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Infective Endocarditis in a Young Age Pregnant Woman

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ABSTRACT

Infective endocarditis (IE) in pregnancy is extremely rare with high maternal and fetal mortality. We report a case of 28 years old female, at the puerperium stage was complaining of recurrent fever during pregnancy without evident source of infection. On examination she was pale and having a low grade fever, bradycardia, and skin lesions at palms and at tip of fingers. Severe abdominal pain was present on abdominal examination. Cardiac examination revealed pan systolic murmur over the heart apex.

Laboratory investigations revealed low hemoglobin, Leukocytosis, and positive blood cultures for *Staphylococcus Aureus*. Pelvic-Abdominal ultrasound showed splenic infarctions. Electrocardiographic examination revealed sinus bradycardia. In the trans-thorathic Echo (TTE), the mitral valve showed sub-valvular highly mobile mass. Based on previous data, the patient was diagnosed with IE and started on appropriate medications for IE.

In conclusion; Close attention should be paid to any pregnant woman with recurrent fever. A detailed medical history, physical examination, echocardiography and blood culture should be carried out as soon as possible.

Keywords: Fever; Infective endocarditis; Pregnancy.

INTRODUCTION

Infective endocarditis (IE) is a rare disease with an incidence of 3 to 10 episodes per 100,000 person years [1]. IE in pregnancy is very rare with a reported incidence of 1 in 100,000 pregnancies [2]. IE in pregnancy has a high maternal (up to 33%) and fetal mortality (up to 29%) [3]. Risk factors for IE include intravenous drug abuse, a prosthetic valve, previous history of IE and congenital heart disease [4].

Here, we present a case of pregnant female with IE admitted to Sers El Layan Central Hospital, Menoufia, Egypt. The difficulties in diagnosis and in selection of the appropriate management strategy are emphasized.

CASE SCENARIO

A twenty-eight years old female patient, gravida 2, para 2, at the puerperium stage refereed to us complaining of high temperature, difficult breathing and abdominal pain 2 weeks ago since she was pregnant at 36 weeks gestational age with no resolution of symptoms after labor.

The patient reported that she had a history of recurrent fever during pregnancy without evident source of infection. At 36 weeks of pregnancy, she developed severe cramping abdominal pain, at this time, the obstetrician decided to terminate pregnancy by caesarian section. After termination of pregnancy, nor the fever or the abdominal pain had subsided and the patient received symptomatic treatment without improvement so referred to us.

The patient had experienced dyspnea at ordinary effort of gradual onset and progressive course which progressed from New York Heart Association Functional Classification (NYHA) grade 1 to NYHA grade II over 2 weeks with no orthopnea or paroxysmal nocturnal dyspnea.

On asking about the past medical history, the relatives gave history of cavernous sinus thrombosis 3 years ago after her first delivery, associated with fits that required intensive care unit (ICU) admission and complicated by right senseroneural hearing loss.

On examination the patient was fully conscious, looking ill and pale, having a low grade fever (38.3^{o} C), bradycardia (Heart rate 58 beat/minute, regular, of average volume, equal on both sides with no special character), blood pressure was 110/70 mmHg equal in both sides and the respiratory rate was 27 cycle/min. Diffuse skin lesions were seen at palms which was painless and irregular. Painful hemorrhagic macules were seen at tip of fingers (Figure 1).

Severe abdominal pain was present on abdominal examination. Cardiac examination revealed pan systolic, soft murmur with maximum intensity over apex of the heart. Chest and neurological examination revealed no abnormalities.

The patient was admitted to the ICU for additional investigations. Laboratory investigations revealed low hemoglobin (9.3 mg/dl), Leukocytosis (TLC 14.8 $\times 10^3$ /cmm), normal platelets count (210×10^3 /cmm). Randeom blood sugar, urea, creatinine and liver function tests were within normal values. Urine analysis was clear of blood, glucose and protein. C-reactive protein was positive with initial negative blood culture. Screening for Tuberculosis, typhoid, brucellosis, HIV, HCV and HBV were negative. Anticardiolipin immunoglopulin and lupus anticoagulant were within normal ranges.

