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Ingrown Hairs: A Recurrent Trichoscopic Feature in Scarring Alopecias

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Dear editor,

Trichoscopy is a useful noninvasive technique for the evaluation of patients with hair loss, allowing magnified visualization of the hair and scalp skin. It is a valuable tool to distinguish scarring from non-scarring alopecias and may also help the physician to select the best biopsy site in doubtful cases [1–4].

We recently noticed that a subset of patients with scarring alopecia presented with the trichoscopic finding of ingrown hairs. In this paper, we report a series of patients with scarring alopecia in whom ingrown hairs were seen under trichoscopy. We further discuss the significance of this finding.

We performed a retrospective analysis of images and medical records from patients seen in the last 12 months in our hair clinic presenting with ingrown hairs under scalp trichoscopy. Patients had been seen for different types of hair loss. Diagnosis was established clinically by dermatologists with experience in hair disorders and, in doubtful cases, confirmed through pathology. In 4 patients, trichoscopy-guided biopsies of an ingrown hair had also been performed. Trichoscopy and photographic documentation were done using either Fotofinder Dermoscope® or FotoFinder Handyscope® (Teachscreen Software, Bad Birnbach, Germany).

A total of 20 cases of patients presenting ingrown hairs were recovered, including 7 males and 13 females; 8 were of African-descent and 12 Caucasian. All patients had primary scarring alopecia including conditions from the lymphocytic, neutrophilic, and mixed groups (Fig. 1) (for detailed clinical information, please refer to Table 1). Interestingly, in some patients, ingrown hairs could be observed crossing a long distance underneath the skin (Fig. 1f). Trichoscopy-guided biopsies revealed hair follicles with thinned outer root sheaths transfixated by hair shafts, associated with giant foreign body type reaction (Fig. 2).

Two mechanisms have been proposed for the pathogenesis of ingrown hairs: transfollicular and extrafollicular penetration [5, 6].

Table 1. Clinical information from patients with ingrown hairs

Patient	Gender	Ethnicity	Diagnosis
1	Male	African descent	Acne keloidalis
2	Female	Caucasian	LPP
3	Male	African descent	Folliculitis decalvans
4	Female	Caucasian	LPP
5	Male	African descent	Folliculitis decalvans
6	Female	Caucasian	LPP
7	Female	African descent	LPP
8	Female	African descent	LPP
9	Female	Caucasian	Frontal fibrosing alopecia
10	Female	Caucasian	Frontal fibrosing alopecia
11	Female	Caucasian	LPP
12	Female	African descent	CCCA
13	Female	Caucasian	LPP
14	Male	African descent	LPP
15	Male	African descent	Acne keloidalis
16	Female	Caucasian	Frontal fibrosing alopecia
17	Female	Caucasian	Frontal fibrosing alopecia
18	Male	Caucasian	LPP
19	Female	Caucasian	Frontal fibrosing alopecia
20	Male	Caucasian	LPP

LPP, lichen planopilaris; CCCA, central centrifugal cicatricial alopecia.

In cases of extrafollicular penetration, it is likely that the curved nature of the hair shaft of some patients, especially of African descent, leads to reentry into the skin: after extraepidermal growth, the curved shaft pierces the adjacent skin causing epidermal invagination and penetration into the dermis. In the transfollicular mechanism, hair shafts transfix the follicular wall directly into the dermis.

We believe the latter is more likely to participate in the pathogenesis of ingrown hairs in cicatricial alopecias. We hypothesize that the inflammation that involves hair follicles in primary scarring alopecias would lead to thinning of root sheaths, eventually causing some of the shafts to enter the dermis; giant foreign body type reaction would then ensue.

We compared our findings with those from a series of trichoscopic pictures from 30 patients with non-cicatricial alopecias, seen in the same period: 10 with androgenetic alopecia, 10 with telogen effluvium, and 10 with alopecia areata. Ingrown hairs were not present in any of these cases.

Fig. 1. Ingrown hairs in scarring alopecias. **a** Frontal fibrosing alopecia. **b** Lichen planopilaris. **c** Central centrifugal cicatricial alopecia. **d** Acne keloidalis nuchae – note the ingrown hair within the follicular papule. **e** Folliculitis decalvans. **f** An ingrown hair is perceived running several millimeters underneath the skin of a patient with lichen planopilaris (original magnification $\times 20$).

Fig. 2. Serial sections of a trichoscopy-guided biopsy of an ingrown hair from a patient with lichen planopilaris revealed a follicle with hypergranulosis and thinning of the isthmus external root (**a**). The follicular epithelium is transfixated by a hair shaft. **b** A newly created path, parallel to the hair shaft, can be noticed in the dermis, reaching the skin surface (H&E, $\times 40$).

It is our impression that follicular damage in scarring alopecias is responsible for the recurrent trichoscopic finding of ingrown hairs. Limitations of this study include its retrospective nature and small sample size. Further studies analyzing the exact frequency of this trichoscopic feature in scarring alopecias are needed.

Statement of Ethics

All patients have given oral consent for their details to be described in this paper.

Disclosure Statement

The authors declare no conflicts of interest.

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