# "Broken heart" syndrome complicated by acute severe mitral regurgitation

## *Akut ciddi mitral yetmezliği ile komplike olan "kırık kalp" sendromu*

A 75-year old female was referred to our hospital for chest pain, sudden dyspnea and palpitation after an emotional stressful event (her husband died). In her medical history, there was no evidence of relevant pathologies or cardiovascular risk factors. Precordial palpation revealed apical hyperkinesia. Auscultation revealed systolic murmur (Levine 3/6) at apex and coarse crackles in bilateral lung fields. Heart rate was 120/min with blood pressure of 80/50 mmHg and body temperature was 36.5°C. Electrocardiogram on admission showed ST segment elevation in DI and aVL and T-wave inversion in the anterior leads. Chest radiography showed a remarkable pulmonary congestion and normal cardiothoracic ratio. Laboratory findings showed a significantly elevated serum level of troponin I (Level was 2.39 1µg/L, normal <0.1µg/L) but only slightly elevated creatine kinase and CK-MB. Transthoracic echocardiography showed basal hyperkinesia, mid-to distal dyskinesia of left ventricular chamber with severe mitral leaflet regurgitation and systolic dysfunction (30% left ventricular ejection fraction) (Fig.1, Video 1. See corresponding video/movie images at www.anakarder.com). Mitral valve annulus was in normal range with intact subvalvular structures. Coronary angiography showed no obstructive coronary lesions. Ventriculogram revealed aneurysm of the anterolateral wall and apex of her left ventricle, more extensive than any single coronary territory, and grade 4/4 mitral regurgitation (Fig. 2, Video 2. See corresponding video/movie images at www.anakarder.com).

"Broken heart" syndrome is widely described and characterized by reversible contractile dysfunction of the left ventricle. The syndrome generally has a favorable outcome; however, occasional complications may occur. Significant mitral regurgitation is rare but it is a serious complication. In this case, the patient was treated with intra-aortic balloon counter pulsation. Therapy with loop diuretics for symptom relief was started. Apical hyperkinesia and systolic murmur disappeared during follow-up. At discharge, chest radiography did not show any sign of pulmonary congestion. On echocardiography after 30 days normal left ventricular function without any wall motion score abnormalities was documented. Mild mitral regurgitation was present (Fig. 3, Video 3. See corresponding video/movie images at www.anakarder.com).


**Figure 1. Transthoracic echocardiography four- chamber view of left ventricular apical ballooning and severe mitral regurgitation**
LA - left atrium, LV - left ventricle

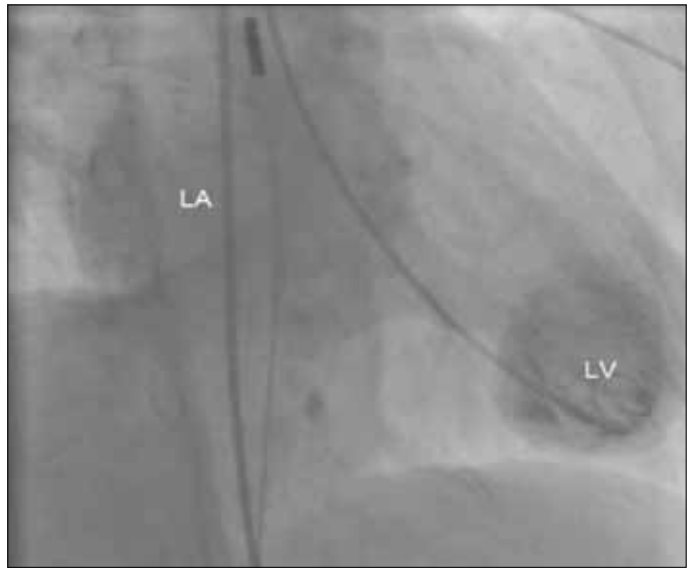


**Figure 2. Left ventriculogram showing apical ballooning, hyperdynamic motion at the base and severe mitral regurgitation**
LA - left atrium, LV - left ventricle

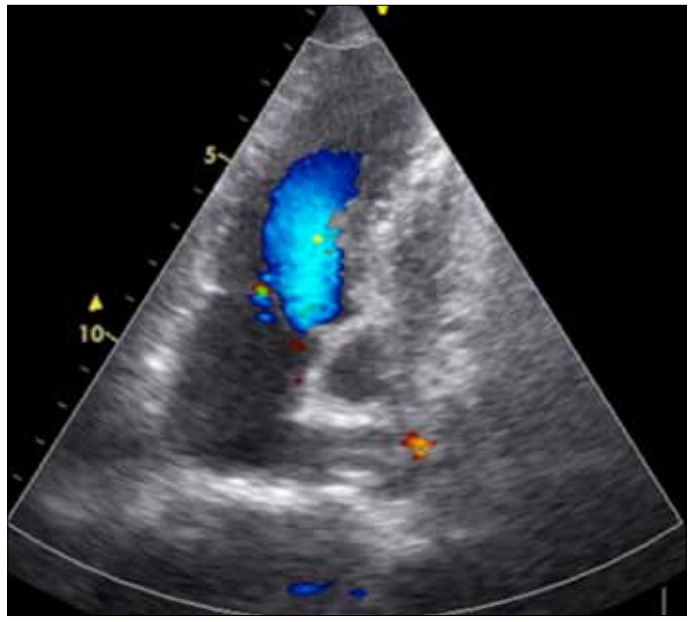

**Figure 3. Transthoracic echocardiographic four- chamber view of a normal ventricular function and mild mitral regurgitation**

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