Pelvic-Abdominal ultrasound was normal except for presence of splenic infarctions. Electrocardiographic examination revealed sinus bradycardia. Computerized tomography (CT) brain without contrast showed no recent ischemic or hemorrhagic infarction (Figure 2A).

Trans-thorathic Echo (TTE) revealed normal left ventricle with normal systolic function, no regional wall motion abnormality, normal aortic valve, no pericardial effusion and normal right side with mild tricuspid regurge. Interestingly, the mitral valve showed sub-valvular (post leaflet) mass (highly mobile, 5 mm) with moderate mitral regurge (Eccentric); Picture suggestive of IE (Figure 3).

Blood cultures was repeated and revealed a positive result for *Staphylococcus Aureus* and displayed sensitivity towards, vancomycin, amikacin, imipenem, and meropenem.

Based on clinical signs and symptoms, TTE findings, and positive blood cultures the patient was diagnosed with IE. The patient was started on appropriate medications for IE. She had received; vancomycin 1 gm every 12 hours, gentamicin 160 mg once daily, intravenous pantoprazole 40 mg once daily, intravenous paracetamol 1000 mg four times daily, enoxaparin 40 IU once daily, ator 20 mg oral once daily, and amlodipine 5 mg oral once daily.

Unfortunately; forty-eight hours after ICU admission the patient complained of left side weakness, CT brain was done, intracerebral hemorrhage (Figure 2B) was present and neurology consultation done who recommended conservative treatment with discontinuation of prophylactic anticoagulants. Physiotherapy consultation was done and within few days the limb movement and sensations improved with improvement of the cardiac and general condition.

Patient was kept in ICU for 2 weeks until culture results become negative, fever subsided and limb movement and sensation had improved then the patient was transferred to the hospital ward and kept there for 4 weeks on antibiotics. Now patient is good with minimal lower left limb weakness.

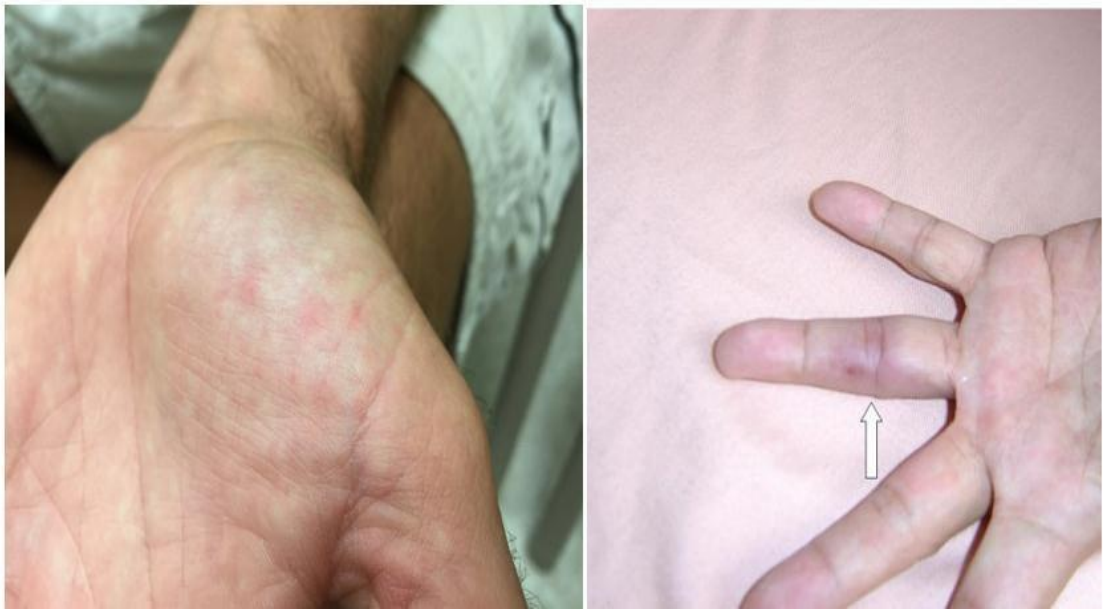

Figure 1: Diffuse skin lesions were seen at palms which was painless and irregular. Painful hemorrhagic macules were seen at tip of finger

