

Cushing's Syndrome Due to Topical Steroid

The Editor,

Sir,

A four-month old male was admitted to hospital with complaints of diaper dermatitis. From his history, it was learnt that he was healthy previously and was delivered as a full-term baby *via* normal vaginal delivery without any complications. He was breastfed and his mental motor development was normal. He suffered diaper dermatitis for the previous one month and thus, he used a total of two boxes of topical clobetasol 17 propionate (50 g/box, 0.05%) twice a day. In his physical examination, no hypertrichosis, stria, acanthosis nigricans and hairing were recorded on his skin. Cardiovascular, respiratory and abdominal examinations were normal. His bodyweight was 6200 g (25–50 percentile), his length was 53 cm (3 percentile) and he was weighing 124% of his ideal weight with regard to his length. In laboratory examinations, white blood cell count was 9100/mm³, haemoglobin was 10.9 g/dL and blood glucose level was 92 mg/dL. Liver function tests, renal function tests and thyroid hormones were normal. Adrenocorticotrophic hormone (ACTH) received in the morning was < 5 pg/mL (10–60) and cortisol was < 1.00 µg/dL (2.8–23 µg/dL). Serum testosterone, androstenedione, 17 OH progesterone, follicle-stimulating hormone and luteinizing hormone levels were within normal limits. Low-dose ACTH stimulation test was performed for the patient to assess the function of hypothalamo-hypophysial-adrenal axis. No increase in cortisol level was determined as the result of the test. This condition was regarded as secondary adrenal insufficiency. With these findings considered, the case was evaluated as iatrogenic Cushing's syndrome as a result of topical steroid use (Figure). The topical corticosteroid pomade was stopped. In the initial month of his follow-up, ACTH 8 pg/mL and cortisol 9.1 µg/dL were normal.

Frequent topical applications of a bland protective barrier agent (petrolatum or zinc oxide paste) may suffice to prevent dermatitis. When these measures are not sufficient to promote healing, a light application of 0.5–1% topical hydrocortisone ointment after each diaper change for a limited time is often effective (1). Effects and side effects of topical corticosteroids depend on drug intensity, administration area, and potency of the steroid administered. In children, dermal absorption increases due to thin skin, wet administration area, and loss of dermal integrity depending on infection. Side ef-



Figure: Cushingoid appearance of the patient.

fects are observed more in babies due to higher surface area/volume ratio (2). Clobetasol 17-propionate is one of the most potent steroids. Its effect is 1000 times greater compared to hydrocortisone (3).

The index case received a total of 100 mg 17-propionate with a daily average dose of 268 mcg/kg for two months. This amount is approximately 13 times higher than the daily release rate of cortisol. Clinically, a moon-face appearance and short-term weight gain occurred in our case. Cortisol and ACTH levels were low in the serum. The treatment option for diaper dermatitis should not be pomades with topical steroids. If topical steroids are required, families of the patients should be warned about the side effects of the drug and when to discontinue the treatment.

Keywords: Child, Cushing's syndrome, diaper dermatitis, topical steroids

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