ACUTE CHORD RUPTURE OF THE MITRAL VALVE POSTERIOR LEAFLET IN HEART FAILURE PROGRESSION IN HYPERTENSIVE PATIENT WITH CORONARY HEART DISEASE AND CHRONIC OBSTRUCTIVE LUNG DISEASE

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Introduction and case report description

A 76-year-old woman was admitted because of dyspnea, lower limbs edema and fever during the previous several days. She noted a sharp appearance of sudden dyspnea a week ago. In the district hospital chest X-ray was carried out and bilateral lower lobe pneumonia was revealed. There wasn't any significant positive treatment outcome. Thus heart failure was regarded the leading causes of the disease, and the patient was referred to the cardiology department. Over the past 20 years patient suffered from arterial hypertension and regularly took antihypertensive drugs. She had a 30 years history of work with paint materials.

Upon admission she had attenuation of the percussion sound in the basal parts of the lungs. Pulmonary auscultation revealed hard breathing, dry wheezing. Also the left heart boundaries expanding, systolic murmur at all points of auscultation, mainly in the area of the projection of the mitral valve, which is held in the left axillary region, edema of the limbs were registered.

Description of the problem, procedures, techniques and/or equipment used

Mitral chordae tendinae rupture is a rare but important cause of severe mitral valve insufficiency and left ventricular dysfunction in patients with degenerative mitral valve disease.

The electrocardiogram showed sinus rhythm, left ventricular hypertrophy with no signs of ischemia.

Transthoracic echocardiography reported the left heart cavities enlargement, first stage aortic valve stenosis, 2nd stage of pulmonary hypertension (73 mm Hg) and mitral valve posterior leaflet chordae tendinae rupture with severe mitral regurgitation. Angiography showed 40% stenosis of the proximal left anterior descending artery and 40% stenosis of the proximal segment of the right coronary artery. Multidetector computed tomography with angiography of the pulmonary arteries revealed the presence of cardiomegaly, pulmonary arterial hypertension and moderate bilateral hydrothorax. Convincing evidence for pulmonary embolism at the time of the study hasn't been identified.

Questions, problems or possible differential diagnosis

The patient had aortic stenosis, but it was slightly expressed and could not cause a substantial heart chamber enlargement, severe left ventricular failure, dyspnea, double-sided hydrothorax, double-sided congestive pneumonia. In addition there were particular auscultation pictures - systolic murmur mainly in the mitral valve

with the left axilla radiation. The presence of the patient heart chamber dilatation because of ischemic cardiomyopathy were excluded during coronary angiography – no severe and hemodynamically significant coronary artery lesions revealed.

The patient presented with the signs of pulmonary hypertension (73 mm Hg) with the sudden appearance of dyspnea and required differential diagnosis with thromboembolism of pulmonary artery small branches. We conducted angiography of the pulmonary artery and revealed no pulmonary embolism. Patient had chronic obstructive pulmonary disease, but after a week of bronchodilator therapy ERF values improved significantly (FEV1 increased significantly) from 0.7 to 1.5, dyspnea decreased, but remained.

Answers and discussion

The diagnosis of acute chord rupture of the mitral valve posterior leaflet is usually difficult to quickly establish in patients with left ventricular dysfunction and requires very careful differential diagnosis especially in old-patients with co-morbidities.

Conclusions and implications for clinical practice

Acute chord rupture of the mitral valve posterior leaflet is rare but serious cause of severe mitral valve insufficiency, acute heart failure manifestation or chronic heart failure progression and leads to difficulties in the differential diagnosis of the reasons of heart failure. Acute chord rupture in degenerative mitral valve disease should be suspected in older patients with left ventricular dysfunction and co-morbidities as a cause of heart failure.