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Case report

Acute myocardial infarction as the manifestation of the thoracic aorta pseudoaneurysm

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ARTICLE INFO

Article history:

Received 5 August 2016

Received in revised form

7 November 2016

Accepted 16 November 2016

Available online xxx

Keywords:

Thoracic aorta pseudoaneurysm

Graft infection

Redo cardiac surgery

ABSTRACT

We present the case of the 56-year-old Caucasian man, with the 30 months history of previous Yacoub operation, reported to the complex cardiovascular center as the acute coronary syndrome with new LBBB ECG changes. Coronary angiogram proved the atypical affection of the left main coronary artery, transesophageal echocardiography clarified a large aortic pseudoaneurysm repressed both of coronary arteries, as the cause of symptoms. The surgical correction (Bentall procedure) was successfully performed and the patient was discharged 23 days after redo surgery with no complications.

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Introduction

Thoracic aorta pseudoaneurysm (TAP) is a rare, but severe complication after cardiac surgery. Typical manifestations on the ascending aorta involve the symptoms of heart failure and chest pain and require surgical correction [1].

Case review

A 56-year-old, morbid obese (BMI 40) man, with the anamnesis of Yacoub operation 30 months ago, was reported to the complex cardiovascular center (CCC) with 1 h present sudden chest pain and new LBBB ECG changes (Fig. 1), as the acute myocardial infarction with the symptoms of acute cardiac

failure (Killip class IV). The coronary angiogram was performed immediately after the admission to the CCC and showed atypical course of the left main coronary artery, with the critical stenosis of its proximal part, followed with the sharp deflection of the artery (Fig. 2). Owing to extremely dilatated aortic root, the right coronary artery was not displayable. The aortic aneurysm was assumed and transesophageal echocardiography (TOE) was indicated. TOE diagnosed the dehiscent and deformed aortic neo-root, with large perigraft pseudoaneurysm and insufficient native bicuspid aortic valve (Figs. 3 and 4). After necessary preparation, the surgery was performed. Intraoperatively, the TOE finding was confirmed (Fig. 5), suspected of infective endocarditis; then the sample of aortic tissue was sent to polymerase chain reaction (PCR) analysis, and the mechanical aortic valved graft was implanted (Bentall procedure). Because of previous reimplanted coronary arteries, modified

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<http://dx.doi.org/10.1016/j.crvasa.2016.11.009>

