International Journal of Medical Sciences And Clinical Research (ISSN – 2771-2265)
VOLUME 03 ISSUE 12 PAGES: 39-43
SJIF IMPACT FACTOR (2021: 5. 694) (2022: 5. 893) (2023: 6. 184)
OCLC – 1121105677
Crossref doi Google Scholar WorldCat MENDELEY
Publisher: Oscar Publishing Services

Journal Website: https://theusajournals.com/index.php/ijmscr



Research Article

# DERMOSCOPY IN FEMALE ANDROGENETIC ALOPECIA

Submission Date: December 11, 2023, Accepted Date: December 16, 2023,
Published Date: December 21, 2023
Crossref doi: https://doi.org/10.37547/ijmscr/Volume03Issue12-08

**Tashmatova N.B.**
**Research Institute Of Military Medicine Of The Military Medical Academy Of The Armed Forces Of The Republic Of Uzbekistan**

## ABSTRACT

We present 3 patients with hair thinning that is pronounced on the top of the head (Fig.1 a,b,c). Thinning of the vertex region is characteristic of female-type androgenetic alopecia but is not diagnostic. Trichoscopy (dermoscopy of hair and scalp) can provide important differential diagnostic information.

## KEYWORDS

Trichoscopy, female-type androgenetic alopecia, Alopecia.

## INTRODUCTION

**Case #1**

The 60-year-old patient clinically showed a pronounced oval-shaped hair thinning in the area of the head with a gap in the front hairline (Fig. 1a). The scalp, which was clearly visible in this area, had an atrophic shiny appearance with discrete perifollicular redness around individual remaining hair shafts. In addition to the loss of follicle openings, erythema with perifollicular emphasis around residual hairs (Fig. 2a, white arrow) and whitish areas (Fig. 2a, black arrow) were visible in this area under reflected light microscopy.

**Case #2**

Clinically, the 29-year-old patient presented with an oval, moderately pronounced hair thinning in the area of the vertex and the adjacent scalp (Fig. 1b). In the dermoscopic examination of the affected area, a clear variability in the thickness of the hair shaft (Fig. 2b, white arrows) and the predominance of follicular ostia

International Journal of Medical Sciences And Clinical Research (ISSN – 2771-2265)
VOLUME 03 ISSUE 12 PAGES: 39-43
SJIF IMPACT FACTOR (2021: 5. 694) (2022: 5. 893) (2023: 6. 184)
OCLC – 1121105677
Publisher: Oscar Publishing Services

with only one emerging hair shaft (Fig. 2b, arrowheads) were visible as a correlate for the clinically visible hair thinning.

**Case #3**

The 26-year-old patient clinically showed diffuse hair thinning with the greatest severity in the vertex area, whereby the scalp was visible. Clinically, this showed numerous follicular openings that appeared prominent due to dilatation and occasionally had a comedo-like appearance.

Dermoscopically, in addition to the rarefaction of the hair shafts, short hairs, some of which tapered proximally and had blunt ends (Fig. 2c, "exclamation point hair", black arrows), were also visible. Numerous follicular openings of both hairless and hair-bearing follicles were dilated and filled with a yellowish material (Fig. 2c, "yellow dots", white arrows).

## DISCUSSION

Hair loss can be clinically diffuse, focal or in a so-called pattern "Hair loss in a pattern" is typically found in androgenetic alopecia. Women most often show an oval or triangular thinning of the vertex area with a preserved frontal hairline (Ludwig and Olsen type); a male pattern of loss is observed in individual cases (Hamilton type) [1].

Rarely, other hair diseases can mimic the picture of androgenetic alopecia, especially alopecia areata and lichen planopilaris [2].

**Case 1**

Our first patient (Case 1; Figs. 1a and 2a) showed a pattern of hair loss compatible with advanced androgenetic alopecia of the Ludwig type, but the changes in the scalp were already clinically suspicious for a scarring process. The loss of follicle openings and the presence of whitish fibrosed areas in reflected light microscopy confirmed this suspicion. The perifollicular erythema in the area of residual hair was suggestive of lichen planopilaris (Table 1). The suspected diagnosis was also confirmed histologically.

The so-called "fibrosing alopecia in a pattern distribution" represents a clinical variant of lichen planopilaris that occurs in areas typical of androgenetic alopecia.

Dermoscopic examination of the scalp is of great importance for differentiating scarring and non-scarring alopecias. The simultaneous loss of hair and follicle openings is the main feature of primary cicatricial alopecia. Further reflected light microscopic findings help to differentiate the subentities; the perifollicular emphasis of erythema, fibrosis and scaling with a sometimes ruff-like appearance is typical of lichen planopilaris [3]. However, because of the common underlying inflammatory fibrosing process,

International Journal of Medical Sciences And Clinical Research (ISSN – 2771-2265)
VOLUME 03 ISSUE 12 PAGES: 39-43
SJIF IMPACT FACTOR (2021: 5. 694) (2022: 5. 893) (2023: 6. 184)
OCLC – 1121105677
Publisher: Oscar Publishing Services

scarring alopecias may show overlapping reflected light microscopic criteria.

Diagnosis case 1: Lichen planopilaris ("fibrosing alopecia in a pattern distribution")

With regard to therapeutic consequences, biopsy confirmation of the diagnosis is recommended.

