Non-Melanocytic Pattern Dermoscopy

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I have no conflicts of interest to disclose
Except that I LOVE dermoscopy

Non-Melanocytic Lesion Dermoscopy
Often also non-pigmented

• Problem: No Pigment!
• Solution: Use your clues!
  • Vascular structures
  • Chrysalis structures
  • Texture
  • Structureless areas
  • Scale
  • Ulceration

Vascular morphology
A. Dots (melanoma)
B. Clods (lacunes) (hemangioma)
C. Lines straight (sclerotic BCC)
D. Lines looped (hairpin vessels) (SCC)
E. Lines curved (comma vessels) (dermal nevus)
F. Lines serpentine (linear irregular vessels) (BCC)
G. Lines helical (corkscrew vessels) (SCCIS)
H. Lines coiled (glomerular vessels) (SCCIS)

A regular
B in a string
C clustered
D radial
E irregularly branched
F irregular

Non-Melanocytic Lesions

**Benign Lesions**
- Seborrheic keratoses
- Clear cell acanthoma
- Vascular lesions
  - Angiomas
  - Angiokeratomas
- Dermatofibromas
  - Conventional
  - Cellular

**Malignant Lesions**
- Basal cell carcinoma
- Actinic keratoses
- Squamous cell carcinomas
- Merkel cell carcinoma

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**Benign Lesions**

- A. Random (non-specific) (SCCIS)
- B. Clustered (SCCIS)
- C. Serpiginous (string of pearls) (CCA)
- D. Linear (SCCIS)
- E. Centered (subepidermal keratosis)
- F. Radial (starburst) (SCC)
- G. Reticular (sun-damaged skin)
- H. Branched (arborizing) (BCC)

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**Benign Lesions**

- Personal Collection, patient granted special permission to show tattoo

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**Benign Lesions**

- Milia-like cysts = pseudo-horn cysts
  - (black arrows)
- Comedo-like openings = comedo structures
  - (red arrows)
Irregular crypts and comedo like openings

Fissures and Ridges
• Wedge shaped clefts in the epidermis
• AKA gyri and sulci, fat fingers, or cerebriform pattern
• Can also be seen in melanocytic nevi with congenital patterns, and epidermal nevi
19. Fissures/ridges

20.

21. Fissures/ridges

22. Congenital type nevus with fissures/ridges

23.

24.
Clear cell acanthoma
• String of pearls vessels
• Glycogen rich keratinocytes
**Hemangioma**

- Red-blue homogeneous color
- Red-blue lacunes

**Angiokeratoma**

- Multiple red to bluish-black well defined lacunae
- Blue-white veil: no diagnostic significance
- Red-blue lacunae, no pigment network
- Hyperkeratosis over thrombosed vessels

*Acral pseudolymphomatous angiokeratoma of children with rainbow pattern: A mimic of Kaposi sarcoma*

Pinos León, Víctor Hugo et al. Journal of the American Academy of Dermatology, Volume 76, Issue 2, S25 - S27
Multinucleate cells in the superficial dermis with an angular outline (detailed in lower right corner, Hematoxylin & eosin, X100). Proliferation of small dilated vessels, slight interstitial infiltrate of spindle or dendritic perivascular cells, mostly lymphohistiocytic.

Diffuse reddish areas (attributed to the dilated vessels), whitish patches (associated with thickening of the collagene) and isolated peripheral areas with a fine reticulated appearance.

Dermatofibroma

- Central scar like pallor
- Surrounding delicate pigment network
- Chrysalis structures

Cellular Dermatofibroma

- Nodule with central scar like pallor
- Surrounding delicate pigment network
- Chrysalis structures / central erosion/focal ulceration
• Ulceration without a clear history of trauma should lead to a biopsy
• Serum leaking from ulcerated areas may trap fibers of clothing or loose hair
• Adherent fiber — dermoscopic clue to ulceration
Ulceration

- Seen in pigmented and non-pigmented basal cell carcinoma

Arborizing vessels

61

62

64

65

66

67
Large Blue-Gray Ovoid Nests

- Well circumscribed, confluent, pigmented ovoid areas
- Larger than globules
- Not connected to larger tumor body
- Represent large nests of pigmented BCC

Benign intradermal vs Basal cell carcinoma

Multiple Blue-Gray Globules

- Round, well circumscribed structures
- Smaller nests of pigmented basal cells
Maple Leaf Areas
- Nests of pigmented epithelial nodules of basal cell carcinoma

Spoke-Wheel Areas
- Well circumscribed brown to gray-blue-brown radial projections meeting at a darker central hub
- Nests of basal cell carcinoma radiating from a follicular epithelium

