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### **Dermoscopic Findings of Temporal Triangular Alopecia**

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#### **Abstract**

**Background:** Temporal triangular alopecia (TTA), also referred as congenital triangular alopecia, is an uncommon dermatosis of unknown etiology. It is characterized by a non-scarring, circumscribed alopecia often located unilaterally in the fronto-temporal region that usually emerges at ages 2-9 years. Differential diagnosis of other types of localized alopecia such as alopecia areata is necessary in some cases.

**Objective:** To evaluate the potential benefit of trichoscopy in the clinical diagnosis of TTA.

**Methods:** Trichoscopic examination of 15 patients suffering from TTA using the DermLite II Pro and 10X optical zoom by Samsung S4 Zoom camera and their dermoscopic findings were done.

**Conclusion:** Dermoscopy is a noninvasive tool that aids in the differential diagnosis of TTA.

#### **Introduction**

Dermoscopy is a non-invasive diagnostic tool that allows the recognition of morphologic structures not visible by the naked eye. Scalp dermoscopy is very useful for the evaluation of patients with hair and scalp disorders. The main advantage of dermoscopy in the evaluation of hair disorders is the fact that large areas can be swiftly screened including eyebrows and eyelashes that maybe difficult to evaluate using different methods [1].

Temporal triangular alopecia, is also known as congenital triangular alopecia [2]; however the term congenital triangular alopecia has become inadequate because most cases arise at ages 2-9 years and the disease may even manifest itself in the adulthood [3]; it is an uncommon form of alopecia of unknown etiology. It was first reported by Sabouraud in 1905 [4]. According to Yamazki and coworkers, around 74 cases have been reported till 2010 [3]. Although it usually emerges sporadically, reports of familial cases suggest the presence of a

para-dominant inheritance [5,6].

TTA commonly manifests itself as a spear-shaped, oval, round or triangular area of alopecia unilaterally located in the fronto-temporal region [3,7], however it may affect other areas of the scalp, including the occipital region, and it may also be bilateral [8]. Sometimes there is a small fringe with terminal hairs at the front edge of the lesion and even a tuft of hair at the center of the lesion was reported in some cases [5,6].

Some diseases have been associated with TTA, such as: Down syndrome, iris nevus syndrome, phakomatosis pigmento vascularis, congenital heart disease, bone and tooth abnormalities, mental retardation and congenital aplasia cutis [9]. The main differential diagnoses are alopecia areata, trichotillomania, traction alopecia and congenital aplasia cutis [7].

Hair implantation and surgical excision of the lesion are the main therapeutic proposals in cases with significant aesthetic and emotional injury [10]. Bang and colleagues described the first successful case using topical minoxidil. Nevertheless, there is no scientific evidence confirming the efficacy of such treatment [11].

### **Aim of the work**

This study was undertaken to evaluate the potential utility of a handheld dermatoscope in the clinical diagnosis of TTA.

### **Patients & Methods**

Clinical and dermoscopic examination was performed for 15 patients suffering from TTA using the DermLite II Pro (3Gen, Inc., San Juan Capistrano, California, USA.) and 10X optical zoom by Samsung S4 Zoom camera (Samsung Electronics Co., Ltd., Yeongtong-Gu Suwon-Shi, South Korea) and their dermoscopic findings were reported.

### **Results**

The dermoscopic features of the 15 patients with TTA were analyzed and showed: **(Figures 1-3)**

- Vellus hairs in 15 patients (100%).
- Reduced follicular ostia in 6 patients (46.7%).
- Diffuse erythema in 5 patients (33.3%).
- Hypotrichosis in 5 patients (33.3%).
- White dots in 4 patients (26.7%).
- Central tuft of terminal hair in 1 patient (6.7%).



**Fig. 1:** Clinical and dermoscopic images of a patient showing only vellus hair, diffuse erythema, diminished follicular ostia, white dots and hypotrichosis.



**Fig.2:** Clinical and dermoscopic images of a patient showing affection of the frontal area and dermoscopically there is only vellus hair and hypotrichosis.



**Fig.3:** Clinical and dermoscopic images of patient showing abundant vellus hair with central tuft of terminal hair, diminished follicular ostia and hypotrichosis.

## Discussion

Temporal triangular alopecia is a non-inflammatory and non-scarring form of alopecia that remains stable throughout life [7]. Alopecia areata is the main differential diagnosis of TTA. Dermoscopy helps to differentiate between these two diseases, avoiding the performance of

biopsies to confirm the diagnosis [6]. Dermoscopic findings in our patients included normal follicular openings with vellus hairs covering the area of alopecia and terminal hairs on the outskirts of the lesion, reduced follicular ostia, diffuse erythema, hypotrichosis and white dots. Black and/or yellow dots and 'exclamation mark' hairs, which are present in alopecia areata, were absent in our patients so we could confirm our diagnosis as TTA and exclude AA by simple, easy and non-invasive tool.

In a study conducted by Inui and colleagues in 2012, the authors stressed on the importance of the diagnostic criteria of TTA and proposed the following criteria: I) triangular or spear-shaped area of alopecia involving the fronto-temporal region of the scalp; II) dermoscopy reveals normal follicular openings with vellus hairs surrounded by normal terminal hair; III) dermoscopy shows absence of yellow and black spots, dystrophic hairs, and decreased follicular openings; IV) persistence of no significant hair growth after dermoscopic and clinical confirmation of the existence of vellus hairs [7], however we report the presence of reduced number of follicular ostia as well as the presence of white dots which may be denoting cicatrization of those hair follicles suggesting the overall decreased number of follicles in these patients, which is consistent with the findings of Silva and coworkers in 2010 [12].

## Conclusion

Dermoscopy is a noninvasive tool that aids in the differential diagnosis of TTA. This method avoids invasive diagnostic procedures and ineffective treatments.

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