Gram-negative bacteria causing infective endocarditis: Rare cardiac complication after liver transplantation

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Core tip: A pre-transplant cardiac assessment should include a careful evaluation for underlying valvular pathology. Bacterial endocarditis can however still occur in liver transplant recipients with normal cardiac valves. Gram negative bacteria though rare can be a causative agent for infective endocarditis. High index of suspicion for bacterial endocarditis is essential when investigating transplant recipients for fever of uncertain origin.

INTRODUCTION

Infective endocarditis is a rare complication affecting solid-organ transplant recipients. Common isolates include Staphylococcus aureus (S. aureus), Enterococci and Aspergillus. Gram negative bacilli causing bacterial endocarditis of mitral valve has hitherto not been reported. We report bacterial endocarditis of the mitral valve due to extended spectrum of betalactamase (ESBL) producing strain of Escherichia coli (E. coli) following a deceased donor liver transplantation.

CASE REPORT

A 51-year-old male, a hypertensive, underwent a deceased donor liver transplant (LT) for ethanol induced end-stage
Infective endocarditis after LT is rare. The prevalence of bacterial endocarditis among liver transplant recipients has been reported to be around 1.7%. Unlike in general population, bacterial endocarditis in transplant recipients can occur even in normal cardiac valves. The common causative agents for valvular endocarditis and mural endocarditis are *S. aureus* and *Aspergillus* respectively[9]. Other uncommon bacterial organisms causing infective endocarditis are *E. coli*, *Klebsiella oxytoca* and *Propionibacterium acnes*. *E. coli* causing infective endocarditis has been reported in pulmonary valve[8]. To our knowledge, this is the first report of ESBL producing *E. coli* induced mitral valve endocarditis.

Bacteria producing ESBL enzymes are resistant to most betalactam antibiotics such as penicillin and cephalosporins. ESBL is found exclusively in Gram negative organisms such as *Klebsiella pneumoniae*, *Klebsiella oxytoca*, *E. coli* species and *Acinetobacter baumannii*. Risk factors for infection with ESBL producing organisms include prolonged hospital or intensive care unit stay, prolonged mechanical ventilation, central venous or arterial catheters, bladder catheter, emergency abdominal surgery and prolonged exposure to antibiotics.

In conclusion, a high index of suspicion for endocarditis is essential, especially in the setting of new auscultation findings at cardiac valve areas. Multiple blood cultures are necessary to make the correct diagnosis. Initiating empirical broad-spectrum antibiotics at the earliest prior to getting culture sensitivity is important in LT recipients.

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