

# Mitral Valve Aneurysm: A Rare Complication of Aortic Valve Endocarditis

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A 20-year-old intravenous drug abuser man, referred to our hospital with dyspnea and orthopnea. Transesophageal echocardiography revealed severe aortic regurgitation, healed vegetation of aortic valve and an aneurysm of the anterior leaflet of the mitral valve. The patient was discharged after aortic valve replacement and mitral valve repair.

## Introduction

Mitral valve aneurysm can be confused with several abnormalities including myxomatous degeneration of the mitral valve, mitral valve prolapse, flail mitral leaflet, papillary fibroelastoma, myxomas involving the mitral valve, and non-endothelialized cyst of the mitral valve. Although trans-thoracic echocardiography (TTE) may occasionally identify subtle valvular abnormalities, better resolution provided by trans-esophageal echocardiography (TEE) yields a more definitive identification of these rare lesions.

## Case report

A 20-year-old intravenous drug abuser male, was admitted to Cardiology Ward at Shiraz University of Medical Sciences with dyspnea and orthopnea without fever. Trans-thoracic echocardiography (TTE) performed during admission showed severe aortic regurgitation, healed vegetation of aortic valve, dilated LV, dilated LA, severe eccentric mitral

regurgitation, a localized bulge of mitral leaflet toward the left atrium with systolic expansion and diastolic collapse. Transesophageal echocardiography (TEE) confirmed the above findings and revealed an aneurysm on the anterior mitral leaflet which resulted in poor coaptation of mitral valve (Fig 1). The color Doppler flow showed that the aneurysm was filled with flow during systole without any communication with left atrium (Fig 2). Moderate to severe eccentric posterior mitral regurgitation was also identified. The patient was discharged after aortic valve replacement (AVR) and mitral valve repair. After one week, one month and six months of follow-up, the patient remained asymptomatic with good aortic and mitral valve function on TEE.

## Discussion

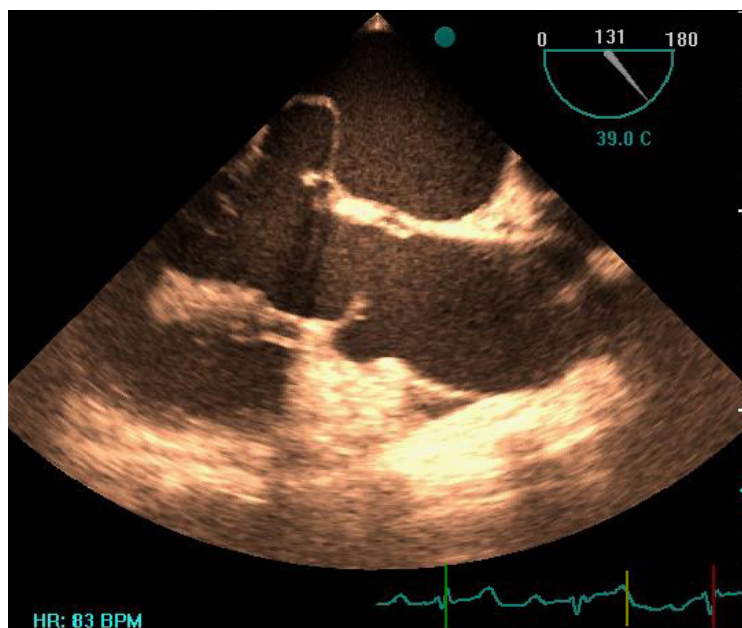
In 1729, Morand described the first case of mitral valve aneurysm.<sup>1</sup> In some patients with aortic valve endocarditis, the infection may spread to the mitral aortic intervalvular fibrosa producing abscess, aneurysm and perforation into the left atrium.<sup>2</sup> Less frequently an infected aortic regurgitation jet striking the

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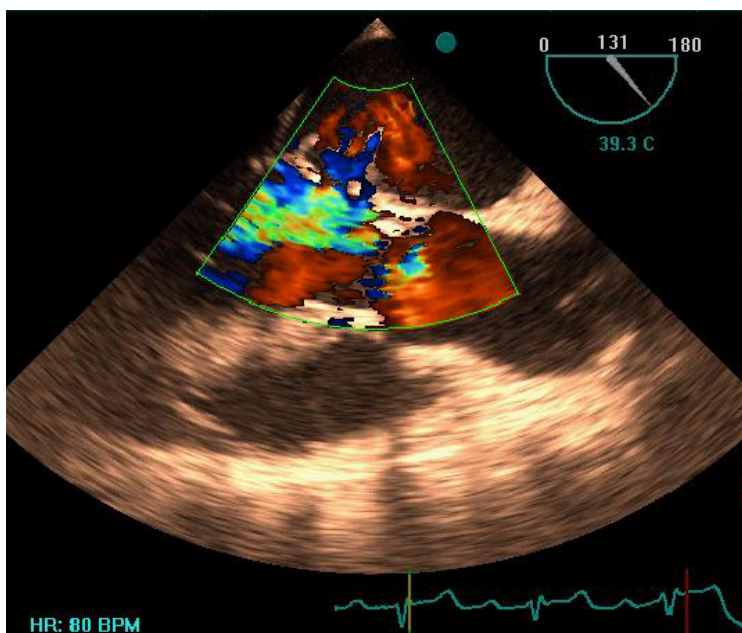
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**Figure 1.** TEE shows an aneurysm on the anterior mitral leaflet which resulted in poor coaptation of mitral valve



**Figure 2.** The color Doppler flow showed that the aneurysm was filled with flow during systole without any communication with left atrium

ventricular surface of the anterior mitral leaflet can result in the formation of an aneurysm of this leaflet.<sup>3</sup> Reports on mitral valve aneurysm have been published sporadically, and characteristically occur in association with aortic valve endocarditis.<sup>4,5</sup> Because mitral valve an-

eurysm rarely occur in absence of endocarditis or in patients with pure aortic regurgitation, an infectious etiology is at least partly responsible for leaflet degeneration. Mitral valve aneurysm can be confused with several abnormalities including myxomatous degeneration of the

mitral valve, mitral valve prolapse, flail mitral leaflet, papillofibroelastoma, myxomas involving the mitral valve, and nonendothelialized cyst of the mitral valve.<sup>6</sup> Although TTE may occasionally identify subtle valvular abnormalities, the better resolution provided by TEE yields a more definitive identification of these rare lesions. Color flow doppler distinguishes the aneurysm from other abnormalities by demonstrating direct communication between the aneurysm and the left ventricle. Early detection and prompt intervention are important

to prevent the complications of valvular aneurysms, which include rupture, embolism, and endocarditis. Furthermore, failure to surgically repair or replace these valves may result in worsening mitral regurgitation. Therefore, in patients with mitral valve aneurysms, repair or replacement of the valve during AVR should be performed.

### Acknowledgements

The authors declare that they have no Conflicts of Interest.

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