Nail dystrophy	Time from onset of melanonychia to development of hyponychial LBP, mo	Length of follow-up, mo
1	4	M	R5F	100	–	14	41
2	<1	M	L1F	33.3	–	LBP present at initial visit	33
3	8	M	L4F	66.7	+	56	30
4	2	M	L1F	39.5	+	LBP present at initial visit	13
5	36	F	L1F	72.7	+	LBP present at initial visit	14
6	<1	F	L3T	52.4	–	LBP present at initial visit	42
7	71	F	R4F	25	–	LBP present at initial visit	24
8	24	M	R1T	100	–	29	24
9	36	M	R2T	48	–	LBP present at initial visit	8
10	60	F	R3F	100	–	LBP present at initial visit	9
11	5	F	L1F	71.2	+	31	27
12	40	M	R2F	29.6	+	LBP present at initial visit	6
13	80	M	L1T	40.3	–	LBP present at initial visit	17
14	11	F	L1F	13.1	–	18	28
15	3	F	L3F	22.8	–	17	30

F, Female; LBP, longitudinal brush pigmentation; M, male.

*The first letter specifies right (R) or left (L), and the last specifies finger (F) or toe (T). A number between them indicates which finger or toe is affected.



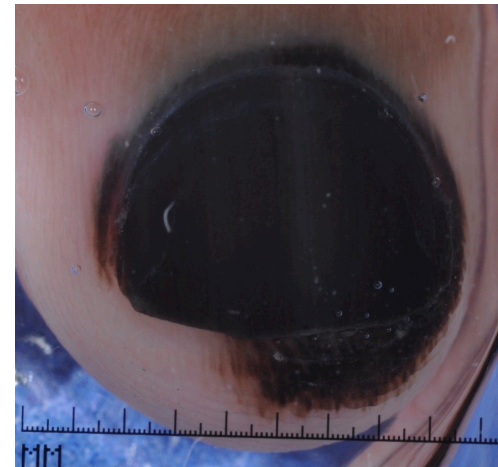
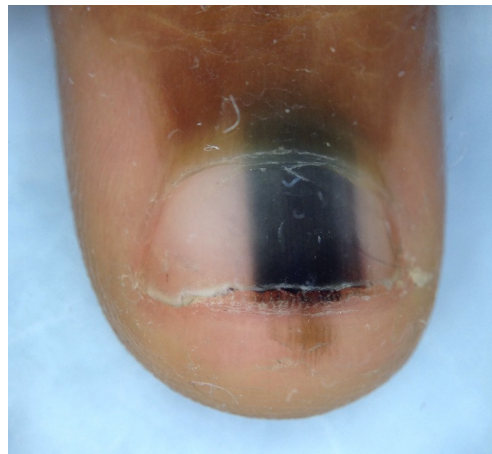
Conclusion:

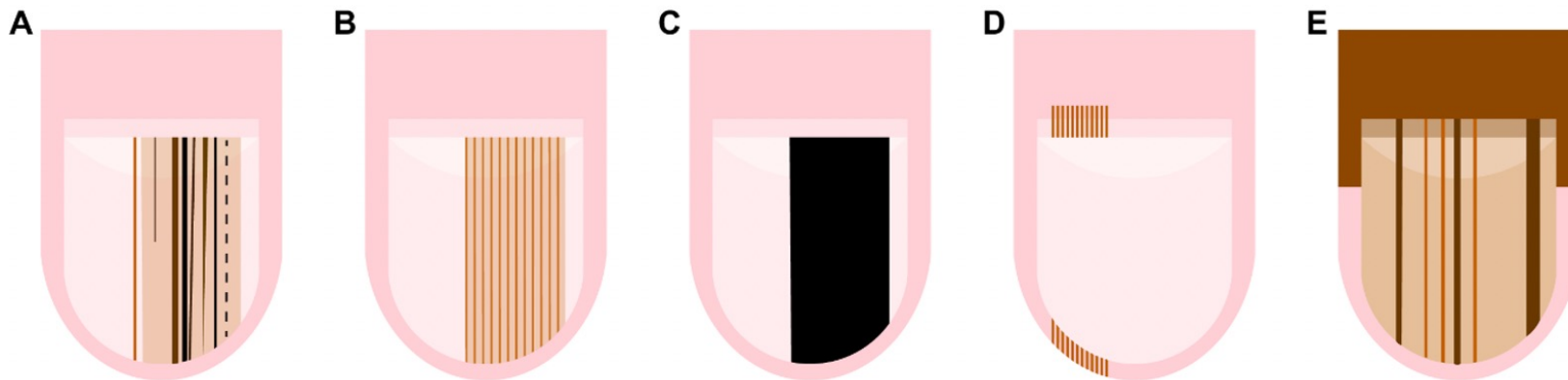
Characteristically, the distal fibrillar pattern is often present and may be a “signature feature” of congenital and congenital-type NMN.

