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## Radiodermatitis with Signs of Eccrine Squamous Syringometaplasia Following a Diagnostic Procedure<sup>☆</sup>

### Radiodermatitis secundaria a procedimiento diagnóstico con signos de siringometaplasia escamosa ecrina

To the Editor:

Eccrine squamous syringometaplasia (ESS) is a squamous metaplasia of the cuboidal cells of the of the eccrine sweat ducts. ESS is considered a nonspecific reactive response to exposure to toxic agents and drugs but has also been described following cutaneous processes, such as tumors, infections and inflammatory conditions, such as pyoderma gangrenosum, phytophotodermatitis, and chronic ulcers.<sup>1–4</sup>

We report a peculiar case of radiodermatitis with the unusual histopathologic finding of ESS.

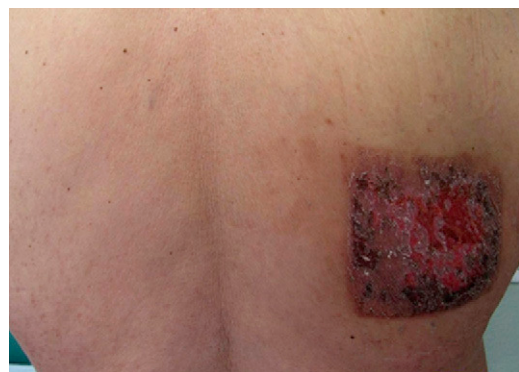
The patient was a 62-year-old man who reported the appearance of an itchy erythematous plaque on the right side of his back. The plaque had developed 15 days earlier. His medical history included metabolic syndrome, hyperuricemia, and chronic ischemic heart disease. The patient was receiving regular treatment with atorvastatin, allopurinol, enalapril, isosorbide, carvedilol, ticlopidine, sitagliptin, and metformin. In the previous 2 months, he had

undergone a diagnostic coronary angiography and 2 angioplasties.

Physical examination revealed a square-shaped erythematous plaque (9 × 12 cm) with well-defined borders and an eroded center (Fig. 1). The location coincided with one of the sites irradiated when the patient received a total dose of 7.8 Gy in 3 separate procedures. Histopathology demonstrated hyperkeratosis, irregular acanthosis and dysmaturation of the epidermis, a moderate predominantly neutrophilic perieccrine inflammatory infiltrate in the dermis, and squamous metaplasia of both eccrine coil and duct (Fig. 2). These findings were compatible with ESS.

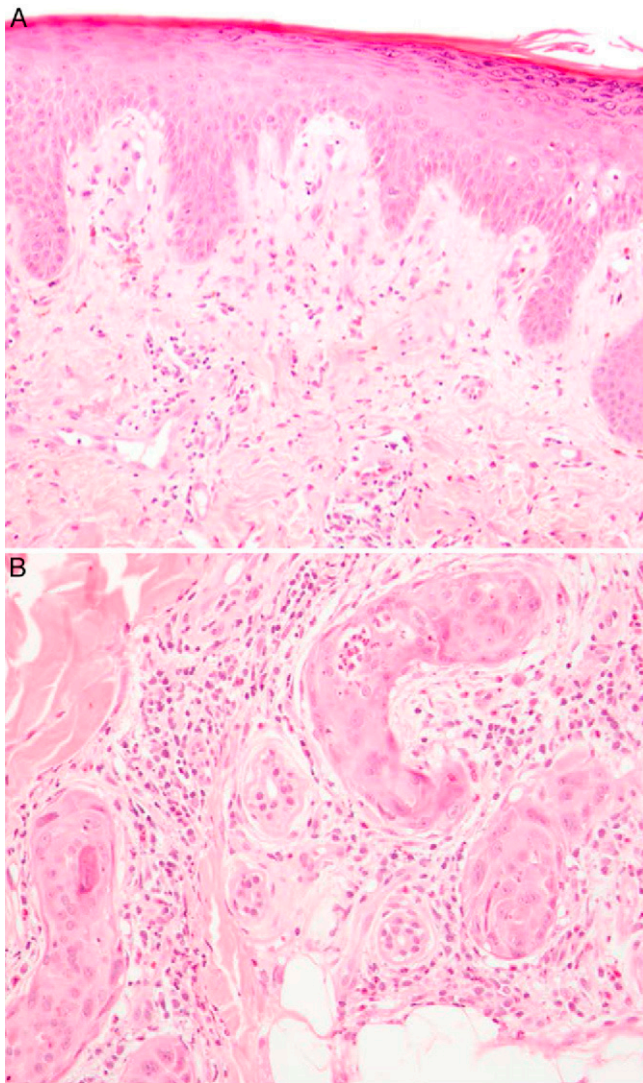
The radiodermatitis plaque responded favorably to local treatments and topical corticosteroids. At the time of writing, only slight residual hyperpigmentation persisted.

