KLİNİKİ MÜŞAHİDƏ AÇIQ GİRİŞ (OPEN ACCESS)

A RARE COMPLICATION OF INFECTIVE ENDOCARDITIS: MITRAL-AORTIC INTERVALVULAR FIBROSA INVOLVEMENT WITH PERFORATION AND PSEUDOANEURYSM

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ABSTRACT

Infective endocarditis is a serious disease characterized by infectious involvement of the cardiac valves and adjacent structures. One rare but serious complication is destruction of the fibrous tissue located between the mitral and aortic valves. Infectious involvement of this region can result in perforation, abscess formation, or pseudoaneurysm, which carries a high risk of mortality. Early diagnosis and timely surgical intervention play an important role in patient prognosis. The present case is notable for infectious involvement of this rare anatomical region together with the simultaneous detection of multiple structural complications.

Keywords: infective endocarditis, mitral-aortic intervalvular fibrosa, pseudoaneurysm

Case report:

A 70-year-old male patient presented to the cardiology outpatient clinic with complaints of dyspnea, a choking sensation, and nausea. His history revealed that he had undergone ascending aortic stent grafting in 2019. Over the preceding weeks, exertional dyspnea had gradually worsened, beginning to limit his daily activities.

ECG revealed no significant pathological changes. Transthoracic echocardiography showed normal left ventricular systolic function. However, suspicious masses raising concern for vegetations were observed at both the mitral and aortic valve level . Transesophageal echocardiography (TEE) was performed for further evaluation.

TEE revealed severe mitral and aortic valve regurgitation. In addition, a perforation was identified in the fibrous area between the anterior mitral leaflet and the aortic root, with an associated pseudoaneurysm in this region. The images demonstrated that the infectious process had extended beyond the valves, producing destructive changes in the surrounding tissue (Picture 1 and 2).

Blood cultures grew Staphylococcus aureus. Based on the combined clinical, microbiological, and imaging findings, the patient was diagnosed with infective endocarditis of the mitral-aortic intervalvular fibrosa.

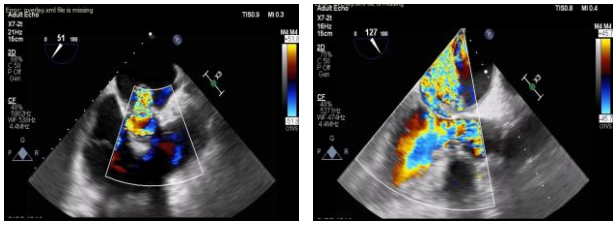
A multidisciplinary heart-team consultation, including cardiac surgeons, cardiologists, and other specialists, determined that the patient had high-risk structural complications. The decision was made to proceed with surgical mitral and aortic valve replacement, together with reconstruction of the perforated area and repair of the pseudoaneurysm.

Picture 1. Perforation in intervalvular fibrosa.



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Picture 2. Color doppler imaging of severe mitral regurgitation and intervelvular fibrosa perforation



Discussion:

Infective endocarditis involving the mitral-aortic intervalvular fibrosa is considered one of the rarest yet most dangerous complications of the disease[1]. Because this anatomical region lies in close proximity to the valvular structures, spread of infection can rapidly produce destructive changes. In particular, the development of perforation and pseudoaneurysm can deepen hemodynamic disturbance and accelerate the progression of heart failure[2].

A notable feature of this case is that, despite the absence of significant abnormalities on initial evaluation, transesophageal echocardiography revealed life-threatening structural damage[3]. This finding underscores the importance of more detailed imaging modalities in patients with suspected infective endocarditis[4,5].

Infective endocarditis caused by Staphylococcus aureus is characterized by high virulence and can lead to extensive tissue destruction within a short period. In such cases, early surgical intervention alongside antibiotic therapy has a significant impact on patient survival [6,7].

Conclusions

This case highlights that infective endocarditis of the mitral-aortic intervalvular fibrosa, although rare, can give rise to life-threatening complications such as perforation and pseudoaneurysm. Even when initial investigations are unremarkable, clinicians should pursue more detailed imaging in patients with ongoing suspicion of infective endocarditis. Given the aggressive course typical of Staphylococcus aureus infection, early surgical assessment is essential for optimal outcomes.

Learning points:

1. Although infective involvement of the mitral-aortic intervalvular fibrosa is rare, it can lead to life-threatening complications such as perforation and pseudoaneurysm.
2. Even when initial investigations are normal, more detailed imaging techniques should be used in patients with persistent suspicion of infective endocarditis.
3. Because Staphylococcus aureus-related infective endocarditis has a rapidly destructive course, early surgical evaluation is essential.

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