TRICHOSONOPY
DIAGNOSING
DIFFUSE HAIR LOSS

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Dermoscopy

- Permits a detailed view of structures within the skin that are usually invisible to the unaided eye.
- Traditional Use: for the early diagnosis of melanoma, with an improved malignant/benign excision ratio for melanocytic lesions.
Trichoscopy is the term coined for dermoscopic imaging of the scalp and hair.
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- **Value:**
  - Diagnosing alopecias & hair shaft abn.
  - Obviating unnecessary biopsies
  - If needed helpful in choosing an ideal biopsy site.
  - Evaluating the treatment response photographically at each follow-up.
Trichoscopic Criteria = 4

- Hair Shafts
- Vessels
- Scalp Surface
- Follicle openings
Normal Scalp

- Hair: Equal shaft thickness, same color
- 1 or 2 vellus hairs.
- In darker races, a honeycomb pigment network
1-4 Hairs per Follicular Unit
1- Hairs

**Terminal**
- Uniform thickness & color, more than 50 um thickness, around 90% of total hairs

**Vellus**
- Thin hairs less than 30 um, hypopigmented, short, less than 10% of total hairs
2- Scalp Surface

- Scales: diffuse, perifollicular, peripilar (hair cast)
- Erythema
- Pigment pattern/colors
Children - Dirty dots
Honeycomb pigment pattern

- Diffuse, homogenous in the normal scalp
Normal scalp – Simple red loops

- Simple red loop = Pinpoint red dots
Vessels (Various Patterns)

- **Interfollicular simple red loops**: in normal scalp and most of the inflammatory conditions. Appear as multiple regularly spaced hairpin like structures.

- **Arborizing red lines**: These are seen in normal and affected scalp, and represent the sub-papillary plexus.
4- Dots

1. **Yellow** follicular openings: Empty hair follicle, secretions: Alopecias (AA, AGA, trichotillomania)

2. **Black** Dots: Hairs cut off at surface, AA, Tinea capitis

3. **White perifollicular** dots: larger in size, fibrosis

4. **White interfollicular** dots: tiny, sweat glands hypertrophy
Yellow Perifollicular dots

- Alopecias
Yellow Dots

Dilated infundibulum with keratinous material

Tosti, Arch Dermatol. 2011
White Pin Point dots

- Distributed uniformly between the follicular ostia.
- Correspond to eccrine sweat glands pores in the scalp, seen in children and in Female AGA.
TRICHOSCOPY FOR DIAGNOSING DIFFUSE HAIR LOSS
Diffuse Hair Loss

- Diffuse hair loss is a very common complaint.
- To treat efficiently: 1st diagnose properly.

- Telogen Effluvium:
  occurs 3-4 months after stress, with premature transformation of hair follicles into telogen phase.

- Androgenetic Alopecia:
  Accentuated 5-α-reductase enz in susceptible individuals, with shortening of anagen duration and increase in telogen shedding.

- Alopecia Areata Incognito
Androgenetic Alopecia

AGA results from progressive miniaturization of hair follicles and thus the earliest and diagnostic feature is a hair shaft diameter variation of more than 20% hair shafts.
Trichoscopy Androgenetic Alopecia

- Predominance of trichoscopy abnormalities in the frontal area compared to the occipital area.
- Increased proportion of thin and vellus hairs.
- Hair shaft thickness heterogeneity.
- Presence of variable number of yellow dots, predominantly oily (sebaceous), or white dots: empty follicles.
Hairs/Follicle

Follicles in AGA show presence of single hair unlike normal unaffected follicles which bear up to 4 terminal hairs.
AGA

severe

mild
Chronic Telogen Effluvium

- Telogen effluvium (CTE) is the most common cause of diffuse hair loss in adult females.

1 - Telogen effluvium is characterized by decreased hair density with presence of empty follicles, in all regions of the scalp.
Chronic Telogen effluvium

2-Predominance of hair follicle openings with only one emerging hair shaft.

3-Telogen effluvium shows minimal variation in thickness of hairs.
Alopecia Areata Incognito

- Rare
- Diffuse hair thinning without typical patches of alopecia
- Thinning more evident on androgen-dependent scalp, more in females.
Dermoscopy: Numerous Yellow Dots + short miniaturized regrowing hair (2-4 mm long).

Zhao et al, 2012, IJDVL
In Conclusion

- Decreased Hair density
- One emerging hair shaft

<table>
<thead>
<tr>
<th>Androgenetic Alopecia</th>
<th>Chronic Telogen Effluvium</th>
<th>Alopecia Areata Incognito</th>
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</thead>
<tbody>
<tr>
<td>Variation in Hair thickness $\geq 20%$, earliest feature.</td>
<td>No variation in thickness.</td>
<td>Short miniaturized regrowing hair</td>
</tr>
<tr>
<td>Pearly white dots or yellow dots</td>
<td>Less evident dots</td>
<td>Numerous Yellow Dots</td>
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<tr>
<td>More on frontal than occipital.</td>
<td>No site of predilection</td>
<td>More on frontal than occipital.</td>
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Thank You

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