

Vancomycin-induced drug rash with eosinophilia and systemic symptoms (DRESS)

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DESCRIPTION

A 52-year-old previously healthy man presented to the emergency department with pruritic rash, angioedema and fever of 39.3°C that started the day previously. Four weeks ago, he was treated for left fifth digit osteomyelitis with surgical debridement and initiated a 6-week course of vancomycin and ertapenem. Skin examination was notable for diffuse erythematous folliculocentric papules that initially appeared on his neck and spread down his torso to bilateral upper and lower extremities ([figure 1](#)). The next day, his rash continued to spread to bilateral palms and soles. The patient promptly halted antibiotics and was admitted to the intensive care unit due to significant facial swelling causing concern for impending airway compromise. Laboratory findings showed eosinophilia with 2026 eosinophils per microlitre (reference range, 50–350), elevated serum IgE of 151.9 units per millilitre (reference range, <100), atypical lymphocytes and acute kidney injury. Of note, this patient's aspartate aminotransferase (reference range, 0–40) and alanine aminotransferase (reference range, 0–41) remained within normal limits throughout his entire hospitalisation. There was no palpable lymphadenopathy. Blood cultures, antinuclear

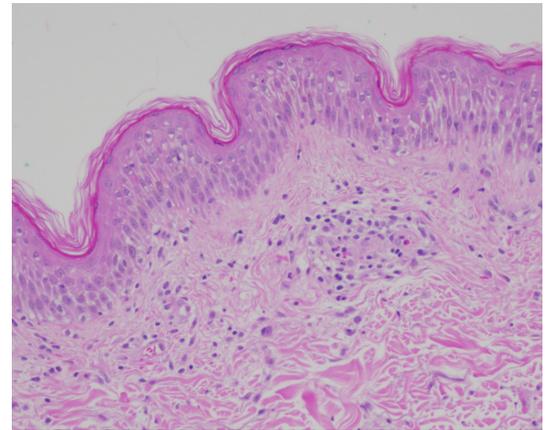


Figure 2 Skin biopsy showing spongiotic dermatitis with perivascular eosinophils.

antibody, HIV, HSV and hepatitis serologies were negative. Skin biopsy revealed spongiotic dermatitis with notable perivascular eosinophils ([figure 2](#)). The patient was diagnosed with drug rash with eosinophilia and systemic symptoms (DRESS) syndrome secondary to vancomycin. He had eight points on the scoring system developed by the European Registry of Severe Cutaneous Adverse Reactions, indicating a very high likelihood of DRESS syndrome. The patient was treated with 3 days of intravenous methylprednisolone which improved his facial swelling and rash. He was then discharged to complete a 6-week oral prednisone taper with complete resolution of DRESS.

DRESS syndrome is a rare but potentially lethal drug-induced hypersensitivity leading to multi-system compromise. Vancomycin is an uncommon cause of DRESS syndrome, but some patients may be genetically predisposed due to human leukocyte antigen (HLA) variations.¹ Vancomycin-induced DRESS tends to present with greater incidence of renal impairment compared with other drugs.² Hepatic compromise from vancomycin-induced DRESS can be variable, with some patients presenting with significant transaminitis.^{3–5} Other patients may present with only a mild elevation in liver function tests; these patients tend to be younger and healthier, like the one presented in this report.^{6,7} Previously published cases of vancomycin-induced DRESS report onset of symptoms after at least 3 weeks of antibiotic therapy.^{3–7} This suggests that patients who require greater duration of vancomycin therapy, such as those with endocarditis or osteomyelitis, are at greater risk of developing DRESS.



Figure 1 Diffuse erythematous morbilliform rash covering the patient's bilateral lower extremities.



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Images in...

Patient's perspective

After discharge, my rash and facial swelling began to steadily improve, resolving within two weeks. I followed up with dermatology, allergy, orthopaedics and internal medicine afterwards. With respect to the osteomyelitis, during my admission my antibiotics were switched to IV daptomycin and moxifloxacin. I completed these medications for two more weeks to complete the originally planned six-week course of antibiotics. By then, the degree of swelling and pain in my pinkie had improved significantly so I started physical therapy which is helping me regain my baseline level of function. It has been a pleasure working with the physicians here and I am especially grateful that we did not have to amputate the finger.

Learning points

- ▶ Drug rash with eosinophilia and systemic symptoms (DRESS) syndrome should be suspected in any patient with diffuse morbilliform rash covering greater than 50% of body surface area, especially 2–6 weeks after starting the offending medication.
- ▶ Although vancomycin is an uncommon cause of DRESS syndrome, patients who require prolonged (>3 weeks) vancomycin therapy may be at greater risk.
- ▶ DRESS syndrome can be diagnosed with European Registry of Severe Cutaneous Adverse Reactions criteria, which takes into account fever, eosinophilia, lymph node enlargement, atypical lymphocytes, organ involvement and rash characteristics.

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