

Dermoscopy Primer: Top-down 2-step dermoscopy algorithm **Special Sites: Facial, Mucosal, & Volar skin & Nails**

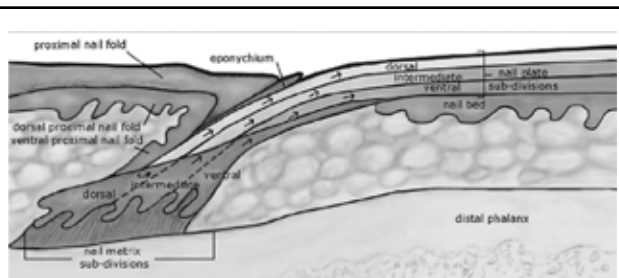
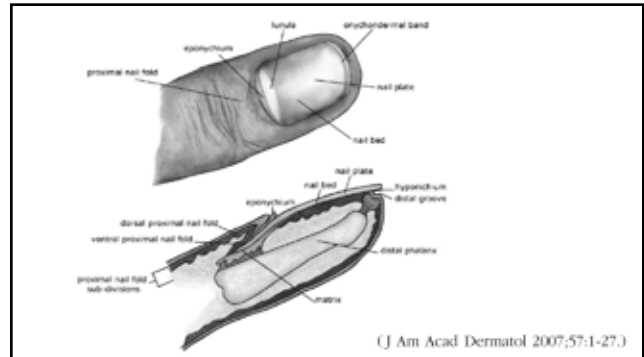
Ashfaq A. Marghoob, MD
Attending Physician



Memorial Sloan Kettering
Cancer Center.

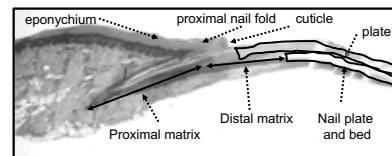


Website to
dermoscopedia



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

The distal matrix produces the lower surface of the nail plate.
The proximal matrix produces the top surface of the nail plate.



The location of the pigment (observed at the free edge) can help determine the location of the causative lesion:

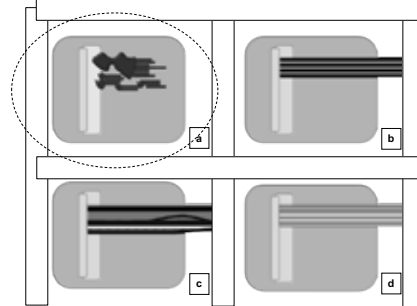
Nail plate surface : proximal matrix
Nail plate undersurface : distal matrix

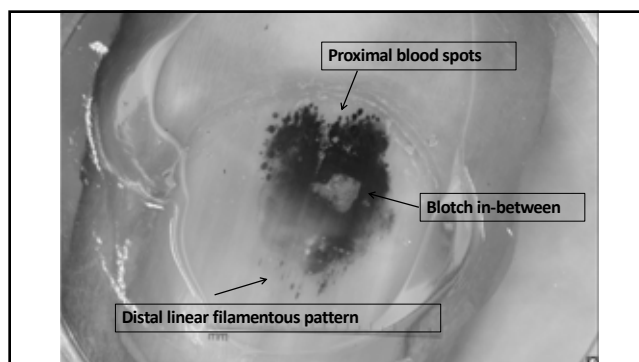
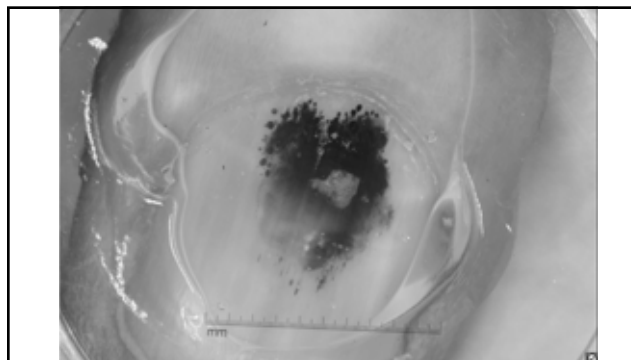
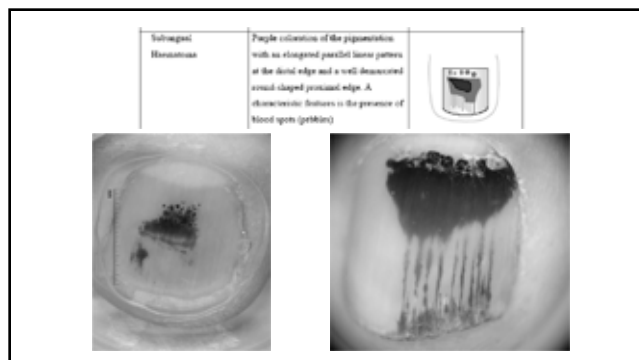
Nail apparatus dermoscopy

- Viscous immersion fluid is necessary (i.e., ultrasound gel)
- If using PD: Contact PD is better than NCPD



Four main dermoscopic patterns:

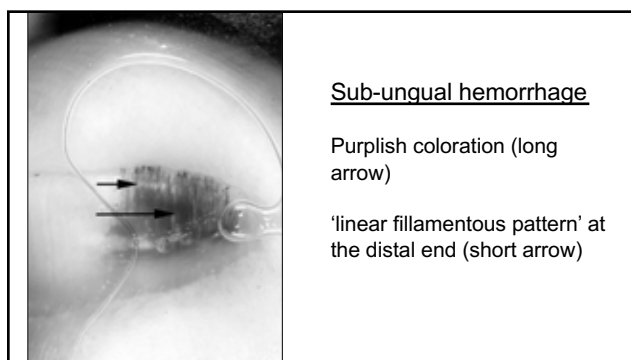
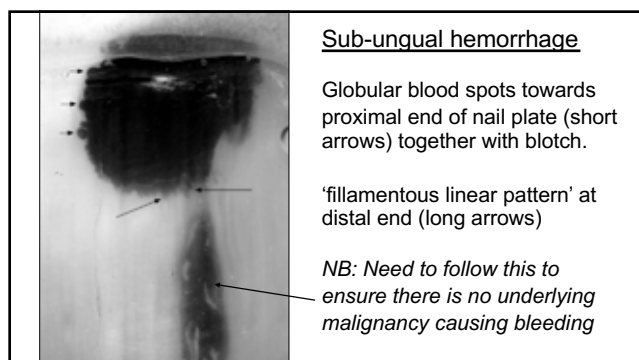