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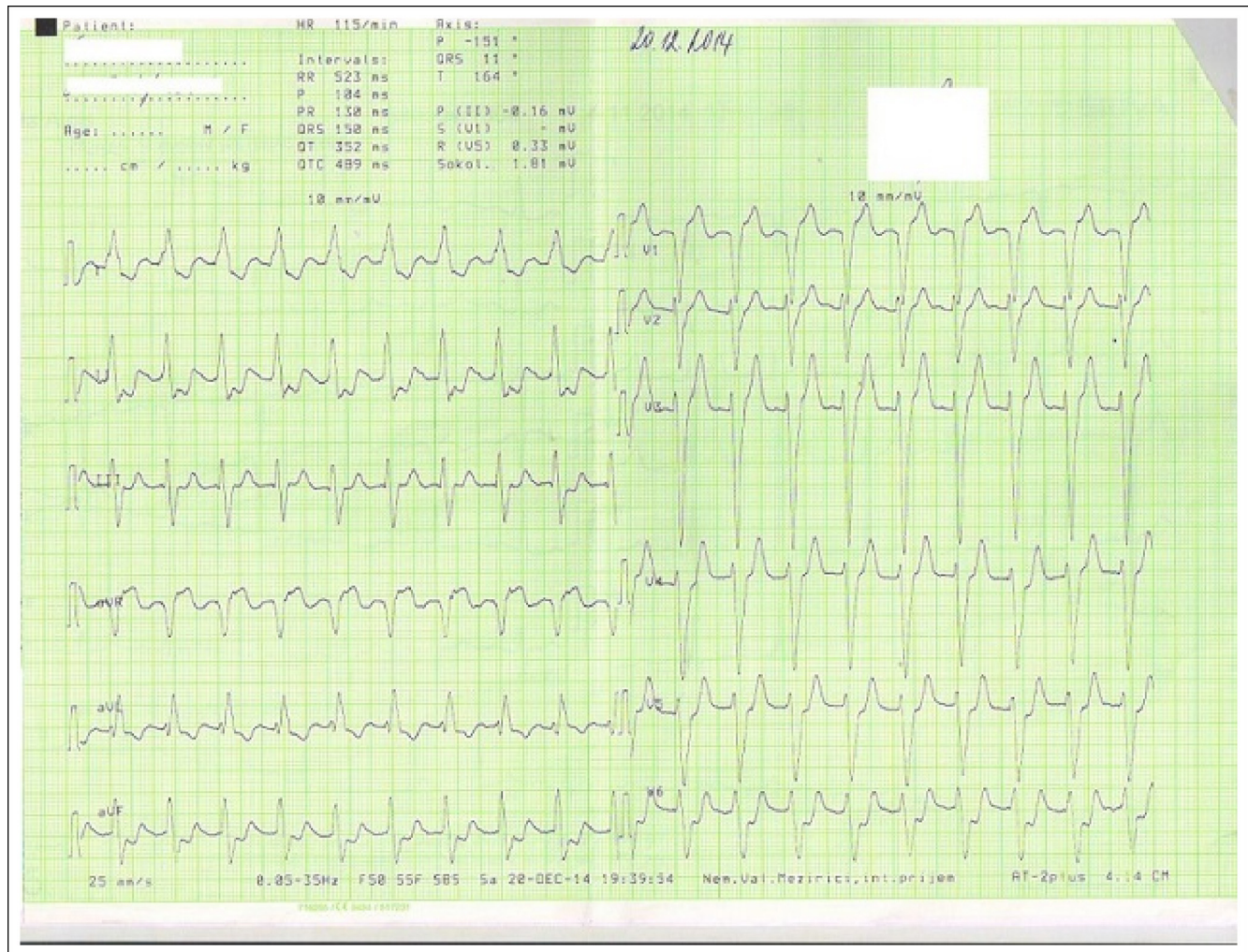


Fig. 1 – 12-Lead eCG – LBBB changes before admission to complex cardiovascular center.

Cabrol technique was used for aorto-coronary anastomosis (Fig. 6). Cardiopulmonary bypass time was 270 min; therefore, deep hypothermic circulatory arrest was used. The postoperative need of mechanical ventilation for the circulatory instability and sepsis was 17 days, stay at intensive care unit was 18 days, and one cycle of continuous veno-venous hemodiafiltration was implemented. For sepsis, the antibiotic therapy was administered with ampicillin, amoxicillin-clavulanate and gentamicin in adequate doses. *Staphylococcus* species was identified in the tissue of aorta with the PCR analysis, and the infectious cause of TPA was confirmed. For the impairment of renal function gentamicin treatment was switched to vancomycin. Significant improvement in overall condition permitted the oral drug use including antibiotics and effective rehabilitation. Postoperative echocardiography revealed moderate left ventricular function (50% ejection fraction with no local motion abnormalities, proper function of mechanical aortic valve, and no perigraft collection), laboratory results showed moderate deterioration of renal function (glomerular filtration rate 0.43 mL/min/1.73 m² – stage 3 CKD), and the patient was discharged to outpatient care

23 days after surgery with no neurological complications, symptoms appropriate class II NYHA classification.

Discussion

Pseudoaneurysm of the thoracic aorta after cardiac surgery is rare, but is a potential malignant situation. In the literature, there are only few case reports or studies, with the small number of patients, published [1–3]. The most frequent causes of pseudoaneurysms generally are previous cardiac surgery, trauma or infection [2]. Predisposing surgical factors are suture line tension, graft infection [2], excessive use of biologic glue [4,5], persistent bleeding into the space surrounding the aortic graft [6], and aortic root or ascending aortic replacement is found in almost half of cases as the previous operation [7].

Typical manifestations of TAP on ascending aorta are chest pain, heart failure and aortic regurgitation [1]. Katsumata et al. report persistent febrile illness after the primary operation in 6 of 10 patients reoperated for the TAP, operative tissue culture detected microbiological agent in only 3 cases

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