Radiation Recall Dermatitis Triggered by Iodinated Contrast in a Patient with Mandibular Intraosseous Squamous Cell Carcinoma

Leandra Reguero del Cura, Beatriz Castro Gutiérrez, Íñigo Navarro Fernández, Marcos Antonio González López

Division of Dermatology, University Hospital Marqués de Valdecilla (U.H.M.V), Santander, Spain

Address for correspondence:
Dr. Leandra Reguero del Cura, Avenida Cardenal Herrera Oria, Nº1, 3ºG, Santander, Cantabria 39011, Spain.
E-mail: leandra.reguero@scusalud.es

How to cite this article: del Cura LR, Gutiérrez BC, Fernández IN, González López MA. Radiation recall dermatitis triggered by iodinated contrast in a patient with mandibular intraosseous squamous cell carcinoma. Indian Dermatol Online J 2021;12:454-5.

Received: 04-Jun-2020. Revised: 17-Jul-2020. Accepted: 20-Sep-2020. Published: 12-May-2021.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

© 2021 Indian Dermatology Online Journal | Published by Wolters Kluwer - Medknow

Radiation Recall Dermatitis (RRD) is a rare and poorly understood inflammatory reaction. Clinically, it is suspected by well-demarcated cutaneous erythema and edema that involve previously irradiated skin. During the last years, a wide variety of triggering agents have been described, still being cancer therapies the most associated drugs. Herein, we present a case of RRD precipitated by an iodinated contrast agent (ICA) in a patient without intravenous contrast allergy and who was not taking any medications.

A 65-year-old woman with mandibular squamous cell carcinoma was treated with surgical excision and subsequent radiation therapy for a total dose of 56 Gy. As a result of treatment, she developed grade-2 dermatitis that healed within 2 weeks. One month after radiotherapy, she underwent computed tomography (CT) scan with contrast for intravascular administration. Ten days after the study, she developed well-demarcated desquamative erythema, edema, and local temperature rise in the distribution of her radiation portals [Figure 1a and b]. Laboratory tests were normal and a skin biopsy showed nonspecific changes. High potency topical corticosteroids were prescribed with great improvement after a single application [Figure 2]. The patient denied taking any new drugs or over the counter medication.

RRD is a phenomenon whose physiopathologic basis is poorly understood. Different hypotheses have been proposed such as radiotherapy being responsible for local vascular permeability or proliferative changes that favor an idiosyncratic drug type IV T-cell–mediated hypersensitivity reaction. In our case, the patient had undergone a CT scan with iodixanol, a dimeric, nonionic, ICA for intravascular administration for developing a recall phenomenon 10 days after the study. Typical cutaneous adverse reactions related to ICAs include pruritic maculopapular rash, angioedema, flushing, and Stevens–Johnson syndrome. Generally, these reactions are multifactorial due to direct chemotoxicity, the ionic state, and the osmolarity of the injected preparation. RRD has been associated with increased susceptibility to external toxic agents on account of DNA repair inhibition in irradiated tissues. In consonance with this, some authors have proposed that it is necessary to achieve a minimal cumulative
Radiation dose.\textsuperscript{[1]} RRD has been defined as occurring more than 7 days after radiotherapy and after complete recovery of acute radiation toxicity. There is a grading scale from mild to severe disease\textsuperscript{[4]} and usually, the recurrence presents with milder clinical signs than at the first instance. There is no evidence to support the systematic use of corticosteroids. However, while moderate recall syndrome may resolve spontaneously, topical or systemic corticosteroids may accelerate the recovery and control local discomfort.

To the best of our knowledge, there is only another report of RRD induced by iodinated contrasts\textsuperscript{[5]} in a patient allergic to these agents who was simultaneously receiving anastrozole, which has recently been associated with RRD. Iso-osmolar ICAs like nonionic dimers used in our case are associated with the highest risk of causing a delayed reaction, and it is advisable that physicians be aware of these recall phenomenon potential triggers in order to make an accurate diagnosis and prevent future events.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Ristić B. Radiation recall dermatitis. Int J Dermatol 2004;43:627-31.
2. Stelzer KJ, Griffin TW, Koh WJ. Radiation recall skin toxicity with bleomycin in a patient with Kaposi sarcoma related to acquired immune deficiency syndrome. Cancer. 1993;71:1322-5.
3. Pasternak JJ, Williamson EE. Clinical pharmacology, uses, and adverse reactions of iodinated contrast agents: A primer for the non-radiologist. Mayo Clin Proc 2012;87:390-402.
4. Bourgeois A, Grisoli SB, Soine EJ, Rosen LB. Tamoxifen-induced radiation recall dermatitis. Dermatol Online J 2017;23:13030/qt1d38e9c7.
5. Lau SKM, Rahimi A. Radiation recall precipitated by iodinated nonionic contrast. Pract Radiat Oncol 2015;5:263-6.