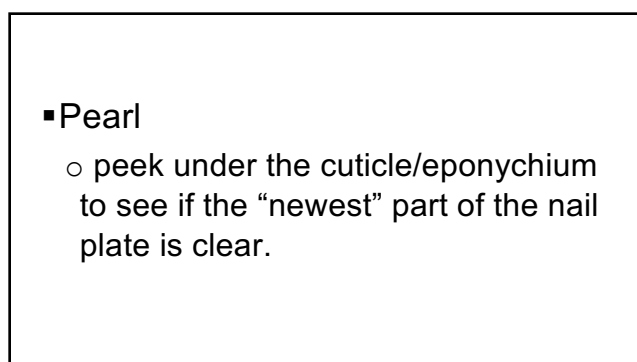
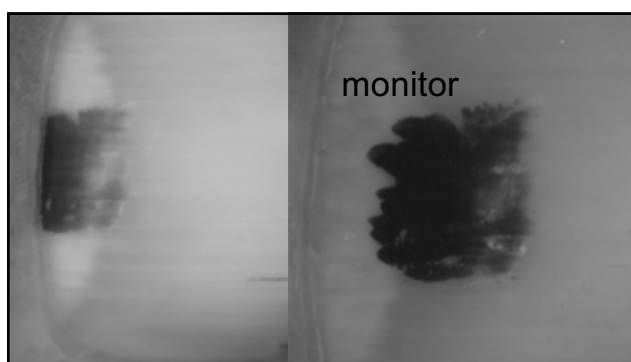
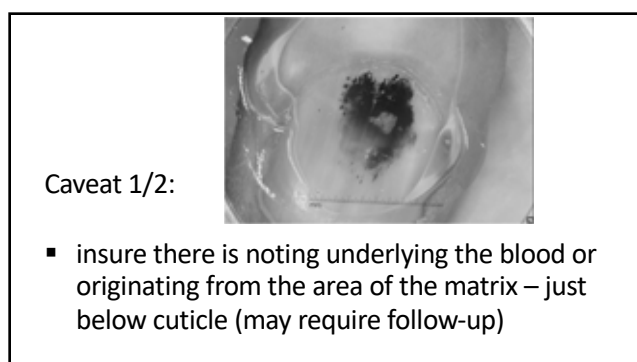
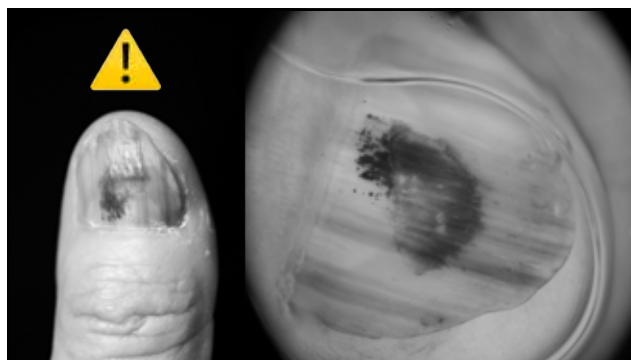
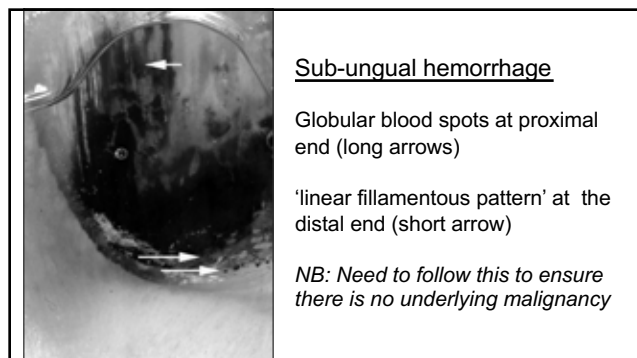


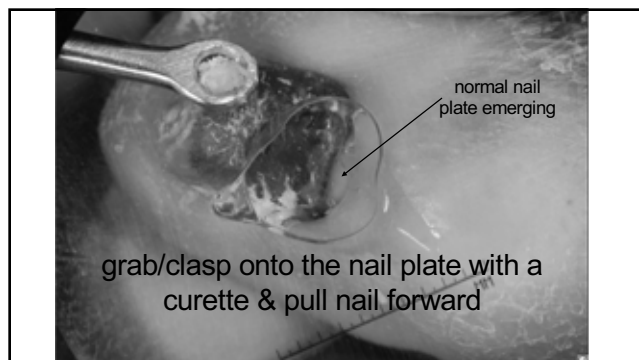
Blood spots (globules) with distal filamentous pattern

- Blue-purple color (new blood)
- Brown-black color (older lesions)
- In the absence of other criteria their presence favors diagnosis of sub-ungual hemorrhage

- ⚠ Their presence does not rule out melanoma
- ⚠ Present in 60% of amelanotic melanomas
- ⚠ Present in 25 % of squamous cell carcinomas

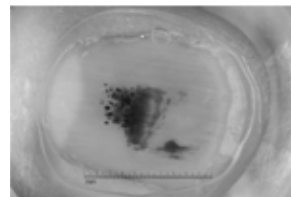






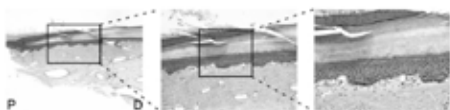
Caveat 2/2:

- Blood isolated to nailbed speaks against melanoma



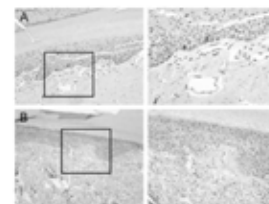
If blood is isolated to nailbed...

- It cannot be melanoma
 - A melanoma isolated to nailbed has not been reported
 - We did study:
 - Cadaver fingers



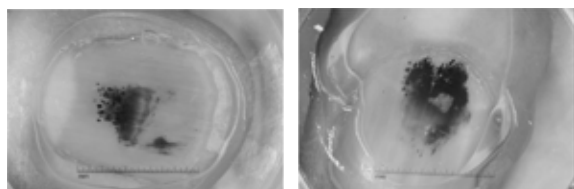
- Histological confirmation of melanocyte populations in the nail matrix but not in the nail bed

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-Son-10 (Sry-related HMG-BOX gene-10) (Cell Marque, 1:50 dilution).

