

Reverse Isotopic Phenomenon in Acute Drug Eruption

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Case Presentation

A 90-year-old patient was brought to the emergency department with a 3-day history of a progressively worsening erythematous rash on the trunk and abdomen. She had been taking valacyclovir and metamizol for 4 days after developing herpes zoster on the upper left flank prior to onset of symptoms. Physical examination revealed a maculopapular erythematous rash over the trunk, abdomen and proximal extremities. The rash spared crusts and erosions that followed a dermatomal distribution suggestive of herpes zoster infection (Figure 1A). On dermoscopy, individual lesions were composed of a central reddish crust surrounded by a white halo with shiny white lines, and perilesional erythema with linear and dotted vessels (Figure 1B).

A skin biopsy was performed, including a crust, rash, and unaffected skin. The biopsy revealed three histopathologically distinct zones. In the center of the biopsy, there was

an unspecific erosion that tested negative for herpes virus 1 and 2. The periphery of the biopsy showed a moderate dermal inflammatory infiltrate with eosinophils (Figures 1, C and D). In between those areas, there was a zone with minimal changes corresponding to the spared skin. A diagnosis of acute drug eruption with reverse isotopic phenomenon over healing herpes zoster lesions was made. The rash disappeared shortly after discontinuing all medication and receiving a short course of systemic corticosteroids. The patient declined further testing, including drug patch testing.

Teaching Point

Reverse isotopic phenomenon or isotopic non-response describes the absence of a skin disease in an area previously affected by another dermatosis. This sparing effect is thought to be related to dysfunction of antigen-presenting cells, particularly Langerhans cells [1,2].

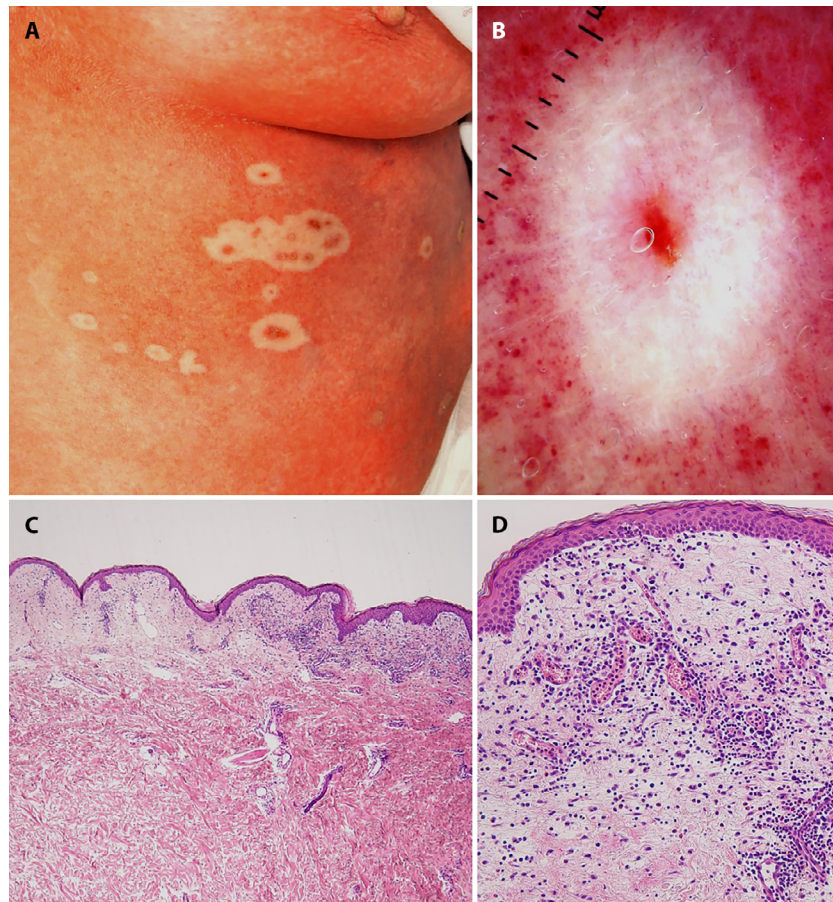


Figure 1. (A) Maculopapular erythematous rash over the trunk, which spared the herpes zoster lesions. (B) Central reddish crust surrounded by a white halo with shiny white lines, and perilesional erythema with linear and dotted vessels. (C) On the right side of the skin biopsy, a denser dermal inflammatory infiltrate corresponding to the affected skin as opposed to the spared skin on the left. (D) Dermal edema with perivascular and interstitial infiltrate of lymphocytes, plasma cells, and eosinophils.

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