Annular abscesses are serious complications of infectious native and prosthetic valve endocarditis. Virulent gram-positive cocci, *S. Aureus* in particular, have been the most commonly isolated organisms from patients with annular abscess and pseudo-aneurysm/fistula (1). *Stenotrophomonas maltophilia* is, on the other hand, a ubiquitous, gram-negative organism that causes nosocomial outbreaks of infections, mostly pneumonia (2, 3). People often come in contact with *Stenotrophomonas maltophilia* through environmental water sources, including hospital tap water or faucets (3). It is an uncommon cause of infectious endocarditis with annular abscess; rare cases have been reported in drug addicts or following valve replacement (2).

**Case report**

A 38-year-old man with fever, leukocytosis and dyspnea was referred to our unit for surgery due to aortic subannular abscess one year after aortic valve replacement with bileaflet mechanical prosthesis. His transthoracic and transoesophageal echocardiography clearly demonstrated the pathology and the mobile septations within (Fig. 1A and B). Long-axis views also demonstrated a communication with the left ventricular cavity in systole (Fig. 2). He was empirically given a combination of intravenous vancomycin and gentamicine following hospitalization and serial blood cultures. The patient was transferred to surgery the next day and a complete aortic root replacement with 21 mm The Medtronic Freestyle® aortic root bioprosthesis (Medtronic Inc, Minneapolis, MN) was performed with resternotomy and systemic hypothermia. The abscess cavity was opened and cleaned using iodine solution. As the aortic annulus was destroyed by the inflammatory process, full root replacement with re-implantation of the coronary ostia using the button technique had to be performed. The graft was sutured to the left ventricular outflow tract with interrupted 4-0 polypropylene. Additional reconstruction was not required for the left ventricular outflow tract. Interrupted sutures were tied over a strip of pericardium to prevent leakage. 5-0 polypropylene running sutures were used for implantation of the coronary ostia. The patient was weaned off cardiopulmonary bypass with moderate-dose dopamine and had an uneventful postoperative course. His blood and intra-operative tissue cultures revealed *Stenotrophomonas (Xanthomonas) Maltophilia* susceptible to trimethoprim-sulfamethoxazole (TMP-SMZ) and ticarcillin/clavulanic acid (TC-CL). His antibiotherapy was switched to intravenous 160/800 mg of TMP-SMZ/Bactrim® BID and 3.1 g of TC-CL/Timentin® qid for four weeks. Fever and leukocytosis were abolished in the immediate postoperative period with rapid improvement of his general health status. The patient was discharged from the hospital on postoperative day 42 without complications.

**Discussion**

Annular abscesses are serious complications of infectious native and prosthetic valve endocarditis. Infection of the aortic valve results in a regurgitating jet that presumably strikes this subaortic fibrous zone and produces a secondary site of infection. Infection of this area then
leads to the formation of subaortic abscess or pseudoaneurysm of the left ventricular outflow tract. This infected zone of mitral-aortic intervalvular fibrosa or subaortic aneurysm can subsequently rupture into the left atrium with systolic ejection of blood from the left ventricular outflow tract to the left atrium. Radical debridement with a margin of healthy tissue to eradicate intracardiac foci of infection remains the primary aim of surgery for prosthetic valve endocarditis, enabling secure fixation of the new prosthesis, avoiding recurrent or residual infection, periprosthetic leak/dehiscence, or subannular aneurysm formation (4). Virulent gram-positive cocci have been the most commonly isolated organisms from patients with annular abscess and pseudoaneurysm/fistula complicating infectious endocarditis (1). *Stenotrophomonas maltophilia* is a very rare cause of infectious endocarditis involving mostly prosthetic valves leading to high mortality/morbidity rates (5); it has emerged as an important nosocomial pathogen capable of causing respiratory, bloodstream, and urinary infections. The treatment of nosocomial infections caused by *Stenotrophomonas Maltophilia* is difficult, as this pathogen shows high levels of intrinsic or acquired resistance to different antimicrobial agents, drastically reducing the antibiotic options available for treatment (6). In our experience, sensitivity panel led the therapeutic strategy to a regimen of TMP-SMZ and TC-CL to which a favourable response was observed. We present a rare incidence of infectious endocarditis complicated by an annular abscess by *Stenotrophomonas Maltophilia*. Clinical reports claimed that the type of valve implanted may not be as important as radical resection of the abscess and pericardial reconstruction of the left ventricular outflow tract. The rate of recurrent infection after a replacement procedure is at 7% (7). We took into consideration that aortic homograft and pulmonary autograft can restore the anatomic and physiologic units of the left ventricular outflow tract with similar biologic attributes; however, we preferred an aortic root xenograft to manage active endocarditis complicated with annular abscess, due to its availability. A major factor influencing the decision was the fact that an implanted biological valve will heal in place and be totally permeated with antibiotic solution from the systemic administration of antibiotics. In addition to limited availability of the homografts, several authors reported no significant difference between standard bioprosthetic valves in prosthetic valve endocarditis in terms of recurrence and long-term event free survival (4, 8). Appropriate antibiotherapy and prompt surgery using the utmost effort to eradicate all infected tissues are the keystones to a favourable outcome.

References