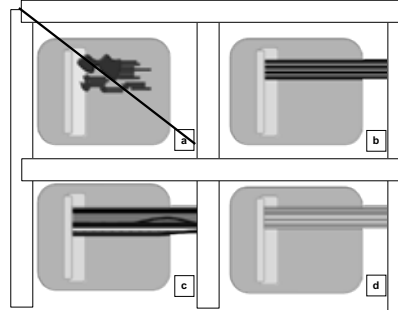


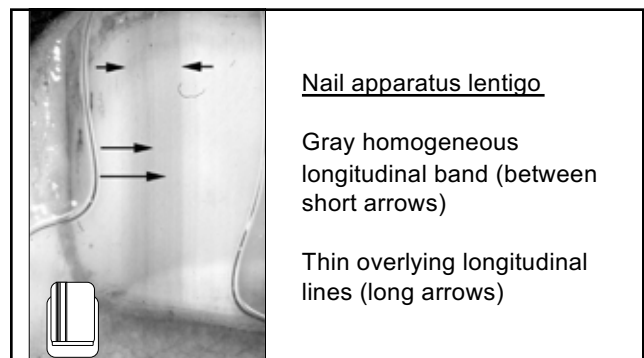
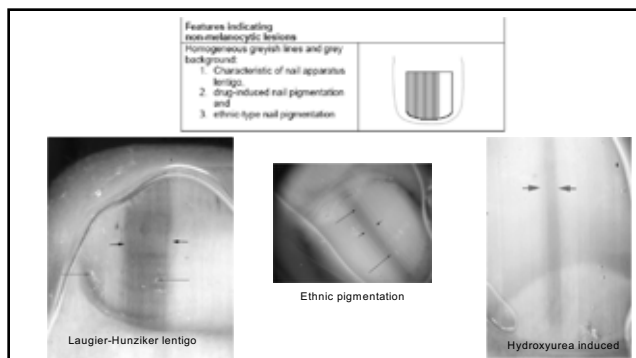
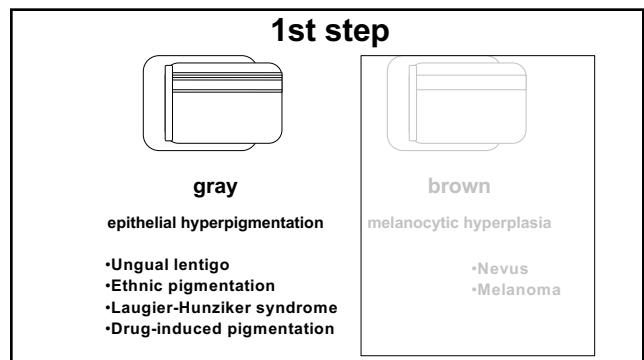
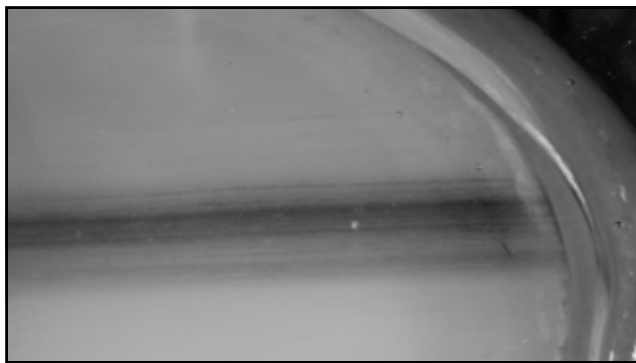
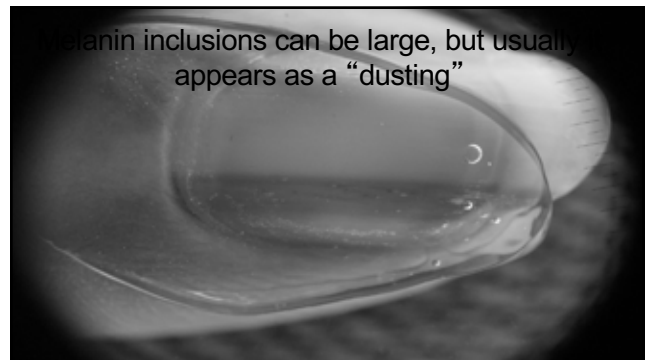
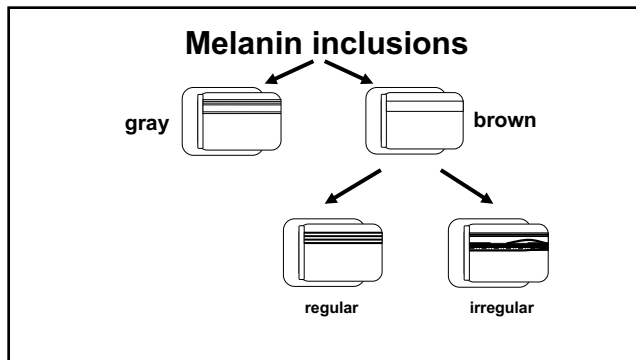
Anti-tyrosinase staining of nail matrix (A) and nail bed (B). Magnification for both A and B is (left) and (right).

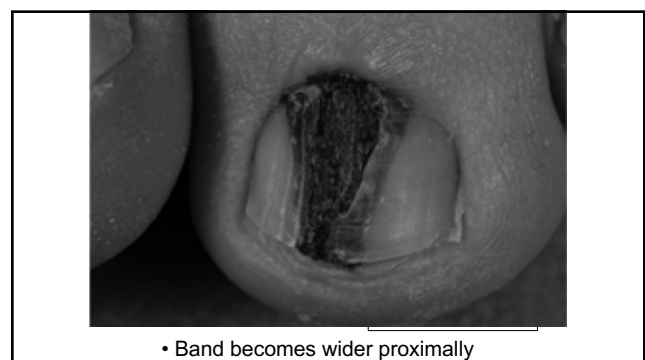
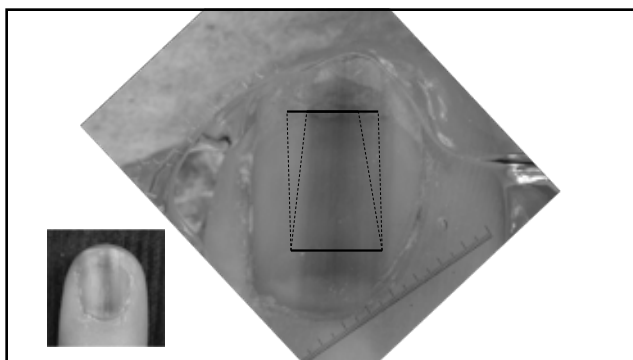
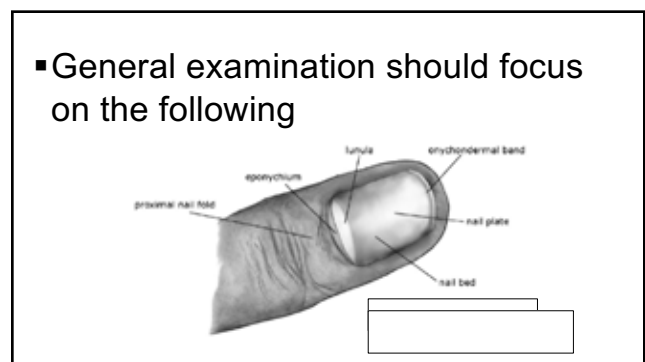
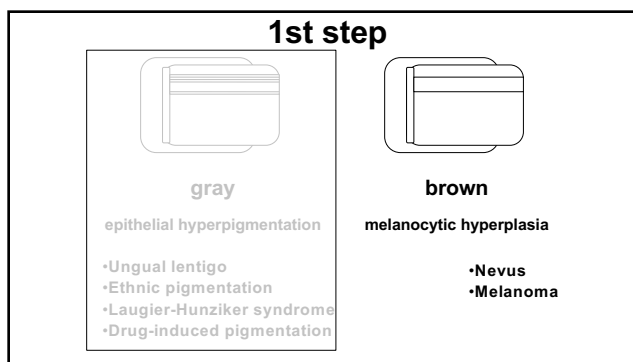
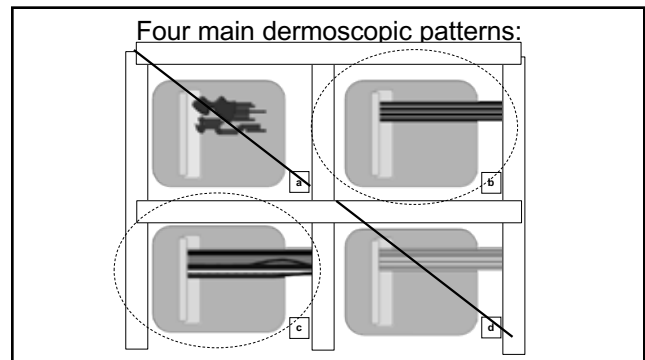
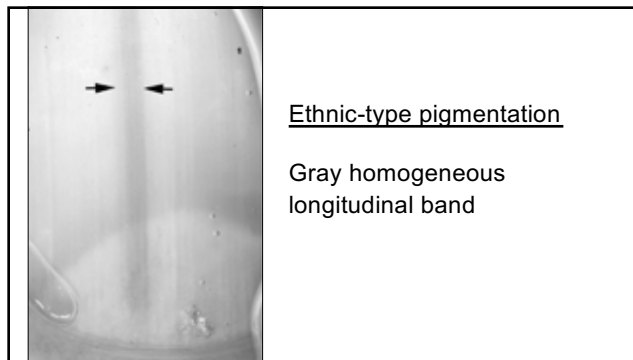
No melanocytes on nail bed!
Melanoma isolated to the nailbed is not possible.

