Portuguese Journal of Dermatology and Venereology

PERMANYER

Check for updates

Port J Dermatol and Venereol.

DERMATOLOGY IMAGES

Radiation-induced morphea: an uncommon entity

Morfeia pós-irradiação: uma entidade rara

Miguel Santos-Coelho[a], Joana A. Barbosa[b], and Rodrigo Araújo-Carvalho[c]*

Department of Dermatology and Venereology, Hospital de Santo António dos Capuchos, Centro Hospitalar Universitário de Lisboa Central, E.P.E., Alameda Santo António dos Capuchos, Lisbon, Portugal

ORCID: [a]0000-0002-2288-7306; [b]0000-0001-7351-5302; [c]0000-0002-3228-2482

A 70-year-old man presented to the dermatology department with a slowly growing, asymptomatic, indurated 10 × 8 cm plaque, with a central white area and erythematous borders, of the right dorsal area (Fig. 1). Seventeen years earlier, the patient had developed a primary cutaneous follicle center lymphoma of the same region and had undergone treatment with 25 sessions of radiotherapy, with a complete response and no recurrence. Before this, no significant atrophy or radiodermatitis was noted.

Histopathology from a punch biopsy revealed no epidermal changes, a marked thickening of collagen fibers, with a dense, mainly perivascular and periadnexal, lymphohistiocytic infiltrate of the reticular dermis and hypodermis (Fig. 2). Perieccrine fat substitution by fibrosis was also present. These findings supported the diagnosis of radiation-induced morphea (RIM). The patient started topical betamethasone with gradual improvement over the next few months.

RIM is a rare entity most commonly associated with radiotherapy following breast cancer[1]. Most cases develop in the months following treatment, but a latent period of several years has been described[2,3].

The precise pathophysiological mechanisms leading to RIM have not been established, but increased transforming growth factor-β signaling is thought to be a key element in inducing extracellular matrix deposition and extensive fibrosis[2].

Figure 1. Indurated plaque of the right dorsal area.

Differential diagnosis is vast and includes chronic radiation dermatitis, radiation recall dermatitis, and

***Correspondence:**
Miguel Santos-Coelho
E-mail: mscoelho.derma@gmail.com

Received: 07-09-2023
Accepted: 17-09-2023
DOI: 10.24875/PJDV.23000071

Available online: 06-03-2024
Port J Dermatol and Venereol. 2024;82(1):77-78
www.portuguesejournalofdermatology.com

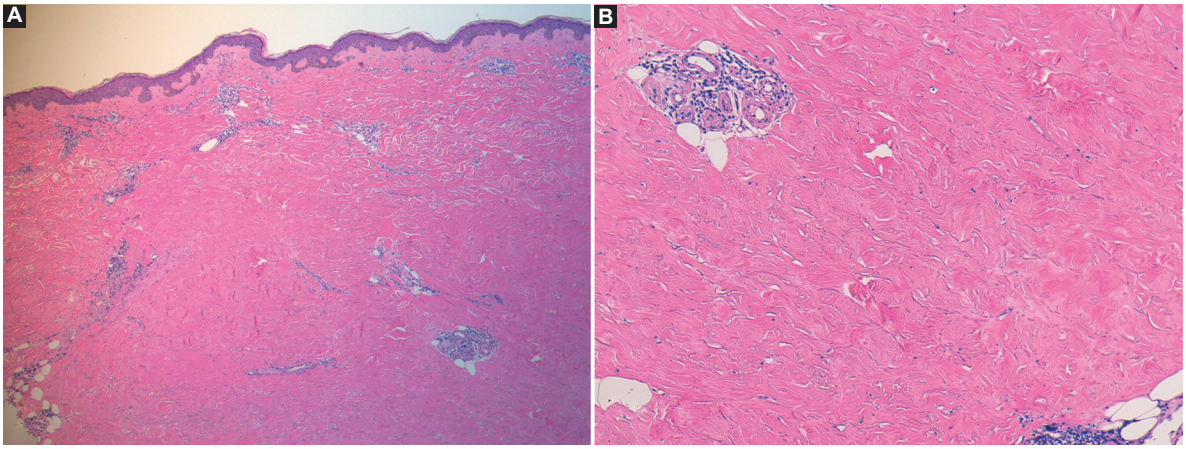

Figure 2. Punch biopsy revealing marked thickening of collagen fibers and a dense dermal perivascular and periadnexal lymphohistiocytic infiltrate (**A:** H and E, ×40; **B:** H and E, ×100).

tumor recurrence, making skin biopsy an important step in these patients' evaluation.

Treatment is difficult and includes potent and superpotent topical corticosteroids, topical calcineurin inhibitors, oral methotrexate, oral corticosteroids, and phototherapy.

Funding

None.

Conflicts of interest

None.

Ethical disclosures

Protection of human and animal subjects. The authors declare that no experiments were performed on humans or animals for this study.

Confidentiality of data. The authors declare that they have followed the protocols of their work center on the publication of patient data.

Right to privacy and informed consent. The authors have obtained the written informed consent of the patients or subjects mentioned in the article. The corresponding author is in possession of this document.

Use of artificial intelligence for generating text. The authors declare that they have not used any type of generative artificial intelligence for the writing of this manuscript nor for the creation of images, graphics, tables, or their corresponding captions.

References

1. Machan A, Oumakhir S, Khalidi M, Hjira N, Boui M. Radiation-induced morphea: autoimmunity as a risk factor. Neth J Med. 2019;77:29-31.
2. Spalek M, Jonska-Gmyrek J, Gałecki J. Radiation-induced morphea-a literature review. J Eur Acad Dermatol Venereol. 2015;29:197-202.
3. Laetsch B, Hofer T, Lombriser N, Lautenschlager S. Irradiation-induced morphea: x-rays as triggers of autoimmunity. Dermatology. 2011;223:9-12.