CASE REPORT

Native Valve Endocarditis with Aorta-to-Left Atrial Fistula Due to Corynebacterium amycolatum

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Infective endocarditis remains a pathology with a high rate of complications and mortality. One of the most dramatic complications is abscess formation. A rare evolution of abscess formation is the development of fistula. We describe an 88-year-old woman with an aortic root abscess and aorta-to-left atrial fistula. To our knowledge this has only been described with streptococcus species as causative micro-organism. In this case the abscess was caused by Corynebacterium amycolatum, which is an infrequently found micro-organism.

Case Report

An 88-year-old woman was admitted to our hospital because of shortness of breath and deterioration. One month before admission she had been hospitalized because of high fever. Blood cultures were positive for Corynebacterium amycolatum (sensitive for cefuroxim in vitro), whereas all other cultures of stool, sputum, urine and decubitus wound yielded no organisms. During the same hospitalization, a transthoracic echocardiography was performed and revealed an important concentric left ventricular hypertrophy and an aortic valve stenosis with a peak gradient of 51 mmHg and a mean gradient of 35 mmHg. The aortic valve was calcified and had a reduced opening on M mode and bi-dimensional trans-thoracic echocardiography. However, no vegetation or abscess formation was observed. A transoesophageal echocardiography was refused by the patient. Based on these data, the diagnosis of sepsis with Corynebacterium amycolatum of unknown origin was made. After 14 days treatment with cefuroxim intravenously (3 × 1.5 g/24 h), the patient was discharged asymptomatic and apyretic.

One month later she was admitted again because of important oedema of both legs and increasing shortness of breath. A grade three systolic murmur was heard over the heart. Lung auscultation revealed bilateral crackles and a diminished vesicular murmur over the right lung. Oedema of both legs was present and the decubitus wound was more pronounced. A transthoracic and transoesophageal echocardiogram were performed and revealed an aortic valve endocarditis with an aortic root abscess and aorta-to-left atrial fistula (Figs 1 and 2). The maximal gradient of that turbulent flow was 50 mmHg (probably underestimated due to misalignment; Fig. 3). The patient died a few hours after admission. Two days later blood cultures, taken at admission, demonstrated the presence of Corynebacterium amycolatum. The family refused a post-mortem examination.

Discussion

Annular abscess is a common and serious complication of aortic valve endocarditis. Fistula formation, however, is a very rare complication. The diagnosis can be made by transthoracic echocardiography which is a rapid and non-invasive examination but a transoesophageal echocardiography has a higher sensitivity[1]. In our...
Endocarditis with Aorta-to-Left Atrial Fistula

The presence of a cardiac abscess is a poor prognostic factor in infective endocarditis. Especially, *Staphylococcus aureus* has a much worse prognosis. In 31% of cases no causative micro-organism is identified[3]. In this case the causative micro-organism was *Corynebacterium*

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**Figure 1.** Transoesophageal echocardiography, multiplane, transverse view 15°. Around the aortic valve (AV) multiple cavities are visible (two visualized on the figure) strongly suggestive for aortic valve abscedation (A = aortic abscess).

**Figure 2.** Multiplane TEE, longitudinal view 120°. Continuity between the abscess cavity (A) and the left atrium (LA) is indicated with the arrow (A = aortic abscess).
amycolatum, which was never described in native valve endocarditis. Corynebacterium species are an extremely varied genus, which includes the well known pathogens like C. diphteriae, C. urealyticum and C. jeikeium. Corynebacterium amycolatum is found less frequently and was not reported as a cause of human infections up to 1996. In the literature, there are three cases of septicaemia with C. amycolatum. The isolates came from three different sources: sputum, wound and catheter[3]. C. amycolatum is regarded a normal inhabitant of the skin and it may colonize the female genital tract. In our patient decubitus wound might be the probable source of infection (no evidence of sputum or catheter infection).

References

