Clinical Case Reports

Open Access

CASE REPORT

Systemic hypersensitivity reaction to Omnipaque radiocontrast medium: a case of mini-DRESS

Christina George[1], Alison Sears[1], Abdel-Ghani Selim[2], Sarah Walsh[1] & Daniel Creamer[1]

[1]Dermatology, Kings College Hospital, Denmark Hill, London SE5 9RS, UK
[2]Histopathology, Kings College Hospital, Denmark Hill, London SE5 9RS, UK

Correspondence
Christina George, Dermatology, Kings College Hospital, Denmark Hill, London, SE5 9RS UK. Tel: 0203 299 3703; Fax: 0203 299 3616; E-mail: Cgeorge2@nhs.net

Funding Information
No sources of funding were declared for this study.

Received: 18 September 2015; Revised: 27 November 2015; Accepted: 27 January 2016

Clinical Case Reports **2016; 4(4): 336–338**

doi: 10.1002/ccr3.513

Key Clinical Message

Drug reaction with eosinophilia and systemic symptoms (DRESS) is a delayed drug reaction defined by physical signs and laboratory parameters. Mini-DRESS is a new entity, in cases that display some but not all features of DRESS. Cases of mini-DRESS have a less protracted course, and respond well to systemic corticosteroid treatment.

Keywords

Drug reaction with eosinophilia and systemic symptoms, hypersensitivity, Mini-DRESS, radiocontrast.

Case History

A 76-year-old man underwent a computed tomography (CT) scan of the abdomen for investigation of a pancreatic lesion. He received radiocontrast medium (RCM) at the time of the investigation. The following day, he developed an itchy rash around the waist which spread to the torso and limbs. Six days later, he presented to the Emergency Department with extensive skin involvement and symptoms of general fatigue. He was afebrile with stable observations. On examination, there was a widespread, urticated, and edematous confluent exanthem on the torso (Fig. 1); on the limbs there were discrete urticated lesions reminiscent of targets but with extensive purpura (Fig. 2). There was associated lymphadenopathy in the inguinal regions bilaterally. There was no mucous membrane involvement.

Five years earlier, he had undergone a CT chest scan with RCM and had no reported complications. He was taking no other medications and there was no history of previous drug allergies.

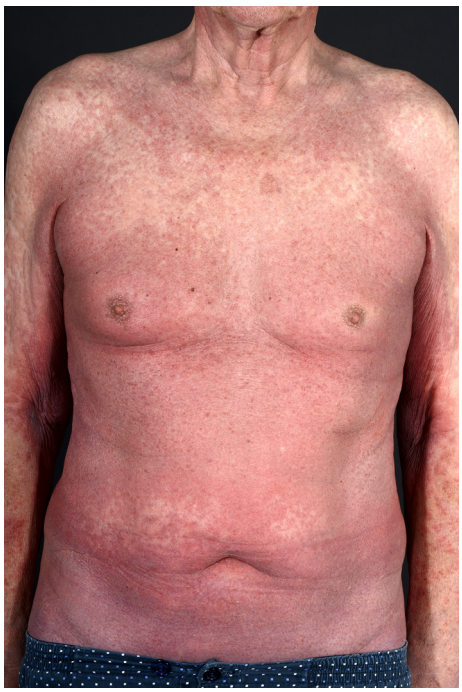

Figure 1. Widespread urticated and edematous confluent exanthem on the torso.

Investigations

Blood tests revealed an elevated white cell count of 20.54 (10^9/L), with a neutrophilia of 16.6 (10^9/L) and an eosi-

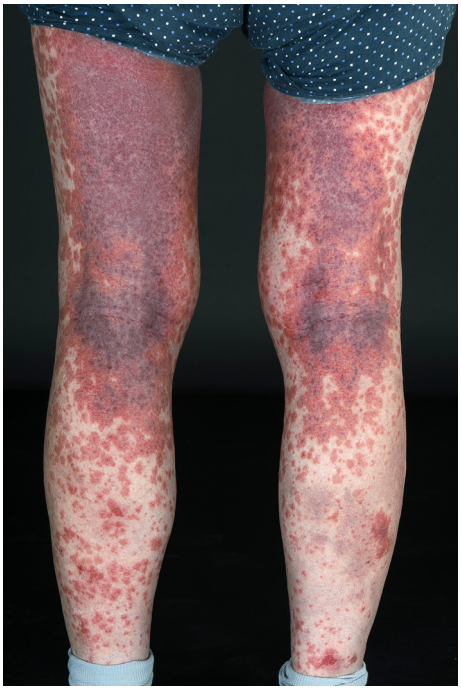

Figure 2. Extensive purpura on the lower limbs.

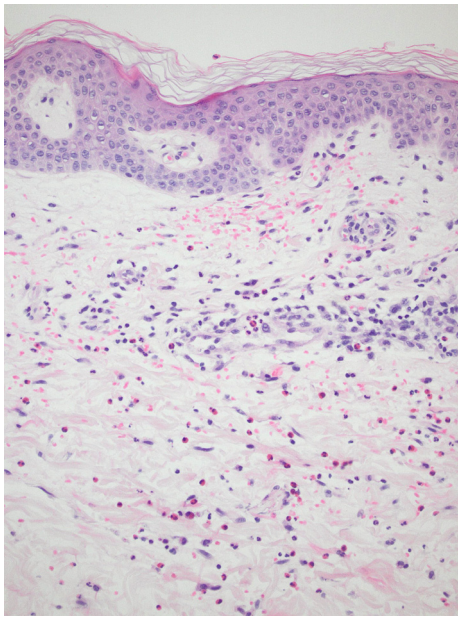

Figure 3. A 4-mm punch biopsy of skin from the abdomen, showing spongiosis, a perivascular inflammatory cell infiltrate, and red blood cell extravasation.

nophilia of 2.12 (10^9/L). There was a mild acute kidney injury with creatinine 134 mmol/L, urea 11.0 mmol/L. Liver function tests were normal.