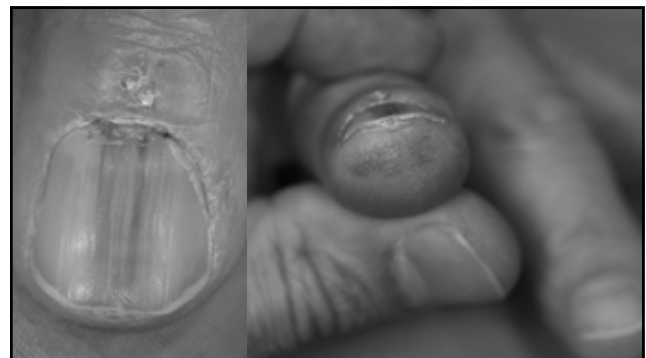
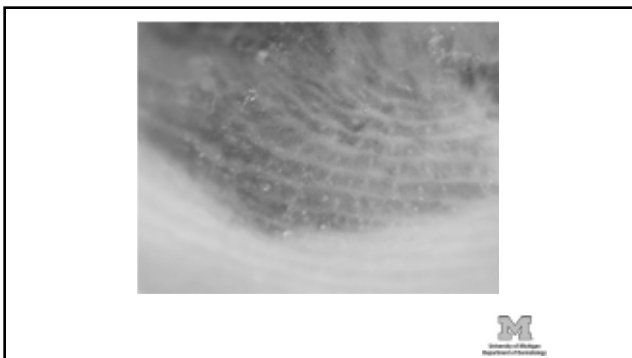
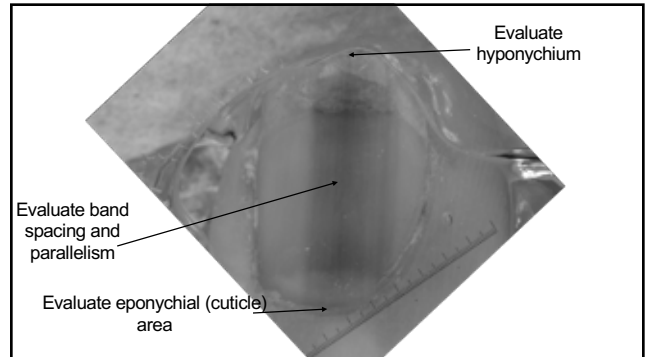
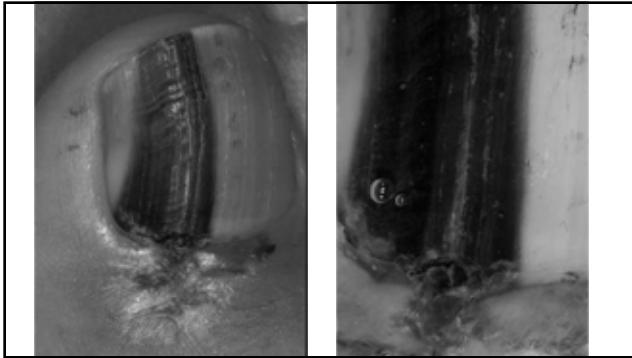


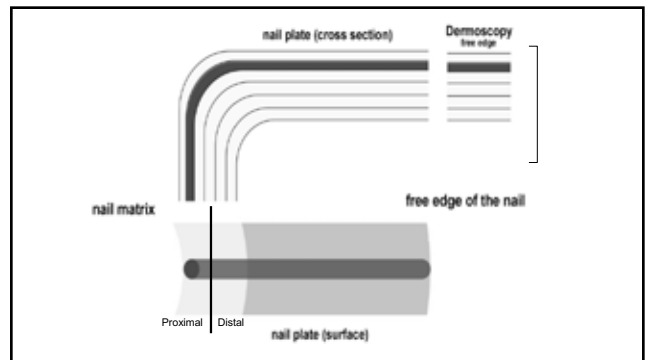
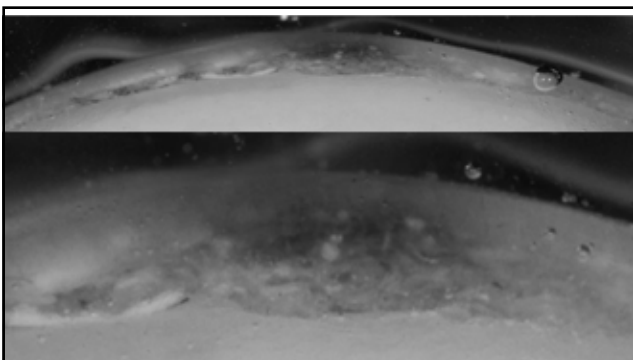
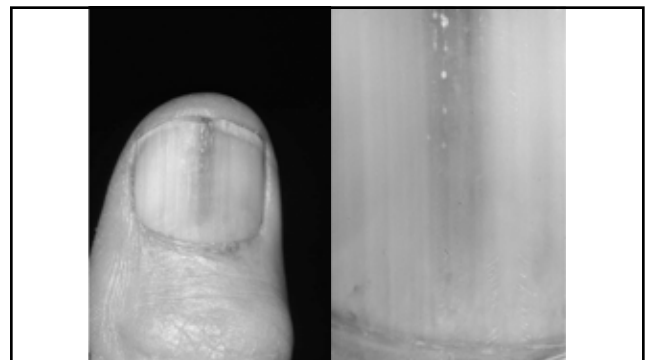
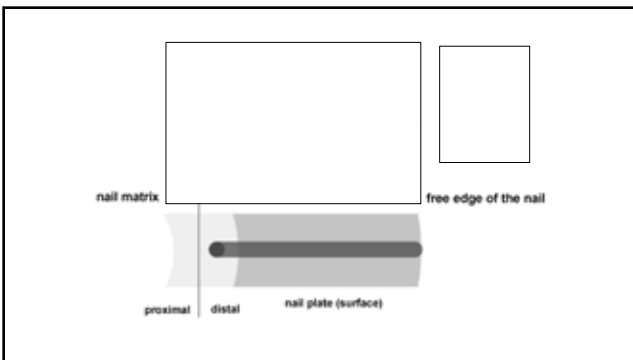
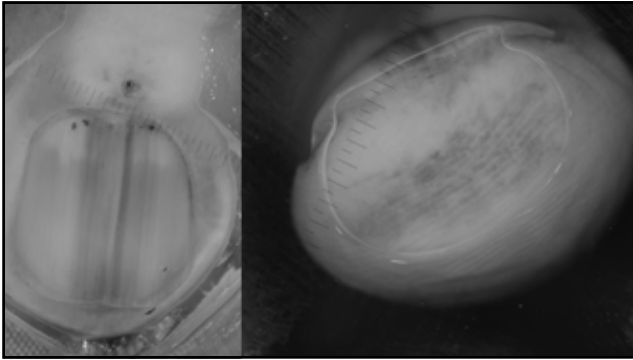
Four main dermoscopic patterns:

