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PHOTOLETTER TO THE EDITOR

Congenital atrichia associated with an uncommon mutation of *HR* gene

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Abstract

Congenital atrichia (CA) is a rare form of irreversible alopecia with an autosomal recessive mode of inheritance, usually associated with a mutation in the human hairless (*HR*) gene located at chromosome 8. Papular lesions may develop as an additional phenotypic feature. Herein we describe a case of CA supported by trichoscopy, histology and genetic analysis. The patient's single brother had also universal alopecia. To our knowledge this is the second report of a specific pathogenic mutation (c.2818C>T) of the *HR*, which until now had only been identified in a family with CA and papular lesions, emphasizing the difficulty to establish a strict correlation between HR genotyping and the phenotype. (*J Dermatol Case Rep*. 2013; 7(1): 18-19)

Key words:

alopecia, atrichia, child, dermoscopy, hair, hypopigmentation. hypotrichosis, mutation, trichoscopy

A 7-month-old Caucasian female child was referred to our paediatric dermatology department due to alopecia. She was born with an apparent normal hair. However, it was possible to observe a considerable number of hairs in the meconium and some weeks later she suffered an accentuated hair defluvium. At the appointment she had scanty hair shafts (Fig. 1A), no eyebrows or eyelashes, without other cutaneous or systemic abnormalities. Her parents were third degree cousins and her only brother of 13 years old presented universal alopecia since birth with hypopigmented macules on the scalp (Fig. 2), without papular lesions. Trichoscopy showed absence of hair follicles and the biopsy revealed rudimentary pilosebaceous structures, without formation of follicle bulb, fibrosis or inflammation (Fig. 1B-C). After informed consent, a genetic analysis was performed at GENDIA (Genetic Diagnostic Network, Belgium) and a nonsense homozygous mutation (c.2818C>T) of human hairless (*HR*) gene was identified by sequencing the gene, consistent with congenital atrichia (CA). Parents refused further genetic studies and decided for an hair prosthesis at 2 years of age, with a good acceptation.

Alopecia universalis congenitalis or CA is characterized by malformation of the hair follicles causing early-onset hair loss,[1] which can be followed by development of papular lesions during the first decade of life — atrichia with papular lesions (APL).[2] Generally, the affected individuals have normal hair at birth that is then shed almost completely during the first weeks or months of life and never regrows.[2] This disorder affects equally both gender and is genetically heterogeneous, mostly caused by autosomal recessive variants in the *HR* gene,[2,3] although mutations in the vitamin D receptor gene have been associated with a phenotype similar to APL.[4]

We emphasize the role of trichoscopy in the differential diagnosis with other forms of hair loss, especially *alopecia areata universalis* to avoid unnecessary treatments.

According to the diagnostic criteria for APL by Zlotogorski *et al*[2] it is included the presence of hypopigmented streaks on the scalp, a feature observed on the patient's brother. In the light of the present knowledge it is not possible to predict the likelihood of papule development[5] in this kind CA and insights from molecular analysis of the *HR* gene are further needed to address this issue.

In our case, through sequencing the *HR* gene, a pathogenic variant was identified in exon 13 predicted to result in a premature stop codon, a mutation that has previously been reported only in a Pakistani family with APL.[6] Therefore our case is the second reporting such a variant, but with the distinctive feature of absence of papular lesions, so far in any of the affected siblings. This finding, in accordance with other studies,[2,3,5] emphasizes the difficulty to establish a strict correlation between *HR* genotyping and the phenotype.

