Fungal endocarditis of native valves

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DESCRIPTION

A 49-year-old man with history of hepatitis C and former intravenous drug addict under methadone therapy was hospitalised in an intensive care unit after sustaining severe burn injuries to the face, airway and left hand. During hospitalisation, he developed ventilator-associated pneumonia with *Klebsiella pneumoniae* bacteraemia. Antibiotic therapy was delivered with amoxicillin/clavulanic acid and the infection resolved, but on the 26th day of hospitalisation fever returned, along with new onset increase in inflammatory markers. Four blood cultures were harvested from two distinct venous punctures and a fifth was collected from a central venous line, which was later replaced. All the blood cultures were positive for *Candida tropicalis* and the patient was treated with a 3-week course of micafungin for candidaemia. The patient was discharged home on the 63rd day of hospitalisation after two sets of four negative control blood cultures.

One month later, he returned to the Emergency Department complaining of a 2-week history of asthenia, pleuritic chest pain and fever. At physical examination, he was emaciated and with poor general condition. His blood pressure was 100/55 mm Hg, heart rate was 75 beats per minute and temperature was 102.2°F. His lung and heart sounds were normal and there was no peripheral oedema or cutaneous lesions. His ECG was normal and blood tests showed an increased white cell count (12500 U/L) along with an elevated C reactive protein (1661 mg/dL). The chest X-ray was also normal, but the transthoracic echocardiogram showed evidence of a large mass in the aortic valve, with moderate

Video 2 Transoesophageal echocardiogram. In the aortic root posterior region, a hypoechoic space is seen with flow in the interior communicating with the left ventricular outflow tract, compatible with a pseudoaneurysm of the aortic root extending to the mitral-aortic fibrosa. Poor coaptation of the mitral valve leaflets resulting in moderate to severe insufficiency.

regurgitation and an abscess adjacent to the valsalva sinus. Blood cultures were collected, and the patient was empirically started on vancomycin and gentamicin. On the first day of hospitalisation, *C. tropicalis* was isolated in blood cultures and a transoesophageal echocardiogram was performed (videos 1 and 2). The diagnosis of fungal endocarditis was made. The patient was started on liposomal amphotericin B and underwent cardiac surgery, during which direct involvement of both the aortic and mitral valves by the infectious process was noticed. Both valves were replaced by mechanical prosthesis and amphotericin was continued for 8 weeks after surgery. Control blood cultures were

Video 1 Transoesophageal echocardiogram. Thickened aortic valve, with destruction of the cusps and a large adherent vegetation protruding towards the left ventricular outflow tract; severe aortic insufficiency.

Learning points

- ▶ Fungal endocarditis is a rare disease (less than 2% of all cases of infectious endocarditis), with a mortality rate of about 50%.
- ▶ Risk factors have changed dramatically in the last decades and include prosthetic valves, long-term vascular lines, broad-spectrum antibiotic exposure, immunocompromised patients, complex non-cardiac surgery and intravenous drug users (much less affected these days). Our patient had a previous fungaemia in the presence of a central venous catheter, which is in agreement with the described risk factors.
- ▶ Treatment should be combined: antifungal therapy for a minimum of 6 weeks and surgical replacement of the infected valve, if possible.

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negative and a repeat echocardiography showed absence of vegetations. Mycological examination of the valves was also positive for *C. tropicalis*.

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