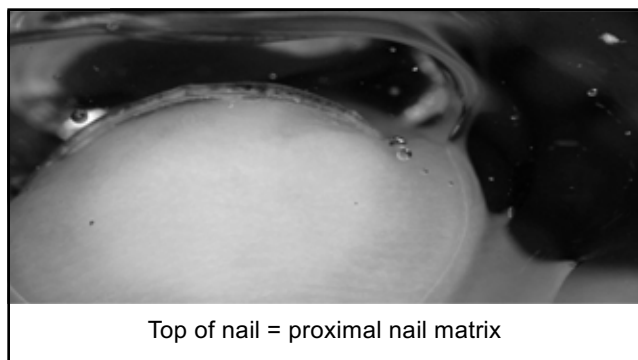






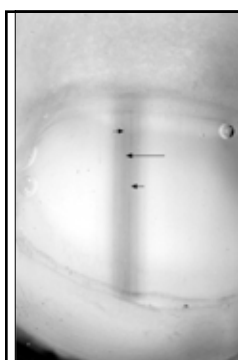
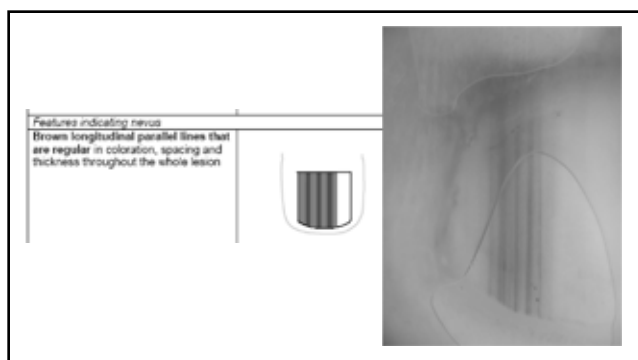






Regular brown bands

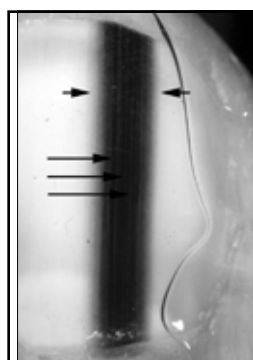
- Background brown color
- Parallel lines
- Regular spacing and thickness of lines
- Symmetric pattern & colors



Nail Matrix Nevus

Brown coloration of the background (between short arrows)

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



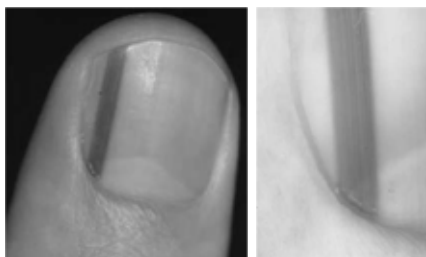
Nail matrix nevus

Brown coloration of the background (between short arrows)

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



Nevus of the nail matrix

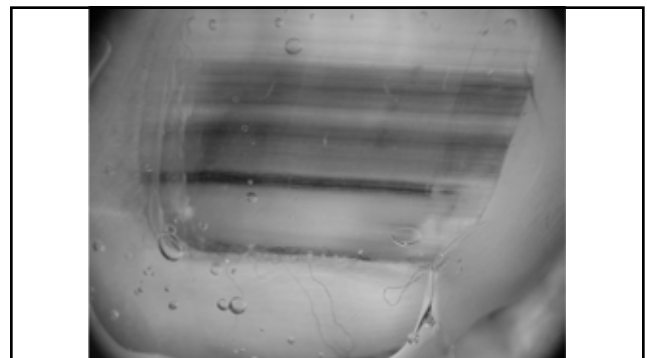
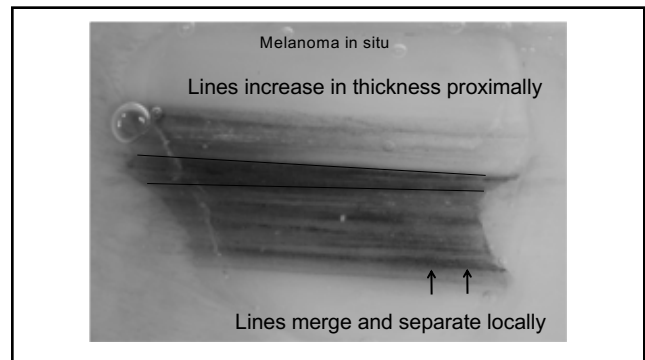
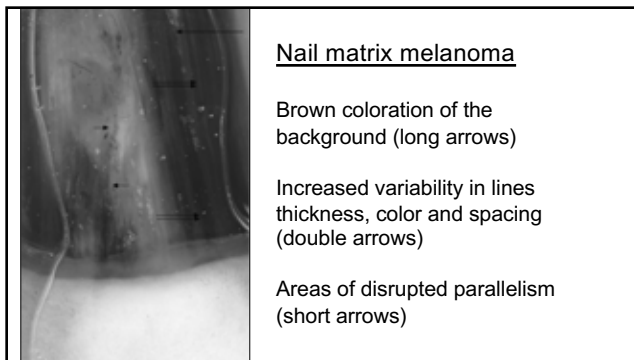
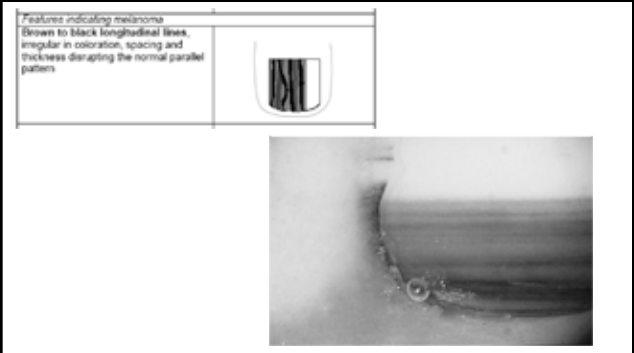


