

boards fodder

Common hair trichoscopy structures: Histopathological and clinical correlations

By Mohammad Fardos, DO, Vixey Silva, DO, and Tory Starzyk, DO



Mohammad Fardos, DO, is a PGY-3 resident at HCA Florida Largo Hospital.



Vixey Silva, DO, is a PGY-3 resident at HCA Florida Largo Hospital.

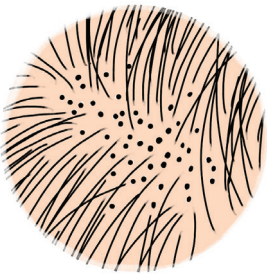
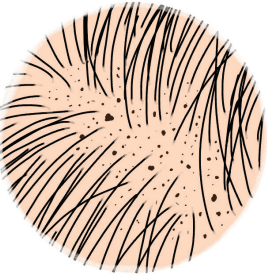
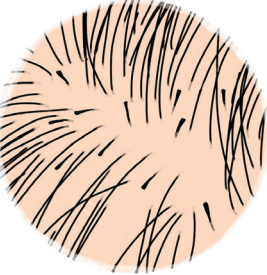
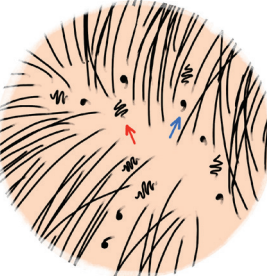



Tory Starzyk, DO, is a PGY-3 resident at HCA Florida Largo Hospital.

Normal hair findings				
<p>Mean hair thickness: frontal: > 0.053 mm, temporal and occipital: > 0.050 mm Percentage of thin hairs: frontal and occipital: < 10%, temporal: < 13% Single-hair pilosebaceous units: frontal: < 35%, temporal: < 40%, occipital: < 30% Yellow dots (70x magnification): frontal: < 4 in 4 fields of vision, temporal and occipital: < 1 in 4 fields of vision Perifollicular discoloration: frontal: < 25%, temporal: < 20%, occipital: < 15% Vascular patterns: frontal: Pinpoint vessels in 80% of patients, temporal and occipital: thin arborizing vessels</p>				
Trichoscopic structure	Definition	Histopathologic findings	Clinical correlates	Image
Yellow dots	<p>Small and round polycyclic structures that are not clinically apparent</p> <p>Represent dilated follicular openings filled with keratotic material or sebum</p> <p>Pearls: Not visible in Fitzpatrick skin type IV-VI and prepubertal children</p>	<p>Keratin plugging</p> <p>Sebum accumulation</p> <p>Miniaturized or empty follicles</p>	<p>Alopecia areata (correlates with disease activity)</p> <p>Trichotillomania</p> <p>Tinea capitis</p> <p>Syphilitic alopecia</p> <p>Traction alopecia</p> <p>Central centrifugal cicatricial alopecia</p>	
Red dots	<p>Erythematous, polygonal to concentric structures</p> <p>Represent dilated blood vessels or inflammation</p>	<p>Prominent dilation of blood vessels</p> <p>Perifollicular inflammation</p> <p>Red blood cell extravasation</p>	<p>Discoid lupus erythematosus (specific)</p> <p>Vitiligo</p> <p>Seborrheic dermatitis</p> <p>Psoriasis</p>	
White dots	<p>White dots:</p> <p>> 0.3 mm white circular structures</p> <p>Pinpoint white dots:</p> <p>0.2-0.3 mm white circular structures forming a "starry sky" pattern with occasional surrounding hyperpigmentation</p> <p>Pearls: May be more apparent in Fitzpatrick skin type IV-VI</p>	<p>Empty follicular ostia</p> <p>Fibrotic tracts</p>	<p>White dots:</p> <p>Alopecia areata</p> <p>Cicatricial alopecia (lichen planopilaris)</p> <p>Pinpoint white dots:</p> <p>Regular distribution: normal scalp</p> <p>Irregular distribution: cicatricial alopecia</p>	


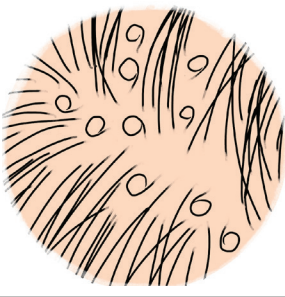


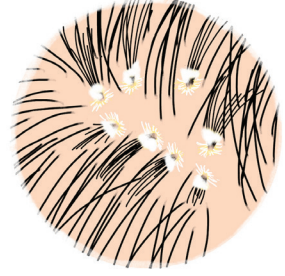
Common hair trichoscopy structures: Histopathological and clinical correlations

