Thyrotoxicosis Presenting as Generalized Pruritic Exfoliative Dermatitis and Fever

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Sir,

Hyperthyroidism can present and is associated with a wide spectrum of clinical manifestations affecting various organ systems. Cutaneous symptoms most commonly associated with thyrotoxicosis include pretibial myxedema, diffuse hyperpigmentation and alopecia. We describe a patient for whom generalized pruritic exfoliative dermatitis and fever were presenting signs of thyrotoxicosis. To our knowledge, exfoliative erythroderma has not been described as either presenting sign or cutaneous manifestation of hyperthyroidism [1 and Medline search in January 1991].

A 55-year-old Mexican woman had a generalized pruritic 'rash' and fever of 1 month duration that was initially treated at the local hospital intensive-care unit with intravenous broad-spectrum antibiotics and intravenous steroids with some improvement in the rash; however, fever still persisted. Once intravenous steroids were stopped, the rash got worse, and she was referred to our Department of Dermatology for further evaluation. The patient had not been taking any medicine prior to the development of this rash and, at the time of presentation to our department, was only on hydrocortisone 10 mg p.o. q.d. and diphenylhydramine 50 mg p.o. p.r.n. pruritus. On physical examination, she had generalized slightly erythematous exfoliative dermatitis with excoriations, findings that are commonly seen in patients with resolving scarlet fever or drug reactions. Her vital signs were temperature 37.7 °C, pulse 135 (sinus tachycardia on electrocardiogram); blood pressure and respiratory rate were normal. Skin biopsy of the rash showed focal areas of parakeratosis, a moderate amount of acanthosis and mild spongiosis and superficial perivascular lymphohistiocytic infiltrate. Blood tests (blood counts, electrolytes, anti-nuclear antibodies, VDRL, rheumatoid factor, complement levels, blood smear for Sézary cells), radiologic studies and blood cultures were all normal except for thyroxine 23.7 µg/dl (normal 4-12), free thyroxine index 20.74 (normal 5-12) and thyrotropin 0 µu/ml (0.5-7). Thyroid scan showed no uptake of ¹³¹I by the thyroid gland, and no antithyroglobulin or antimicrosomal antibodies were found in her serum indicating that the patient's thyrotoxicosis was most likely caused by thyroiditis rather than Grave's disease. Once the diagnosis of thyrotoxicosis had been made, the patient was placed on propranolol causing complete resolution of dermatitis within 72 h. At 2- and 4-week follow-up visits after initiation of propranolol therapy, her skin had remained completely clear, she had no pruritus and her vital signs were normal. The skin biopsy taken at the 4-week follow-up from the same site showed

normal skin without any pathological changes. Her thyroid tests at the 4-week follow-up were: thyroxin 2.8 µg/ml, free thyroxin index 2.9 and thyrotropin 28.2 µu/ml indicating that at this stage of thyroiditis she was in a hypothyroid stage.

It has been reported that epidermal thickness, replication and anabolic activity are significantly increased in patients with thyrotoxicosis occasionally causing the skin to appear 'scaly' [2]. Furthermore, following treatment of thyrotoxicosis, these changes become rapidly reversible [3]. The histologic findings of parakeratosis and acanthosis observed on a skin biopsy of our patient are expected and

consistent with the above-mentioned changes. Furthermore, it is known now that thyroid hormone and retinoic acid have similar if not homologous cellular nuclear receptors [4], and the epidermopoietic effect of retinoids [5] and their ability to induce des-quamation, pruritus and other epithelial changes are well described in the literature [6]. This case illustrates that the diagnosis of thyrotoxicosis should be entertained in patients with generalized pruritic, exfoliative steroid-unresponsive dermatosis of unknown etiology.

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