

Weft Hair Extensions Causing a Distinctive Horseshoe Pattern of Traction Alopecia

One of the winning presentations given by dermatology residents at Cosmetic Surgery Forum.

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Traction alopecia (TA) represents a pattern of traumatic hair loss caused by a pulling force applied to the hair shaft over time. This excessive tensile force results from hair styling practices such as tight ponytails, braids, cornrows, chignons, or religious head coverings. TA has traditionally been categorized into marginal alopecia (occurring behind the frontal hairline or along the temporoparietal margin) or non-marginal alopecia. In the US, traction alopecia is most common in African American women due to their hair styling practices.¹ It is also common in Sikh men of India and Japanese women whose traditional hair styles result in excessive tension on the hair. The presence of retained hairs along the frontal and/or temporal hairline, termed the “fringe sign,” is a common finding in patients with traction alopecia of the marginal hairline and can help in making a clinical diagnosis of TA.² The histopathology of TA in early stages shows trichomalacia, a normal number of terminal follicles, and preserved sebaceous glands. At some point there may be “follicular drop-out” of the terminal hairs where the follicles seem to have disappeared but the vellus-sized hairs are intact. With longstanding TA, there is a decrease in the number of terminal follicles, which may be pro-

gressively replaced with concentric fibrosis. Inflammation is little-to-absent in longstanding TA but may be mild in some cases of early TA.²

Diagnostic challenges may be encountered if the clinical suspicion for traction is not high, if the history of traction is remote or not obtained or if the pattern of alopecia is atypical. Herein, we report two patients with an unusual variant of TA resulting from use of hair wefts, which we termed “horseshoe” pattern traction alopecia (Figure 1). Wefted hair extensions consist of multiple strands of hair held together by a band of fine threads (Figure 2). These extend-



Figures 1. Horseshoe traction alopecia. Alopecia of the occipital and temporo-parietal scalp corresponds to the area where the patient had used glued-in hair wefts.



Figure 2. A hair weft.

ed-wear hairpieces are attached directly to the hairline by being sewn, bonded, glued, or clipped and are used to conceal existing hair loss or for cosmetic purposes. Repeated application of wefts or longstanding use may mimic scarring alopecia, however a detailed history will often reveal the cause of hair loss.³

It is important to recognize various patterns of TA at early stages into order to cease traction and prevent progression to permanent alopecia. Although the pathogenesis of TA remains to be fully elucidated, it may follow three stages, including a reversible, pre-alopecia stage, a reversible stage with associated alopecia, and finally an irreversible stage with permanent alopecia. The mainstay of treatment for early disease is to discontinue hair styling practices that generate traction. For late stage TA associated with scarring, the optimal treatment is hair transplantation.⁴ ■



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eccrine neoplasm first described in 1956 by Smith and Coburn.¹ It is usually diagnosed clinically as a seborrheic keratosis, squamous cell carcinoma *in situ*, basal cell carcinoma, or a different adnexal tumor.²⁻⁴ The most common locations for its appearance include the lower extremities and trunk.²⁻⁴

Hydroacanthoma simplex is a member of the poroma family of neoplasms, which also includes classic eccrine poroma, dermal duct tumor, and poroid hidradenoma.⁵ Hydroacanthoma simplex is believed to be derived from the basal keratinocytes of the lower acrosyringium.^{2,4} Hydroacanthoma simplex is superficially located, with well-defined islands of cells confined to the epidermis.² Conversely, classic eccrine poroma is characterized by massive proliferation of acrosyringium cells and abundant vasculofibrous stroma.² Whereas necrosis in a tumor is usually suggestive of malignancy, necrosis *en masse* is a typical feature of benign poromas.⁴

Rare cases are reported in the literature of transformation from benign hydroacanthoma simplex to malignant hydroacanthoma simplex, also known as eccrine porocarcinoma, with the potential for distant metastasis.^{3,6,7} In cases of transformation, wide local excision with clear margins or Mohs should be performed.⁷ Therapeutic options described in the literature for primary eccrine porocarcinoma include fulguration, cautery, simple excision, and radiation.⁸ Regional lymph node dissection may be needed if lymphadenopathy is present.⁹ Although it is considered a benign lesion, hydroacanthoma simplex should generally be treated, because of the low risk of malignant transformation. ■

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