

## CASE REPORT

### Short anagen syndrome

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#### INTRODUCTION

Many syndromes that involve hair fragility and breakage can present clinically as short scalp hair. Short anagen syndrome is an uncommon condition characterized by the inability to grow long hair and increase in the number of hairs in telogen phase. It is not that uncommon, but is probably underreported. It can cause congenital short scalp hair but with normal hair density and normal hair shaft. We report here a case of 15-year-old girl with a short scalp hair diagnosed as short anagen syndrome after clinical evaluation and microscopic examination of the hair shaft in a trichogram.

#### CASE REPORT

An apparently healthy looking 15-year-old girl was referred to our clinic with a short fine dark brown hair that had not been cut except when she was 4- months old. The pregnancy and the perinatal period had been uneventful. At birth she had a scanty faint color hair otherwise, she was healthy and her development had been normal. No family history of the same condition was reported. She developed normal teeth and nails. On examination, the scalp showed short dark brown hair few centimeters in length with decrease density but no bald areas were seen (Fig.1&2). The eyebrows and eyelashes were normal. No abnormalities could be detected in teeth or nails examination. Hair pull test produced negative results. Microscopic examination of the hair shaft in the trichogram revealed increase numbers of telogen hairs (Fig. 3&4) with tapered ends but no abnormalities regarding the hair shaft with normal anatomy. The

anagen to telogen ratio after the hair pluck test was significantly reduced (5/25). After shaving a small area of the scalp and following up the growth rate of the shaved hair, it was found that the growth rate was normal (about 0.3 mm/day).



**Fig. 1** Short scalp hair since birth



**Fig. 2** The same case in figure 1, occipital view

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**Fig. 3** Microscopic examination shows telogen hair (20X)



**Fig. 4** Microscopic examination shows telogen hair (40 X)

## DISCUSSION

The normal ratio of anagen to telogen is 9:1. This parallels the ratio of the duration of these phases of the hair cycles in normal hair growth.<sup>1</sup> If the short anagen hair in our patient was only due to slow growth, then the anagen to telogen ratio should be normal, as the proportion of the time spent in each phase of the hair cycle would still normal. However if the short hair was due to shortened anagen phase, an alteration of the anagen to telogen ratio would be expected.

Short anagen syndrome is considered as one of the functional types of telogen effluvium in which

some individuals may experience increased shedding due to idiopathic shortening of the anagen phase that features increase shedding and decreased hair length.<sup>2</sup> A short anagen phase has been associated with different hair anomalies. Trichodental syndrome patients have short anagen phase with increase in telogen hair. There is hypotrichosis since birth associated with abnormal dentition and it is inherited as an autosomal dominant.<sup>3</sup> Congenital hypotrichosis was described by de Berke<sup>4</sup>, whereas hypotrichosis due to short anagen hair was the only suggested abnormality. Whitmore<sup>5</sup> reported a 19 year old woman with a life long history of a sparse hair and a short scalp hair growth, negative hair pull and increased telogen on hair pluck which is consistent with short anagen syndrome. Loose anagen syndrome is ruled out by the absence of loose anagen hairs on hair pull test and the absence of any unruly sections of hair. This case should be differentiated from cases of congenital hypotrichosis due to structural hair shaft defect as in monilethrix. Cases of Marie Unna hereditary hypotrichosis should be differentiated by the presence of wiry hair and the development of scarring alopecia. Our patient has a congenital anomaly of abnormal short scalp hair since birth. The hairs are not fragile and most of the extracted hairs by the hair pull test are telogen hairs. The patient did not cut hair since infancy with no unruly patchy area. Family history for a similar condition is negative. All these findings are consistent with short anagen syndrome.

Short anagen syndrome may normalize during puberty and adulthood, a phenomenon observed in other hair disorders of childhood such as loose anagen syndrome and uncombable hair.

Since minoxidil can stimulate telogen hair follicles to enter into anagen and prolongs the duration

of anagen phase<sup>6</sup>, thus topical minoxidil would seem to be an appropriate treatment for this condition and was prescribed to our patient who will be followed up for the effectiveness of the treatment and the progression of hair condition.

## CONCLUSION

Short anagen syndrome is a relatively recently recognized entity, and has been rarely reported in the literature.<sup>7-9</sup> The diagnosis is mainly clinical and easy, but there is no precise treatment option available. It can lead to severe psychosocial impairment to the patient.

## REFERENCES

1. Braun-Falco O, Heilgemeir G P. The trichogram. *Seminar Dermatol*1985; 4: 40-52.
2. Headington J T. Telogen effluvium new concepts and review. *Arch dermatol* 1993; 129: 356-63.
3. Kersey PJ. Tricodental syndrome: a disorder with a short hair cycle. *Br J Dermatol* 1987; 116: 259-63.
4. De Berker D. Congenital hypotrichosis. *Int J Dermatol*1999; 38: 25-33.
5. Whitemore S E, Tausk F A. Short anagen syndrome. *J Clin Dermatol*1999; 2: 30-32.
6. Oslen EA. Hair loss in childhood. In: Oslen EA ed. *Disorders of hair growth: Diagnosis and treatment*. New York: McGraw-Hill, 2003:177-238.
7. Antaya RJ, Sideridou Eirini, Olsen EA. Short anagen syndrome. *J Am Acad Dermatol* 2005; 53: S130-34.
8. Avashia N, Lloyd HW, Tosti A, Romanelli P. Short anagen syndrome in an African woman. *J Am Acad Dermatol* 2010; 63: 1092-93.
9. Giacomini F, Starace M, Tosti A. Short anagen syndrome. *Ped Dermatol* 2010; 53: 1-2.