Infantile generalized hypertrichosis caused by topical minoxidil*

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Abstract: Rare cases of hypertrichosis have been associated with topically applied minoxidil. We present the first reported case in the Brazilian literature of generalized hypertrichosis affecting a 5-year-old child, following use of minoxidil 5%, 20 drops a day, for hair loss. The laboratory investigation excluded hyperandrogenism and thyroid dysfunction. Topical minoxidil should be used with caution in children.
Keywords: Minoxidil; Child; Hypertrichosis

INTRODUCTION

Rare cases of hypertrichosis have been associated with topically applied minoxidil. It commonly affects the cheeks, upper lip, and chins but can also appear in other areas of the body, with few cases reported in the pediatric population. [1] We present the first reported case in Brazil of generalized hypertrichosis affecting a 5-year-old child after using topical minoxidil.

CASE REPORT

A pediatrician prescribed minoxidil 5% for a 5-year-old, female patient (20 drops a day) for hair loss. After two months, the parents noticed substantial hair growth on her back and face, as well as a slight increase on her limbs, at which point they consulted dermatologists (Figure 1). Further, they noticed that her eyelashes had become longer (Figure 1). The patient did not present co-morbidities and the parents denied continuous use of medications. After the dermatological examination, a laboratory investigation was performed, which excluded hyperandrogenism and thyroid dysfunction.

DISCUSSION

Minoxidil, an arteriolar vasodilator medication, is prescribed for androgenetic alopecia following reports of hypertrichosis in patients treated for severe hypertension during the 70's. In 1988, its topical use was approved by the FDA for androgenetic alopecia in men and later in women in 1992.[2] Several clinical studies have been conducted to explain the exact mechanism by which topical minoxidil promotes hair growth. [2] Possible mechanisms include action on vasculature or on follicle cells DNA synthesis, with agonist effects on ATP-sensitive potassium channels and increased anagen phase.[2,3]

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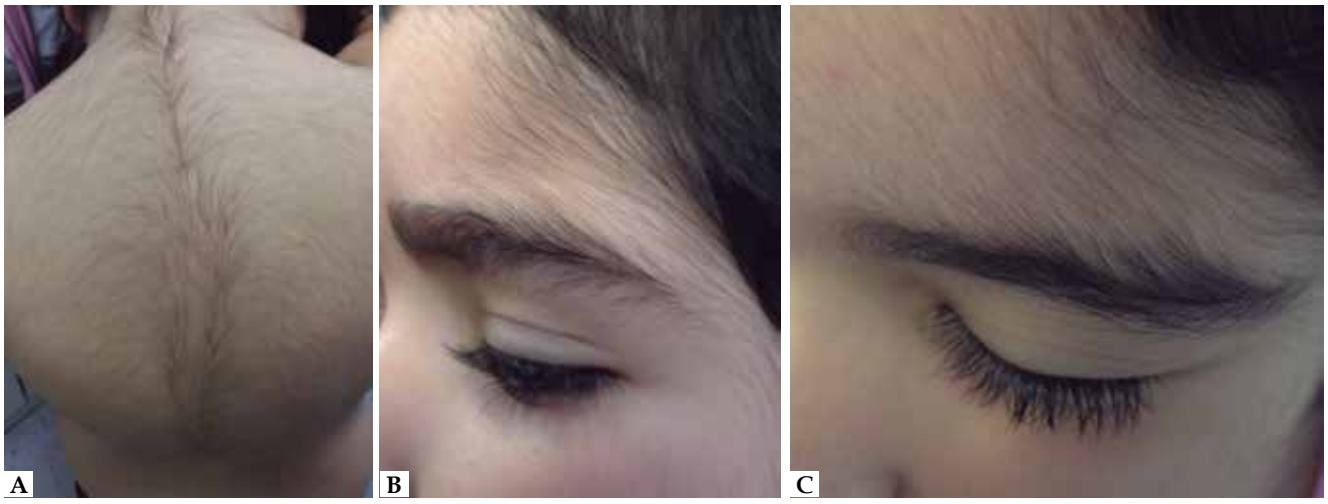

Figure 1: Hypertrichosis on the back (a) and forehead (b). Elongated eyelashes (c)

Secondary hypertrichosis caused by topical minoxidil is more prevalent in women than men. In 2003, a study showed a higher incidence for this side effect in a group treated with minoxidil 5% than in a group treated with minoxidil 2%. [4]

Systemic absorption of the drug is typically minimal with topical therapy. However, absorption varies among individuals, which explains the reports of tachycardia and palpitations with topical use of minoxidil, suggesting that it can reach high concentrations in pharmacologically active plasma, especially in children. [3,5-7] There is scarce information about its pharmacology in children, since it is not normally used in this age group.

Hypotheses on the pathogenesis of the diffuse hypertrichosis reaction routinely include systemic absorption, as well as high sensitivity of the follicular apparatus to the medication. [1,8] Differences were observed in the cutaneous and systemic metabolism of topical substances applied in children compared to adults. This age group also experienced increased drug viability and sometimes higher toxicity, due to greater body surface area in relation to weight. [6] We found few reported cases of diffuse hypertrichosis caused by topical minoxidil in children.

We conclude that the concentration of 5% and low body weight may have favored the systemic effect in our patient. Since minoxidil is also used for other forms of alopecia, including areata, its topical application in a pediatric population may require caution.[9] ❑

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