

THE UNUSUAL ADVERSE SIDE EFFECTS OF SUPER-POTENT TOPICAL STEROIDS

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» INTRODUCTION

- Topical steroids are commonly used in clinical practice for management of dermatological diseases. Clobetasol propionate is the most potent.⁽¹⁾
- They are systemically absorbed and may cause adverse side effects due to improper and prolonged use, such as iatrogenic Cushing's syndrome and adrenal insufficiency due to suppression of hypothalamic-pituitary-adrenal axis.⁽²⁾
- Left ventricular hypertrophy and hypercalcemia are unusual presentations, that are rarely documented to coincide in these patients.

» CASE SUMMARY

History

- A 7-month-old previously healthy boy was referred to our Endocrinology unit in Alexandria University Children's hospital with obesity and oral thrush. He had a history of diaper dermatitis of 2 months duration. During this period, his mother used clobetasol propionate 0.05% cream. It was used 4-5 times daily extensively and finished a tube every 3 days.
- The mother noticed rapid weight gain of 4.5 Kg over 2 months and noticed that diaper dermatitis was not improving, so she stopped creams 2 weeks before presenting to us.

Physical examination

- His weight was 10.5 kg (95th percentile), his length was 68 cm (25th-50th percentile). He had a cushingoid appearance with moon face, extensive oral thrush, hypertrichosis on his forehead, truncal obesity, buffalo hump and diaper dermatitis. (Figure 1)
- Despite that clobetasol cream had been stopped, he was hypertensive (blood pressure 140/90), and angiotensin-converting enzyme inhibitor (ACEI) was started.

Laboratory investigations

Serum chemistry	Level
Na	136 mmol/L
K	5 mmol/L
Ca	12.5 mg/dl
P	4.6 mg/dl
ALP (N.46-116)	126 U/L
Mg (N.1.7-2.6)	2.2 mg/dl
Albumin	3.1 g/dl
Cholesterol	250 mg/dl
Glucose	90 mg/dl

Hormonal profile	Level
Cortisol 8am (N.1-34)	1.4 pg/ml
Cortisol after Synacthen stimulation	was not available
ACTH 8 am (N. up to 120)	13 ug/dl
25-hydroxyvitamin D	33 ng/dl
PTH (N.15-65)	<1.2 pg/ml
FT4 (N.0.8-2)	1.89 ng/dl
TSH (N.0.7-6.4)	1.47 uIU/ml

- He was diagnosed with iatrogenic Cushing's syndrome. Echocardiogram revealed mild left ventricular hypertrophy, likely due to hypertension, despite the short duration of topical steroid use. Sonography of adrenal glands and kidneys was normal.
- Intravenous stress dose hydrocortisone and diflucan were given, serum total calcium normalized and oral thrush improved.
- Hypercalcemia was interpreted to be induced by adrenal insufficiency, which occurred due to the abrupt stoppage of clobetasol cream. This was confirmed by normalization of serum calcium level by only administering steroids.

Patient's progress

- Then the patient was shifted to physiological dose of prednisolone, with a plan for gradual tapering and stopped after 6 months. On follow up, weight decreased to 8 Kg, calcium levels remained normal, and ACEI dose was stopped. (Figure 2)



Figure (1): On presentation: Cushingoid features



Figure (2): After 6 months of stopping topical steroids

An informed consent was obtained from the parents.

» CONCLUSIONS

- Over-the-counter availability of super-potent topical steroids has led to their misuse or overuse causing iatrogenic Cushing's syndrome. Lower-potency agents are preferred in infancy, with limited duration and dosage, under-supervision of a physician.
- Abrupt withdrawal of topical steroids without seeking medical advice can lead to adrenal insufficiency, which can cause hypercalcemia.
- Hypertension can occur and may persist even after cessation of use.
- Therefore, measuring blood pressure and screening those patients with echocardiogram and serum calcium is recommended.

» REFERENCES

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