

Exogenous Cushing Syndrome due to Topical Clobetasone use for Diaper Rash

Inadvertent use of topical corticosteroids can be associated with systemic side effects, more so in infants and children due to their higher total body surface area-to-weight ratio and thinner skin [1]. We report a case with exogenous Cushing syndrome due to application of topical steroids for diaper rash.

An 8-month-old girl presented with prominent cheeks and excessive facial hairs. Birth weight was 2.6 kg. Caloric intake was normal. Parents denied medications, except oral calcium. Her weight was 8.2 kg (just above 50th centile), length was 63.5 cm (<3rd centile), and blood pressure was 86/60 mm Hg. Cushingoid facies, hypertrichosis (**Fig. 1a**) and hypopigmentation in diaper area (**Fig. 1b**) were noted. Topical application of a cream (containing 0.05% clobetasol propionate, gentamicin and miconazole) in diaper area and buttocks for last 3 months was reported by parents. A low 8 AM serum cortisol (0.22 µg/dL, normal 4.5- 22.6) with low ACTH (5.9 pg/mL, normal <46 pg/mL) confirmed the diagnosis of exogenous Cushing syndrome. The use of the cream was discontinued and replacement hydrocortisone was given in the dose of 6 mg/m²/day. After 3 months, improved facial appearance, skin pigmentation, and recovery of serum cortisol (10.9 µg/dL) was documented.

Clobetasol, a superpotent topical corticosteroid, is the most frequently described topical agent to cause Cushing syndrome [2]. Application for even couple of weeks can cause systemic toxicity [3]. Most cases are related to its use in diaper dermatitis, as the occlusive effect of the diaper and underlying inflammation increase systemic absorption. Female preponderance of cases indicates additional absorption from vaginal mucosa [3].

Most cases of diaper dermatitis can be managed with frequent change of diapers, periods of “rest” from diaper use, and application of a protective barrier agent containing petroleum or zinc oxide. If deemed necessary, low potency topical steroids (e.g. 2.5% hydrocortisone) may be used for a short period of time (3-5 days) [4]. Use of finger-tip units (FTU) can guide the amount of topical medication [5]. Using high potency steroids (clobetasol, betamethasone) is inappropriate.

If adrenal suppression is noted following topical steroid use, replacement hydrocortisone should be given and dose enhancement during stress (fever, trauma, surgery) should be explained to parents.

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(a)



(b)

Fig. 1 Cushingoid facies (a), and hypopigmentation in diaper area (b) due to topical clobetasol use.

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Massive Idiopathic Prepubertal Gigantomastia

Gigantomastia is rare, and the majority of cases are reported after puberty. In some cases, it can be due to an exaggerated response of breast parenchyma to estrogen [1-2]. We present the case of an 11-year-old Mexican girl, with progressive, bilateral, and symmetric breast enlargement (**Fig. 1**). It started before menarche, and caused postural problems and back ache. The patient did not have any illness or a family history of gigantomastia. She was not receiving any drugs. The patient weighed 37.7 kg, and height was 139 cm (BMI 19.5); external genitalia were Tanner I. On examination, breasts were massively enlarged (35 cm from the sternal notch to nipple areola complex). The breasts were ptotic, and the superficial veins were prominent and dilated, without ulceration of the skin. The areola were immature without any discharge or hyperpigmentation. No breast masses could be palpated. There was no axillary lymphadenopathy. Hormonal assays were within the normal range. Ultrasonography of the breast and pelvis was normal. No evidence of any tumor was found on magnetic resonance imaging of the brain.

She underwent a reduction mammoplasty with the inferior pedicle technique, with preservation of the nipples areola complex. Weight of each breast was 4000 g, comprising about 20% of the total body weight. The histological examination showed hyperplastic terminal duct lobular units with edematous stroma. Breast tissue estrogen and progesterone receptors were negative. Post-operatively, the measurement of the sternal notch to nipple areola complex was 16 cm. Four years later, she underwent a breast augmentation with mammary implants. After 10 years, there was no recurrence, and she had an acceptable physical appearance.

In idiopathic prepubertal gigantomastia, reduction mammoplasty is usually the first treatment option, with or without hormonal therapy, because of preservation of lactation. Recurrence may occur in many cases [3-5].



Fig. 1. Excessive breast growth in gigantomastia.

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