Spondylodiscitis concurrent with infectious aortic aneurysm caused by Candida tropicalis: a case report

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ABSTRACT

We report a case of spondylodiscitis concurrent with infectious aortic aneurysm caused by Candida tropicalis in a 79-year-old immunocompromised man. The patient underwent percutaneous drainage of the abscess and endoluminal exclusion of the aneurysm using a bifurcated stent graft. Micafungin was administered intravenously for 8 weeks, followed by a prolonged course of oral fluconazole. At the one-year follow-up, no recurrence was noted, and the patient could walk with a cane without low back pain.

Key words: aneurysm, infected; candidiasis; discitis; immunocompromised host; minimally invasive surgical procedures

INTRODUCTION

Spondylodiscitis concurrent with infectious aortic aneurysm is potentially fatal because of the risk of aneurysm rupture and septic complications. This study reports a case of spondylodiscitis concurrent with infectious aortic aneurysm caused by Candida tropicalis in a 79-year-old man.

CASE REPORT

In January 2012, a 79-year-old man with a history of chronic heart failure secondary to atrial fibrillation presented with acute low back pain. One year earlier, he was hospitalised for idiopathic interstitial pneumonia, which was resolved with prednisolone (5 mg/day) and cyclosporin (100 mg/day). He continued to receive prophylactic trimethoprim/sulfamethoxazole for pneumonia caused by Pneumocystis jiroveci. Six months later, he developed central venous catheter-related sepsis caused by C. tropicalis. Computed tomography (CT) detected a 2.9-cm-diameter abdominal aortic aneurysm (Fig. a).

Physical examination showed severe stiffness of the spine and tenderness at L3–4. Neurological findings were normal. His temperature was 36.7°C, blood pressure was 120/63 mm Hg, and heart rate
was 74 beats/min. His white blood cell count was 8 \times 10^9/l, C-reactive protein level was 1.1 mg/dl, and erythrocyte sedimentation rate was 51 mm/h. Blood culture results were negative.

Radiographs showed a narrowed disc space at L3–4, with destruction of the adjacent vertebral endplates (Fig. b). Gadolinium-enhanced magnetic resonance imaging revealed a hyperintense signal over the L3–L4 vertebral bodies and abscess formation in the L3–L4 intervertebral disc space adjacent to the aneurysm; (d) contrast-enhanced computed tomography showing destruction of the L3–L4 vertebral bodies and a 5.5-cm-diameter multilobulated infrarenal abdominal aortic aneurysm; and (e) 3-dimensional computed tomography showing the spatial relationship between the aneurysm and the vertebral bodies.

The patient underwent image-guided needle drainage of the abscess, followed by endovascular repair of the aortic aneurysm by a cardiologist using a bifurcated endovascular stent. Cefazolin (2 g/day) was administered. Six days after the drainage, cultures of the abscess yielded \textit{C. tropicalis}, and intravenous micafungin (150 mg/day) was initiated for 8 weeks, followed by a prolonged course of oral fluconazole (200 mg/day).

Two weeks later, physiotherapy using a thoracolumbar orthosis was started. The patient could walk with a cane 6 weeks later, and was discharged at 5 months. At the one-year follow-up, the patient was pain-free and had no evidence of infection in laboratory tests or on radiographs. One month after the 12-month follow-up, the patient died of sepsis from a urinary tract infection caused by \textit{Escherichia coli}.

**DISCUSSION**

In a review of 70 cases of spondylodiscitis concurrent...
with infectious aneurysm, symptoms including back pain, fever, and gastrointestinal abnormality are nonspecific. CT features suggestive of infectious aneurysm include a saccular or multilobulated aneurysm, para-aortic soft-tissue mass or stranding, perivascular fluid collection, contiguous spondylodiscitis, or rapid expansion of a pre-existing aneurysm.2–4

In our patient, the origin of infection may have been either the aorta or the spine. When the infection begins in the spine, the accumulation of exudate in the disc or vertebral body progressively destroys the bone. When the vertebral body collapses, bony sequestra or pus may be squeezed out into the wall of the aorta, which lies adjacent to the anterior surface of the vertebra. When aortic infection precedes the spinal infection, it is associated with septicemia, which is more common in an atherosclerotic or aneurysmally dilated vessel.1 Our patient had a pre-existing abdominal aortic aneurysm and a history of candidaemia, suggesting that the infectious aneurysm may have preceded the spinal lesion.

Outcome is poor when treated with antibiotics alone because of the risk of uncontrollable sepsis or rupture of the aneurysm.1,5 Open surgery involving resection of the infected aorta, followed by revascularisation through in situ or extra-anatomical bypasses, and debridement of vertebral bones, with or without bone grafts carries high risk and mortality.6 Our patient achieved a favourable outcome after a less invasive procedure comprising percutaneous drainage of the intervertebral abscess and endovascular stent grafting; this approach may be suitable for elderly people with multimorbidities who cannot tolerate open surgery.7,8 Although placement of a foreign body in an infected field remains controversial, the early mortality associated with endovascular repair is lower than that associated with conventional surgery.9 Nonetheless, the long-term outcome of this less invasive treatment has yet to be established.10

The most common pathogen responsible for concurrent spondylitis and infectious aneurysm is Salmonella species, followed by gram-negative bacilli, mycobacteria, gram-positive cocci, mixed bacteria, and fungi.1 Candida spondylodiscitis is a rare complication of systemic candidaemia and is thought to spread haematogenously.11 About 60 cases of candida spondylodiscitis have been reported.12 The interval between candidaemia and onset of spondylodiscitis can range from a few days to more than one year.11,13

Risk factors for candidiasis and candida spondylodiscitis include receipt of broad-spectrum antibiotics, immunocompromised status, and vascular causes, such as the presence of indwelling central venous catheters and drug injection.14,15 Our patient was immunocompromised and had received broad-spectrum antibiotics. It is important to obtain a complete set of cultures, including fungi, as part of the diagnostic work-up. If misdiagnosed, the outcome can potentially be lethal owing to the vascular problems or uncontrollable infection.

DISCLOSURE

No conflicts of interest were declared by the authors.

REFERENCES