CLINICAL IMAGE

Atypical presentation of cardiac device–related infectious endocarditis and complicated follow-up

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Infectious endocarditis (IE) is a potentially fatal disease that is difficult to diagnose. Patients often present with unspecific signs and symptoms, which delays diagnosis and proper treatment. The incidence of IE in patients with cardiac implantable electronic devices is estimated at 1% to 2%.[1] Cardiac device–related infections vary from pocket infection and lead-dependent IE (LDIE) to sepsis.

A 51-year-old man presented to the Department of Neurology with recurrent lower back pain, which started suddenly 2 months earlier, and a considerable weight loss and confluent sweats during 6 months prior to admission. Magnetic resonance imaging (MRI) of the lumbar spine showed inflammation of L4/L5 intervertebral disc and L4 and L5 vertebral bodies (FIGURE 1A), and chest X-ray demonstrated bilateral pneumonia. His medical history included previous inferior wall myocardial infarction treated with coronary artery bypass grafting, dual chamber implantable cardioverter-defibrillator (ICD) implanted as secondary prophylaxis, arterial hypertension, and type 2 diabetes. Empirical antibiotic treatment was employed (ceftriaxone, rifampicin, and vancomycin). Echocardiography performed during hospitalization suggested vegetations on the tricuspid valve. The patient was transferred to the Department of Cardiology with suspicion of LDIE.

On admission, he had no fever, inflammatory parameters were as follows: C-reactive protein, 10.30 mg/l (mild elevation); procalcitonin, 0.06 ng/ml (within normal limits). The suspicion of LDIE was confirmed using transthoracic echocardiography, which demonstrated vegetations on

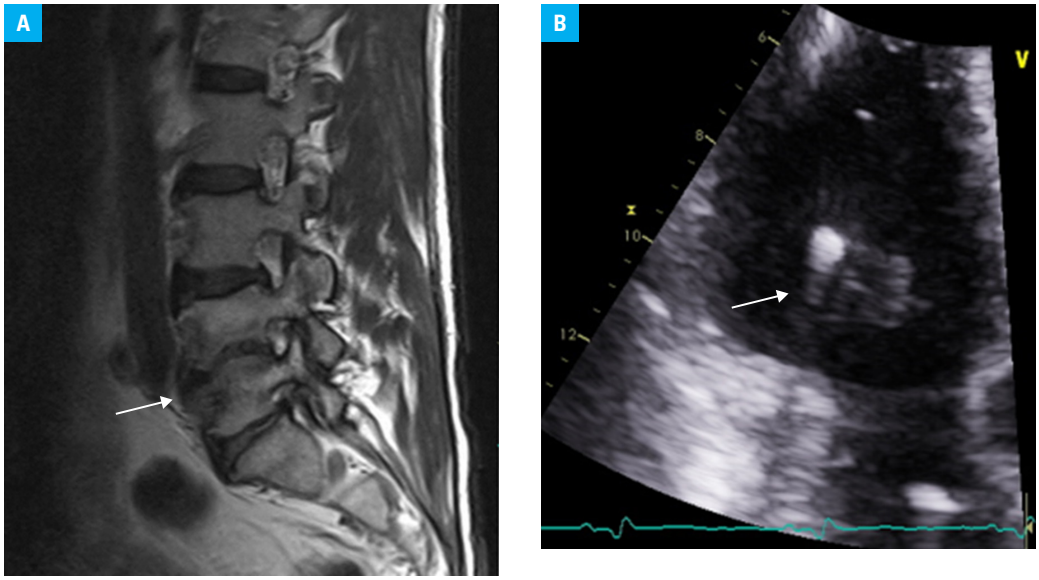

FIGURE 1 **A** – magnetic resonance image of the spine: inflammatory lesions of the intervertebral disc and L4/L5 vertebral bodies (arrow); **B** – transthoracic echocardiography: vegetations on right ventricular/high voltage (RV/HV) and atrial leads (arrows)

