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Case report

Unusual cases of acute mitral valve regurgitation

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ARTICLE INFO

Article history:

Received 19 February 2016

Received in revised form

15 July 2016

Accepted 17 July 2016

Available online xxx

Keywords:

Mitral regurgitation

Acute regurgitation

Myxomatous disease

ABSTRACT

Severe acute mitral regurgitation without early surgical correction can lead to congestive left-sided heart failure and quick death. Traumatic mechanism is one of its rare causes and is described in the literature mainly after blunt chest injuries in car accidents. In our case reports, we deal with cases of patients who have been diagnosed with a significant mitral regurgitation with rupture of chordae tendineae with symptoms of left ventricular failure requiring cardiac surgery. The onset of symptoms was associated with traumatic events of small or mild intensity.

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Introduction

Traumatic mitral valve damage is a rare clinical event seen mostly after blunt chest injuries incurred in car crashes. Acute mitral regurgitation without surgical correction can lead to congestive left ventricular heart failure and death.

Case report A

A 51-year-old female with a history of arterial hypertension without pharmacotherapy and treated for hyperthyroidism has been examined for a week and showed lasting rapidly progressive shortness of breath. The patient was physically active with no limitations before the onset of the symptoms. The patient reported that immediately before the onset of the

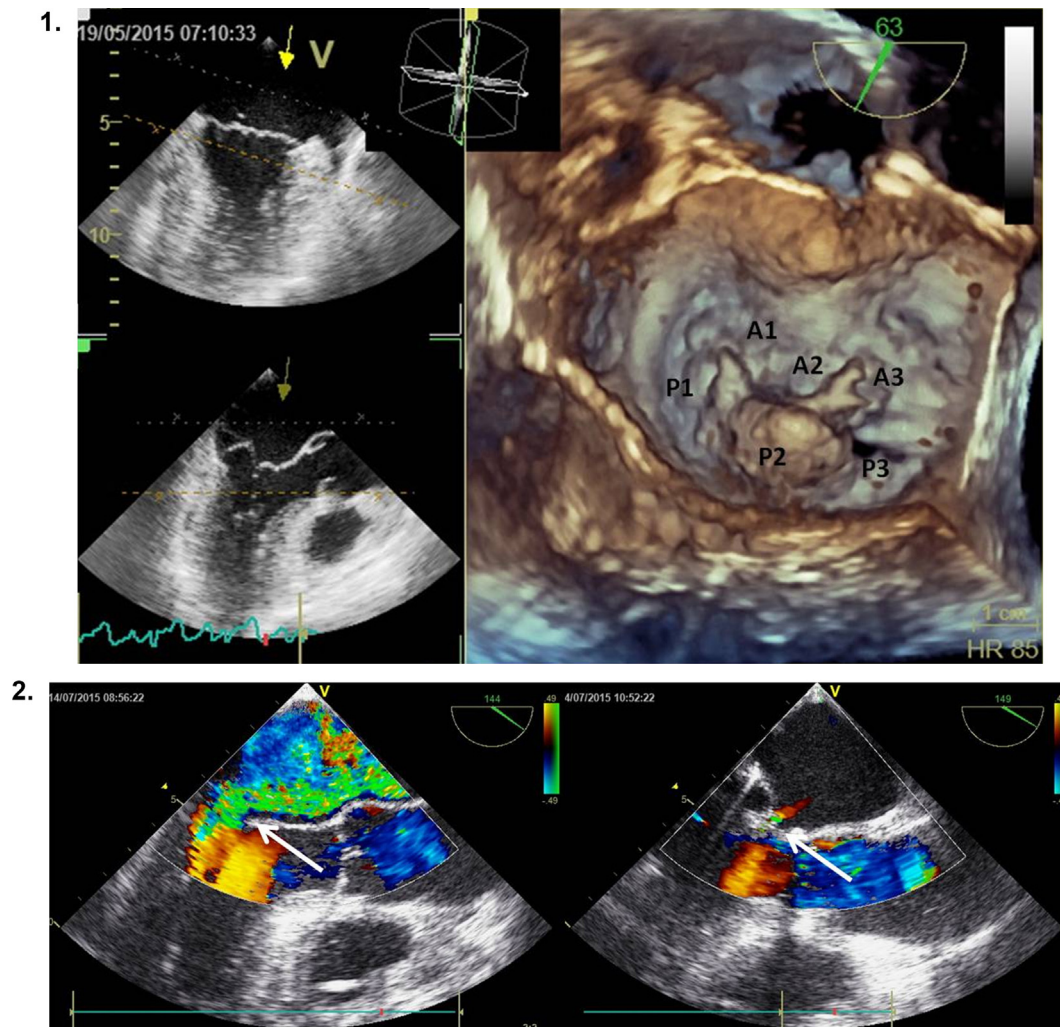
symptoms she tripped and fell with her chest on a blunt object. She sought medical attention a week after the injury. During the initial examination, the patient was normotensive, there was a visible hematoma on the lateral side of the chest in the apex of the heart and a holosystolic murmur of intensity 4/6 with a maximum at the apex and promotion to the axilla. Laboratory findings were without any abnormalities; cardiac Troponines were not elevated. Chest X-ray showed signs of pulmonary congestion, and ECG showed P-mitrale. Initial transthoracic echocardiographic examination revealed significant mitral regurgitation with deep prolapse of posterior mitral leaflet and a flail leaflet. The systolic function and kinetics of left ventricle were normal. There was a slight dilatation of the left atrium, normal function of the right ventricle, a slight tricuspid regurgitation, and mild pulmonary hypertension. Transesophageal echocardiography revealed myxomatous mitral valve, rupture of chordae of the posterior mitral leaflet and severe mitral regurgitation (LVD 55/31 mm,

