Update on dermoscopy in the evaluation and treatment of hair loss

Antonella Tosti

Fredric Brandt Endowed Professor of Dermatology & Cutaneous Surgery
DISCLOSURE OF RELATIONSHIPS WITH INDUSTRY

Antonella Tosti, MD
C022 Update on dermoscopy in the evaluation and treatment of hair loss

DISCLOSURES

Taylor&Francis: Royalties
Trichoscopyonline: Royalties
Fotofinder :Consultant
Update on dermoscopy in the evaluation and treatment of hair loss

1 Scarring versus non scarring alopecia

2 Androgenetic alopecia versus telogen effluvium

3 Inflammatory scalp disorders

4 Selection of optimal biopsy site

5 Establish disease severity and response to treatment
1 Scarring versus non scarring alopecia

Look for follicular openings

Absent: scarring

Present: non scarring
Scarring alopecias

Loss of follicular openings

May or may not be associated with inflammatory changes

Inflammatory changes indicate disease activity
Scarring alopecias

Black scalp

Loss of follicular openings is not very evident due to the pinpoint white dots.

Yin NC, Tosti A. A systematic approach to Afro-textured hair disorders: dermatoscopy and when to biopsy. Dermatol Clin. 2014 Apr;32(2)145-51
Black scalp

Pinpoint white dots

Normal scalp

Non scarring alopecia

Scarring alopecia
Black scalp

Pinpoint white dots

Follicular openings

Sweat gland openings


Black scalp

How can we then assess scarring?

Distribution of pinpoint white dots is irregular

Presence of white patches
Dermoscopy in the diagnosis of scarring alopecia

- Lichen planopilaris
- Frontal fibrosing alopecia
- Discoid lupus erythematosus
Lichen Planopilaris

Most common cause of cicatricial alopecia

- Severe scalp itching
- Multiple irregular areas of scarring alopecia
Lichen Planopilaris

Diagnostic features

Loss of follicular openings

Peripilar casts

Hair tufting
Lichen Planopilaris

Peripilar casts

White concentric scales surrounding the hair shaft at its emergency

Thickness is variable

Sign of disease activity
Lichen Planopilaris

Always use dry dermoscopy to look for casts!!

Don’t use interface solution!!
Lichen Planopilaris

Hair tufting

Tufts of 2 or more hairs surrounded by a peripilar cast are very typical of LPP.
Lichen Planopilaris

Presence of few pili torti should always raise the suspicious of a scarring alopecia

Pili torti are common both in LPP and FFA
Frontal Fibrosoing Alopecia

Scarring alopecia causing progressive recession of the fronto-temporal hairline

Most patients complain of hair loss

They might seek attention for the facial papules

You will miss the diagnosis if you don’t examine the hairline
Frontal Fibrosing Alopecia

Always use dermoscopy to evaluate the hairline for presence of vellus hair and peripilar casts!
Frontal Fibrosing Alopecia

Diagnostic features

Absence of vellus hairs

Peripilar casts

Frontal Fibrosing Alopecia

Peripilar casts

In FFA peripilar casts are often thin and can be very subtle
Discoid Lupus Erythematosus

Cicatricial alopecia associated with active inflammatory lesions, atrophy and telangiectasia

Scalp scaling is often a prominent feature

Loss of pigment is commonly seen in black scalp
Discoid Lupus Erythematosus

Diagnostic features

Loss of pinpoint white dots
Loss of pigmented network
Follicular keratotic plugs
Red dots
Enlarged branching vessels
Discoid lupus erythematosus

Absence/reduction of pinpoint white dots

Correlates with involvement of the sweat ducts
Discoid Lupus Erythematosus

Loss of pigmented network

Diagnostic for DLE in the black scalp
Discoid Lupus Erythematosus

Red dots

Active lupus erythematosus

38% of patients with DLE

Patients with this pattern might regrow hair
Presence of follicular openings

Non scarring alopecias

Alopecia areata

Other diseases causing anagen effluvium

Trichotillomania

Androgenetic alopecia
Alopecia Areata

Diagnostic features

Yellow dots

Exclamation mark hairs

Black dots

Circle hairs
Alopecia Areata

Exclamation mark hair

Broken hair with a thick pigmented tip
2 Androgenetic alopecia versus telogen effluvium

Look at the thickness of the hair shafts

Hair of different thickness: AGA
Uniform hair thickness: TE
Androgenetic alopecia

Diagnostic features

Hair diameter diversity

More than 6 thin short regrowing hair in the frontal scalp
Androgenetic alopecia

Hair diameter diversity

More than 20% variability is diagnostic for AGA.
Androgenetic alopecia

More than 6 thin short vellus hair in the frontal scalp

Described in women but seen also in men

Can also be evaluated as percentage: more than 10%
Telogen effluvium

Diagnostic features

Absence of variability
Short regrowing hair of normal thickness
3 Inflammatory scalp disorders

Look at vessels

- Immersion fluid dermoscopy
- Minimal/low pressure

Vessels fade with pressure
Inflammatory scalp disorders

Look at the vessels!

Arborizing vessels: seborrheic dermatitis/contact dermatitis

Twisted capillary loops: psoriasis

Enlarged tortuous capillaries: connective tissue disorders
4 Selection of optimal biopsy site

Dermoscopy guided biopsy

Use the dermatoscope to select the biopsy site!

Area to select depends on disease

<table>
<thead>
<tr>
<th>Hair disorder</th>
<th>Optimal site of biopsy showing disease activity</th>
<th>Pathological correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lichen planopilaris</td>
<td>Hair with peripilar concentric white scales and/or perifollicular erythema</td>
<td>Hair follicle with lichenoid/intraperfollicular infiltrate and perifollicular fibrosis</td>
</tr>
<tr>
<td>Frontal fibrosing alopecia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discoid lupus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Folliculitis decalvans</td>
<td>6 or more hairs emerging from the same ostium surrounded by white yellowish scales</td>
<td>Compound follicular structure of 6 or more hair follicles surrounded by dense inflammation with/without fibrosis</td>
</tr>
<tr>
<td>Central centrifugal cicatricial alopecia</td>
<td>One or two hairs emerging together, surrounded by white grey halo</td>
<td>Individual or compound follicles devoid of inner root sheaths and surrounded by concentric fibrosis with/without lichenoid inflammatory infiltrate</td>
</tr>
<tr>
<td>Discoid lupus</td>
<td>Follicular red dots (erythematous polycyclic, concentric structures regularly distributed in and around the follicular ostia)</td>
<td>Widened infundibula plugged by keratin and surrounded by dilated vessels and extravasated erythrocytes</td>
</tr>
<tr>
<td>Discoid lupus lichen planopilaris</td>
<td>Keratotic plugs</td>
<td>Dilated infundibula plugged with keratin masses</td>
</tr>
</tbody>
</table>
5 Establish short term prognosis and response to treatment

Evaluate margin of the patch and apparently normal scalp in alopecia areata

Use dermoscopy for follow up during treatment
Thank you!

atosti@med.miami.edu