

## Diffuse Hair Loss in a Young Female

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### Introduction

Alopecia areata incognita is a subtype of alopecia areata, characterized by an intense and diffuse hair loss without the typical patches of alopecia and an acute onset.

Clinically, alopecia areata incognita closely resembles a telogen effluvium or an androgenic alopecia, for these reasons more cases are often misdiagnosed, and only dermoscopy and histopathology may reveal the typical findings of alopecia areata.

Prognosis is generally favorable especially as compared to certain variants of alopecia areata.

### Case Report

We present the case of a 21 year-old woman who came to our attention complaining an acute and diffuse hair loss, lasting from about 5 months. She also observed an important hair thinning. The patient was healthy and denied events like psychological stress, significant fever or fast weight loss in the previous months. She had no nutritional deficiency or thyroid disorders. The personal history revealed polycystic ovary syndrome, with normal hormones levels. Her familiar history was positive for male androgenetic alopecia. Clinical examination of the scalp revealed moderate hair density (Figure 1). Eyebrows, eyelashes and body hair were normal, as well as nails.

The pull test was positive in all the five areas of the scalp: with a mild traction, several hairs (total of 15 hairs from all over the scalp, 2 days after the last shampoo) could be removed. Microscopic observation of the extracted hair showed telogen roots at different degrees of maturation and a dystrophic anagen root. Videodermoscopy (VDS) (Foto Finder dermoscope, Teach screen Software, Bad Birnbach, Germany) showed the presence of round yellow dots, different in size, and a large number of short (<1 cm) re-growing hairs in all scalp areas (Figure 2). Percentages of more than 20% of hair shafts with variable diameter were detected in the androgen dependent areas of the scalp. A 5-mm punch biopsy was performed in an area of the vertex scalp with yellow dots, selected with the aid of the videodermoscope. Vertical sections showed mild lymphocytic infiltrate in the dermis, vellus follicles, catagen follicles and telogen germinal units; horizontal sections showed a decreased number of terminal follicles with increase of vellus anagen follicles (miniaturized), catagen, telogen germinal units, with moderate lymphocytic infiltrate around follicles (Figure 3). The histological report confirmed the diagnosis of alopecia areata incognita.

The patient was treated with local combination therapy: a topical steroid (clobetasol foam, once a day), and 2% minoxidil lotion (1 ml, twice a day). A progressive diffuse re-growth of hairs and parallel improvement of the dermoscopic findings, with significant increase of the hair diameter and reduction in number of the yellow dots were observed after 6 and 12 months (Figure 4).

### Discussion

Hair loss is very common in women, at any age. It can appear as increased hair loss or as diffuse, patchy or patterned hair thinning. In all cases, it is associated with severe psychological distress and decreased self-confidence that are not proportional to severity of hair



**Figure 1:** Clinical features: diffuse hair thinning, more evident on androgen-dependent scalp.



**Figure 2:** Scalp videodermoscopy showing yellow dots, miniaturized hairs and short regrowing hairs.

loss. Differential diagnosis includes several cicatricial or noncicatricial alopecias, the most common causes being telogen effluvium and androgenetic alopecia. The diagnosis is based on the history and clinical examination, associated with diagnostic techniques such as the pull test and videodermoscopy, and sometimes histopathology.

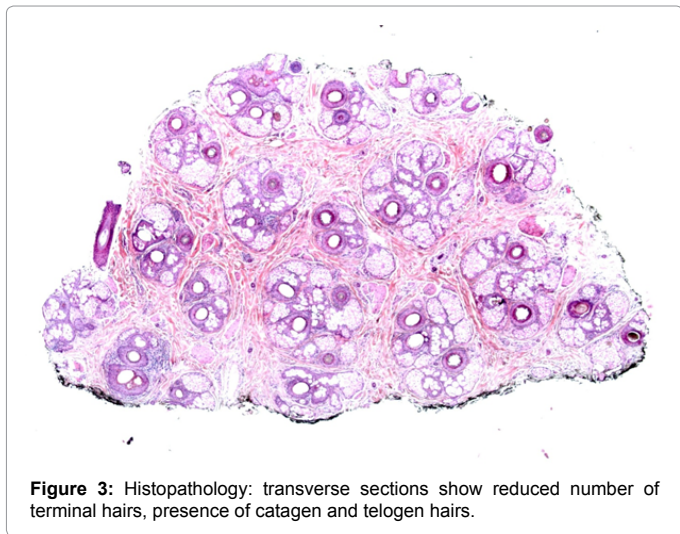
Alopecia Areata Incognita (AAI) is an uncommon disorder, more common in females, characterized by diffuse loss of telogen hairs with