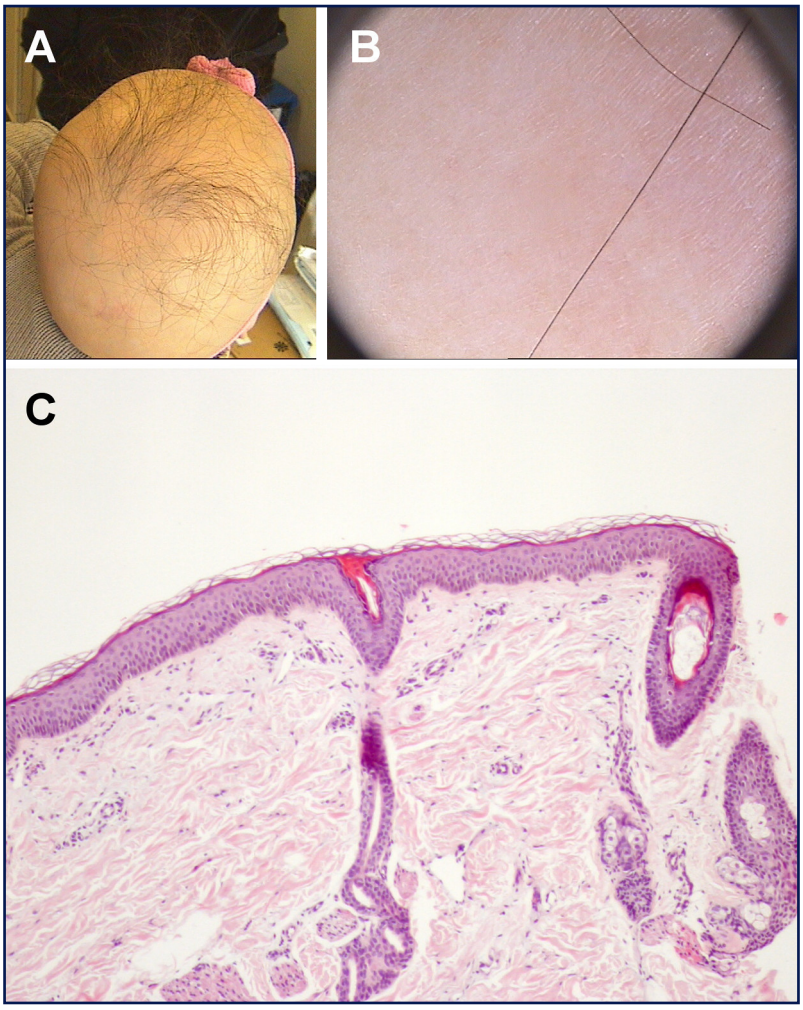

Figure 1

Patient at 7 months of age: (A) Incomplete alopecia with sparse hairs on the scalp. (B) Scalp dermoscopy without follicular orifices, black dots or exclamation mark hairs. (C) Histology (H&E) revealing underdeveloped hair follicles, without inflammatory infiltrate.

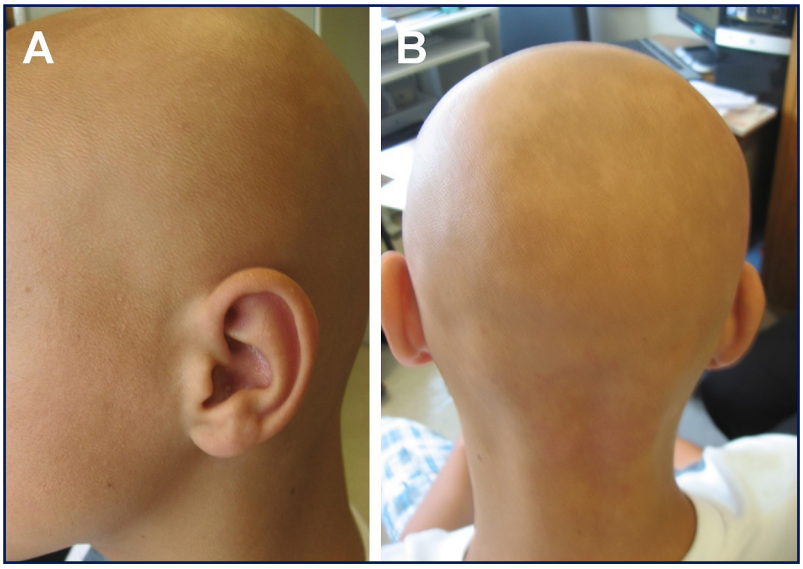

Figure 2

Hypopigmented macules on the scalp surface in the absence of inflammation or scale (patient's brother).

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