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Authors

Tchanque-Fossuo, Catherine N
Isseroff, R Rivkah
Silverstein, Marc A

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Letter

Fluoroscopy induced chronic radiation dermatitis should be included in the differential diagnosis of notalgia paresthetica

Catherine N. Tchanque-Fossuo^{1,2} MD, MS, R. Rivkah Isseroff^{1,2} MD, Marc A. Silverstein¹ MD

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¹ Dermatology Service, Sacramento VA Medical Center, Mather, CA, USA

² Department of Dermatology, University of California Davis, Sacramento, CA, USA

Correspondence:

Marc A. Silverstein, MD
Department of Dermatology
3301 C Street, Suite 1400
Sacramento, CA 95816
Tel. (916) 734 - 6068
Email: masilverstein@ucdavis.edu

Abstract

We report a patient with radiation (fluoroscopic)-induced dermatitis that produced symptoms similar to notalgia paresthetica.

Keywords: radiation dermatitis, notalgia paresthetica, fluoroscopy-induced dermatitis

Letter

Although the recent article Tchanque-Fossuo et al. [1] was in press, one of us (MAS) brought a similar case to our attention. We report this case because it is a reminder that subtle findings can provide a clue to this diagnosis.

Although cutaneous injuries secondary to radiation exposure are well documented [2, 3], fluoroscopy-induced dermatitis is poorly recognized [4]. We report a patient who had an unusually mild presentation of fluoroscopy-induced chronic radiation dermatitis, which was initially misdiagnosed as notalgia paresthetica.

The patient is a 78-year-old man who presented with a pink patch on his right back. The patient could not recall the duration of the patch and he complained of occasional pruritus. He denied any known preceding rash or trauma. The patient's dermatologic history was only pertinent for a history of alopecia areata. Clinical exam of the patient revealed a square area of macular telangiectasia with a slight yellowish background over the right paraspinal back. Hair was notably absent over the area. There was no ulceration or atrophy (Figure 1). The morphology was suggestive of radiation dermatitis, but at the time the patient gave no history of radiation therapy. Given the location and mild pruritus, the working diagnosis was felt to be notalgia paresthetica. Because of the subtle findings and minimal symptomatology, biopsy was not performed.



Figure 1. Right mid paraspinal back (left) with a square area of telangiectasia with a yellowish coloration background (top & bottom right).

Two years later, the patient returned to the clinic for follow-up. The telangiectatic patch was unchanged. On more detailed questioning, the patient revealed that he had significant coronary disease and he had a cardiac stent placement 14 years prior to presentation. In addition, the patient had undergone an extensive emergent interventional procedure with 3 stents placed in his right coronary artery 2 years prior to his presentation. This was performed out of the country and detailed information on radiation dosing or fluoroscopy time was not available. With this additional history and the consistent lesion morphology, a diagnosis was made of fluoroscopy-induced chronic radiation dermatitis. Consultation with his cardiologist (personal communication) confirmed that this location would be typical for his type of fluoroscopic procedure.

Many cardiac interventional procedures are performed under fluoroscopic guidance [5, 6], which is associated with a risk of radiation complications [7, 8]. Radiation doses are expressed in terms of peak skin dose in Gray (Gy) or amount of radiation absorbed [2, 5, 6]. Transient erythema has been described at doses less than 2 Gy with no long-term effect [5]. Dermal atrophy can occur with doses between 2-5 Gy [5]. Telangiectasia and dermal atrophy may be irreversible when radiation dosage reaches 10 to 15 Gy [5]. Finally, skin can be severely compromised at dosage above 15 Gy, necessitating more aggressive types of intervention for skin repair, such as surgical excision [5]. Following standard fluoroscopic-guided procedures, skin injuries are generally not anticipated. However, the risk of skin injury is related to the radiation dose, which increases with the duration of the procedure, and also with multiple procedures over time [7].

This case raises the possibility that very mild cases of fluoroscopy induced chronic radiation dermatitis may be more prevalent than is currently recognized, and are either ignored owing to minimal symptomatology, or misdiagnosed owing to unfamiliarity with this entity. One factor that could potentially contribute to misdiagnosis is unfamiliarity with the variability in location. For fluoroscopic procedures, the beam is angled to provide optimum visualization of the relevant structures, and the exact location will depend on the procedure performed as well as the patient's anatomy. Common locations include both the right and left scapular or subscapular areas, mid back, right lateral region below the axilla, and right anterolateral chest [9]. This variability in location needs to be kept in mind when considering this diagnosis.

Notalgia paresthetica is a common entity presenting with neuropathic itch between the scapula and the vertebral column. Frequently there is some degree of hyperpigmentation in this area, thought to be secondary to rubbing or scratching. In previous publications, the differential diagnosis of this entity has included lichen amyloidosis, lichen simplex chronicus, atopic and contact dermatitis, fungal infections, and mycosis fungoides [10, 11]. Fluoroscopy-induced chronic radiation dermatitis should be included in this differential diagnosis, given that this scapular area (either left or right) is a common location for coronary fluoroscopy.

Given the clinical presentation and supportive history, a biopsy was not felt to be required in this case. Poor wound healing can be seen in areas of chronic radiation and biopsy is generally not recommended when the diagnosis can be made by history and physical examination [8]. With the increasing use of fluoroscopy guidance during interventional procedures in a variety of medical fields, wider recognition of these mild presentations may allow more accurate diagnoses and help to prevent unnecessary interventions.

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