

# Probable *Hafnia alvei* and *Delftia acidovorans* discitis and vertebral osteomyelitis in a person who injects drugs

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## Background

A 40 y/o male was admitted with subacute GI obstruction related to duodenal and oesophageal strictures from adhesions post-pancreatitis. Past medical history was significant for pancreatogenic diabetes, traumatic brain injury, untreated Hepatitis C, active alcohol excess and intravenous drug use. During this admission he underwent oesophageal dilatation and supplemental TPN feeding. He was also treated for recurrent aspiration pneumonias due to post-prandial vomiting from oesophageal strictures.

## Bloodstream Infection

Day 9 of admission a PICC line was inserted for TPN feeding. Day 25 of admission he developed a febrile illness, and PICC cultures grew four *Candida sp.* (*albicans*, *tropicalis*, *dubliniensis* and *glabrata*), a vancomycin resistant *Enterococcus faecium* (VRE), and *Hafnia alvei*. The PICC line was removed and the tip cultures grew *C. albicans*, *C. tropicalis* and *Acinetobacter sp. (non-baumannii)*. Anidulafungin was commenced, and piperacillin-tazobactam was continued for aspiration pneumonia and *H. alvei* treatment. The decision was made not to treat the VRE.

## Discitis and Osteomyelitis

The patient was managed with peripheral lines due to suspicion of PICC access for recreational drug use. Day 37 post admission he developed a new febrile illness with associated back pain. Pip-tazobactam was stopped and meropenem 1g TDS IV was started. Peripheral blood cultures were positive for *H. alvei* and *Delftia acidovorans*. MRI spine revealed a C5/C6 discitis with a small epidural collection without an associated osteomyelitis. Given onset of back pain coincided with these positive cultures we assume that one or both of these is the responsible pathogen.

Two weeks later a repeat MRI revealed new extensive osteomyelitis in the vertebral bodies of C5 and C6. Meropenem was increased to 2g TDS IV and daptomycin added to cover the VRE identified 1 month earlier. Unfortunately, the patient's condition deteriorated despite these changes and the decision was made to move to comfort care on day 61 of admission.



Fig. 1 C5/C6 discitis on MRI STIR sequence



Fig.2 Two weeks later discitis plus new osteomyelitis on MRI STIR sequence

## Discussion

*H. alvei* is an enteric Gram-negative bacillus found in soil and sewage. *D. acidovorans* is an environmental Gram negative bacillus found in soil, water and the hospital environment. Both are usually non-pathogenic organisms and an uncommon cause of opportunistic infections in immunocompromised patients. There are rare cases of infection in immunocompetent individuals. Our patient may have been at increased risk due to Hepatitis C infection and malnutrition.

The patient denied drug use throughout his hospital stay, but there was evidence of drug intoxication during his admission. We believe that these GNBs were able to cause infection in our patient due to non-sterile injection practices, with the possibility that he had buried his drug cache, or that it had otherwise become contaminated with soil.

This case highlights the risk of unsafe injecting practices, and the extra challenges that injecting drug use adds to patient care.