**Case 2**

In our second patient (case 2; Figs. 1b and 2b) there was clinically hair thinning similar to the beginning of androgenetic alopecia of the Ludwig type. The increase in thin hairs and the decrease in follicular ostia with 2 or 3 hair shafts emerging together, which could be detected under reflected light microscopy, reflected a progressive miniaturization of the hair follicles in this area and confirmed the suspected clinical diagnosis of androgenetic alopecia (Table 1). Through the morphological assessment of hair and scalp, trichoscopy enables differentiated conclusions to be drawn about the pathogenesis of hair loss diseases and thus facilitates differential diagnostic considerations.


**Fig.1a,b,c Three patients with hair thinning on the top of the head as in female-type androgenetic alopecia.**

International Journal of Medical Sciences And Clinical Research (ISSN – 2771-2265)
VOLUME 03 ISSUE 12 PAGES: 39-43
SJIF IMPACT FACTOR (2021: 5. 694) (2022: 5. 893) (2023: 6. 184)
OCLC – 1121105677
Publisher: Oscar Publishing Services

Fig.2 Dermoscopic images of the patients shown in Fig. 1.a - loss of follicular openings with the presence of whitish fibrosed areas (black arrow) and characteristic perifollicular erythema (white arrow). b - variability of the hair shaft thickness due to the presence of normal terminal hairs, intermediate and thin hairs (white arrows) as well as an increase in vellus hairs and follicular ostia with the emergence of individual hairs (arrowheads). c - short hair, partly tapering towards the scalp, with blunt ends (black arrows, "exclamation point hair") and clearly visible follicular ostia filled with yellowish material (white arrows, "yellow dots")

Hair changes in androgenetic alopecia are caused by the genetically varying degrees of sensitivity of individual follicles to androgens [4]. Under the influence of hormones, the affected hair follicles shrink or even lose. Depending on the hormone status and metabolism of sex hormones in hair and skin, affected different areas of the scalp. The occipital region usually shows little or no changes.

Diagnosis Case 2: Androgenetic alopecia (Ludwig type)

The topographically varying severity of dermoscopic changes of central diagnostic importance and enables the recognition of early forms without a clinically pronounced pattern of failure.

The examination using a hand dermatoscope is a method for diagnosing androgenetic alopecia that is at least equivalent to the trichogram and is also time-saving and painless. Most videodermatoscopes use special computer programs to carry out a digital trichogram, which, in addition to determining the anagen/telogen ratio, also allows the vellus/terminal hair ratio as well as the hair density and thickness to be measured. The possibility of digital storage is of great advantage for monitoring progress and objectively evaluating the success of therapy.

**Table 1. Characteristic reflected light microscopic findings of the patients shown**

| Fall 1: Lichen planopilaris | Fall 2: Androgenetic alopecia | Fall 3: Alopecia areata incognita |
|---|---|---|
| Loss of follicle openings | Variability of hair shaft thickness (increase in thin and vellus hairs) | Dystrophic hair shafts: short hairs that partly taper proximally and have blunt ends |

International Journal of Medical Sciences And Clinical Research (ISSN – 2771-2265)
VOLUME 03 ISSUE 12 PAGES: 39-43
SJIF IMPACT FACTOR (2021: 5. 694) (2022: 5. 893) (2023: 6. 184)
OCLC – 1121105677
Publisher: Oscar Publishing Services

| | | |
|---|---|---|
| Perifollicular erythema | Increase in follicular ostia with only one emerging hair shaft | Numerous "yellow dots" |
| Whitish areas | | |
| *in androgen-dependent areas | | |

**Case 3**

The patient clinically showed an emphasis on the vertex region that is characteristic of androgenetic alopecia of the female type. The severe degree of hair loss was mainly as unusual given the patient's age, as were the dilated follicle openings in the severely affected area. The presence of numerous "yellow dots" and characteristic dystrophic hair shafts in reflected light microscopy led us to the diagnosis of alopecia areata incognita (Table 1).

**Diagnosis Case 3: Alopecia areata incognita (Alopecia areata diffusa)**

Clinically, alopecia areata incognita often shows a hair loss pattern similar to androgenetic alopecia. In the case of hair loss caused by inflammation, disease activity can often be determined using a reflected light microscope. Alopecia areata shows a disorder of hair growth in active stages due to the inflammatory infiltration of the bulb region. There are typically broken hairs, hairs that taper towards the scalp and so-called hairs that are cadaverized at the scalp level ("black dots") [5]. The accumulation of unpigmented hair residues and sebum leads to dilatation and yellowish coloration of follicle openings. The appearance of short, regrowing hair can be seen as a prognostically favorable sign.

## REFERENCES

1. Assouly P, Reygagne P (2009) Lichen planopilaris: update on diagnosis and treatment. Semin Cutan MedSurg28(1):3–10
2. Rakowska A, Slowinska M, Kowalska-Oledzka E, Olszewska M, Rudnicka L (2009) Dermoscopy in female androgenic alopecia: method standardization and diagnostic criteria. Int J Trichology 1(2):123–130
3. Tosti A, Whiting D, Iorizzo M, Pazzaglia M, Misciali C, Vincenzi C, Micali G (2008) The role of scalp dermoscopy in the diagnosis of alopecia areata incognita. JAmAcadDermatol59(1):64–67