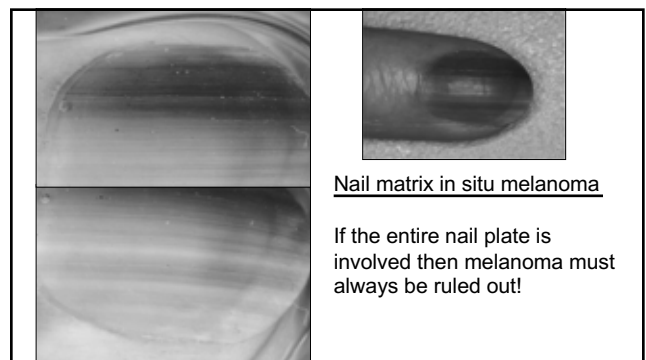
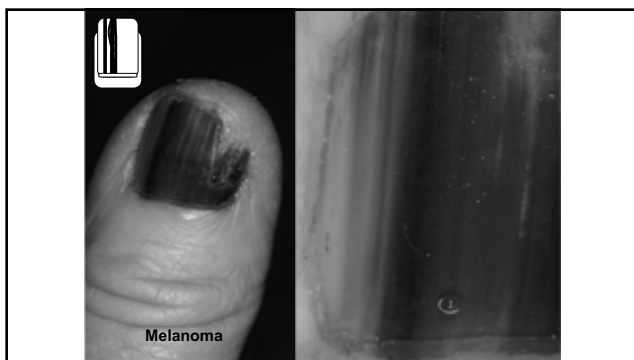
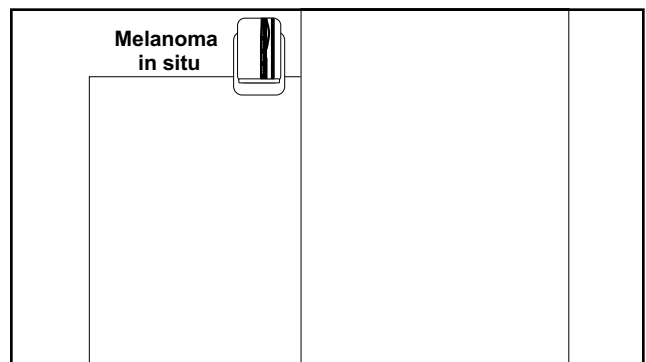
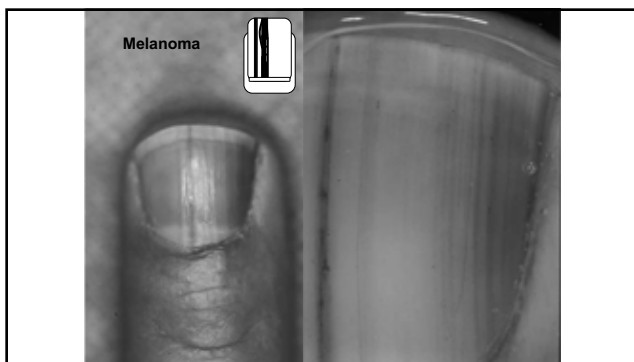
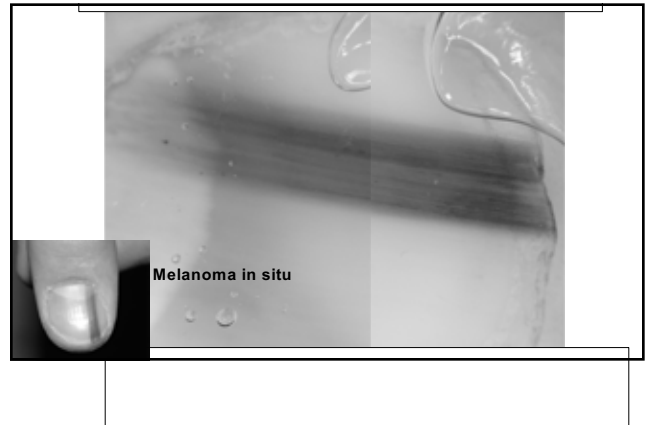
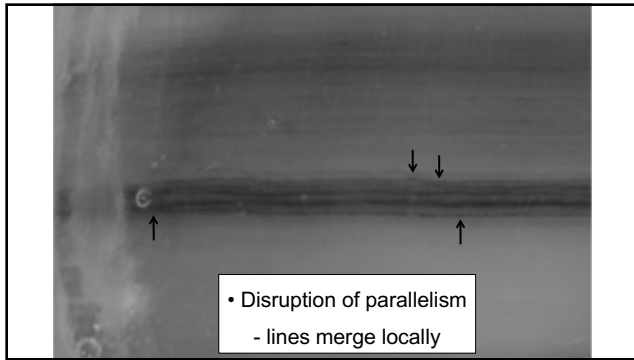
Thomas L et al, Dermatol Ther 2007



Irregular brown bands

- Disorganized pattern
- Disruption of parallelism
- Multiple colors
- Irregular spacing and thickness of lines

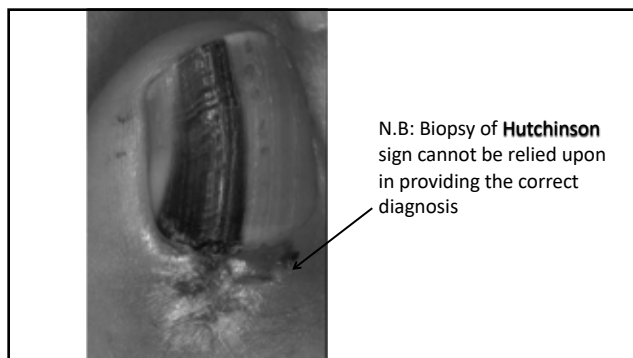
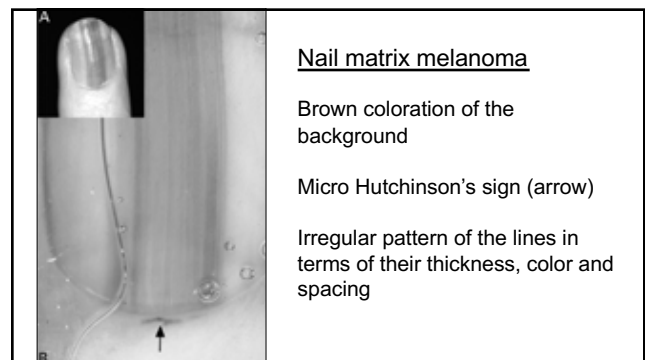
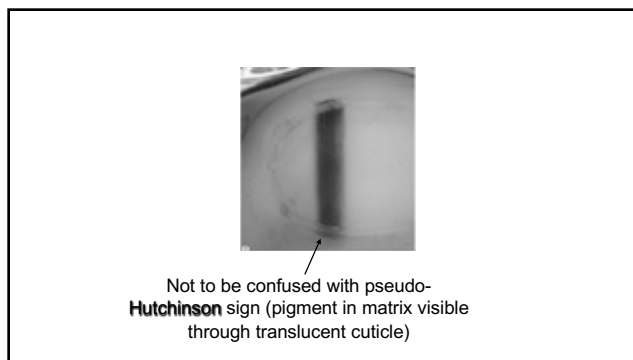
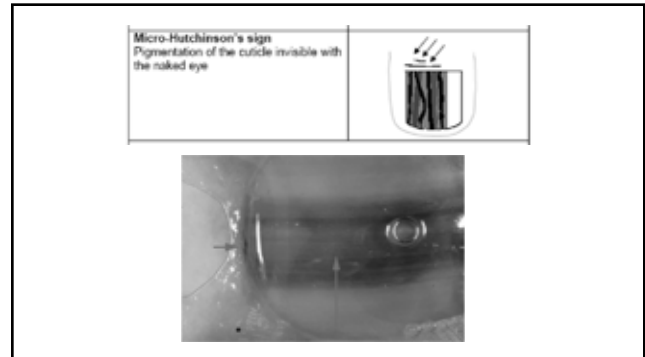