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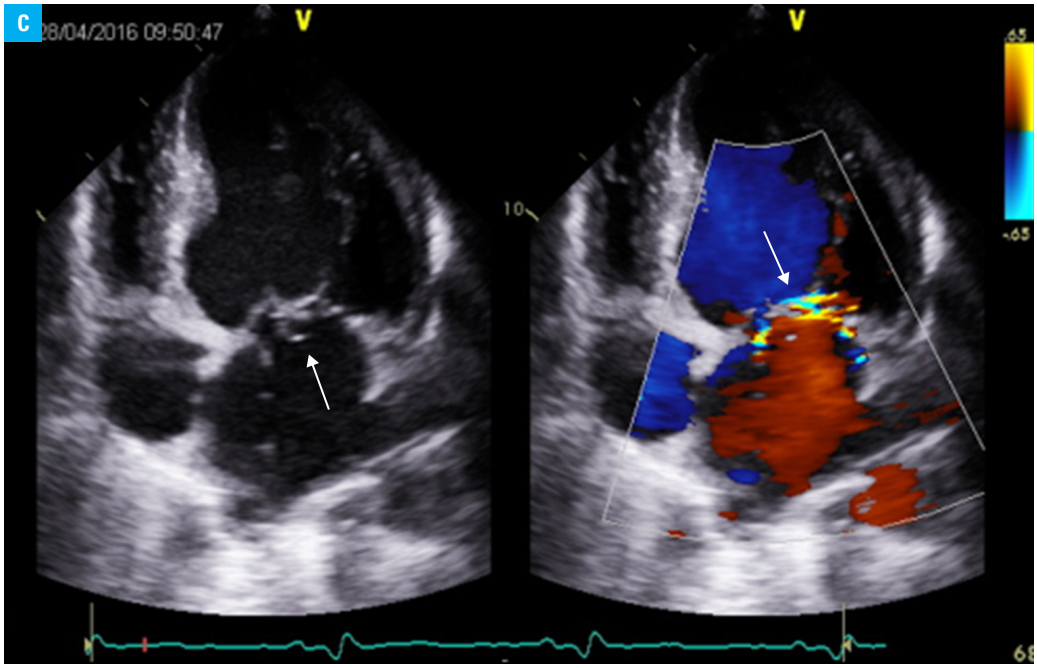
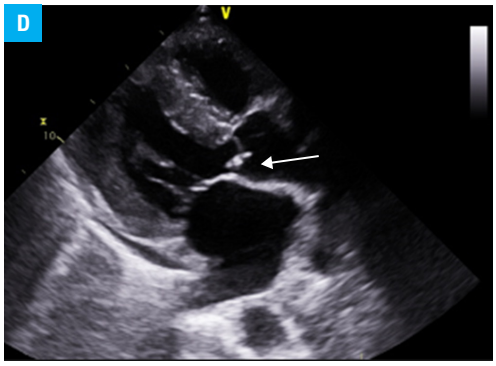
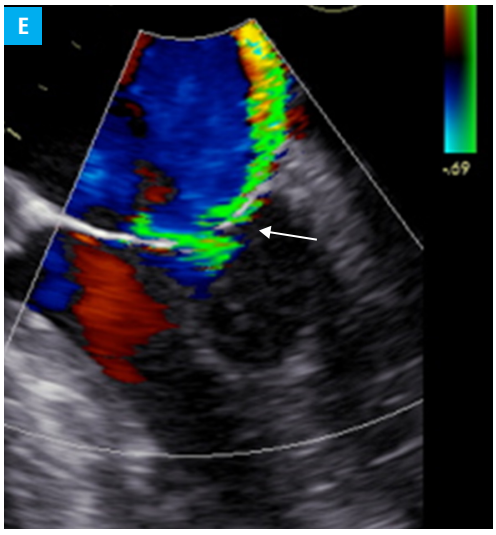
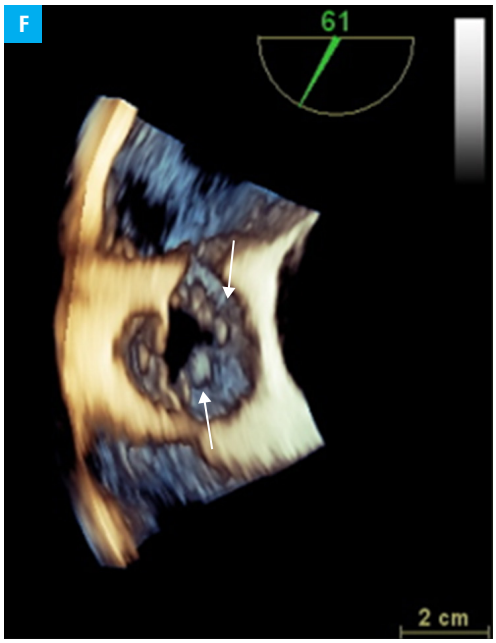
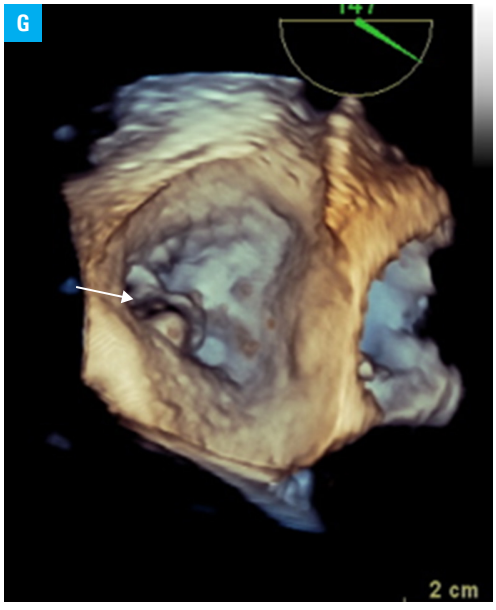
FIGURE 1
C – transthoracic echocardiography: unusual mitral regurgitation jet and lesion resembling empty mitral leaflet abscess (arrows); **D** – transthoracic echocardiography: suspicious lesion on the aortic leaflet (arrow); **E** – transesophageal echocardiography: unusual mitral regurgitation jet (double eccentric jet) (arrow); **F** – 3-dimensional transesophageal echocardiography: vegetations on the aortic leaflets (arrows); **G** – 3-dimensional transesophageal echocardiography, empty mitral leaflet abscess (posterior leaflet) (arrows)











