A case of localized Short Anagen Syndrome

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Summary

Short Anagen Syndrome is an under recognized hair condition characterized by hairs incapacity to extend. This is caused by an anagen phase shorter than normal. We know two forms of this syndrome: a diffuse form and a localized form. Usually there isn’t any relationship with systemic diseases. The treatment of SAS involves the use of topical minoxidil 2%.

KEY WORDS: Short Anagen Syndrome; hair; telogen.

Report

We present a case of a Caucasian 4 year-old girl that comes to our attention because her hairs don’t grow. The growth defect is localized in frontal and occipital regions. The parents refer that the defect is present since birth and they never cut the hair of the frontal and occipital regions. The little girl, daughter of non-consanguineous parents, has brown hair with straight hair, whose frontal and occipital regions show a maximum length of 25 mm, shorter than the rest of the hair (Figure 1A, B).

Physical dermatological examination reveals that eyelashes, eyebrows and other body hair are normal and there are not any dental or nail abnormalities. Psychic examination shows a normal general intellectual development.

The child has a sister of 1 year without defects of her hair growth. There isn’t family history for hair loss or hair disease. Numerous laboratory tests are required, which are normal. The parents do not report abnormal fall of hair and pull test reported negative. We perform dermoscopic examination with videodermatoscope at magnifications of 30 to 150x. The dermoscopic examination of the frontal and occipital regions presents normally shaped hair, of different lengths, but all is not greater than 20 mm, typically with the tip cone, indicating that the hair was neither cut nor broken (Figure 2 A, B).

The remaining regions of the scalp hair have with clinical and dermoscopic normal (Figure 3 A, B). Short Anagen syndrome is therefore diagnosed. In view of the international scientific literature, it was decided not to perform any treatment, keeping the patient in follow-up until puberty.
Discussion

Short Anagen Syndrome (SAS) is an under recognized hair condition characterized by the inability of the hair to stretch beyond a certain limit. Usually not associated with fragility or excessive hair loss (1, 2). The pathogenesis consists in curtailing the anagen phase of the hair cycle. The duration of the anagen phase is influenced by many factors: genetic and hormonal. Hormonal factors also depend on sex and age. The duration of anagen phase determines the final hair length (1, 3).

The normal duration of the anagen in adults is about 2-6 years; in children the percentage of anagen is 90% and the elongation is 0.33 mm/day. A short anagen phase determines a rise relative hairs in telogen and synchronization of hair cycles, explaining the possible incidents of telogen effluvium in patients with SAS (4). The SAS comes from birth in the form of thinning, but it becomes more evident around 3-4 years. May be widespread, affecting the entire scalp, or localized, affecting often the front hairline of the scalp or in the form of restricted area, called Nevo to short anagen. The short hair is present without signs of alteration of the stem or of fragility. The SAS is defined as a sporadic condition, although familial cases are described.

The short anagen is also described in the so-called Trichodontal syndrome, which consists of a rare congenital disorder with hypodontia and short anagen (2). The SAS goes in differential diagnosis with Hair Loose Anagen Syndrome, an autosomal dominant condition, which is characterized by excessive hair loss, which can be extracted easily and painlessly, and why hesitate a thinning of the scalp (5). In the loose anagen syndrome is observed 70% of fallen hair in the anagen phase and no hair in telogen (4, 5). The treatment of SAS involves the use of topical minoxidil 2% at dose <1ml/day that acts lengthening the anagen phase of the hair follicles, stimulating the follicle in telogen to anagen switch, and reduce the miniaturization of the

Figure 2A,B - A) Dermoscopic examination with videodermatoscope at magnifications of 30x. The dermoscopic examination of the frontal and occipital regions presents normally shaped hair, of different lengths, but all is not greater than 20 mm, typically with the tip cone, indicating that the hair was neither cut nor broken. B) Dermoscopic examination with videodermatoscope at magnifications of 150x. Normally shaped hair, of different lengths, but all is not greater than 20 mm.

Figure 3A,B - A) Dermoscopic examination with videodermatoscope at magnifications of 150x; B) the remaining regions of the scalp hair have with clinical and dermoscopic normal.
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Topical minoxidil shortens telogen, causing premature entry of resting hair follicles into anagen and also causes prolongation of anagen and increases hair follicle size. This case we presented is an interesting case that regarding a form of localized SAS.

Learning Points

- Short Anagen Syndrome (SAS) is an under recognized hair condition.
- The pathogenesis consists in curtailing the anagen phase of the hair cycle.
- The SAS comes from birth in the form of thinning, but it becomes more evident around 3-4 years.
- The SAS goes in differential diagnosis with Hair Loose Anagen Syndrome.
- The short anagen is also described in the so-called Trichodental syndrome.
- The treatment of SAS involves the use of topical minoxidil 2%.

Conflicts of interest: None.

References