Dermatoscopic and clinical features of congenital or congenital-type nail matrix nevi: A multicenter prospective cohort study by the International Dermoscopy Society

Félix Pham, MD,^{a,b} Amélie Boespflug, MD, PhD,^{a,b} Gérard Duru, PhD,^c Alice Phan, MD,^d

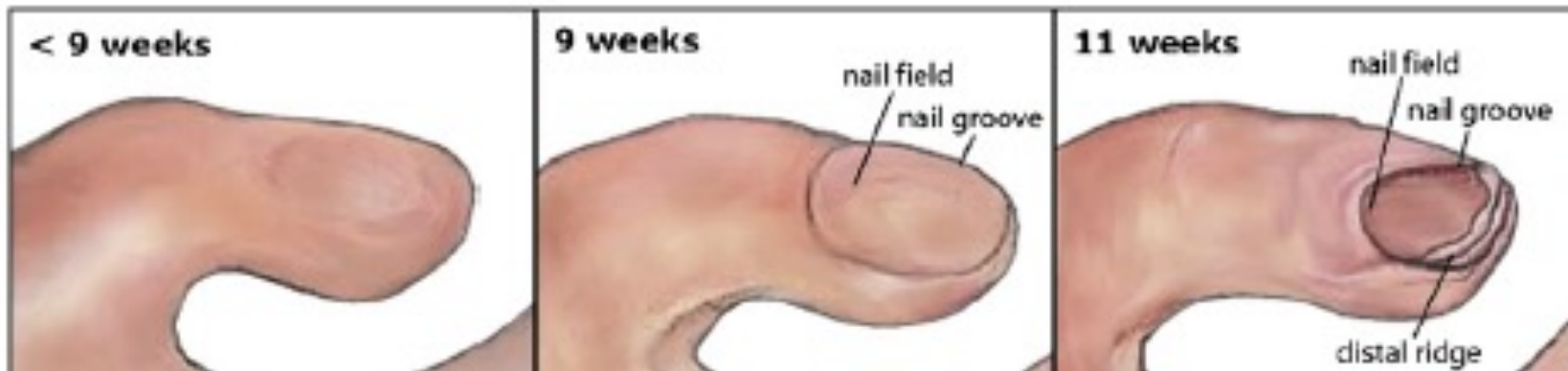
Conclusion: Congenital and congenital-type NMN showed worrisome clinical and dermatoscopic features similar to those observed in adulthood subungual melanoma. The distal fibrillar (“brush-like”) pattern is a suggestive feature of congenital and congenital-type NMN. (J Am Acad Dermatol <https://doi.org/10.1016/j.jaad.2022.01.028>.)





Conclusion: Congenital and congenital-type NMN share common clinical and dermoscopic features of SUM in adults.

- It is hypothesized that congenital melanocytic nevi that form before the development of the nail groove during embryogenesis will likely involve the entire nail unit (matrix, cuticle, nail bed and hyponychium).



(J Am Acad Dermatol 2007;57:1-27.)

Longterm digital monitoring in the diagnosis and management of congenital nevi of the nail apparatus showing pseudo-Hutchinson's sign

