

Unusual presentation of infective endocarditis during pregnancy: A case report

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Abstract

Infective endocarditis (IE) is uncommon but a very serious infection during pregnancy. In most cases, the disease tends to run a subacute course and involves the mitral valve. We present the case of a 25-year old pregnant female who developed shortness of breath and fever 2 weeks prior to parturition. The symptoms did not subside after her delivery, which was carried out via c-section. Based on vegetations attached to aortic valve cusps and positive blood culture for staphylococcus Aureus, the diagnosis of infective endocarditis was made.

Keywords: Endocarditis, Aortic valve, Pregnancy.

Introduction

Infective endocarditis is an inflammation of the endocardium and its valve. It usually involves the mitral valve, but aortic valve involvement is very rare; especially in pregnancy. The incidence of infective endocarditis (IE) during pregnancy has been reported to be 0.006%¹ or 1 in 8,000 deliveries (0.0125%).² According to a recent collective study, the calculated maternal and foetal mortality rates were 22.1% and 14.7%, respectively.³ There is little literature available on the involvement of the aortic valve in infective endocarditis during pregnancy. In this paper, we report a case of infective endocarditis following aortic stenosis with mild regurgitation in a pregnant woman having a congenital bicuspid aortic valve and discuss its outcomes.

Case Report

A 25-year-old female patient was referred from Gynaecology Ward to Cardiac Outpatient Department, Civil Hospital, Karachi, in April 2016 with shortness of breath and fever for 1 month. According to the patient, she had gestational amenorrhea since August 2015 and 2 weeks prior to parturition, she developed progressive shortness of breath initially on exertion and later on at rest on starting of her

labour pains, she was referred to the gynaecology ward where she was managed with an emergency c-section. The surgery was uneventful with a living child. As the symptoms she presented with did not subside, she was referred to the cardiology ward for further assessment. Fever was high-grade intermittent, not associated with rigors and chills and subsided with analgesics. There was a history of miscarriage, but no history of any heart disease, rheumatic fever, and intravenous drug use.

On examination, Temperature was 38.0°C, Blood pressure 100/60 mmHg; Pulse rate 98 beats/min. Pulse was regular with no radio radial or radio-femoral delay. Pallor was present and there were findings of erythematous lesions on the soles. At CVS examination, end systolic murmur (3/6 grade) was present at the right second and third intercostal spaces. It was radiating to the carotids and the apex. The spleen was palpable 1 cm below the subcostal margin. Other systemic examination was normal.

Laboratory investigations revealed haemoglobin 8.1 gm/dl, TLC 13500, platelet 386000, ESR 109 mm/hour. C-reactive protein 47 mg/l. Serum sodium 135 mmol/l, Potassium 4.3 mmol/l. Creatinine 0.6 mg/dl, BUN 4 mg/dl. D-dimer levels 1.6 mg/dl. Urine dipstick was negative for proteins and blood. Chest x-ray was normal. Viral markers for hepatitis B (surface antigen) and hepatitis C were non-reactive. Her ANA test was negative. She was sent for trans-thoracic echocardiography which showed the thickened bicuspid aortic valve with restricted movements. There was a mass of 10*11 mm dimensions attached to the aortic cusps. Ejection fraction was normal and she was diagnosed with severe Aortic stenosis with mild Aortic regurgitation.

Two sets of blood culture showed growth of Staphylococcus aureus, sensitive to amoxicillin, clindamycin, and gentamicin. During the hospital stay, the patient remained febrile for 2 weeks despite appropriate antibiotics. She developed severe pain of right foot and toes, which was pricking in character with petechia on toes which later turned to a black discolouration (Figure).

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Figure: Black discoloured petechia on toes with erythematous lesions on soles.

Drug history: Vancomycin, Metoprolol, Acetylsalicylic Acid, Rifampicin, Cilostazol.

Because of persistent fever despite antibiotics, the cardiac surgery department took on board and the department advised aortic valve replacement.

Discussion

In this case, we discuss the postpartum infective endocarditis secondary to aortic stenosis, which is very rare but lethal to both mother and foetus. Predisposing factors that lead to IE during pregnancy include previous cardiac structure abnormalities like congenital bicuspid aortic valve as in our case, IV drug abuse, periodontal disease and local infection.⁴ It can occur after normal delivery or during miscarriage. In our patient there was a past history of miscarriage.⁵

IE usually presents with atypical findings.⁶ When classical triad of anaemia, fever, and murmurs are present it should be kept in differentials. Fever is present in almost every case. Pregnancy has its effects on the cardiovascular system, which increases the blood volume, heart rate, and cardiac output so the presence of murmurs, in this case, could be due to the normal physiological changes occurring during pregnancy.⁷ Antibiotics are usually the treatment of choice for IE as we gave our patient, but because her condition deteriorated despite treatment for 2 weeks, so aortic valve replacement was performed.

Our patient had a bicuspid aortic valve which is the most common predisposing factor for aortic stenosis in pregnancy. It can cause lethal effects to the mother by producing tachycardia and cardiac failure.⁸ In this case, bicuspid aortic valve remained asymptomatic before the pregnancy, but pregnancy-related physiologic changes aggravated the stress on the bicuspid aortic valve which became fibrosed and ultrasound showed aortic stenosis. Any pathologic

damage to valve contributes to the development of infective endocarditis.⁹

A review article of 30 case reports showed only one case of bicuspid aortic valve involvement in IE during pregnancy,¹⁰ indicating how rare is the presentation. Few cases of IE of aortic valve during pregnancy have been reported.¹¹ There are also other cases of postpartum IE, most likely secondary to incomplete antibiotic prophylaxis.¹²

Conclusion

IE in pregnancy is very rare but a life-threatening condition for both foetus and mother. It is very difficult to diagnose and requires urgent treatment. It should be kept in the differential diagnosis whenever the patient presents with obscure cardiovascular symptoms.

Informed Consent: Appropriate informed medical consent was taken from the patient regarding the publishing of this case report.

Disclaimer: None to declare.

Conflict of Interest: None to declare.

Funding Disclosure: None to declare.

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