

Treatment of infective endocarditis complicated by peripheral embolism

Semih Murat Yucel, Serkan Burc Deser

Ondokuz Mayıs University, Faculty of Medicine, Department of Cardiovascular Surgery, Samsun, Turkey

Abstract

Infective endocarditis still has high mortality and morbidity. Infective endocarditis usually affects the native valve and may lead to non-cardiac complications such as embolism, metastatic infection and septicemia due to the embolus of septic vegetations. Development of heart failure, systemic embolization, and perivalvular abscess are indications for emergency surgery. Complication rate of vegetations which are greater than 10 mm is more than 90% however, the complication rate of vegetations which are less than 10 mm is 48%. Medical treatment alone may not always be sufficient and may lead to more serious complications such as peripheral embolism. Here, we present a patient diagnosed with acute aortic valve infective endocarditis and left femoral artery embolism in the light of current literature.

Keywords: Infective Endocarditis; Surgical Treatment; Embolism.

INTRODUCTION

Infective endocarditis (IE) is the infiltration of the endothelial surface of the heart with pyogenic microorganisms, and often seen in advanced age and males. The most important finding is vegetation on the valve. The annual incidence of IE is 1.9-6.2 / 100.000. Staphylococcus aureus is the most common microorganism of acute endocarditis however, streptococcus is the most common microorganism of subacute endocarditis (1). Valvular and Paravalvular complications can be seen. Cerebral emboli, peripheral emboli, septicemia, and metastatic infections are common extracardiac complications (22-43%) (2). Progressive heart failure, systemic embolization or perivalvular abscess are considered as indications for the emergency surgery for acute infective endocarditis (3). Here, we present a patient with acute aortic valve endocarditis and peripheral emboli with the light of current literature.

CASE REPORT

A 47-year-old female was admitted to secondary hospital with a complaint of fever and epigastric pain. Intravenous (IV) anti-biotherapy was administered with the preliminary diagnosis of cholecystitis. Then, the patient was transferred to Ondokuz Mayıs University Hospital due to on-going fever. IV Sulperazone (2x1gr,

daily) treatment was initiated empirically after the blood cultures were taken. Brucella and Salmonella were not grown in her blood culture however, Methicillin-sensitive Staphylococcus aureus grew for this reason, IV Cefazolin (3x2 gr, daily) and Gentamycin (3x80 mg, daily) was initiated. 10x7 mm vegetation was detected on the aortic valve by transthoracic echocardiography and a vegetation on the non-coronary cusp of the aortic valve, moderate mitral regurgitation, and advanced aortic regurgitation was confirmed with the transesophageal echocardiography (TEE). On the 13th day of the anti-biotherapy, the patient was developed acute left femoral artery embolism while fever was on-going. For this reason, the patient referred to our clinic. On admission, her blood pressure was 90/60 mmHg, pulse: 110 min, body temperature was 38°C. Physical examination revealed wheezing and rales in the lung, and 2/6 diastolic murmur in the aorta. WBC: 18.000/mcL, Hgb: 9.4 mg/dL, CRP: 47 mg/L, ESR: 56 mm/h was found in the laboratory examination. In physical examination, her left lower limb pulses were absent and her foot was pale and cold.

We decided to perform surgery. The patient's informed consent was obtained and routine preparation was completed. Under general anesthesia median sternotomy, aortic right atrial cannulation and partial cardiopulmonary bypass were performed. Cardiac arrest was achieved

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Corresponding Author: Serkan Burc Deser, Ondokuz Mayıs University, Faculty of Medicine, Department of Cardiovascular Surgery, Samsun, Turkey, E-mail: sbd983@yahoo.com

with moderate hypothermia at 28 °C via potassium-rich blood cardioplegia. After aortotomy was done, the aortic valve was resected with non-coronary cusps with a 1 cm diameter vegetation valve. The aortic valve was replaced with a twenty-one mm mechanical prosthesis (St. Jude Medical Inc, St Paul, MN, USA) with pledged sutures. Meanwhile, thrombectomy was performed simultaneously via left main femoral artery with a Fogarty catheter. The patient was treated with double anti-biotherapy (IV Gentamycin and Cefazolin) for 14 days and single (IV Cefazolin) for 28 days after surgery. She was discharged on the postoperative 30th day. Six months after the surgery, the vital signs of the patient were stable and no pathology was found in the control TTE.

DISCUSSIONS

Infective endocarditis is still associated with high in-hospital mortality and morbidity rates. Despite appropriate anti-biotherapy with surgical treatment, survival rates range between 60% and 80% (4). Streptococci, Staphylococci, Haemophilus, Actinobacillus, Cardiobacterium, Eikenella, and Kingella are the common cause of infective endocarditis for native valve endocarditis. Infective endocarditis most commonly affects aortic valve. Complication rate of vegetations which are greater than 10 mm is more than 90% however, the complication rate of vegetations which are less than 10 mm is 48% (5). Acute infective endocarditis not only damages to all native valves but also lead to non-cardiac complications such as peripheral embolism due to spreading of septic vegetations, metastatic infection, and septicemia. The peripheral embolism which is the most common extracardiac complication, frequently affecting kidneys (60%), spleen (44%), brain (40%), coronary arteries (30%) and peripheral arteries (3-6). 50% of the complications occur within 20 days of initial symptoms and 80% occur within the first month. Besides that, mitral valve endocarditis carries a greater risk of peripheral emboli rather than aortic valve endocarditis (5). Progressive heart failure, systemic embolization, end-organ damage, perivalvular abscess are the indications for the emergency surgery for infective endocarditis

(4). Valve replacement is recommended for aortic valve involvement, however, valve repair is recommended for mitral and tricuspid valve involvement (5). The purpose of the surgical treatment is to remove infected tissues and repair the defect. For this reason, leaflet resection, cord transposition, pericardial patch, partial homograft, prosthetic ring, bioprosthesis or metal prosthetic valve replacement are used for the surgical treatment of IE (3).

CONCLUSION

Despite improvements in the technology, the accessibility of anti-biotherapy and the increased surgical experience, the treatment of acute infective is still not very successful. It is time-consuming to treat with only medical therapy in the presence of mobile vegetation. Especially in younger population, diagnosis of infective endocarditis should definitely come to mind in the case of systemic embolism. The best time for surgery is when the patient is hemodynamically stable. Despite the high risk, emergency surgery is essential in the presence of progressive heart failure, systemic embolization, or perivalvular abscess.

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