



Infective Endocarditis on the Tricuspid Valve in a Neonate

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Highlights

A full-term female neonate with infective endocarditis was reviewed. Transthoracic echocardiography showed vegetations attached to the tricuspid valve. The baby had clinical signs of septicemia and positive blood culture *Pseudomonas aeruginosa*. Thus, echocardiography remains an important tool in the diagnosis and follow-up of infective endocarditis.

Keywords: Infective endocarditis; vegetations; neonate

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Introduction

Infective endocarditis (IE) in neonates is a rare condition and is associated with significant morbidity and mortality [1].

It usually affects the right side of the heart, with the tricuspid valve commonly involved because of the shared venous circulation with the mother [2]. The combination of endothelial damage and bacteremia are the main contributing factors for the development of endocarditis and its subsequent complications in the form vegetations [3]. This report discusses a newborn diagnosed with infective endocarditis on the tricuspid valve.

A baby girl born by spontaneous vaginal delivery at 40-weeks gestation weighted 3,320 gram and had Apgar scores of 8 at first minute and 9 at five minutes. The baby was referred from a regional secondary care hospital to our tertiary referral center on the second day of birth with a suspected diagnosis of congenital heart disease. The Baby's mother had frequent urinary infections during pregnancy, despite conservative treatment, because of nephrocalcinosis.

The Baby's Clinical examination showed clear signs of septicemia, respiratory distress, pallor and poor skin circulation with cool extremities. A grade 3 systolic murmur was heard at the left lower sternal edge. Laboratory investigations confirmed the presence of infection with raised CRP of 430 which responded to treatment and fell

down to 16.5 after 10 days. Respective values for Procalcitonin were 11 and 0.169 ng/ml. White cell count was 25,000 and blood culture was positive for *Pseudomonas aeruginosa*. Initial management included CPAP, intravenous fluid replacement and antibiotics.

A transthoracic echocardiogram was performed over the next two days which showed clear evidence for a bright vegetation attached to the tricuspid valve. Despite medical treatment, the significant clinical improvement of the baby and the normalized laboratory findings the subsequent echocardiogram, three weeks later, showed the same size mass which became brighter than the baseline (Figure). As the heart rate slowed down we were able to ascertain the mass attached to the posterior leaflet, causing failure of coaptation and significant, more than moderate, tricuspid regurgitation.

Conclusion

This case demonstrates a neonate with infective endocarditis, based on blood tests and the baseline echocardiogram, involving the tricuspid valve and causing significant regurgitation. The raised inflammatory markers, leukocytosis and echocardiography evidence for vegetation support the diagnosis and assist follow up management. Whether the source of infection is related to the mother's recurrent urinary tract infection, cannot be confirmed in the absence of evidence for a similar organism.

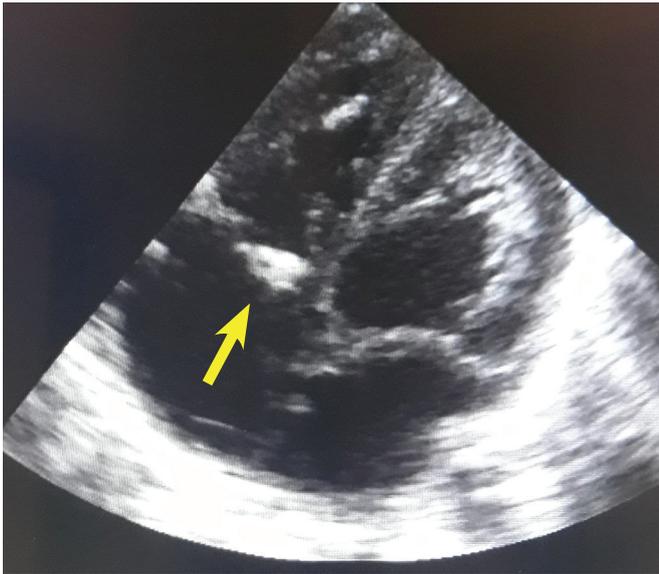


Figure 1. Apical 4 chamber view showing the bright vegetation attached to the posterior tricuspid valve leaflet

Declarations of Interest

The authors declare no conflict of interest.

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The authors state that they abide by the authors' responsibilities and ethical publishing guidelines of the International Cardiovascular Forum Journal.

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