Histology of a skin biopsy revealed mild acanthosis and spongiosis with occasional intraepidermal apoptotic keratinocytes. There was a perivascular inflammatory cell infiltrate composed of eosinophils, lymphocytes, and neutrophils; extravasation of red blood cells was also seen (Fig. 3). The dermatopathological features were suggestive of a drug reaction.

Diagnosis

A diagnosis of a cutaneous and systemic hypersensitivity reaction to RCM was made.

Treatment

The patient was prescribed oral prednisolone 30 mg and 0.1% mometasone furoate ointment to the skin. There was significant clinical and biochemical improvement following 5 days of treatment.

Discussion

Most allergic reactions to RCM are immediate, however, delayed-type hypersensitivity responses are well recognized [1, 2]. In this situation, sensitization to RCM occurs when a patient is first exposed; subsequent RCM administration activates the immune mechanism resulting in a T-cell mediated hypersensitivity reaction developing within 24–48 h. Clinically, delayed reactions to drugs present to dermatology in a variety of forms. Those with constitutional upset, internal organ involvement, leukocyte activation, and a florid drug rash are usually termed drug hypersensitivity syndrome (DHS) or drug reaction with eosinophilia and systemic symptoms (DRESS). More specifically, the systemic abnormalities accompanying DRESS are fever, lymphadenopathy, hematological derangement (typically eosinophilia and atypical lymphocytosis), and internal organ involvement (frequently liver injury) [3]. In DRESS, there is usually a protracted latency period between drug ingestion and onset of the reaction (between 4 and 8 weeks). Commonly, the disorder takes several weeks to settle and can enter a chronic phase [4]. There is little epidemiological data on the exact incidence of DRESS, as it presents in a variety of forms, and thus may often go undiagnosed.

A scoring system for DRESS developed by RegiSCAR (an international severe drug eruption registry), quantifies the physical signs and abnormal laboratory parameters to produce a value which defines the diagnosis [5]. The score is based on clinical features, extent of eosinophilia, atypical lymphocytosis, internal organ involvement of a defined severity, and the presence of an extensive rash. A score of 4 or 5 (out of 9) is classified as a probable case; a score of 5 or above is a definite case. However, in day-to-day clinical practice, there are patients who develop a

drug reaction with systemic features which is suggestive of the DRESS phenotype, but which fails to exceed the diagnostic threshold. These patients can be considered to have a minor form of DRESS.

Our patient's clinical manifestations included an extensive dermatosis, lymphadenopathy, mild acute kidney injury, and mild eosinophilia. However, there was no fever, no other solid organ involvement, and resolution of the reaction was swift. Application of the RegiSCAR DRESS criteria in this case yielded a score of 3 – that is, neither a probable nor a definite case of DRESS. We conclude that our patient sustained a systemic drug hypersensitivity reaction to RCM, but of a degree not severe enough to diagnose DRESS.

Our case illustrates the incomplete form of DRESS, which displays some but not all of the features of the full-blown syndrome. This is an entity we term mini-DRESS. These cases may go unrecognized, as they do not fulfill the complete diagnostic criteria. Typically, the drug exposure latency period in these cases is shorter than that in DRESS. In addition, mini-DRESS reactions are less likely to produce a protracted illness, compared to DRESS. The prognosis in mini-DRESS is good, and most cases respond swiftly and fully to a short course of systemic corticosteroid.

Conflict of Interest

None declared.

References

1. Kanny, G., W. Pichler, M. Morisset, P. Franck, B. Marie, C. Kohler, et al. 2005. T cell mediated reactions to iodinated contrast media: evaluation by skin and lymphocyte activation tests. J. Allergy Clin. Immunol. 115:179–185.
2. Torres, M. J., C. Mayorga, J. A. Cornejo-Garcia, S. Lopez, P. Chaves, C. Rondon, et al. 2008. Monitoring non-immediate allergic reactions to iodine contrast media. Clin. Exp. Immunol. 152:233–238.
3. Walsh, S. A., and D. Creamer. 2011. Drug reaction with eosinophilia and systemic symptoms (DRESS): a clinical update and review of current thinking. Clin. Exp. Dermatol. 36:6–11.
4. Kardaun, S. H., A. Sidoroff, L. Valeyrie-Allanore, S. Halevy, B. B. Davidovici, M. Mockenhaupt, et al. 2007. Variability in the clinical pattern of cutaneous side-effects of drugs with systemic symptoms: does a DRESS syndrome really exist? Br. J. Dermatol. 156:609–611.
5. Kardaun, S. H., P. Sekula, L. Valeyrie-Allanore, Y. Liss, C. Y. Chu, D. Creamer, et al. 2013. Drug reaction with eosinophilia and systemic symptoms (DRESS): an original multisystem adverse drug reaction. Results from the prospective RegiSCAR study. Br. J. Dermatol. 169:1071–1080.