



Diaper Dermatit Nedeniyle Steroid Kullanımına Bağlı Gelişen Cushing Sendromu: Olgu Sunumu

Cushing's syndrome caused by topical steroid for treatment of diaper dermatitis: case report

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ÖZET

Diaper dermatit çocukluk döneminde sık görülen ve tedavisinde topikal steroidli kremlerin kullanıldığı bir durumdur. Bu steroidlerin uzun süreli ve yanlış kullanımına bağlı olarak hipotalamo-pituitar-adrenal aks supresyonu sonucu iyatrojenik cushing sendromu görülebilmektedir. Bu çalışmada diaper dermatit nedeniyle yaklaşık altı ay klobetasol 17-propionate %0.05 krem kullanan sekiz aylık süt çocuğunda görülen iyatrojenik cushing sendromu olgusu sunulmuştur. Özellikle süt çocukluğu döneminde cushing sendromu bulguları olan hastalarda öyküde, kullanılan steroidli kremler sorgulanmalı, aileye bu kremlerin olası yan etkileri, kullanım şekli ve süresi konusunda detaylı bilgi verilmelidir.

Anahtar Kelimeler: İatrojenik cushing sendromu, topikal kortikosteroid, diaper dermatit

ABSTRACT

Diaper dermatitis is a common condition in childhood and topical steroid cream is used in the treatment. Iatrogenic Cushing's syndrome can be seen as a result of hypothalamic-pituitary-adrenal axis suppression due to long-term use and misuse of such steroids. We present a case of iatrogenic Cushing's syndrome in an eight-

month-old infant after the use of clobetasol 17-propionate 0.05% cream for about six months for diaper dermatitis. Steroid cream use should be queried in the history of the patients with Cushing's syndrome symptoms in infancy in particular and the family should be informed on the possible side effects of these creams and the necessary form and duration of use in detail.

Keywords: Iatrogenic cushing's syndrome, topical corticosteroid, diaper dermatitis

Introduction

Glucocorticoids are primarily anti-inflammatory, vasoconstrictor, antiproliferative and immunosuppressive agents used locally for the treatment of various dermatological diseases. Iatrogenic Cushing's syndrome can be seen with corticosteroid use¹. The systemic side-effects of local steroid use depend on many factors such as the administration form, dose and duration of the treatment and additionally the absorbability of the drug². The subcutaneous absorption of local steroids is easy and the systemic effects can be seen due to the high surface/volume ratio and the thinness of the dermis layer in children³. We

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present an iatrogenic Cushing's syndrome case due to 0.05% of clobetasol 17-propionate (Dermovate Cream) cream use.

Case Report

An eight-month-old female was brought to our outpatients department with symptoms of increased appetite, swelling of the cheeks and excessive weight gain. The history revealed that clobetasol 17-propionate 0.05% cream had been used regularly three times a day for about six months for the diagnosis of diaper dermatitis and she had suffered from her current symptoms for about four months. The personal and family history of the patient contained nothing of significance. Body weight was 10.5 kg (>97 p), height 70 cm (50-75 p), head circumference 44 cm (50-75 p), heart rate 85 beat/min, respiratory rate 26/min, and blood pressure 80/50 mmHg. Moon face, buffalo hump appearance and hypertrichosis of the back were present (Figure 1).

Laboratory investigation revealed a serum glucose of 102 mg/dl, total cholesterol 156 mg/dl (N: 40-170 mg/dl), LDL 87 mg/dl (N: 55-130 mg/dl) and Triglyceride 182 mg/dl (N: 30-110 mg/dl). The whole blood count, urine analysis, and liver, renal and thyroid function tests were normal. Abdominal ultrasonography was normal. Morning Serum Adrenocorticotrophic Hormone (ACTH) was 6.13 pg/ml (N:10-42 pg/ml) and serum cortisol was 0.31 ug/dl (N: 8-25 ug/dl). Peak cortisol level was 6.25 ug/dl (N: >22 ug/dl) with the low-dose (1 mg) ACTH stimulation test. The patient was diagnosed with iatrogenic Cushing's syndrome due to the low cortisol response to the ACTH stimulation test.

Topical steroids were discontinued. Oral hydrocortisone (10 mg/m²/day) treatment was started. The basal serum cortisol level was 9 ug/dl (N: 8-25 ug/dl) and the peak cortisol level was 22 ug/dl (N: >22 ug/dl) at ACTH with the ACTH stimulation test on the 3rd month. The hydrocortisone was therefore decreased and stopped. The Cushingoid face had improved and hypertrichosis had decreased.

Discussion

Iatrogenic Cushing's syndrome is a condition where the strong topical steroids used in the treatment of various medical conditions cause secondary adrenal deficiency as a result of hypothalamic-pituitary-adrenal axis suppression. Steroids are absorbed in 4 to 6 hours after topical administration and pass into the systemic circulation. If steroids are suddenly discontinued after use in pharmacologic doses for longer than four weeks, adrenal deficiency can develop as the adrenal axis suppression will not improve immediately⁴. Cushing's syndrome can cause obesity, moon face, hirsutism, purple striae, hypertension, muscle weakness, acne, skin bruising and buffalo hump⁵. The earliest problems in children with iatrogenic Cushing's syndrome are rapid weight gain, swelling of the cheeks and growth stagnation⁶. The moon face, buffalo hump and hypertrichosis were typical in our case. She had a history of rapid weight gain and swelling of the cheeks but the family had ignored these. Diaper dermatitis consists of redness in the diaper regions in infants due to skin lesions which may be seen in the form of blisters or even open wounds in

more severe cases⁷.

Factors such as excessive moisture, friction, the urine or stool remaining on the skin for a long time, fungal infections, bacterial infections and allergic reactions to the diaper can cause diaper dermatitis. Frequent diaper changes, zinc oxide creams or 0.05-0.1% steroid creams are used in the treatment. Clobetasol 17-propionate 0.05% cream had been used for a total of 130 gr and for 170 days for diaper dermatitis in our case. This cream is one of the strongest topical steroids⁴. The basal plasma cortisol and ACTH levels were first checked for the diagnosis of our case. Although metyrapone, insulin, and CRH can be used as cortisol secretion stimulating agents in the evaluation of primary adrenal functions after long-term use of corticosteroids, the standard ACTH stimulation test (250 pg/1.73m²) is a well-known test and is recommended for all cases⁷. However, the low-dose ACTH test has been reported to be more sensitive than the standard dose in determining adrenal suppression⁸. We used the low-dose ACTH test. We considered adrenal deficiency that had developed as a result of hypothalamic-pituitary-adrenal axis suppression secondary to topical steroid treatment due to the low serum cortisol levels and insufficient response to the ACTH stimulation test. Topical steroids were stopped and low-dose oral hydrocortisone (10 mg/m²/day) treatment started. The Cushingoid appearance had improved at the 2nd month after topical steroids were stopped. Hydrocortisone treatment was decreased and stopped when the basal and stimulated serum cortisol levels returned to normal on the third

month follow-up.

In conclusion, the physician should query whether the infant had diaper dermatitis and used steroid cream when Cushing's syndrome symptoms are found in infancy. If steroid creams will be preferred for the treatment of the diaper dermatitis, low-potency products should be preferred and the family should be well informed on the form of use, amount, duration and side effects if strong steroid creams have to be used. We believe that the number of Cushing's syndrome cases has increased because strong steroid creams can easily be obtained without a prescription from pharmacies in our country and the families are not adequately informed on the use of these drugs by physicians.

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Figure 1: View the overall obesity and diaper dermatitis