Mizuki Sawada¹, Sumiko Ishizaki¹, Ken Kobayashi¹, Itaru Dekio¹, Masaru Tanaka¹

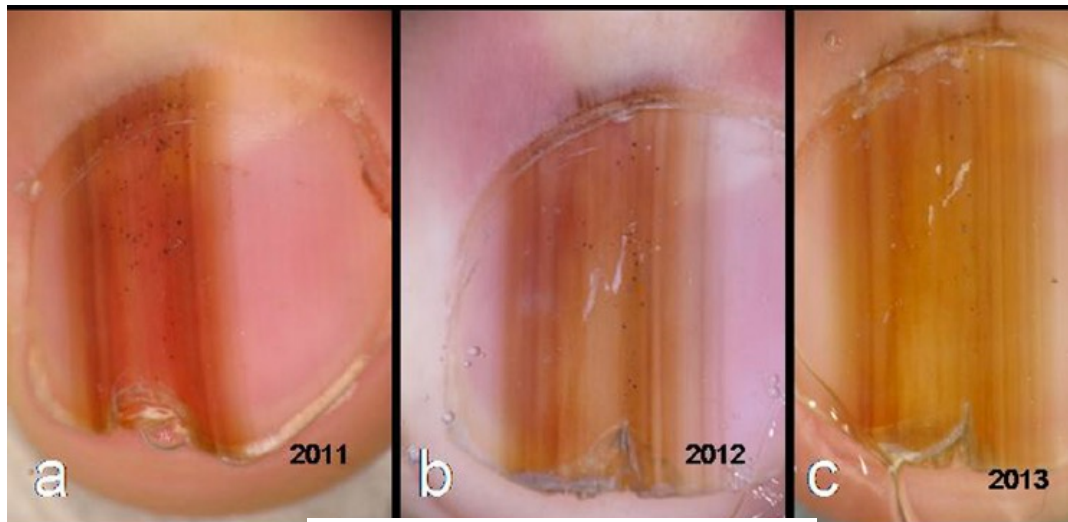
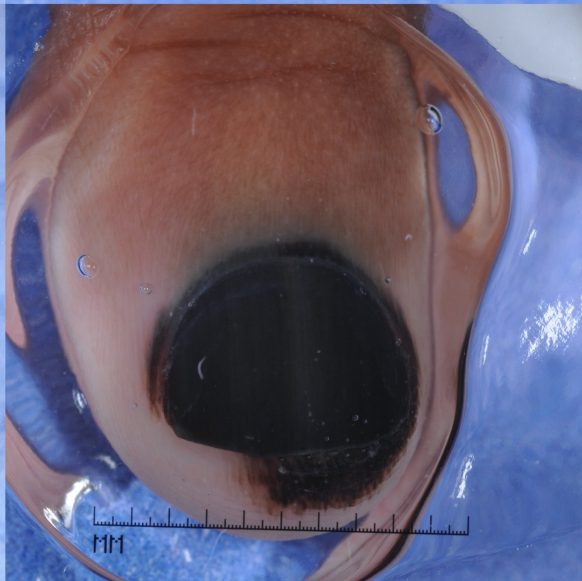
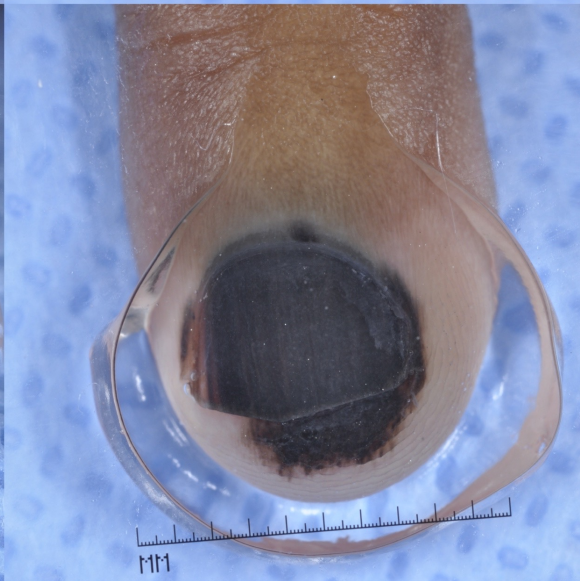
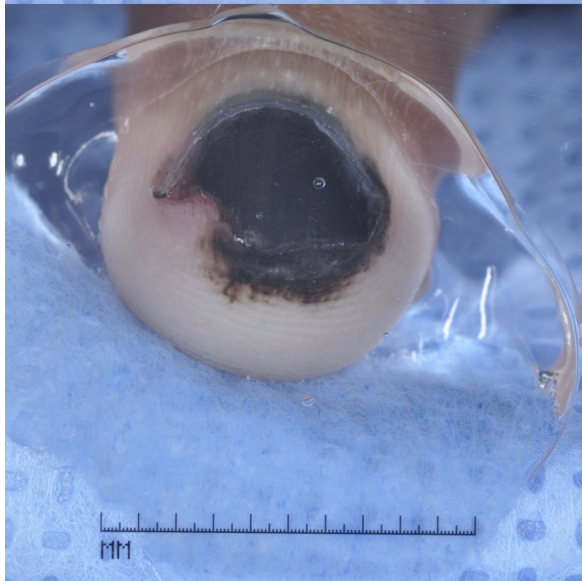
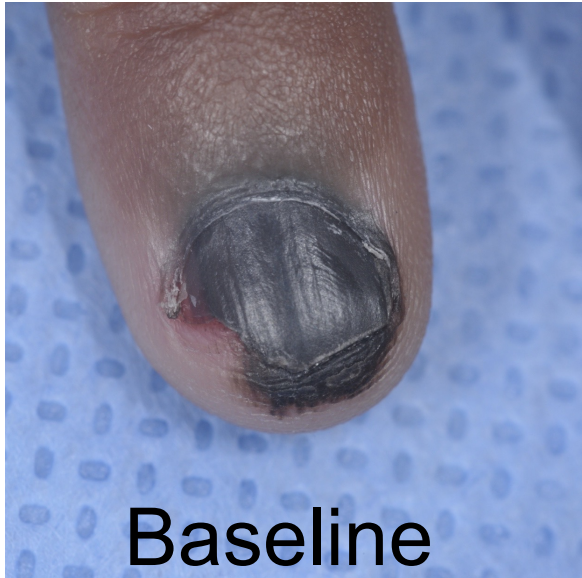


