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An Unusual Localised Reaction Associated With Vancomycin Therapy

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SUMMARY

Vancomycin has been documented to cause various adverse cutaneous reactions. We present a case report of a man, who developed a large localized erythematous plaque in his forearm following parenteral vancomycin therapy. We believe this to be the first reported case of such cutaneous reaction associated with parenteral vancomycin therapy.

KEY WORDS:
Vancomycin; parenteral therapy; adverse cutaneous reactions; localized erythematous plaque; irritant effect

CASE REPORT

Approved by the United States Food and Drug Administration (FDA) in 1958[1], vancomycin has been in clinical use for at least half a century. It is an antibiotic, belonging to the glycopeptide group with good bactericidal activity against Gram positive bacteria. The use of vancomycin has seen steady increase in recent years, largely due to the rise in the incidence of Methicillin Resistant Staphylococcus aureus (MRSA) infections. Not surprisingly, with a more widespread use, more vancomycin-related adverse reactions have been reported.

Among the various adverse cutaneous reactions attributed to vancomycin, the Red Man's Syndrome is probably one of the most well-known. Non-immunologic, direct histamine release drives the pathogenesis of this reaction and it usually occurs in association with a rapid vancomycin infusion[2,3].

Other less common but clinically significant cutaneous manifestations include bullous dermatosis, vasculitis, drug rash with eosinophilia and systemic symptoms (DRESS), Steven-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN).

Vancomycin has also been reported to cause phlebitis with parenteral therapy. Given the acid nature of vancomycin with its low pH, this effect is likely secondary to a direct irritant effect exerted by vancomycin running through the vasculature. In the extreme case, vancomycin can leak and extravasate to cause skin necrosis[4].

We would like to report a case of a localized erythematous plaque associated with parenteral vancomycin therapy.

A 82 year-old Chinese man was admitted from the community hospital for the problem of nosocomial pneumonia. He had just been discharged from the hospital a week earlier for the treatment of his right foot gangrene. His medical history was significant for hypertension, dyslipidaemia, non-insulin dependent diabetes mellitus (NIDDM) – with complications of nephropathy and severe peripheral vascular disease - and coronary artery disease with coronary by-pass grafting (CABG) surgery in 2008. He had no known drug allergies.

He had developed pneumonia in the community hospital and was commenced on intravenous piperacillin-tazobactam prior to his transfer to our hospital. As he was still febrile with no clinical improvement despite the intravenous piperacillin-tazobactam, his antibiotics was escalated to intravenous imipenem (250 mg every 6 hourly – renal-adjusted dose) as well as intravenous vancomycin.(1 g every morning – renal-adjusted dose).

On day 4 of antibiotics therapy, a large erythematous plaque with a well-demarcated border developed over his left forearm (Figure 1). It was non-blanchable, non-pruritic, non-tender and not warm to touch. This was not associated with skin necrosis. The distal pulses were still well felt. The location of the rash was just proximal to the intravenous cannula that was infusing vancomycin. No rash was seen in other parts of the body.

The intravenous cannula was re-sited to another arm and the speed of vancomycin infusion reduced by half. The rash improved clinically without any active intervention and resolved almost completely by day 11 of intravenous vancomycin therapy (Figure 2).

Given the locality of the rash, we postulate that the reaction was likely a localized irritant effect of parenteral vancomycin on the vascular bed leading to dermal edema, hence giving rise to the localized erythematous plaque that we see. The speed of the infusion had probably played a role in precipitating the rash. This was supported by the observation that by changing the site of infusion to another arm and slowing down the rate of infusion, a similar rash did not develop in that particular arm.

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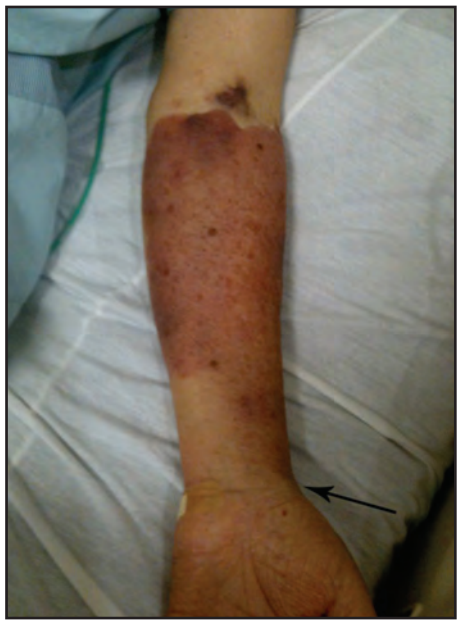

Fig. 1 : A large erythematous plaque with a well-defined border seen over the left forearm, involving close to its entire circumference. The arrow indicates the site of previous intravenous cannula.

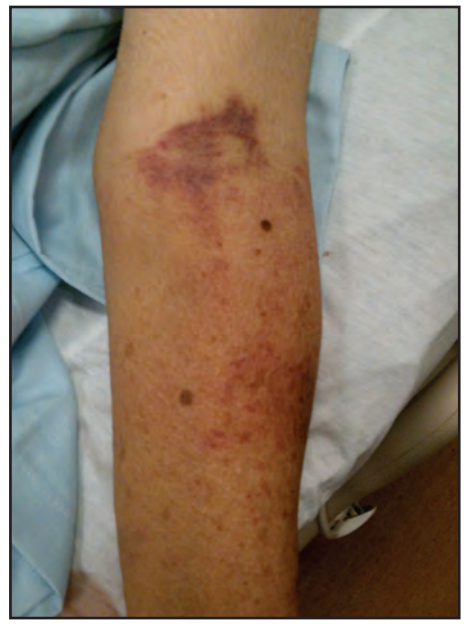

Fig. 2 : Significant improvement of the rash was seen after re-siting of the intravenous cannula. This picture was taken on Day 11 of antibiotic treatment.

To the best of our knowledge, we believe this to be the first reported case of such cutaneous reaction associated with parenteral vancomycin. We hope that this case report will create awareness among clinicians of such cutaneous reaction to vancomycin in the future.

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