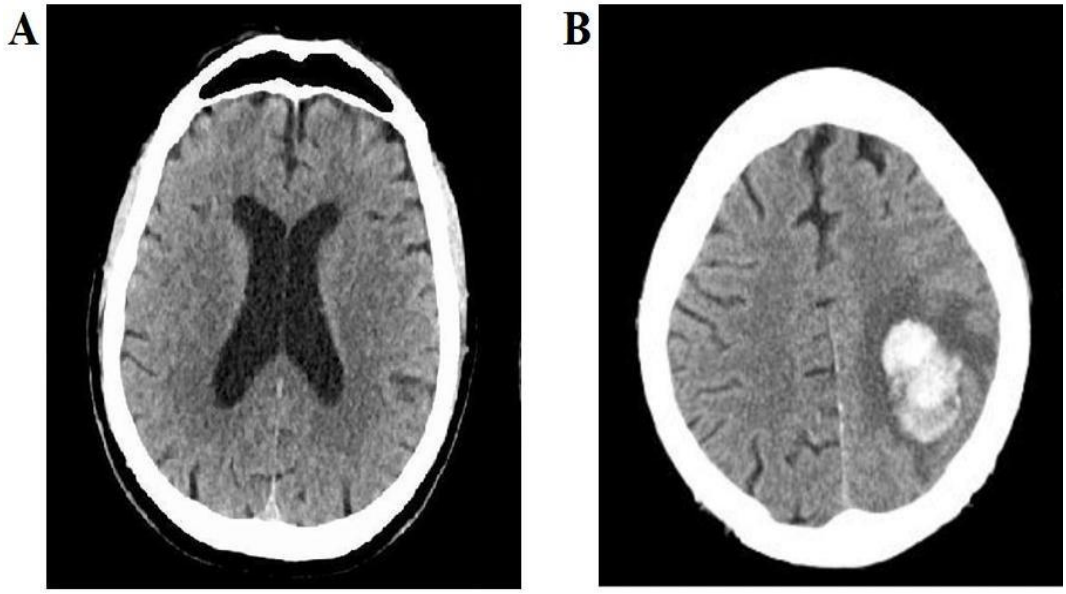

Figure 2: Computerized tomography (CT) brain without contrast **A:** CT at the first day of admission showing no recent ischemic or hemorrhagic infarction. **B:** CT after forty-eight hours after ICU admission showing intracerebral hemorrhage.

