

CASE REPORT

Something fishy: an unusual *Erysipelothrix rhusiopathiae* infection in an immunocompromised individual

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SUMMARY

A 39-year-old man with a history of Crohn's disease presented to the emergency department with a 12-h history of worsening febrile illness. He deteriorated rapidly with progression to sepsis and was admitted to the intensive care unit. Initial treatment comprised broad spectrum antibiotics and inotropic support resulting in rapid improvement. With the immunocompromised state of the patient, and multiple blood cultures revealing *Erysipelothrix rhusiopathiae*, a detailed history disclosed a recent injury sustained from a fishing wire as the probable source of an infection. Treatment was narrowed to target the identified pathogen, the patient made a full recovery, and was counselled to be more cautious in future fishing activities.

BACKGROUND

This case highlights the unusual sources and varieties of infection that immunocompromised patients should be made aware of; and the importance of good history taking to elucidate the source of infection.

CASE PRESENTATION

A 39-year-old medical scientist presented to our emergency department with a sudden onset, rapidly worsening febrile illness over 12 h. He complained of chest pain radiating to his right shoulder, as well as a generalised headache with no other features of meningism. He denied coryzal symptoms, abdominal pain, urinary symptoms or change in bowel habit.

His initial observations were a temperature of 39.7°C, heart rate 130 bpm, and blood pressure 90 mm Hg systolic despite aggressive fluid resuscitation. On auscultation of the chest there were right lower zone crepitations, but no significant abdominal findings. With continuing deterioration and progression to sepsis, he was transferred to the intensive care unit for inotropic support and broad spectrum antibiotics as well as oseltamivir to cover influenza.

The patient's medical history was notable for ileocolonic Crohn's disease, initially diagnosed in 1993 and ultimately a right hemicolectomy after failing to respond adequately to medical therapy. He had a complex clinical course with severe perineal disease complicated by a perianal abscess requiring drainage in 1999. This was followed by an ileal resection for stricturing disease in 2006. His severe refractory disease was managed with

increasing doses of azathioprine while also requiring ongoing corticosteroid therapy. The monoclonal antibody against tumour necrosis factor (TNF)- α , adalimumab, had been started 6 months prior to this presentation and with this therapy he had finally achieved excellent Crohn's disease control and was enjoying a good quality of life.

INVESTIGATIONS

A full septic screen was performed to investigate the source of infection. Minor right lower zone chest changes, and his history of complex Crohn's disease, prompted a CT chest, abdomen and pelvis which revealed bibasal lung consolidation, consistent with bilateral pneumonia.

DIFFERENTIAL DIAGNOSIS

The differential diagnoses for this rapidly progressive illness in an immunocompromised patient included *Staphylococcus pneumoniae*, standard community-acquired pneumonia, influenza and opportunistic infections such as *Pneumocystis jiroveci*.

TREATMENT

Blood cultures were positive on day 3 of admission from the first four bottles taken, both anaerobic and aerobic. The species was subsequently identified as *Erysipelothrix rhusiopathiae* and treatment was then narrowed to intravenous benzylpenicillin.

OUTCOME AND FOLLOW-UP

The patient improved rapidly on appropriate antibiotics with successful withdrawal of inotropes, normalisation of temperature and improvement in biochemical markers of infection. A transoesophageal echocardiogram showed no evidence of infective endocarditis. Adalimumab was withheld until full recovery.

On careful questioning he was found to be an avid social fisherman, and had recently cut his hand on fishing wire. This gave as a highly probable source of infection and good grounds to counsel him about taking great care to avoid such an event in the future, particularly given his ongoing immunosuppressed status.

DISCUSSION

E rhusiopathiae is a non-spore forming Gram-positive rod, that is, generally sensitive to penicillin. It predominantly causes disease in animals, particularly turkeys, pigs, fish and reptiles. Individuals commonly affected are butchers, fisheries workers,

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abattoir workers and veterinarians. The most common disease in humans is a cutaneous form known as erysipeloid which can be mild and localised, but a severe diffuse form also exists.¹ It is rarely associated with sepsis, but when severe disease does occur there is a significant risk of endocarditis.²⁻³ A case of pneumonia secondary to *Erysipelothrix* has also been reported⁴ as has infection in an immunocompromised individual,⁵ however neither of these are classic features.

Learning points

- ▶ Advise severely immunocompromised patients (ICPs) that they are susceptible to unusual varieties and sources of infection, not just the common droplet, hand/mouth routes and need to take special care.
- ▶ Infections can progress very rapidly so ICPs should seek medical attention at an earlier stage in their illness than would normally be the case.
- ▶ Medical staff need to be cognisant of the potential rapidity of progression in ICPs and act accordingly.
- ▶ Careful and exploratory history taking from ICPs will assist in identifying likely types and sources of unusual and life-threatening infections.

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