Triangular patch of hair loss in scalp since infancy

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CLINICAL FINDINGS

A 29-year-old male patient presented with a non-progressive patch of hair loss on the right side of his scalp since infancy. He was treated with topical steroids and systemic multivitamins but without response. There was no history of joint discomfort, bone deformities, or dental problems. There was no history of itching, chemical exposure, or dandruff on the scalp. There was no family history of similar condition. Cutaneous examination showed a single, well-defined triangular patch of alopecia of approximately 6x3cm with sparse hairs, on right temporal region just above right ear. The lesional skin was normal, with no signs of inflammation, scales or atrophy. (Fig. 1). Serological investigation including CBC, hepatic, kidney profiles in addition to serum ferritin, zinc, vit B12, Vit D were within normal limits. General examination showed no significant abnormalities.

What is your clinical differential diagnosis?

Alopecia areata

Congenital triangular alopecia

Trichotillomania

DERMOSCOPY FINIDINGS

Dermoscopic examination revealed normal follicular openings with vellus hairs surrounded by terminal hairs on the edge of the lesion, with no yellow or black dots, brittle hair, or “exclamation mark” hairs. (Fig. 2).

DIAGNOSIS

- Congenital triangular alopecia.

Fig. 1 Triangular patch of alopecia measuring approximately 6x3cm with sparse hair in between in right temporal region.

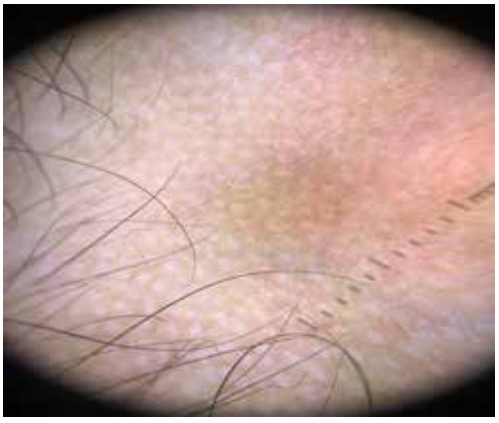

Fig. 2 Dermoscopic examination showed normal follicular openings and villus hairs surrounded by terminal hairs on the periphery of lesion.

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COMMENT

Congenital triangular alopecia (CTA), also termed as temporal triangular alopecia (TTA) or Brauer nevus, can be present at birth or acquired throughout the first decade of life (as in our case). It remains constant throughout one's lifetime. It has a 0.1 percent incidence rate and no gender preference.[1] The condition has also been reported in adults.[3] TTA primarily affects white patients.[2] It is usually unilateral in 80 percent of cases, and it has been described more frequently on the left side than on the right side.[4] The lesion was unilateral and on the right temporal area in our case.

It is a developmental disorder that was once thought to be congenital, but many now believe it is acquired due to the shrinkage of hair follicles, which leads to the formation of the disease's characteristic vellus hairs. It is normally sporadic, although it can happen in families on rare occasions, and it's termed a paradominant feature.[5] Mosaicism is a para dominant trait associated with postzygotic loss of the wild type allele in a heterozygote state. Alopecia comes in a variety of shapes, including triangular, oval, and lancet.[6] The most distinguishing aspect of a lancet-shaped lesion is its narrow width, which can be unilateral or bilateral, with the "lancet" point superiorly and posteriorly. In 2.5 percent of instances, the temporal region of the scalp is the most commonly involved, followed by frontotemporal and finally occipital.[7]

Differential diagnosis of CTA including Alopecia areata, traction alopecia, trichotillomania, tinea capitis, and aplasia cutis congenita.[8] Table 1 summarizes the distinguishing characteristics of its imitators based on clinical appearance, location, dermatoscopy, and histopathology.

CTA is distinguished from androgenetic alopecia by bilateral frontotemporal hairline regression. Differentiation between CTA and tinea capitis can be done using a potassium hydroxide test. Alopecia's typical tonsure pattern, perifollicular hemorrhage, and pigmentation in dermoscopy aid to distinguish it from trichotillomania, while a lack of skin over the scalp since birth indicates aplasia cutis. CTA has been linked to Down syndrome, iris nevus syndrome, phakomatosis pigmentovascularis, congenital heart disease, bone and teeth abnormalities, mental retardation, and congenital aplasia cutis.[9]

The following are proposed diagnostic criteria for congenital alopecia: (1) a triangular or spear-shaped area of alopecia involving the frontotemporal region of the scalp, (2) normal follicular openings with vellus hair surrounded by normal terminal hair on dermoscopy, (3) absence of yellow and black spots, dystrophic hair, or decreased follicular openings on dermoscopy, and (5) persistent lack of significant hair regrowth for 6 months after treatment.[9]

Triangular alopecia on the right side of the frontotemporal region of the scalp from birth, normal follicular opening with vellus hairs surrounded by terminal hair, and absence of yellow and black spots were all criteria met by our patient. On histopathology, the absence of mature hair follicles and the presence of vellus hairs give the appearance of "miniaturized hair follicles" as seen in androgenetic alopecia, with a normal number of follicles, a predominance of vellus hair, but occasional terminal hair in the superficial dermis, and no evidence of inflammation or scarring.[2] Normal follicular openings with vellus hairs covering the alopecia area and terminal hairs on the periphery of the lesion were seen under the microscopy in our patient.

Table 1: Differential diagnosis of congenital triangular alopecia

Disease	Age	Site	Dermoscopy	Pathology
Alopecia areata	**20-59 years**	**Scalp or body**	• Yellow dots, black dots, broken hairs, tapering hair "Exclaimation mark" and short vellus hairs,	• Peribulbar and intrabulbar lymphocytic inflammatory infiltrate around anagen follicles "swarm of bees,"
Trichotillo-mania	**Adults**	**Fronto-parietal region**	• Broken off and fractured hairs with blunt end	• Normally growing hairs among empty hair follicles, keratin debris plugging follicles, strands of basaloid-appearing cells in plucked follicles trichomalacia
Tinea capitis	**3-7 years of age**	**Any site of scalp**	• Comma hair, multiple spores, loop hair, coiled hair	• Hyphae and spores within hair follicles
Androgenetic alopecia	**At puberty**	**Bilateral fronto-temporal**	• perifollicular pigmentation/ peripilar sign and yellow dot, Hair diameter diversity >20%,	• , increased telogen to anagen ratio and Increased follicular stelae a minimal. Perifollicular lymphohistiocytic infilterate with or without mild fibrosis around the upper part of follicle

TTA has no effective treatment and, in most situations, there is no need for therapeutic intervention other than counseling to inform the patient of the dermatosis's benign nature. Surgical excision, hair transplantation, and topical minoxidil are all options for treatment. Minoxidil has been shown to be successful, with a relapse occurring shortly after stopping medication.[11] After 3 months, the patient showed response to minoxidil in the form of fresh vellus hair growth, however the patient will need to be followed up on to see how she responds after therapy is stopped. In cases of serious cosmetic and emotional impairment, hair transplantation and surgical removal of the lesion are the main therapeutic options. For small lesions, complete excision may be recommended, while others will necessitate hair transplantation.[12] we advised our patient to do hair transplantation.

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