

# A Rare Case Report of Topical Steroid Induced Iatrogenic Cushing's Syndrome

Dr. Kurakula Rani<sup>1</sup>, Dr. B. Ayesha<sup>2</sup>, Dr. R. Raghuramulu Naik<sup>3</sup>

<sup>3</sup>M. D, Assistant Professor, S. V. M. C. Tirupati, India

**Abstract:** *Glucocorticoids are used for many conditions such as inflammatory, allergic, autoimmune and neoplastic diseases. These are available in oral, parenteral, topical, intra-articular, inhalable, rectal preparations. Topical steroid induced iatrogenic Cushing's syndrome more common in children than adults because of thin skin and large surface / volume ratio. Here, we report a case of clobetasol propionate cream induced iatrogenic Cushing's syndrome in 17year old young male using for disseminated Tinea infection.*

**Keywords:** Topical Steroid, Iatrogenic Cushing Syndrome

## 1. Introduction

Cushing's syndrome results from chronic exposure to excess glucocorticoids of any etiology. Cushing's syndrome can be due to ACTH-dependent or ACTH-independent, as well as Iatrogenic. Iatrogenic Cushing's syndrome is the most common clinical form of hypercortisolemia [1]. However, overall, the medical use of glucocorticoids for immunosuppression, or for the treatment of inflammatory disorders, is the most common cause of Cushing's syndrome. Prolonged use of topical corticosteroids may cause Cushing's syndrome, and suppression of the hypothalamopituitary-adrenal axis (HPA) is less common than with the use of oral or parenteral steroids [1]. Glucocorticoids are more easily absorbed from skin and cause more systemic adverse effects in children because of thin skin and high surface/volume ratio [2]. Here we report a case of 17year old male developed Cushing's syndrome due to application of clobetasol propionate cream for disseminated Tinea infection.

## 2. Case Report

A 17year old young male presented to OPD of SVRRGGH, Tirupati with chief complaints of rapid weight gain since 6months around 10kgs, facial puffiness, purple striae over abdomen, poor wound healing since 6months. Past history revealed patient was using clobetasol propionate cream (30gms) for disseminated Tinea infection around 90grams/week since 1year. No history of oral or IV steroid abuse. On physical examination he had moon facies with truncal obesity, buffalo hump, purple striae over abdomen, easy bruising over skin, height: 165 cm, weight: 75kgs, BMI: 27Kgs/m<sup>2</sup>.

In laboratory findings, the patient was found to have Hb: 12gm%, wbc: 12, 600cells/mm<sup>3</sup> with lymphopenia and eosinopenia, RBS: 110mg/dl. RFT, LFT'S and serum

electrolytes are within normal limits. Serum cortisol (8:00am) is 3mcg/dl (normal 5-25mcg/dl), 24hr urinary cortisol is 8mcg/24hrs (normal 10-100mcg/24hrs), serum ACTH-12pg/ml (normal 10-60pg/ml), ACTH stimulation test shows decreased response. USG abdomen, CT abdomen shows no suprarenal mass.

Clinical and laboratory findings of patient suggested the diagnosis of iatrogenic Cushing's syndrome due to prolonged use of high potent clobetasol propionate cream which lead to HPA axis suppression [10]. Patient is advised to stop using the cream and supplemented with oral steroid in gradually tapering doses to recover from suppression of HPA axis and patient's symptoms gradually improved over 3 months [6, 9].

## 3. Discussion

History and clinical findings in our patient suggest the diagnosis of Cushing's syndrome caused by prolonged use of high potent clobetasol propionate cream. Low cortisol, decreased response to ACTH stimulation test suggests HPA axis suppression. Oral and topical steroids have been used by medical practitioners for many dermatological, other conditions. Although they have provided substantial benefit, potential adverse effects have also be proven [3]. It causes serious side effects like hypertension, hyperglycaemia, dyslipidaemia, HPA axis suppression, glaucoma, cataract, skin atrophy, osteoporosis, Failure to thrive, hypertrichosis, and predisposes to life threatening infections [1, 4, 5, 8]. Local and systemic side effects influenced by frequency of application, concentration, potency of drug, percentage of body surface area covered, age of patients. Very rarely topical steroids can cause Cushing's syndrome which is more common in children than adults because of higher body surface area to weight ratio. In other studies, high dose of glucocorticoid treatment for 5-30days was shown to suppress HPA axis [7].



In figure:

- 1) Showing moon shaped face, truncal obesity, purple striae.
- 2) Buffalo hump, hypertrichosis
- 3) Easy bruising

#### 4. Conclusion

Iatrogenic Cushing's syndrome is more common than endogenous forms of hypercortisolemia [1]. This case emphasizes that judicious use of high potent topical steroids is needed to avoid their side effects. So, patients on long term glucocorticoid treatment must be evaluated for potential adverse effects and withdrawal symptoms by their physician and endocrinologist.

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