Pearl:

“Micro-Hutchinson Sign”

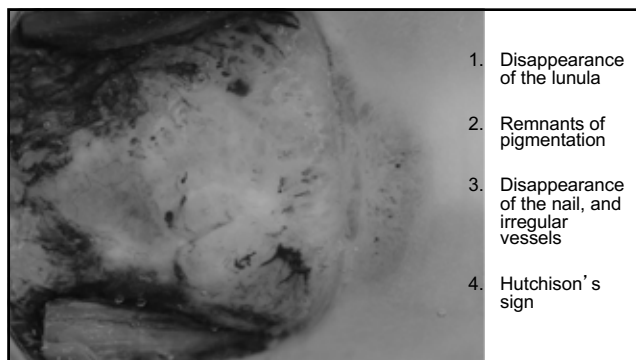
- Seen only with dermoscopy
- Pigmentation of cuticle
- Suspicious for malignant melanoma but not completely specific



Amelanotic melanoma

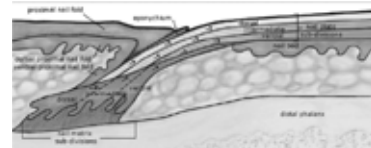
- Disappearance of the lunula (80%)
- Polychromia – remnant pigmentation (80%)
- Disruption of parallelism, disappearance of the nail (nail dystrophy), blood spots and irregular vessels (60%)
- Linear micro-hemorrhages, purple-blue spots and red spots (40%)

			<ul style="list-style-type: none"> ▪ Disruption of the lunula ▪ Polychromia ▪ Disruption of parallelism, blood spots ▪ Linear micro-hemorrhages, purple-blue spots and red spots



Caution

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



Special attention:

1. Isolated pigmentation on a single digit developing during the fourth to sixth decade (especially if broad or encompassing the entire nail plate)
2. Nail pigmentation that develops abruptly in a previously normal nail plate
3. Changing pigmentation (darker, larger, blurred)
4. Acquired pigmentation of the thumb, index finger, or large toe.

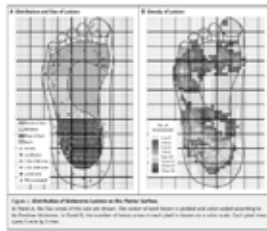
Special attention

5. history of digital trauma
6. acquired lesion in patients with a personal history of melanoma
7. pigmentation with nail dystrophy
8. Hutchinson's sign (includes hyponychium)

Melanomas and Mechanical Stress Points on the Plantar Surface of the Foot

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N. ENGL. J. MED. 376:24 NEJM.ORG JUNE 16, 2016

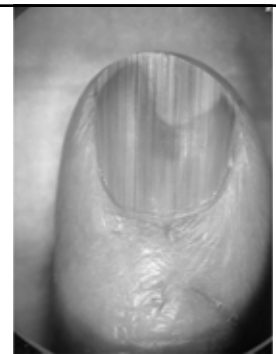


It ain't what you don't know that gets you into trouble. It's what you know for sure that just ain't so.

– Mark Twain

AZ QUOTES

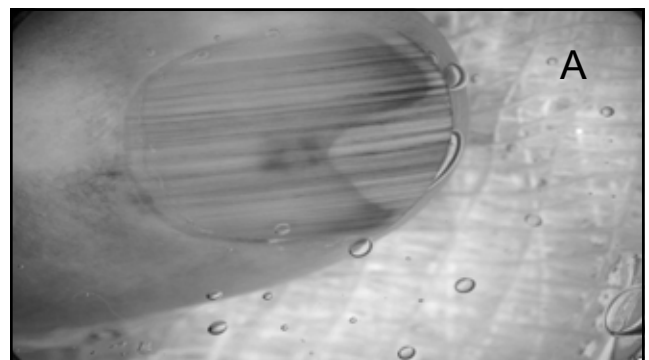
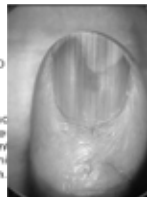
A case to highlight some of the points discussed

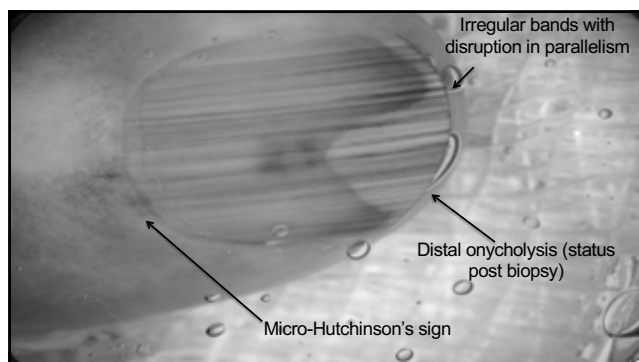


- Patient had biopsy done
- developed persistent distal onycholysis
- over next 6 months the pigment got darker (??)

DIAGNOSIS:
1. Right Little nail [redacted], 7/15/14, 3 H+E AND IMMUNOSTAINED:
- Melanonychia; see note.

Note: Submitted immunohistochemical stains for MART-1 showed 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. Clinician also reviewed the case and agrees.

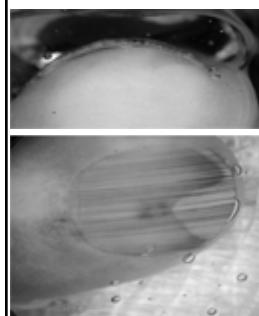
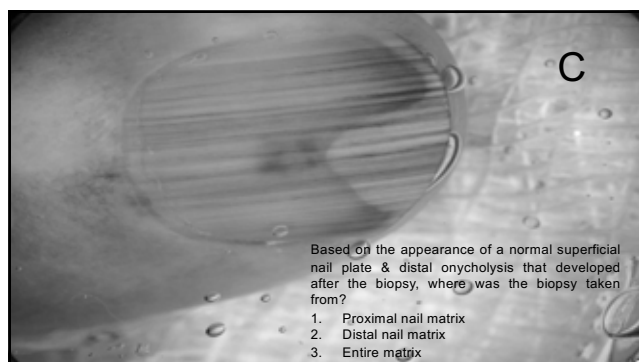
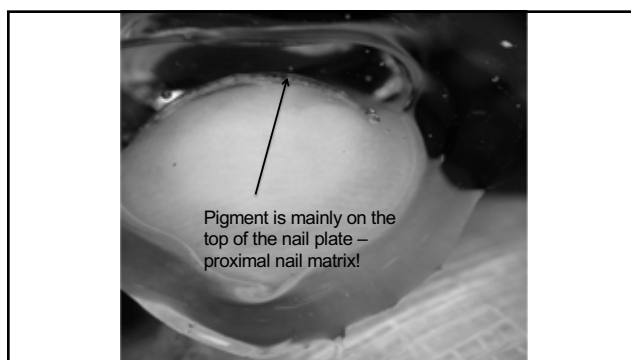
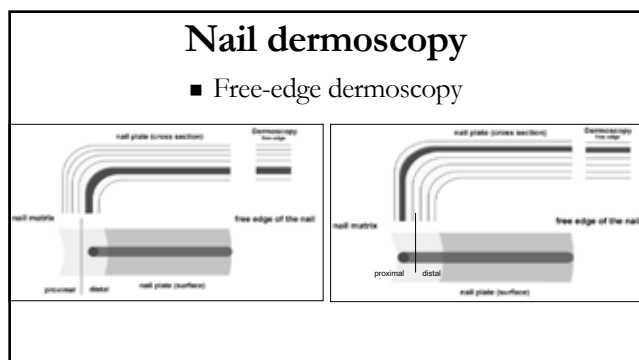
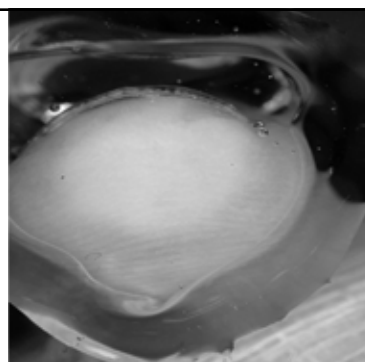




