

Clinical Image

Hair That Does Not Grow: Loose Anagen Hair Syndrome Versus Short Anagen Hair Syndrome

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Loose anagen hair syndrome (LAHS) is a hair disorder that is caused by defective anchorage of the hair shaft to the follicle and primarily affects children. Diagnosis is made clinically by painless plucking of hair that does not grow long and confirmed by a trichogram with dystrophic anagen hairs. Short anagen hair syndrome (SAHS) is another hair condition in which anagen phase has a short duration and as a result, patients present with very short hair and often complain of increased shedding. In this second pathology, pull test shows extraction of telogen hairs with a pointed tip. Both of these diseases must be considered in pediatric patients that present with a complaint of hair that does not grow long.

CLINICAL IMAGE

A healthy 4-year-old girl presented with a concern of “hair that would not grow.” Her mother noted that the patient’s hair was shorter than that of her classmates, despite lack of trimming. She denied hair shedding, scratching, plucking or bald patches. The patient had no significant medical history or family history of hair disorders. On physical examination, she had thin brown hair that did not extend past the shoulder and the occipital hair was dull and unruly (Figure 1). Exam was negative for dysmorphic orofacial features, visible areas of hair loss, cognitive deficits, or behavioral abnormalities. The scalp had reduced density of hair, but no other apparent alterations. Plucking revealed painless extraction of hairs and trichogram revealed absence of telogen roots: 90% of anagen roots were devoid of sheaths (Figure 2). These findings were consistent with a diagnosis of loose anagen hair syndrome (LAHS).

LAHS is a benign, sporadic or familial hair disorder that primarily affects children caused by defective anchorage of the hair shaft to the follicle resulting in easily and painless pluckable hair. The hair does not grow long because anagen hairs are extracted before hair cycle completion. LAHS is usually isolated, but can occur in association with hereditary or developmental disorders. Occurrence in family members may be up to 50% in some cases. It has been associated with mutations in the gene

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- Loose anagen hair syndrome
- LAHS
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- Trichogram
- Alopecia
- Hair disorder
- Pediatric hair loss
- Painless extraction of hair
- Hair that will not grow
- Short hair in child

encoding for companion layer keratin (K6HF) in patients with LAHS and woolly hair syndrome. Also, mutations in SHOC2 have been found in patients with LAHS and Noonan-like syndrome [1,2]. Diagnosis is confirmed by a painless, positive pull test and more than 50-70% of anagen roots devoid of sheaths on trichogram [3,4]. Other associated conditions are coloboma, ectodermal dysplasia, trichorhinophalangeal syndrome, nail-patella syndrome, AIDS and alopecia areata.



Figure 1 Loose anagen hair syndrome (LAHS). The hair, which has never been cut, is short and slightly unruly.



Figure 2 Trichogram LAHS. Loose anagen hair on microscopy: the anagen roots lack of inner and outer root sheaths.



Figure 3 Short anagen hair syndrome (SAHS) in a 3-year old girl. The hair is very short. Pull test and trichogram confirmed diagnosis showing short telogen hairs with tipped point.

When encountering a patient with a complaint of “hair that will not grow”, the differential diagnosis of short anagen hair syndrome (SAHS) must be considered. In this benign condition, the hair has a normal structure but does not grow long because the anagen phase has a short duration. Patients present with very short hair and often complain of increased shedding (Figure 3). Pull test is positive, with extraction of short (less than 6cm long) telogen hairs with a tipped point. Even though SAHS is usually sporadic, it has been associated with tricho dental dysplasia, congenital hypotrichosis, linear scleroderma, and occluded lacrimal duct [5].

In both cases, treatment is conservative. When other related pathologies have been ruled out, reassurance must be given to parents since these conditions are considered benign and sometimes auto-limited. Topical Minoxidil has proved cosmetically beneficial in some cases.

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