

## ACUTE CORONARY THROMBOSIS FOLLOWING BALLOON AORTIC VALVULOPLASTIC

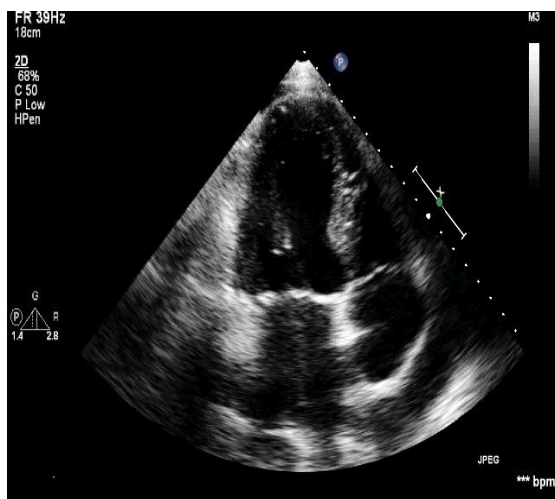
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### HISTORY AND PHYSICAL

A patient, 80 years with complaints of dyspnea with minimal exertion (walking at a distance of about 10 meters), accompanied by chest pain, episodes of dizziness, expressed general weakness. The debut of heart failure symptoms the patient has about 6-7 years, with a gradual deterioration, reduced exercise tolerance. Since that time the patient has chronic atrial fibrillation. About 5 years ago, the patient was diagnosed with aortic stenosis, offered his surgical correction, from which the patient abstained due to the relatively satisfactory at the time being. The last 5-6 months before admission to our hospital noted a rapid increase in heart failure, which led to the re-hospitalization in other hospitals where pleural punctures were performed for recurrent bilateral hydrothorax, with a temporary positive effect. Despite the full regular intake of chronic heart failure therapy, which included the highest possible dose of diuretics, aldosterone receptor antagonists, ACE inhibitors and low-dose beta-blockers, the patient remained lower limb edema, and dyspnea. ECHO at admission: end-diastolic dimension of the left ventricle (LV) 56 mm, ejection fraction (EF) of LV 17-18%, left atrium 45 mm, the pressure gradient in the AV maximum 107 mm Hg, medium - 60 mm Hg; bilateral hydrothorax with the liquid level up to 60 mm.

### IMAGING



### INDICATION FOR INTERVENTION

Perioperative risk of aortic valve replacement on STS was about 26%, risk of a stroke about 4%, the need for prolonged mechanical ventilation - 59%, renal failure - 51%. For another method of surgery - TAVI - also had relative contraindications (severe left ventricular dysfunction with ejection fraction less

than 20%). Balloon aortic valvuloplasty in several papers suggested as a possible alternative to the classic valve surgery and TAVI in high-risk patients. Before actually executing BAV patients in coronary angiography was performed with coronary angiography, which did not identify hemodynamically significant stenosis of the coronary arteries.

## **INTERVENTION**

Balloon aortic valvuloplastic was done.

Immediately after the procedure, the patient presented a complaint to the baking intense pain behind the breastbone. It made an electrocardiogram, in which ST segment elevation was found in leads V1-V4 to 4 mm.

Urgently implemented control coronary angiography, according to which diagnosed an acute occlusion of the left anterior descending artery (LAD) in the middle section.



The patient's condition is serious due to the presence of severe pain syndrome, hemodynamic instability (blood pressure monitor at 70/40 mm Hg). The patient was anesthetized with narcotic analgesics, adrenaline infusion started at a dose of 0.15 mg/kg/hour.

Recanalization LAD was performed with implantation of bare metal stents.

Further treatment the patient received in the conditions of intensive care. Despite rapid recanalization (the "pain-to-balloon" time was 17 minutes) and the restoration of adequate blood flow, the early postoperative period with symptoms of myocardial weakness, which required continuous infusion of inotropic agents. On the 9-th day after the operation the patient was activated. Subsequently, the patient continued to receive full treatment of CHF in maximum tolerated doses. In a series of echocardiogram noted a gradual increase in left ventricular ejection fraction of 27-28% and a decrease in the severity of bilateral hydrothorax (fluid level up to 20 mm on both sides). The residual average gradient of pressure on the AK was 40 mmHg

Subjectively patient noted significant improvement in the state: decreased dyspnea, increased exercise tolerance. The result in a 6-minute walk test, performed on the 13th day after the operation: 320 meters.

## **LEARNING POINTS OF THE PROCEDURE**

The most likely causes of acute coronary occlusion in this case report, we believe embolism fragment calcinate in the projection of the aortic valve, or thromboembolism as a consequence of the presence of atrial fibrillation. In any case, our procedure was performed trigger complications occurred. The fact

that embolism occurred in operating the X-ray and was quickly diagnosed, promoted rapid revascularization and minimize the potential for damage to the myocardium.

The literature describes the rare cases of systemic embolism during the BAS. For example, Buchanan G.L. et al describe similar contact with the above case of acute thrombosis of the left coronary artery. Ben Dor I. et al point to 2 cases of coronary occlusion and 6 cases of ischemic stroke after 301 BAV procedure in 262 patients.

Current recommendations leave the limited indications for the implementation of balloon aortic valvuloplastic, TAVI giving preference to high-risk patients. However, given the disproportionate economic advantage over TAVI, the possibility of its use as a therapy "bridge", and is also a good therapeutic effect, the balloon aortic valvuloplastic can sometimes considered as alternatives not only have comorbid and elderly patients, but also as part of an integrated treatment of severe aortic stenosis in certain clinical situations.