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CASE REPORT

First Sign of Native Valve Endocarditis in the COVID-19 Pandemic: Acute Arterial Septic Embolism in the Lower Extremity

COVID-19 Pandemisinde Doğal Kapak Endokarditinin ilk Belirtisi: Alt Ekstremitede Akut Arteriyel Septik Emboli

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ABSTRACT

The clinical manifestations of infective endocarditis are variable. Late diagnosis of the disease can lead to clinical catastrophe and even death. Although its symptomatology is broad, the initial diagnosis can sometimes be made after complications, particularly during COVID-19 pandemic days. In this report, we aimed to present that lower extremity ischemia was the first sign of infective endocarditis in a 77-year-old female patient with complaints of sudden onset of pain and coldness in the leg with history of fatigue for one week. Echocardiography revealed that a mobile appearance compatible with 16*24 mm vegetation on the aortic valve ventricular surface. In addition, embolus material was also seen in femoral artery during doppler ultrasonography examination. The patient underwent an embolectomy and embolic material of 1x1.5 cm was removed from the left common femoral artery. In conclusion, it should be noted that during the pandemic period, patients with mild infective endocarditis symptoms may be confused with covid 19 infection symptoms.

Keywords: infective endocarditis, embolus, surgery, limb ischemia, acute

ÖZ

Enfektif endokarditin klinik belirtileri değişkendir. Hastalığın geç teşhisi klinik felaketlere ve hatta ölüme neden olabilir. Semptomatolojisi geniş olmakla birlikte, özellikle COVID-19 pandemi günlerinde bazen ilk tanı komplikasyonlardan sonra konulabilir. Bu bildiride, bir haftadır yorgunluk öyküsü olan ve bacağında ani başlayan ağrı ve soğukluk şikayetleri ile başvuran 77 yaşındaki kadın hastada, alt ekstremite iskemisinin enfektif endokarditin ilk bulgusu olduğunu sunmayı amaçladık. Ekokardiyografide aort kapak ventrikül yüzeyinde 16*24 mm vejetasyonla uyumlu mobil görünüm saptandı. Ayrıca doppler ultrasonografi incelemesi sırasında femoral arterde de embolik materyal görüldü. Hastaya embolektomi yapıldı ve sol ana femoral arterden 1x1.5 cm embolik materyal çıkarıldı. Sonuç olarak, pandemi döneminde hafif enfektif endokardit semptomları olan hastaların covid 19 enfeksiyon semptomları ile karıştırılabileceği unutulmamalıdır.

Anahtar Kelimeler: enfektif endokardit, emboli, cerrahi, ekstremite iskemisi, akut

Introduction

Infective endocarditis is an infection of the endocardium of the heart, usually the valves. Delayed diagnosis of the disease may lead to high mortality and morbidity. Although its symptomatology is broad, an initial diagnosis can sometimes be made after complications, particularly during the COVID-19 pandemic period. Complications of infective endocarditis (IE) include cardiac, neurologic, renal, and musculoskeletal complications as well as complications related to systemic infection (including embolization, metastatic infection, and mycotic aneurysm). Due to complications affecting the prognosis and potentially leading to lethal outcomes, they must be well acknowledged and kept in mind. Previously, cases of ischemia of the limbs secondary to infectious endocarditis causing amputation have been reported (1). Systemic embolization with clinical sequelae has been described in 22 to 50 percent of patients with IE (2). As a metastatic complication of infective endocarditis, abscess or distant infection may occur, as well as embolization that may lead to ischemic changes. In this case, we presented septic embolism as a complication of infective endocarditis that could threaten the entire lower extremity and occlude the common femoral artery.

Case Presentation

A 77-year-old female patient with a known history of breast cancer was admitted to the emergency department with complaints of sudden onset of pain and coldness in the leg. The patient had fatigue for one week in her history. Vitals: temperature 37.2°C, heart rate 102 beats/minute, blood pressure 115/50 mmHg, and oxygen saturation 90% in room air. On physical examination, an early diastolic murmur was heard, more prominent in the aortic focus. There was sinus tachycardia in her electrocardiography. Left femoral pulse was palpable manually but there were no distal peripheral pulses. The leg was cold. In laboratory values, white blood cell was 16200 cells/μL, CRP was 78 mg/L, erythrocyte sedimentation rate was 84 mm/

hr, and troponin I was 127 pg/mL. Echocardiography showed a left ventricular ejection fraction of 50%, severe aortic insufficiency, and a mobile appearance compatible with 16*24 mm vegetation on the aortic valve ventricular surface. Upon detection of thrombus material obstructing the flow in the left common femoral artery bifurcation in the patient's Doppler ultrasonography, the patient was operated on urgently. The left common femoral artery was explored under local anesthesia. Longitudinal arteriotomy was made on the main femoral artery and an embolic material of 1x1.5 cm was removed (Figure 1,2).