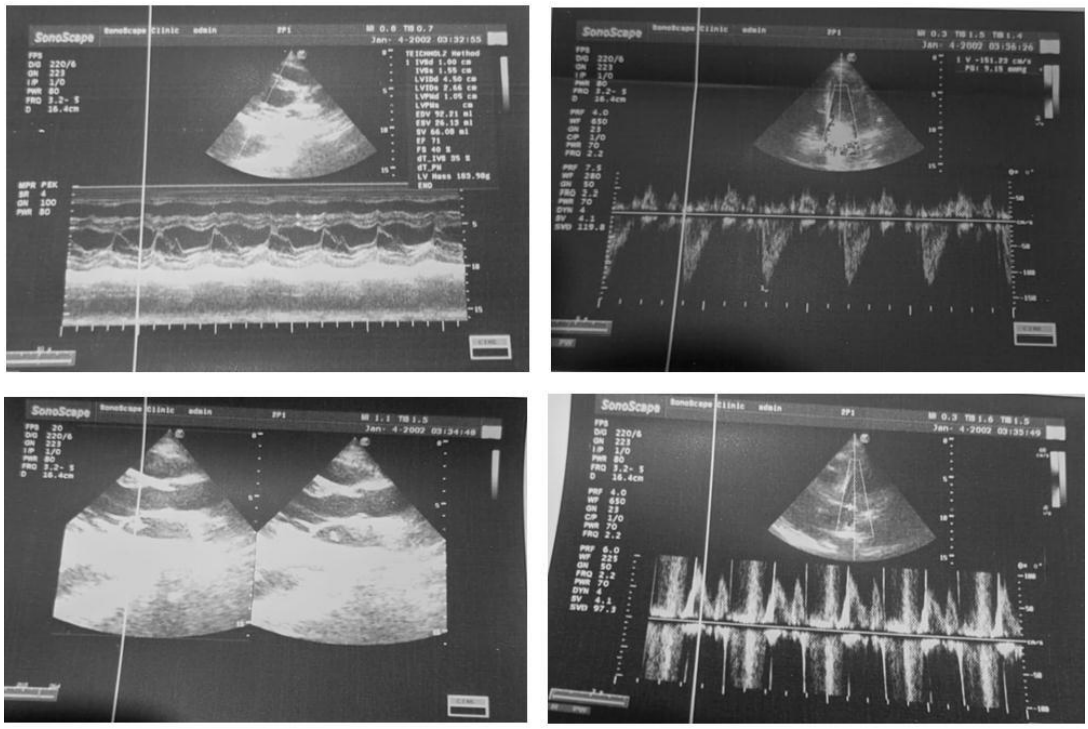

Figure 3: Trans-thorathic Echo showing normal left ventricle with normal systolic function, no RWMA, normal Aortic valve, no pericardial effusion and normal right side with mild tricuspid regurge. The mitral valve showing sub-valvular (post leaflet) mass (highly mobile, 5 mm) with moderate mitral regurge (Eccentric); Picture suggestive of infective endocarditis

DISCUSSION

Infective endocarditis is life-threatening infection rarely occurs during pregnancy. In most cases, IE runs a subacute course and involves the mitral valve[5]. We are documenting a case of a young woman in the puerperium stage with a history of recurrent fever since the thirty-six weeks of pregnancy. Presence of splenic infarctions, Osler nodes in the fingers and pan systolic, soft murmur over the heart apex in the cardiac examination were alarming. Large vegetation on the mitral valve was evident in the echocardiography, and blood culture was positive for *Staphylococcus Aureus*, so the diagnosis of IE was proposed and the case treated accordingly.

In most reports the IE tends to run a subacute course and to appear more frequently in the third trimester of pregnancy [6]. IE can present with atypical findings in pregnancy and its diagnosis is challenging for the physicians. When a patient presents with the classical triad of fever, anemia, and heart murmurs, IE should be listed as one of the differentials, however, the heart murmurs and anemia may be seen in normal pregnant women due to the physiological effect of pregnancy on the cardiovascular system and blood volume [7].

The management of IE in pregnancy is similar to that of a non-pregnant patient. The pathogenesis of IE involves the adherence of bacteria to damaged valves. The organisms most frequently responsible for IE are those that have a high affinity for adherence to damaged endothelium as *Staphylococcus aureus*, Streptococcus species and enterococci, which are responsible for 80% of IE [8]. *Staphylococcus aureus* was the causative organism in our case.

This case report highlights that although the majority of pregnant females are healthy and had uncomplicated antenatal courses, obstetricians should be alert that rare and serious disease can occur in pregnancy. Close attention should be paid to any pregnant woman with recurrent fever, a detailed medical history and physical examination should be performed, echocardiography and blood culture should be carried out immediately, multidisciplinary consultation should be implemented, and a management plan should be formulated right away, as this is the key for saving the lives of mothers and infants.

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