An unusual presentation of staphylococcal tricuspid valve infective endocarditis

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Infective endocarditis can present with highly variable and often non-specific clinical features. Here we are reporting an interesting case with uncommon characteristics of infective endocarditis.

Case report

A 28-year-old married lady presented with low-grade intermittent fever, exertional dyspnoea and gradual swelling of whole body starting from lower limbs of 2 weeks duration. It was associated with generalised weakness, cough with whitish expectoration and orthopnoea. She had a history of medical termination of pregnancy, 4 weeks back. It was followed by per vaginal bleeding for 5–6 days. Five days prior to admission, she was transfused with 4 units of whole blood.

Physical examination revealed mild pallor, temperature of 102°F (38.8°C) and features of CHF with bilateral pleural effusion and ascites. She was found to have normocytic normochromic anaemia with an ESR of 120 mm in 1st hour and transudative pleural effusion. Routine urine analysis showed albumin 3+, RBC 15 per HPF, pus cells 30 per HPF, a few granular and hyaline casts. Spot urine albumin to creatinine ratio was 3055.8mcgm per mg. ANA and ELISA for HIV were non reactive.

Echocardiography showed a pedunculated mass of about 10mm length and 6mm globular head, attached to anterior tricuspid leaflet with a severe normotensive tricuspid regurgitation. Blood culture revealed profuse growth of Staphylococcus aureus in all the 3 samples. Kidney biopsy showed features of diffuse proliferative glomerulonephritis.

Antibiotic therapy with ceftriaxone and gentamicin was initiated. Follow up investigations showed a rising creatinine level (up to 4mg per dl) though the patient became afebrile. Gentamicin was withdrawn and intravenous linezolid was started following sensitivity report. Oral prednisolone in the dose of 1mg per kg body weight was started as urine examinations showed persistent proteinuria and creatinine level kept uprising.

Following continuation of this therapy the albuminuria subsided, serum creatinine values gradually returned to normal. Repeat blood culture was found to be sterile. Steroid was gradually tapered off. After about 3 weeks of therapy, repeat echocardiography showed a hyper mobile vegetation of the same dimensions as the previous one at the same site. The patient was then transferred to the cardiothoracic surgery department, where she was transplanted with a bioprosthetic valve.

She was stable in the postoperative period and is now doing well.
Figure 1. Vegetation at tricuspid valve (encroaching ventricle)

Figure 2. Vegetation at tricuspid valve (in atrium)
Discussion

In infective endocarditis, glomerulonephritis has been seen to be associated in up to 22% cases in United States.\(^2,3\) It was focal in about 8% and diffuse in about 14% of the cases.\(^2,3\) It has also been seen that \textit{S. aureus} is the most common etiologic agent in those cases.\(^2,4\) With \textit{S. aureus} IE limited to tricuspid valve systemic complications are rare\(^5\) though our patient had glomerulonephritis. Again \textit{S. aureus} IE is characterised by a highly toxic febrile illness,\(^6\) contrary to our case.

The case was also unique in multiple other ways. This non-HIV patient had an unusual combination of tricuspid valve endocarditis in the setting of an intrinsically normal tricuspid valve in a non-drug user. Our patient had received multiple parenteral injections and the longstanding indwelling intravenous cannula may have led to seeding of the tricuspid valve, a setting somewhat akin to that of a drug abuser.

According to a study, it was found that the frequency of isolated right sided endocarditis in patients who are non iv drug users and who don’t have a pacemaker is about 2.9%.\(^7\) In a publication in 1989, it was reported that in a series of 80 autopsied iv drug abusers having infective endocarditis, the tricuspid valve was involved in half of the victims compared with 15% of victims dying of acute endocarditis not using iv drugs.\(^8\) In our case, the renal impairment did not improve with antibiotics alone, a short course steroid had to be instituted. Ideal treatment strategy in this regard is not clearly defined. In addition to antibiotic treatment, plasmapheresis and steroids have been used with variable results.\(^9,10\)

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