B

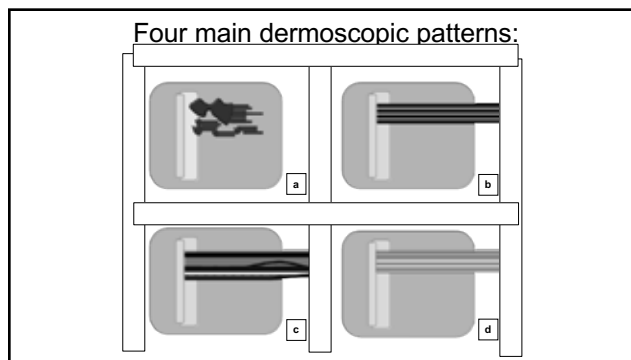
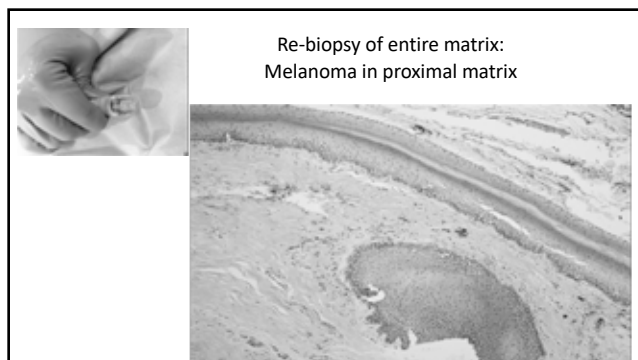
Where is the pathology?

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

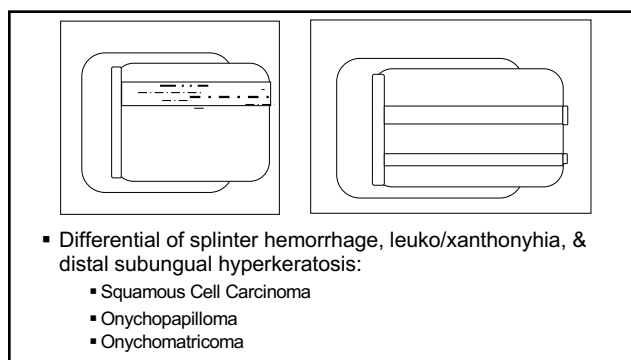


Based on the findings we now know:

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!!!



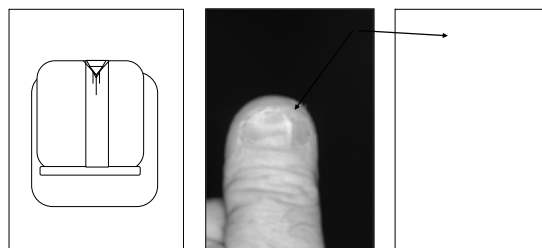
What else?



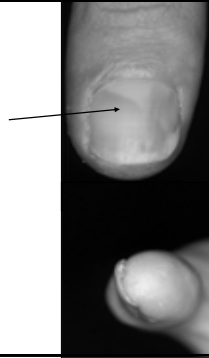
Features of Squamous cell carcinoma

- ✓ Linear micro-hemorrhages
- ✓ Longitudinal leuco-xanthonychia
- ✓ Subungual distal hyperkeratosis (if present, the nail plate is dystrophic...)
- Triangular distal onycholysis
- Triangular lunula
- Disappearance of the lunula

Triangular distal onycholysis



Triangular lunula



Disappearance of the lunula

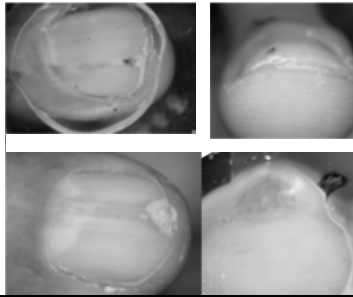


Features of onychopapilloma

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

Journal of Cutaneous Medicine and Surgery 2017; 23(1): 1-10

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

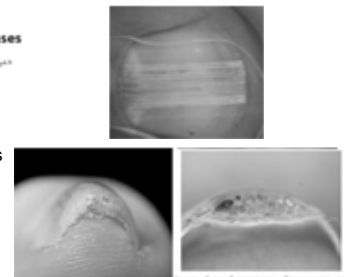


Features of onychomatricoma

Dermoscopic Features of Onychomatricoma: A Study of 34 Cases

Journal of Cutaneous Medicine and Surgery 2017; 23(1): 1-10

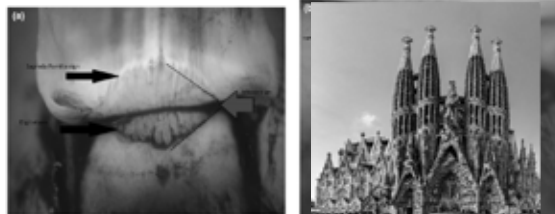
- ✓ Leukonychia/xanthonychia
- ✓ Splinter hemorrhages
- 1. Parallel longitudinal white lines
- 2. Over-curvature of plate with thickening of plate & end-on pits / dots



Intraoperative dermoscopic features of onychomatricoma: a review of 10 cases

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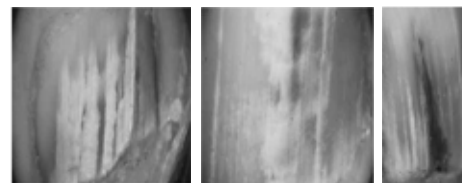
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Onychomycosis:

subungual hyperkeratosis & surface scale

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



Retention of learning



Upcoming meetings



American Dermoscopy Meeting, August 14-17, 2019



IDS World Congress of Dermoscopy, June 10-12, 2021