Figure 2. Dermoscopy of case 2. Dermoscopy showed regular dark brown lines and a brown background band (A–C). The brown background band slightly widened, but the dark brown lines on the band is gradually decreasing. There was a regular minute fibrillar pattern on the proximal nailfold. [Copyright: ©2014 Sawada et al.]



Figure 4. “Neumatic” pattern resembling the notation of the Gregorian chant. The dots and lines in the regressing melanonychia show a “neumatic” pattern. [Copyright: ©2014 Sawada et al.]

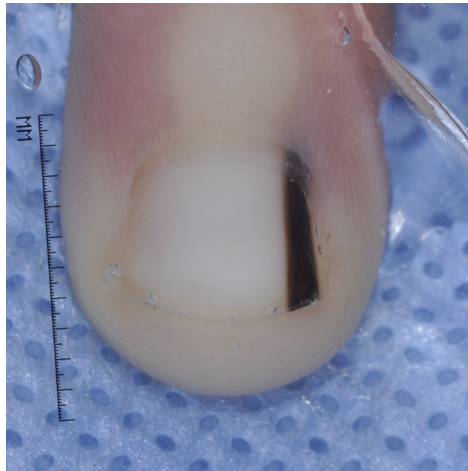
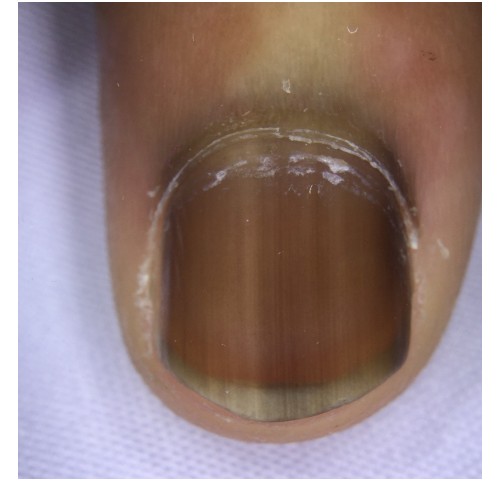


Children break all the rules

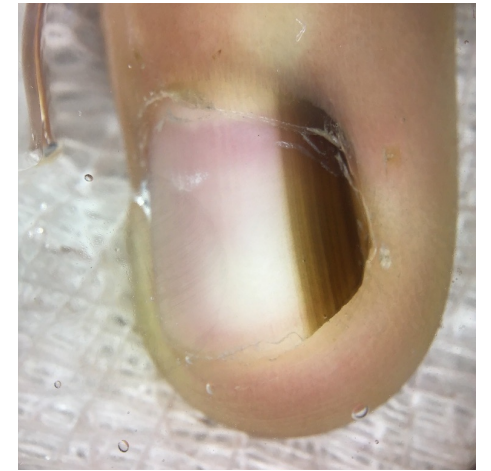


In adults the warning signs include:

1. Entire nail plate involvement
2. Pigment extends onto cuticle or hyponychium
3. Triangulation



F/U



Nail pigmentation: Pigmented band originating from lunula

