Correspondence

Cushing’s syndrome induced by high-potency topical corticosteroids

Editor,

A 13-year-old girl was admitted to our outpatient clinic for psoriatic lesions which had increased during recent months. She had had psoriasis for 9 years and for the past 5 years had used clobetasol propionate 0.05% ointment continuously at 100 mg/week. Her family had obtained this medication from a pharmacy without a prescription. The patient and her family denied receiving any systemic treatment. Sharply demarcated, erythematous, scaly plaques were apparent over the patient’s entire body. A few pustules were observed on these plaques. In addition, the patient exhibited livid striae on her legs, arms and trunk, a moon face, a buffalo hump and truncal obesity (Figs 1 and 2). Her serum cortisol level was lower and her adrenocorticotropic hormone level higher than the normal ranges. Bone densitometry values were significantly low for her age and gender group: the patient’s bone age was 12 years and 6 months. According to these clinical and laboratory findings, the patient was diagnosed with iatrogenic Cushing’s syndrome caused by the prolonged use of a high-potency topical corticosteroid (TC). The topical steroid was ceased and methotrexate (7.5 mg/week) and hydrocortisone acetate (8 mg/m²/d) were initiated in order to prevent adrenal insufficiency. Although new pustules and annular erythematous, scaly plaques appeared on her trunk and extremities in the first days of the treatment, pustular lesions resolved completely within 2 weeks.

Topical corticosteroids are often used for their healing effects in the treatment of many skin diseases. Many factors affect the occurrence of the side-effects of corticosteroids, including the pharmacokinetic properties of the corticosteroid, characteristics of the host metabolism, the timing and frequency of dosing, the duration of treatment, the patient’s age, the location of application, epidermal integrity and inflammation, vehicle content, the form of application (open or occlusive) and the potency of the steroid.

As well as common local side-effects, such as atrophy, striae, purpura and telangiectasies, TCs can be absorbed from the skin into the systemic circulation and cause systemic side-effects. Potential systemic side-effects include diabetes, hypertension and suppression of the hypothalamic–pituitary–adrenal axis. Cushing’s syndrome is the physical manifestation of hypercortisolemia. Truncal obesity, a moon face, a buffalo hump, hirsutism, striae, hypertension and muscle weakness are common findings. The first findings in children are usually weight gain and delayed growth.

Like infants, in whom the side-effects of TCs develop more easily, patients with chronic diseases that affect...
large parts of the body surface, such as atopic dermatitis or psoriasis, are at high risk for developing Cushing’s syndrome. The most reported corticosteroid is clobetasol dipropionate, but lower-potency TCs may cause systemic side-effects in infants or patients with abnormal barrier function, such as in erythroderma or in acitretin use. Cushing’s syndrome caused by TC use is more common in infants and usually results from a shorter duration (3 months to 1 year) of use. The drug therapy period is longer in adults, ranging from 10 months to 12 years, except in patients with erythrodermic psoriasis, but our patient had used topical steroid ointment for 5 years. Another noteworthy feature of the cases reported in the literature is that a large number of them derive from Turkey. The fact that patients in Turkey can obtain corticosteroids without a prescription may explain why the country has a large number of cases.

Strategies to prevent the occurrence of serious systemic side-effects of TCs in longterm use require that no more than 50 g/week of clobetasol propionate ointment is prescribed and that occlusive dressing is avoided. Patients should be informed about usage and the possible side-effects of the drug. Furthermore, the facility to obtain high-potency TCs without a prescription must be restricted. We believe that medical education programs should emphasize questions beginning with “how” and “when” in teaching on the use of TCs.

References
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USING e-ANNOTATION TOOLS FOR ELECTRONIC PROOF CORRECTION

Required software to e-Annotate PDFs: Adobe Acrobat Professional or Adobe Reader (version 8.0 or above). (Note that this document uses screenshots from Adobe Reader X)
The latest version of Acrobat Reader can be downloaded for free at: [http://get.adobe.com/reader/]

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1. Replace (Ins) Tool – for replacing text.
   - Strikethrough (Del) Tool – for deleting text.
   - Add note to text Tool – for highlighting a section to be changed to bold or italic.
   - Add sticky note Tool – for making notes at specific points in the text.

   How to use it
   - Highlight a word or sentence.
   - Click on the Replace (Ins) icon in the Annotations section.
   - Type the replacement text into the blue box that appears.
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   - Click at the point in the proof where the comment should be inserted.
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   How to use it
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7. **Drawing Markups Tools** – for drawing shapes, lines and freeform annotations on proofs and commenting on these marks.

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