Chrysalis Structures
- AKA Crystalline structures or shiny white streaks (SWS)
- Only seen with polarized dermoscopy
- Most commonly seen in basal cell carcinoma and invasive melanomas, may be seen in dermatofibromas and scars
  - In melanomas may reflect increased tumor thickness and regression
Non pigmented Actinic Keratoses

- Pink-red pseudo-network surrounding follicles
- White-to-yellow surface scale
- Fine wavy vessels surrounding hair follicles
- Yellowish keratotic plugs in follicular ostia

"Strawberry-like" pattern composed of reddish pseudo network around whitish keratin filled hair follicles
Squamous Cell Carcinoma *in Situ*

- Glomeruloid blood vessels
- Focal heme crust
- Scale

*Figure 5.* Surface keratin and a white structureless area are seen clearly on the close-up clinical image of a non-pigmented raised lesion on the ear of a 60-year-old man (left). They are also apparent in the dermatoscopic image (right) with the white structureless area indicated by an arrow. It is an SCC. [Copyright ©2014 Rosedahl et al.]
• Lobules composed of central whitish yellow keratin
• Polymorphous vessels dotted (yellow arrow)
• Arborizing (blue arrow), glomerular (black circle), and linear irregular (red arrow) vessels on a yellowish white background

Dermoscopic features of squamous cell carcinoma of the tongue: It looks similar to cutaneous squamous cell carcinoma

Diagnosing squamous cell carcinoma of the lip using dermoscopy

This white cylinder with a hair shaft emerging from the center of it. This finding is produced by highly keratinized malignant squamous cells invading hair follicles.

Thin white cylinder with a hair shaft emerging from the center of it. This finding is produced by highly keratinized malignant squamous cells invading hair follicles.
Merkel Cell Carcinoma

Table I. Dermatoscopic features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Nuclear globules</th>
<th>Linear irregular vessels</th>
<th>Dotted vessels</th>
<th>Adherent vessels</th>
<th>Rosaceous vessels</th>
<th>Vascular network</th>
<th>Pigment network</th>
<th>Keratinocytes</th>
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Fig. 1. Merkel cell carcinoma. A. Dermatoscopy showing milky-red globules and prominent dotted vessels. B. Magnified dermatoscopic features. C. Area of gross erosion.
Clinical and dermoscopic features of combined cutaneous squamous cell carcinoma (SCC)/neuroendocrine [Merkel cell] carcinoma (MCC)

A. Erythematous nodule with adherent scale; background dermatoheliosis with atrophy and wrinkling.
B. Dermoscopy with milky red areas centrally (small top arrow) and large-diameter arborizing vessels at the periphery (larger lower arrows)

The most likely diagnosis is:
A. Stasis dermatitis
B. Actinic keratosis
C. Porokeratosis
D. Clear cell acanthoma
E. Squamous cell carcinoma in situ
Personal Collection

Dermoscopic findings

- Glomeruloid blood vessels
- Focal heme crust
- Scale

Diagnosis: Squamous Cell Carcinoma In Situ

The most likely diagnosis is:

A. Actinic keratosis
B. Inflamed seborrheic keratosis
C. Atypical nevus
D. Clear cell acanthoma
E. Basal cell carcinoma

The most likely diagnosis is:

A. Actinic keratosis
B. Inflamed seborrheic keratosis
C. Atypical nevus
D. Clear cell acanthoma
E. Basal cell carcinoma
Dermoscopic features

- String of pearls blood vessels

The most likely diagnosis is:

A. Basal cell carcinoma
B. Inflamed seborrheic keratosis
C. Amelanotic melanoma
D. Merkel cell carcinoma
E. Squamous cell carcinoma

Diagnosis: Clear cell acanthoma
The most likely diagnosis is:

A. Nodular melanoma  
B. Inflamed seborrheic keratosis  
C. Atypical nevus  
D. Angiokeratoma  
E. Pigmented basal cell carcinoma
Dermoscopic features

- Asymmetric
- Blue grey ovoid nests
- Arborizing telangiectasias
- Chrysalis structures
- Epidermal ulceration

Diagnosis: Pigmented basal cell carcinoma

Thank you!
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Scabies
- Triangle indicating the head of the mite
Fun Benign things . . .
Porokeratosis

- White tract structure = cornoid lamella
- Central white area, red dots, globules and lines
Sebaceous Hyperplasia

- Aggregated white-yellow nodules ~ cumulous cloud
- Crown vessels (radial wreath-like)
  - Branching vessels that extend towards the center of the lesion without crossing it
Accessory Nipple

- Central white area
- Central streak
- Faint pigmented network at the periphery

Xanthogranuloma

- Orange-yellow background coloration with clouds of xanthomatous deposits
Thank you!
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