BMJ Case Reports

Rare disease

Recurrent cutaneous abscesses caused by PVL-MRSA

Marilina Antonelou,[1] Jonathan Knowles,[2] Shahab Siddiqi,[2] Parveen Sharma[2]

[1]Department of General Surgery/Care of the Elderly/Intensive Care and Urology, Barnet and Chase Farm Hospital, London, UK;
[2]Department of Colorectal Surgery, Chase Farm Hospital, London, UK

Correspondence to Dr Marilina Antonelou, marilina@doctors.org.uk

Summary

A 41-year-old female presented with a superficial buttock abscess. In the preceding 6 months she had four other abscesses at different anatomical sites. Screening for diabetes and immunocompromise was negative. Review of microbiology revealed Methicillin resistant *Staphylococcus aureus* harbouring Panton-Valentine leukocidin (PVL) genes. PVL syndrome is an emerging disorder associated with recurrent necrotic skin lesions in the young, otherwise healthy population.

BACKGROUND

PVL is a cytotoxin produced by fewer than 5% Staphylococcal strains.[1] It causes membrane pore formation and the lysis of phagocytic cells.[2] PVL strains are leading to increased virulence and the emergence of community acquired Methicillin resistant *Staphylococcus aureus* (MRSA). The presentation is typically cutaneous infections such as furunculosis.[3]

Over the last decade, new strains of MRSA have spread worldwide. Clones of PVL-MRSA from North America identified in 2003 have now been detected in Europe and Asia.[4]

CASE PRESENTATION

A 41-year-old, Caucasian female presented with a 3-day history of left buttock swelling and pain. In the preceding 6 months following a visit to Delhi, she had developed acute abscesses in the groin, vulva and axilla on separate occasions. There was no history of diabetes or intravenous drug use.

Examination revealed a typical erythematous, fluctuant, buttock abscess. An uncomplicated incision and drainage procedure was performed.

INVESTIGATIONS

Fasting glucose and immunodeficiency screen was negative. Review of the microbiology demonstrated MRSA in the previous and current pus samples as well as skin and mucosal screening swabs. On discussion with the microbiologist, the patient was thought to demonstrate features of 'PVL syndrome'. A nasal swab was repeated and the genes encoding PVL (*luk*S-PV and *luk*F-PV) were detected by PCR.

DIFFERENTIAL DIAGNOSIS

Recurrent cutaneous abscesses can be a first presentation of diabetes mellitus. They may also represent immune deficiency due to underlying lymphoma, leukaemia, solid malignancy or infectious causes, for example, HIV and tuberculosis. Primary immune deficiencies tend to present at a younger age, for example, hyper-IgE syndrome and chronic granulomatous disease.[5]

TREATMENT

Eradication of MRSA was commenced on discharge: 14 days of linezolid and decolonisation protocol of 5-day topical mupirocin 2% nasal ointment and chlorhexidine 4% scrub.

OUTCOME AND FOLLOW-UP

Posteradication swabs were negative. Contacts were risk assessed and screened as appropriate.

DISCUSSION

'PVL syndrome' has been proposed to describe the clinical presentation manifesting mainly as skin and soft tissue infections in immunocompetent, young age adults.[6 7] These include cellulitis, furunculosis and cutaneous abscesses.[4] Less commonly impetigo and finger-pulp infection can occur.[8]

Deep-seated infections such as necrotising pneumonia and meningitis with cerebral abscesses, via metastatic spread from cutaneous site have also been described.[9] A case series of disseminated invasive osteomyelitis associated with deep venous thrombosis has been reported in the paediatric and young adult population.[7] In these cases a greater systemic inflammatory response, in the form of myositis and pyomyositis was observed, compared with osteomyelitis caused by PVL negative *Staphylococcus aureus*.[10] PVL toxins have also been identified in 'toxic shock syndrome like illness.[11]

Virulence factors such as PVL genes are leading to more community acquired infections of both MRSA and methicillin sensitive *S aureus*.[12] With our increasing ability to identify strains and virulence markers, we are likely to identify further bacterial disease patterns. Awareness of these conditions is important for both adequate treatment and reducing spread.

Learning points

- New bacterial strains such as PVL-MRSA, are causing patterns of community acquired infection and may become more commonplace.
- Recurrent superficial infections can represent an underlying immunosuppression or unusual organism.
- Culture and sensitivity results should be checked, after patient discharge if necessary, to allow appropriate eradication.

Competing interests None.

Patient consent Obtained.

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