CASE REPORT

A dirty cause of vancomycin-mediated Henoch-Schonlein purpura: oxygen tubing is not a foley

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SUMMARY

A 59-year-old male presented with methicillin-resistant *Staphylococcus aureus* bacteraemia from a prostatic abscess and was treated with vancomycin. Two weeks into his treatment course, he developed severe joint pains, abdominal pain with bloody, mucinous stools and a diffuse palpable purpuric rash on his extremities. Biopsy of the rash showed IgA immune-complex deposition consistent with Henoch-Schönlein purpura. After treatment with glucocorticoids, his symptoms resolved completely. Vancomycin is an extremely commonly used antibiotic with certain well-known adverse effects. Henoch-Schönlein purpura, a vasculitis involving abdominal pain, arthralgias and palpable purpura, is a much less common side effect, as seen in this patient. Given that vancomycin is widely used internationally, clinicians should be aware of the risks entailed by its use.

BACKGROUND

Henoch-Schönlein purpura (HSP) is a well-documented and potentially dangerous vasculitis affecting both children and adults with numerous triggers, including infections and medications. Vancomycin is a commonly used antibiotic worldwide that has been associated with few cases of HSP. Clinicians should be aware of the multiple risks and adverse effects associated with vancomycin therapy.

CASE PRESENTATION

A 59-year-old male presented to the emergency department with fever, abdominal pain, nausea and vomiting for 1 month. Symptoms initially started shortly after a suspected bug bite on his penis caused swelling and urinary retention. While helping clean a friend's garage, he came across oxygen tubing, which he subsequently used for intermittent self-catheterisations. On admission, he was found to have severe sepsis due to a prostatic abscess secondary to self-catheterisation, ultimately requiring abscess drainage due to persistent methicillin-resistant *Staphylococcus aureus* (MRSA) bacteraemia.

Over the following days, his fevers and bacteraemia resolved; however, approximately 1 week after abscess drainage, he developed new symptoms of bilateral ankle pain, lower extremity oedema and rash on bilateral legs. On exam, he had a purple, petechial rash over his inner thighs that progressed to palpable purpura on his buttocks and upper extremities with 2+ pitting oedema bilaterally (figure 1). His symptoms progressed over several

days to polyarticular joint pains of the wrists, ankles and elbows, as well as severe abdominal pain and bloody, mucousy bowel movements.

INVESTIGATIONS

Laboratory tests were significant for a white blood count of $3.89 \times 10^3/\text{cu mm}$ and a haemoglobin level of 9.6 g/dL (baseline 13–14). Renal function was normal, indicated by creatinine level of 0.8 mg/dL, and urine sediment had no abnormalities. A CT scan of his abdomen showed new, pronounced scattered submucosal bowel oedema (figure 2). Subsequent skin biopsy showed leukocytoclastic vasculitis with IgA deposits in dermal small vessels confirming HSP.

TREATMENT

Due to the severity of his symptoms, prednisone 60 mg daily was started. Within 24 hours, his abdominal pain and GI bleeding resolved, and his joint pains improved. For treatment of this patient's MRSA bacteraemia, vancomycin was switched to daptomycin after the initial appearance of the rash.

OUTCOME AND FOLLOW-UP

Following diagnosis and treatment, the patient's renal function remained preserved, and urine sediment remained without abnormalities. After 6 weeks of prednisone therapy, his symptoms of HSP had fully resolved.

DISCUSSION

HSP is a relatively rare disorder in children with 20 cases per 100 000 patients per year and is even more rare in adults at two cases per 100 000 patients per year with a median age of 48 years.^{1 2} This patient developed the classic triad of HSP: abdominal pain, arthralgia and palpable purpura. Systemic inflammatory response syndrome or sepsis may also be present. Gastrointestinal manifestations range from oedema, diarrhoea and bloody, mucousy stool to intussusception or ischaemia. In addition to palpable purpura and arthralgia, glomerulonephritis may also result, occasionally precipitating end-stage renal disease, especially in adults.^{3 4} It is also infrequently known to lead to scrotal, nervous system and ocular involvement.^{5–7}

Common laboratory findings include elevated IgA levels, leukocytosis, occasionally eosinophilia and anaemia. Biopsies of skin lesions show IgA and C3 deposition with vasculitis of affected organs.^{3 8}

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Figure 1 Palpable purpura and ankle oedema are evident on examination.

The pathophysiology is not fully understood but is thought to involve IgA immune-complex deposition vasculitis of affected organs, which results in the signs and symptoms mentioned.^{3 8} Nearly 40% of cases are thought to be triggered by preceding infection, medications, food, insect bites or immunisations. Implicated infections include group A streptococcus, mycoplasma, Epstein-Barr virus, varicella, parvovirus B19, campylobacter, cholera, typhoid, measles and yellow fever.³ MRSA infection has been reported to cause HSP in nearly a dozen case

reports^{9 10}; however, this patient had MRSA bacteraemia for several weeks prior to presentation, and negative blood cultures were obtained several days prior to the onset of HSP, making the diagnosis of drug-induced HSP more likely.

Commonly implicated drugs include ACE inhibitors, carbamazepine, carbidopa, ciprofloxacin, clarithromycin, cocaine and cytarabine.³ Few published case reports of vancomycin-mediated HSP exist.^{11–13} Patients also have recurrent HSP after recovery on vancomycin re-exposure, confirming vancomycin as the likely causative agent.^{11 12} HSP is also reported to have occurred 2 weeks after vancomycin exposure, consistent with both this patient's clinical course and well-known physiology of adverse drug reactions.^{11 13 14} This case contributes to a growing body of evidence suggesting a correlation; however, further study is required to determine true causation. Given the current data, it is most likely that vancomycin therapy triggered HSP in our patient.

HSP is usually a self-limited process that resolves without treatment; however, in patients with severe disease, prednisone at 1 mg/kg/day may be used. For refractory cases or renal involvement, plasmapheresis with cytotoxic therapy is often used.³ Well known adverse events associated with vancomycin include Stevens-Johnson syndrome and Red Man syndrome; however, clinicians should also be aware that HSP may be a rare complication of vancomycin therapy. Abdominal pain, arthralgia and palpable purpura in a patient receiving vancomycin, a commonly used antibiotic worldwide, should raise concern for HSP.

Learning points

- ▶ Henoch-Schönlein purpura (HSP) is a lesser known adverse effect of vancomycin therapy in some patients.
- ▶ The classic triad of HSP includes abdominal pain, arthralgias and palpable purpura.
- ▶ Adults are at increased risk of developing permanent renal dysfunction from HSP.
- ▶ Often self-limited course though severe cases may require prednisone, plasmapheresis or cytotoxic therapy.

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Competing interests None declared.

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Figure 2 CT abdomen showing new, pronounced scattered submucosal bowel oedema.

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