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<http://dx.doi.org/10.1016/j.crvasa.2016.07.002>

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Figs. 1 and 2 – Transesophageal echocardiography, myxomatous mitral valve, rupture of chordae of the posterior mitral leaflet (P2) and mitral regurgitation.

EDV 120 ml ESV 32 ml, EF 73%, mitral flail leaflet P2, vena contracta 8 ml, ERO 0.7 m², RV 68 ml, E 1.6 cm/s, systolic flow reversal in pulmonary veins) (Figs. 1 and 2). Cardiac catheterization was performed with normal findings on coronary arteries; ventriculography confirmed the finding of significant mitral regurgitation and good systolic function of the undilated left ventricle. In the course of the therapy, the patient had no subjective complaints, was circulatory stable, normotensive, and with no signs of heart failure. For her good condition, the patient was indicated to mitral valvuloplasty in elective term and released from the hospital. The patient underwent mitral valve annuloplasty with artificial Gore-Tex chordae and 3D annuloplasty ring implantation without resection of any segment of the leaflet.

The postoperative course was complicated by development of pericardial effusion with tamponade that led to thoracoscopic pericardial fenestration. Postoperative echocardiography showed optimal effect of the mitral valve annuloplasty leading to normal left ventricular systolic heart function with only mild residual mitral regurgitation. The patient was discharged on the 10th day in good clinical condition.

Case report B

A 66-year-old male, previously healthy, with no cardiac history or other serious comorbidities, was examined for acute dyspnea. A significant shortness of breath appeared suddenly when the patient took off his heavy luggage from the conveyor belt after a short flight. Later that night, the patient was dyspnoic at rest and could not tolerate horizontal position. He did not suffer from chest pain. On the next day, he sought medical attention. On admission to the hospital, the patient was normotensive; auscultation revealed inspiratory rales and systolic murmur of intensity 5/6 in the entire precordium. ECG showed sinus tachycardia with no signs of ischemia; chest X-ray showed signs of pulmonary congestion. NT-proBNP and TroponinT were slightly elevated. Because of the history of the flight in his anamnesis, CT angiography of the pulmonary artery was performed to exclude pulmonary embolism. The patient was admitted to the coronary care unit and the therapy of heart failure was initiated. Echocardiographic examination detected significant mitral regurgitation with deep posterior

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