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**Figure 3:** Histopathology: transverse sections show reduced number of terminal hairs, presence of catagen and telogen hairs.



**Figure 4:** Evident hair re-growth in our patient after 6 months of therapy.

evident hair thinning, and absence of the typical alopecic patches. The clinical features of alopecia areata incognita may be similar to those of Telogen Effluvium (TE) or Androgenetic Alopecia (AGA). Androgenetic alopecia is the most common form of hair loss, both in men and women, and is characterized by a progressive reduction of hair diameter, length, and pigmentation in androgen-dependent areas of the scalp. Telogen effluvium is characterized by loss of telogen hairs due to abnormal hair cycling. A daily shedding of about 100-200 telogen hairs is typically reported by the patient and can be caused by systemic diseases, drugs, fever, different types of stress, weight loss, iron and vitamin deficiency, inflammatory scalp disorders or interruption of oral contraceptives.

Generally, all cases of alopecia areata incognita showed a diffuse involvement of the scalp as in acute telogen effluvium. Recently, Park et al. reported two cases of localised hair thinning of the scalp without bald spots, that they named "alopecia areata circumscripta incognita" [1].

When we deal with a patient with hair loss, it is first necessary to perform a detailed and careful collection of the clinical history, looking for events known as possible causes of telogen effluvium. Then we can do a pull test, identifying the hair roots microscopically as being in telogen or anagen phase. Videodermoscopy and sometimes histopathological examination of the scalp are often needed to confirm clinical diagnosis.

Alopecia areata incognita is more common in patients from 20 to 40 years of age, with a strong female prevalence. Why this disease does not cause patches? Reborna first suggested that if alopecia areata occurs in a scalp affected by androgenetic alopecia, containing synchronized follicles with an unbalanced proliferation/differentiation ratio, the result is an acute and diffuse telogen loss, with presence of scarce dystrophic hairs [2,3]. Tosti et al. detailed the dermoscopic features of alopecia areata incognita; multiple diffuse yellow dots, corresponding to the follicular ostia of both empty and hair-bearing follicles and short regrowing hairs [4]. Hair shaft diameter diversity in androgen-dependent areas is commonly found. Exclamation point hairs, cadaverized hairs (black dots) and few dystrophic hairs may sometimes also be detected.

Park et al. explained the possible mechanism of the development of the localized AAI [1]. They stated that in alopecia areata the loss of hair includes dystrophic pointed hairs and/or telogen hair:

- If all the anagen hair follicles of an area lose dystrophic roots, hair shedding results in a bald surface;
- If a great amount of the hair follicles in the involved area just turn to telogen phase, that area will show hair-thinning, because the hair shafts of the telogen hair are of a lighter colour and thinner diameter than the anagen hairs of the normal surrounding areas.

In our experience, only few patients with alopecia areata incognita develop typical patches of alopecia areata.

Recently, a study proposed the following histopathologic features of this hair disease: non-scarring pattern with preserved number of follicular units and decreased number of terminal follicles, particularly low number of terminal anagen follicles; increased number of telogen structures with presence of at least one telogen germinal unit and/or one small telogen follicle; dilated infundibular openings often plugged with keratin and sebum [5].

The prognosis of the disease is generally favorable, especially if compared with the other clinical types of alopecia areata. Therapeutic approaches for alopecia areata incognita include topical steroids, to decrease the inflammatory aggression toward the hair follicles and minoxidil lotion, to induce reversal of hair miniaturization. Prognosis is very good, with almost complete regrowth of hairs and improvement of dermoscopic findings in a few months.

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