

A Large Inflammatory Mass Seven Years Post Mitral Valve Repair

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Abstract

Introduction: A non-infective inflammatory mitral valve mass has never been described outside the context of a concurrent rheumatological condition.

Case presentation: Routine TTE review of an asymptomatic healthy 73-year-old male, seven years following the insertion of a Cosgrove annuloplasty ring revealed a large mass attached to the atrial surface of the mitral valve repair ring. Cardiac surgery was performed to excise the mitral annular mass, the Cosgrove ring removed, and the annulus debrided. Upon histological examination of the mass, it was revealed to comprise of a chronic inflammatory infiltrate with plasma cells and foreign body type giant cells adjacent to an organising fibrinous exudate. The mass was subjected to extensive infectious testing which was negative.

Discussion: Non-infective mitral valve masses are well reported in literature. However, to our knowledge this is the first identification of an inflammatory mitral valve mass associated with a Cosgrove ring annuloplasty and warrants consideration in those with a suspected non-infectious mass following valvular surgery.

Keywords: Surgery; Thromboembolism; Fibrillation

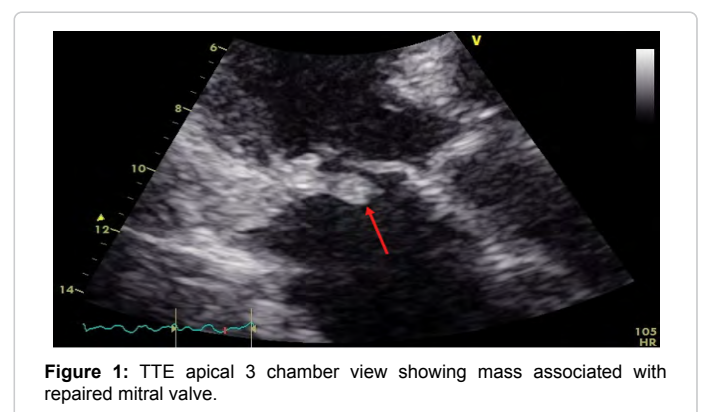
Introduction

Mitral valve repair is the gold standard for the treatment of mitral regurgitation due to its favourable long-term outcomes [1]. When compared with replacement, mitral valve repair is associated with lower rates of thromboembolism, endocarditis and better overall patient survival [2,3]. In this case, we identify the presence of a previously undescribed large inflammatory mitral valve mass in a patient who had undergone mitral valve repair seven years previously and had no concurrent rheumatological condition.

Case Presentation

In 2012, R.D., a then 66-year-old male, presented with a pan systolic murmur with echocardiograms displaying ruptured chordae to the posterior mitral leaflet, a flail P2 segment and severe mitral regurgitation. The left ventricle was dilated with an end diastolic measurement of 59 mm. He proceeded to cardiac surgery, where the posterior leaflet was supported with two sets of 4/0 Gortex prosthetic chords and a size 30 Cosgrove annuloplasty ring was implanted. A patent foramen ovale was also closed. Intraoperative Transoesophageal Echocardiogram (TOE) showed excellent repair with trivial mitral regurgitation. In 2014, he presented with right-sided hemisensory loss and dysarthria and was found to have asymptomatic paroxysmal atrial fibrillation. He was commenced on Rivaroxaban 20 mg daily for presumptive cardioembolic stroke. Transthoracic Echocardiogram (TTE) demonstrated a well-functioning repaired mitral valve with no mass lesions [4,5].

Routine review in March 2019 revealed a healthy 73-year-old male with normal exercise tolerance and no signs or symptoms of infection or rheumatologic conditions. There were no travel or zoonotic risk factors and the patient had not had any recent dental or surgical interventions. He was in asymptomatic atrial fibrillation and was compliant with Rivaroxaban therapy. However, a routine TTE revealed a large mass attached to the atrial surface of the mitral valve repair ring (Figure 1), which was a new finding compared to the TTE performed in 2017. TOE revealed a large, mobile, tongue-like mass arising from the medial end of the Cosgrove ring (Figure 2), projecting into the left atrium. The mitral leaflets were unremarkable and without evidence



of regurgitation. Multiple sets of blood cultures were negative in the absence of recent antibiotic exposure. Serologies for cat scratch disease, Q fever, syphilis, brucellosis and cryptococcal infection were negative, along with multiple rheumatological investigations and a Positron Emission Tomography scan.

Discussion

The patient proceeded to cardiac surgery where the mitral annular mass was excised (Figures 3 and 4), the Cosgrove ring removed, and the annulus debrided. The left atrial appendage was oversewn, and two coronary bypass grafts performed. The post-operative course was uneventful. Histology of the mass demonstrated the presence of

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Figure 2: 3D TOE showing tongue-like mass (→) arising from medial end of the Cosgrove ring (→).



Figure 3: Intra-operative view of the mass.



Figure 4: Excised mass.

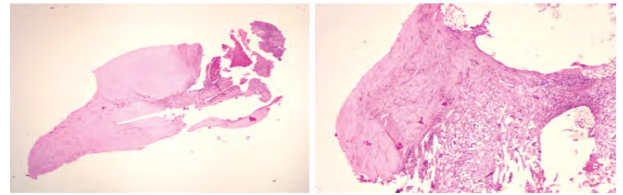


Figure 5: Histology of mass H and E (2x and 4x).

a chronic inflammatory infiltrate with plasma cells and foreign body type giant cells adjacent to an organising fibrinous exudate (Figure 5). Three tissue specimens were submitted to routine bacterial, fungal and mycobacterial cultures, which were all negative.

Conclusion

This 73-year-old male underwent removal of an incidental, asymptomatic large inflammatory tissue mass, of unknown aetiology, associated with a Cosgrove ring, identified seven years post mitral valve repair. Inflammatory valvular lesions such as this have never been described except in the context of an underlying rheumatological condition. Non-infective mitral valve masses are well reported throughout medical literature, with the differential diagnosis for such masses including thrombus, marantic endocarditis, pannus and benign or malignant tumours. To our knowledge, this is the first case of an inflammatory tissue mass attached to an annuloplasty ring, seven years post mitral valve repair. This rare condition should be considered in patients who have undergone valvular surgery and later develop a suspected non-infectious mass.

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