both leads (FIGURE 1B), an unusual mitral regurgitation jet (FIGURE 1C) and lesions on the aortic valve (FIGURE 1D), which led to suspicion of bilateral IE. Consequently, transesophageal echocardiography was performed, which confirmed involvement of both mitral and aortic valves (FIGURE 1E–1G). The patient was treated with ICD removal and lead extraction. Blood and lead cultures showed negative results and the initial antibiotic treatment was continued for 2 months. Positron emission tomography performed to follow the spinal abnormalities was inconclusive. Thus, MRI was used in the follow-up as it provided better visualization of the lesions. It showed abscesses of the spleen and lumbar spine. The case was consulted by general surgeons, who excluded surgery. Follow-up echocardiography showed a significant insufficiency of both mitral and aortic valves. The patient was referred by cardiac surgeons for conservative treatment until IE has healed. Repeated follow-up MRI showed gradually diminishing inflammatory lesions in the spleen and lumbar spine. At present, nearly 2 years since the initial diagnosis, the patient is still alive and asymptomatic. He was qualified for elective mitral valve replacement and ICD implantation.

Lower back pain is a rare presenting complaint of IE, though not unexpected. Cases of such patients have been reported[2,3] but not in LDIE. Back pain is attributed mainly to osteomyelitis, but the relationship between IE and osteomyelitis is uncertain.[2,3] We described a case of a patient with lower back pain as presenting complaint of IE with ICD lead involvement, which was caused by accompanying osteomyelitis, likely secondary to valvular IE. We also showed that a favorable long-term outcome is possible, even with severe complications, provided the patient is optimally treated during hospitalization and closely followed at an outpatient clinic.

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