Management of Melanonychia Including Tangential Shave Biopsy

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DISCLOSURE OF RELATIONSHIPS WITH INDUSTRY

Antonella Tosti, MD
F140 Management of Melanonychia Including Tangential Shave Biopsy

DISCLOSURES

Taylor&Francis: Royalties
Fotofinder :Consultant
Epidermis

Nail matrix

Proximal matrix produces dorsal nail plate

Distal matrix produces ventral nail plate
Nail matrix melanocytes

Quiescent

Not confined to the basal layer

Frequently clustered

More numerous in the distal than in the proximal matrix

# Nail matrix melanocytes

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<tr>
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<th>PNM</th>
<th>DNM</th>
<th>NB</th>
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<tbody>
<tr>
<td>Dormant melanocytes</td>
<td>+</td>
<td>+</td>
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<tr>
<td>DOPA negative</td>
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<td>(Melanosomes I-II)</td>
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<tr>
<td>Activable melanocytes</td>
<td>-</td>
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*Perrin et al. Am J Dermatopathol 19, 462, 1997*
Longitudinal melanonychia

Melanocyte activation
Melanocyte hyperplasia

Lentigo
Nevus
Melanoma
Melanocyte activation

Racial
Laugier-Huntziker syndrome
Drugs
Endocrin diseases
Pregnancy
Traumas
Inflammatory diseases
Onychomycosis
Tumors
Melanocyte activation

Laugier – Huntziker syndrome

Longitudinal melanonychia

Pigmented macules of the oral and genital mucosa
Melanocyte activation

Drugs

Chemotherapy

PUVA

Radiation

AZT
Melanocyte hyperplasia

Lentigo

Nevus

Melanoma
Lentigo/benign melanocyte hyperplasia

Increased number of melanocytes arranged as single cells within the epithelium of the nail matrix

Prevalence unknown

Clinical and dermoscopic criteria not established

Pathological distinction from in situ melanoma difficult

Not really benign for some authors
Nail matrix nevi

Most common cause of melanonychia in children

One digit usually affected

Size and color very variable

Periungual pigmentation common
Nail melanoma

Rare (0.7-3.5% of melanoma)
Thumb / great toe
5 years survival: 15%
Clinical presentation
depends from the site of origin:

- nail matrix melanoma
- nail bed melanoma
Nail melanoma

Nail matrix melanoma

Longitudinal melanonychia first symptom of nail melanoma in up to 70% of cases
Nail melanoma

Nail bed melanoma

Pigmented or not pigmented (25 to 30% of cases) subungual nodule
Nail melanoma

Features suggestive for nail melanoma

Single digit affected
Lack of homogeneity with bands or lines of different color
Nail plate fissuring or splitting
Rapidly enlargement of the band
Proximal part broader than the distal (triangular shape)
Blurred lateral borders
Pigmentation of the periungual skin
Nail melanoma

Features suggestive for nail melanoma

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Lack of homogeneity with bands or lines of different color

**Nail plate fissuring or splitting**
Rapidly enlargement of the band
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Nail melanoma

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Hutchinson’s sign
The alphabet of nail melanoma:

A Age: Range 20-90 y, peak 5th-7th decades
African-American, Native American, Asian

B Band (nail band): Pigment (Brown-Black)
Breadth (≥3 mm)
Border (irregular/blurred)

C Change: Rapid increase in size/growth rate of nail band
Lack of Change: Failure of nail dystrophy to improve despite adequate treatment
The alphabet of nail melanoma:

D  **Digit involved**: Thumb > hallux > index finger
   Single digit > multiple digits
   **Dominant** hand

E  **Extension**: Extension of pigment to involve proximal or lateral nail fold (Hutchinson’s sign) or free edge of nail plate

F  **Family**: or personal history of previous melanoma or dysplastic nevus syndrome
Dermoscopic patterns in nail pigmentation

Blood extravasation

Purple to brown -black round-shaped spots

Keep in mind that blood does not exclude melanoma as tumors can bleed!
Dermoscopic patterns in nail pigmentation

Color of the background

- Gray
- Brown/Black

Activation

Proliferation
Dermoscopic patterns in nail pigmentation

Brown-black background

Nail melanoma

Blurred lateral margins
Irregular longitudinal lines: color, thickness, parallelism
Dermoscopic patterns in nail pigmentation

Limitations

Lesions that are examined with dermoscopy correspond to melanin deposition in the nail plate and not to the site of melanin production.

There are no data showing that dermoscopy is superior to clinical evaluation in early detection of nail melanoma.
Dermoscopic patterns in nail pigmentation

Limitations

Patterns are not valid for melanonychia in children
Management of melanonychia

Should we biopsy?

An excisional biopsy is recommended for a diagnosis based on pathological evaluation of the whole lesion.

Several cases of delay in treatment of nail matrix melanoma due to false negative incisional biopsies are reported in the literature.
Management of melanonychia

Excisional biopsy

Small lesions ( < 3mm) can be removed with a punch

In larger lesions the tangential biopsy of the nail matrix is possibly the best technique to evaluate the whole lesion and provide accurate diagnosis without leaving a definitive nail dystrophy
Intraoperative dermoscopy

Performed directly on the nail matrix and bed after nail plate avulsion

Useful to identify the lesion and its margins

Hirata et al Arch Dermatol 2011, 65: 297-603
Intraoperative dermoscopy

Four patterns

- Regular gray activation
- Regular brown lentigo
- Regular brown with globules or blotches nevi
- Irregular melanoma

Take home message

Look at the band with your dermatoscope

Gray color is a sign of melanocyte activation

Brown/black color is a sign of proliferation

Nevi most common in children and might fade

Nail melanoma presents with melanonychia in most cases

Excise the whole lesion, not biopsy
Thank you!

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