Flail mitral and tricuspid valves due to myxomatous disease

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Myxomatous disease generally affects mitral valve. However, tricuspid valves also can be involved in 20% of the myxomatous mitral valve disease. Valve prolapse, elongation of chordae and chordae rupture are generally seen complications of the myxomatous disease. There are some reports about severe tricuspid regurgitation due to tricuspid valve prolapse and elongated chordae, but no tricuspid and mitral chordae ruptures in the same patient due to myxomatous disease have been reported. In this case tricuspid chordae rupture accompanied to mitral chordae rupture is discussed.

Case report

An 81-year-old patient was referred to our clinic because of systolic murmur at the apex on his examination. He had a history of hospitalization 6 months ago because of sudden onset of dyspnea. Physical examination showed a temperature of 36.5 °C, pulse rate of 72 beats per minute, blood pressure of 110/70 mmHg. There was jugular venous distention with a prominent ‘V’ wave. There was a 3/6 systolic murmur at the left lower sternal border and at the apex, which showed radiation to left axilla. His electrocardiogram was normal. There was minimal cardiomegaly on telecardiogram. On transthoracic echocardiography left ventricle diastolic and systolic diameters were 58/33 mm. Left atrium diameter was 45 mm. Mitral and tricuspid valves were thickened. Mobile echodensity consistent with tricuspid and mitral chordae ruptures was present. Flail mitral posterior and tricuspid anterior leaflets were determined (Figures 1 and 2).

Transesophageal echocardiography (TEE) showed that mobile echodensity was consistent with ruptured chordae tendinea of posterior mitral valve and anterior tricuspid valve (Figure 3). Severe mitral and tricuspid regurgitations were determined on TEE examination. Operation was suggested to patient but he refused operation and discharged with medical treatment.

Discussion

Tricuspid chordae rupture is an uncommon clinical finding. Non-penetrating chest trauma is the most common cause of tricuspid chordae rupture.1,2 Penetrating chest trauma and right heart catheterization can also cause chordae rupture by disrupting the structural components of tricuspid valves.3 Marfan syndrome and other variations of
myxomatous disease affecting the mitral and tricuspid valves can lead to prolapsing leaflets, elongation of chordae or chordal rupture producing valvular incompetence. Anterior and septal leaflets of tricuspid valves are affected generally in tricuspid valve prolapse. In patients with flail mitral valve due to myxomatous disease intrinsic involvement of the tricuspid valve as an etiology of severe tricuspid regurgitation should be investigated during trans-thoracic and transesophageal echocardiography. In our case both tricuspid and mitral leaflets were thickened and tricuspid anterior and mitral posterior leaflets were flail due to chordae rupture. On TEE examination mobile echodensity consistent with chordae rupture was present. Severe mitral and tricuspid regurgitations were determined. In the literature there are case reports about tricuspid chordae rupture but tricuspid and mitral chordae ruptures in the same patient have not been reported yet. This clinical entity has a clinical importance in planning the type of the surgery. Simple resection of the flail segment would be the preferred method if there is only one flail leaflet. Otherwise other techniques like implantation of artificial chordae, quadrangular resection of the flail segment, transposition of chordae or functional repair with ring annuloplasty must be performed. In patients with flail mitral valve due to myxomatous disease intrinsic involvement of the tricuspid valve as an etiology of severe tricuspid regurgitation should be investigated during trans-thoracic and transesophageal echocardiography.

**References**