The frequency of radiodermatitis caused by coronary procedures is not known but is thought to be increasing due



**Figure 1** Erythematous plaque with an ulcerated center on the right side of the back.

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**Figure 2** A, Hyperkeratosis and irregular acanthosis. Signs of epidermal dysmaturation: dyskeratotic cells, with keratinocytes of altered size and polarity, some of which are binucleated (hematoxylin-eosin, original magnification  $\times 10$ ). B, Eccrine duct in which areas of squamous metaplasia and a neutrophilic infiltrate can be observed inside the coil, as well as a moderate perieccrine inflammatory infiltrate (hematoxylin-eosin, original magnification  $\times 40$ ).

to the growing use and complexity of these interventions. The most commonly affected locations are the right axillary region, the middle third of the back, the right anterolateral region of the chest, and the scapular area, as in the present case.<sup>5,6</sup>

Depending on the time of onset of skin lesions after exposure, radiodermatitis is classically described as either acute or chronic. In recent years, a subacute category has also been added; this form usually occurs weeks to months after the initial exposure.<sup>7</sup>

The radiation dose required to cause erythema is estimated at 3 Gy, and doses of over 12 Gy can cause peeling as well as secondary necrosis and ulceration. However, the dose threshold varies widely depending on the area exposed and

an individual's susceptibility.<sup>8,9</sup> Thus, the radiation dose of more than 7.8 Gy received by our patient in the lesion area was sufficient to initiate a cutaneous inflammatory response which may have induced both the radiodermatitis and the ESS.

We have found no similar cases in the literature describing an association between these two conditions.

This patient had not been exposed to any new substances, except for Visipaque (iodixanol), an iodinated contrast agent used during fluoroscopic procedures. However, no association between this substance and ESS has been described.

The differential diagnosis should include dermatitis due to radiation recall, which can present with ESS.<sup>10</sup> However, radiation recall dermatitis most commonly affects areas of radiotherapy-exposed skin that are subsequently reactivated by a second substance, often a chemotherapeutic agent. In our case, given the short clinical course of the condition and the lack of exposure to precipitating agents, we can reasonably rule out this diagnosis.

In summary, we have presented an unusual case of ESS in a patient with radiodermatitis, which we believe should be added to the list of dermatological conditions in which signs of ESS may be observed.

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## Mixed Panniculitis Secondary to Interferon Beta-1a Therapy in a Woman With Multiple Sclerosis<sup>☆</sup>

### Paniculitis mixta secundaria al uso de interferón $\beta$ 1A en una paciente con esclerosis múltiple

To the Editor:

Interferon beta was approved in Spain in 1995 for the treatment of progressive multiple sclerosis. There are 2 main types, interferon beta-1a and 1b, both of which are sold in a variety of formulations, resulting in a range of responses to the same molecule. Local skin reactions are a common adverse effect, and are usually self-limiting. By contrast, panniculitis and lipoatrophy are very rare, and may necessitate discontinuation of treatment.

We describe the case of a 43-year-old woman who was diagnosed in 2005 with multiple sclerosis, for which she received several disease-modifying treatments. In October 2009, she began treatment with interferon beta-1a (Rebif 44), which was self-administered subcutaneously 3 times a week, with a favorable response. After 18 months of treatment, induration was observed at the injection sites, on the back of the thighs, and on the outer arms. A few weeks later, ulcerated lesions appeared on the front of the thighs and progressively increased in size. The patient reported that the plaques caused severe pain, which made moving and walking difficult. She reported no fever or systemic upset and her neurological status remained unchanged.

Examination revealed 2 ulcers on the front of the thighs of 1 cm diameter. The borders of the ulcers had a scarlike appearance and beneath the ulcers were cavities of about 4 cm in diameter. An indurated plaque of about 15 cm in diameter, with a slightly erythematous surface, surrounded the ulcer and was intensely painful to touch (Fig. 1). These indurated plaques were also present on the external aspect of both arms, although no ulcers were observed.

Tissue culture of the ulcers and an incisional biopsy of a plaque from 1 of the thighs were negative. Histopathology revealed a preserved epidermis, sclerosis of the middle

and deep dermis, and subcutaneous tissue involvement. At higher magnification we detected an infiltrate that primarily affected the lobule, although septal thickening was also observed (Fig. 2a); this infiltrate was composed mainly of neutrophils and lymphocytes (Fig. 2b). No vasculitis or necrosis was observed. Based on these observations, the patient was diagnosed with mixed panniculitis secondary to interferon beta-1a therapy. Upon consultation with her neurologist, it was decided to discontinue interferon beta-1a treatment, mainly due to functional impairment.

Interferon beta-1a was approved for the treatment of progressive multiple sclerosis in Spain in 1995. Its administration decreases the relapse rate by 30% and the appearance of new lesions on magnetic resonance imaging by 66%. Local skin manifestations such as erythema and pain are well-described frequent adverse effects; they occur in 63% to 85% of patients<sup>1</sup> but are usually self-limiting and do not require discontinuation of treatment. However, treatment may need to be discontinued in cases of other more serious reactions such as ulcerations, necrosis,<sup>2</sup> sclerosis, and induration at the injection site. Other adverse effects such as sarcoid granulomas, lipoatrofia,<sup>3</sup> lupus-like lesions,<sup>4</sup> and septal or lobular panniculitis<sup>5</sup> are considered very rare. Table 1 summarizes the cases of panniculitis secondary to interferon treatment described to date. Some authors have suggested that this form of panniculitis may be caused by the vascular toxicity of interferon beta.



**Figure 1** Indurated erythematous plaques with ulcerated centers on the front of both thighs.

<sup>☆</sup> Please cite this article as: Cuesta L, et al. Panniculitis mixta secundaria al uso de interferón  $\beta$  1A en una paciente con esclerosis múltiple. *Actas Dermosifiliogr.* 2013;104:257–9.