By Mohammad Fardos, DO, Vixey Silva, DO, and Tory Starzyk, DO

Trichoscopic structure	Definition	Histopathologic findings	Clinical correlates	Image
Black dots (cadaverized hairs)	Amorphous residue of broken or fractured hair shafts expelled from the follicle Pearls: Correlates with disease activity in alopecia areata	Pigmented hair casts Fractured hair shafts Peribulbar inflammation Empty hair follicles	Alopecia areata Trichotillomania Tinea capitis Syphilitic alopecia Central centrifugal cicatricial alopecia Traction alopecia	
Dirty dots	Interfollicular brown, yellow, or black clumps of less than 0.1 to 0.5 mm Represent particulate debris of exogenous sources	Exogenous material	Normal scalp of prepubertal children and elderly patients	
Exclamation dot hairs	Thicker distal end with proximal narrowing	Fractured hair shafts Peribulbar inflammation	Alopecia areata	
Comma or corkscrew hairs	Bent or twisted structure	Fractured hair shafts Perifollicular inflammation	Tinea capitis Scurvy Menkes disease	 Red arrow: Corkscrew hair Blue arrow: Comma hair
Coiled hair	Irregular shape and jagged end resembling a question mark	Fractured hair shafts Perifollicular inflammation	Trichotillomania	




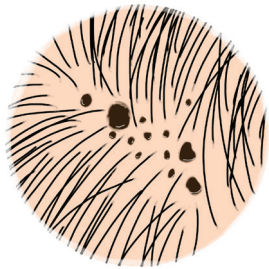
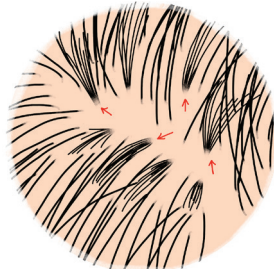
Common hair trichoscopy structures: Histopathological and clinical correlations

By Mohammad Fardos, DO, Vixey Silva, DO, and Tory Starzyk, DO

Trichoscopic structure	Definition	Histopathologic findings	Clinical correlates	Image
Trichoptilosis (broom hair)	Short hairs with split ends emerging from the same ostia	Fractured hair shafts Perifollicular inflammation	Lichen simplex chronicus	
Circle hair (pigtail hairs)	Short regrowing hairs of uniform thickness, color, and coiled shape	Fractured hair shafts Perifollicular inflammation	Alopecia areata Androgenetic Alopecia Chemotherapy induced alopecia	
Bands (Morse code hairs)	Interrupted hairs showing multiple bands along the hair shaft	Fractured hair shafts	Tinea capitis	
Peripilar casts	Layers of tightly adherent scales surround the emerging portion of the hair shaft	White flat/tubular: Perifollicular scaling Yellow starburst: Scaling surrounding tufts	White flat/tubular: Lichen planopilaris Discoid lupus erythematosus Frontal fibrosing alopecia Yellow starburst: Folliculitis decalvans Central centrifugal cicatricial alopecia	 

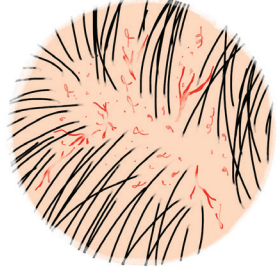
Common hair trichoscopy structures: Histopathological and clinical correlations

By Mohammad Fardos, DO, Vixey Silva, DO, and Tory Starzyk, DO

Trichoscopic structure	Definition	Histopathologic findings	Clinical correlates	Image
Peripilar halo	Concentric annular discolorations surround the emerging portion of the hair shaft	White/gray halo: Perifollicular fibrosis at the infundibulum Salmon halo: Amyloid deposition in perifollicular distribution	White/gray halo: Folliculitis decalvans Salmon halo: Amyloidosis of the scalp Central centrifugal cicatricial alopecia	 White peripilar halo  Salmon peripilar halo
Peripilar sign	Brown annular discoloration surrounding the hairs that emerge on the scalp	Mild lymphocytic infiltrate and fibroplasia at the infundibulum	Androgenetic alopecia	
Keratotic plugs	Keratotic masses plugging the follicular ostia	Accumulations of keratinous material within the follicular openings	Discoid lupus erythematosus Dissecting cellulitis of the scalp	
Hair tufts	More than six hairs emerging from the same ostia Pearl: A small tuft contains fewer than four hairs	Convergence of follicular infundibulum, with the lower portions of the hair follicles remaining separate and unaffected by scarring	Folliculitis decalvans Lichen planopilaris Discoid lupus erythematosus	

Common hair trichoscopy structures: Histopathological and clinical correlations

By Mohammad Fardos, DO, Vixey Silva, DO, and Tory Starzyk, DO

Trichoscopic structure	Definition	Histopathologic findings	Clinical correlates	Image
Vascular structures	Various blood vessel structures of different shapes and morphology	Dilated blood vessels Perivascular inflammation	<p>Simple red loops, thin arborizing vessels: Normal scalp</p> <p>Thick arborizing vessels: Discoid lupus erythematosus</p> <p>Glomerular-like vessels, lace-like vessels: Psoriasis</p> <p>Numerous giant capillaries: Dermatomyositis</p> <p>Hairpin, serpentine, comma vessels: Seborrheic dermatitis</p> <p>Concentric perifollicular linear vessels: Cicatricial alopecia</p>	

References:

1. Rakowska, A., Trichoscopy (hair and scalp videodermoscopy) in the healthy female. Method standardization and norms for measurable parameters. *J Dermatol Case Rep*, 2009. 3(1): p. 14-9.
2. Miteva, M. (2021). *Hair Pathology with Trichoscopic Correlations* (1st ed.). CRC Press. <https://doi.org/10.1201/9780429457609>