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Dissecting cellulitis of the occipital scalp with hair retention within sinus tracts

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KEYWORDS

dissecting cellulitis of the scalp, follicular occlusion, hair retention, sinus tract, tufted hair

Dear Editor,

Hidradenitis suppurativa (HS) is a chronic inflammatory disease based on follicular occlusion, characterized by recurrent nodules, abscesses, sinus tract formation, and scarring [1]. HS-like lesions occurring on the scalp are commonly referred to as dissecting cellulitis of the scalp (DCS), which also belongs to the group of follicular occlusion disorders [2]. Although biologic agents are effective for HS [3], their efficacy in DCS has not been well established.

Here, we report a case of DCS that was refractory to biologic therapy. This case showed characteristic structural changes, including the accumulation of hair shafts within sinus tracts, and we discuss their possible association with treatment resistance.

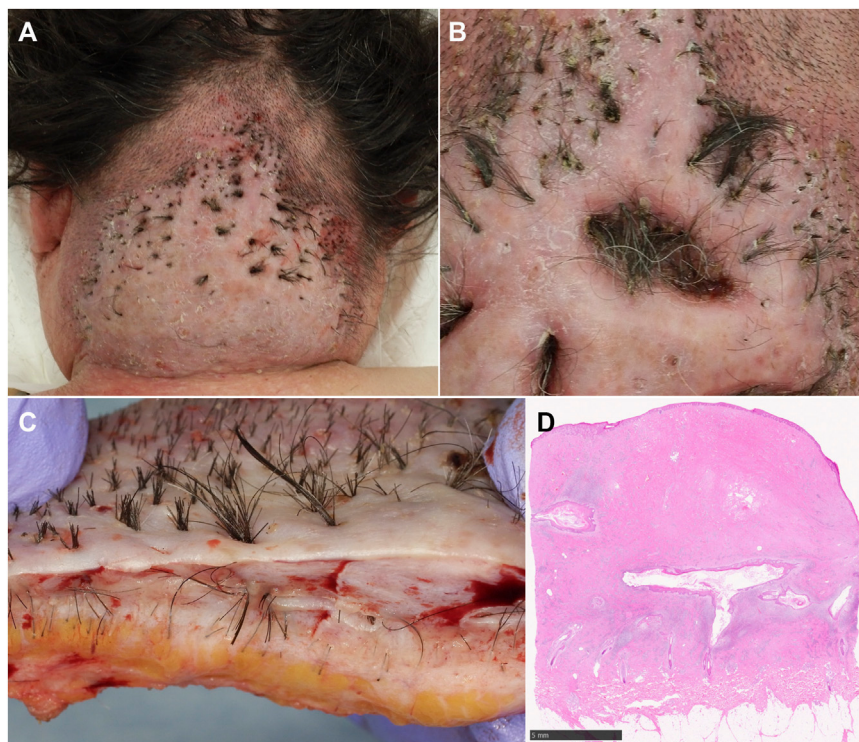
A man in his 40s presented with an 8-year history of nodular lesions on the occipital scalp, which gradually enlarged and were associated with pain, purulent discharge, and progressive hair loss. He had been diagnosed with HS at a previous clinic and treated with adalimumab for 1 year, followed by bimekizumab for 6 months; however, no clinical improvement was observed, and he was referred to our department.

At the initial visit, extensive scarring alopecia with tufted hair was observed on the occipital scalp, accompanied by erythema, induration, and purulent discharge from sinus tracts (Figure 1A). The lesion extended approximately 13 × 13 cm. Incision and drainage followed by derofreeing resulted in limited improvement, and elongated hair shafts extending within the subcutaneous tissue were exposed from the wound (Figure 1B).

Subsequently, wide excision was performed. On cross-section of the excised specimen, markedly thickened fibrotic tissue and numerous hair shafts within the sinus tracts were observed (Figure 1C). Histopathological examination revealed destruction of follicular structures, inflammatory cell infiltration, fibrosis, and fusion of adjacent follicles, consistent with scarring alopecia (Figure 1D). The postoperative course was uneventful, with no recurrence.

Tufted hair is a morphological finding in which multiple hair shafts emerge from a single dilated follicular opening, and is considered to result from destruction of the upper follicular structures and subsequent fibrosis leading to follicular fusion [4, 5]. In the present case, an additional notable finding was the accumulation of hair shafts within sinus tracts. This may reflect impaired extrusion of hair shafts due to follicular destruction and fibrosis, resulting in their retention within the subcutaneous tissue.

In this patient, biologic therapy did not result in clinical improvement. While biologic agents are effective in controlling inflammation, their efficacy may be limited in fibrosis-dominant lesions such as scarring and sinus tracts [3]. The presence of scarring alopecia, tufted hair, and intralesional hair accumulation suggests that the disease had already progressed to a fibrosis-dominant stage at the time of treatment initiation.

**FIGURE 1**

Clinical, gross, and histopathological findings of dissecting cellulitis of the scalp (A) Clinical presentation at the initial visit, showing extensive scarring alopecia with tufted hair. (B) Two weeks after deroofing. Elongated hair shafts extending within the subcutaneous tissue are exposed from the wound. (C) Gross appearance of the excised specimen. Thickened fibrotic tissue with sinus tract formation is observed, and hair shafts are present within the sinus tracts. (D) Histopathological findings. Fibrosis and sinus tract formation extending from the dermis to the subcutaneous tissue are observed, indicating structural destruction associated with chronic inflammation (hematoxylin and eosin stain; scale bar = 5 mm).

This case of DCS was characterized by extensive scarring alopecia and tufted hair, with the notable finding of hair retention within sinus tracts. When scarring alopecia and tufted hair are present, fibrosis-dominant disease with underlying structural abnormalities, including subcutaneous hair retention, may be suspected. In such cases, the response to biologic therapy may be limited, and early consideration of surgical excision is warranted.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

Ethical approval was not required because this manuscript reports a single case based on clinical findings obtained during routine medical care, without any additional intervention or prospective research procedures. The study was conducted in accordance with the local legislation and institutional requirements. Written informed consent was obtained from the

patient for the publication of this case report and any potentially identifiable images or data included in the article.

Author contributions

YY: Conceptualization, Data curation, Investigation, Visualization, Writing – original draft. KF: Supervision, Writing – review and editing. KN: Writing – review and editing. SU: Writing – review and editing. AO: Writing – review and editing. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declared that this work was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Generative AI statement

The author(s) declared that generative AI was used in the creation of this manuscript. OpenAI's ChatGPT was used for language editing and assistance with improving the clarity and readability of the manuscript. The AI tool was not used to generate clinical data, analyze data, create images, or make scientific conclusions. The authors carefully reviewed and

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