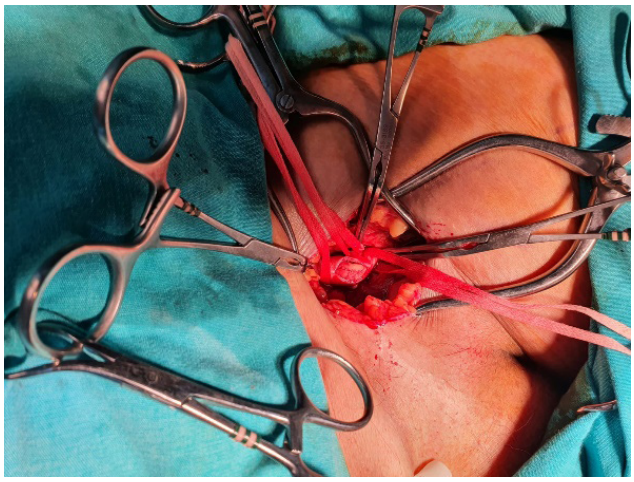

Figure 1: Removal of septic endocarditis material from common femoral artery

Figure 2: A view of septic endocarditis material

No thrombus was removed proximally or distally from the incision with the Fogarty catheter. The patient was taken into the intensive care unit without any complications. Distal pulses were palpable. Three sets of blood cultures were taken from the patient, and intravenous treatment was started with empirical vancomycin 2*1 g and gentamicin 1*240 mg. Streptococcus mitis growth was observed in the blood culture taken. Streptococcus mitis was also isolated from the intraoperative material.

Discussion

The etiology of acute ischemic lower extremity guides the treatment strategy. For example, thrombolysis has no effect on nonthrombotic material, so if either is strongly suspected of infective endocarditis, surgery may be the preferred treatment. Although infective endocarditis is seen in intravenous drug use, prosthetic valve diseases, or rheumatic valve diseases, it is rarely seen in case of immunosuppressant use and especially in those who receive chemotherapy and radiotherapy for cancer (3). In the case presented here, the patient had a history of breast cancer and a history of adjuvant chemotherapy and radiotherapy. In addition, *Streptococcus mitis* growth was observed in the blood culture taken from the patient. In the echocardiography, the valve structures were normal.

Embolic events occurred before hospital admission in 42.1% of IE patients (4). In this study, the majority of embolic events are observed between the onset of endocarditis symptoms and before the start of antibiotic therapy, and the peak periods are the period of hospital admission and the period of antibiotic initiation. In other words, the reason forcing patients to seek medical advice may be an embolic event. Of note, the rate of embolic events drops dramatically during the first 2 weeks of successful antibiotic therapy. In the case presented here, systemic peripheral arterial embolism was the first reason for the patient's admission to the emergency department. The effect of vegetation size on embolic potential was specific to the infecting organism with large vegetations independently predicting embolic events only in the setting of streptococcal IE. In contrast, staphylococcal or fungal IE seems to carry a high risk of embolization that is independent of vegetation size (2,5). In the case presented here, streptococcal strain was grown in blood culture, and vegetation size was greater than 1 cm. In our case, which confirms previous studies, the patient's first reason for admission was an embolic event. So, surgical treatment could be planned by determining the microbiological and echocardiographic embolic risk in order to prevent embolic events that increase mortality and morbidity.

2019 Coronavirus Disease (COVID-19) has become a pandemic all over the world. Several studies have shown that COVID-19 patients, whose coagulation parameters were abnormal, were more likely to have a worse prognosis. According to the available literature, coagulopathy in COVID-19 infections may manifest as acute limb ischemia (6,7). Patients with infectious endocarditis may also have symptoms similar to COVID-19 infection like fever, anorexia, weakness, headache, myalgia, arthralgia, dyspnea, and acute

limb ischemia as mentioned above. In this COVID-19 pandemic period, it is important to be alert about infective endocarditis as well as COVID-19 infection in patients with symptoms of acute limb ischemia and infection symptoms. And also, delayed diagnosis of infective endocarditis leads to high mortality and morbidity. Fear, obsession, and anxiety and COVID-19-related concerns such as isolation from people contact may cause delay or avoidance of medical care as is the case of our patient. In addition, due to the possibility of COVID-19 infection in patients with fever, other symptoms and signs may not have been adequately evaluated at the time of emergency department admission. Therefore, although the treatment of ischemia is a priority in the management of acute critical lower limb ischemia, septic embolism should be kept in mind if there are symptoms and signs of infection in patients presenting with ischemic symptoms at their first hospital admission.

Infective endocarditis and COVID-19 infection might have similar clinical signs and symptoms, and also both of them can result in acute limb ischemia. As a result, because health providers are rather concerned about COVID-19 infection, the diagnosis of infective endocarditis and its complications may be missed during the pandemic period. Infective endocarditis and its complications have a significant death and morbidity rate when diagnosis and treatment are delayed. Identifying the etiology with early evaluation will minimize mortality and morbidity in patients with fever or infectious symptoms with acute limb ischemia on their first admission to the hospital. It should be noted that during the pandemic period, patients with mild infective endocarditis symptoms may be confused with COVID-19 infection symptoms.

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