



## A CASE OF INFECTIVE ENDOCARDITIS IN STAPHYLOCOCCUS AUREUS BACTERAEMIA

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### ABSTRACT

Staphylococcus aureus is a leading cause of community-acquired and hospital-acquired bacteremia. Patients with S. aureus bacteraemia can develop a broad array of complications that may be difficult to recognize initially and can increase morbidity. Mortality rates of 20 to 40 % have been described. In our case, the patient developed a life threatening complication called infective endocarditis.

### KEYWORDS :

### INTRODUCTION

One of the most dreaded complications of SAB is infective endocarditis. Staphylococcus aureus infective endocarditis is a critical medical condition associated with a high morbidity and mortality. With the rise in MRSA and VRSA, it poses a higher threat. Our case

### CASE HISTORY

A 48 year old man came with chief complaints of fever for past 10 days with Right shoulder and left ankle pain for 5 days. Patient was apparently normal before 10 days after which he had fever which was intermittent, high grade, not associated with chills. Patient also complained of right side shoulder pain and left ankle pain associated with swelling. Patient gave a history of fever a month back for which he had an intra-muscular injection of paracetamol for a URTI.

Although the patient's infection resolved, the patient developed an injection site abscess for which I & D was done. The patient was still having an open wound with pus discharge at the time of presentation. Patient has no history of cardiac disease, Type-2 Diabetes mellitus, Systemic hypertension, Bronchial Asthma. On Examination, patient is febrile, pallor was present. Vitals were Pulse-110/minute, regular, normal volume. B.P- 110/80 mm of Hg. Temperature- 102 F. Cardiovascular system – S1 S2 heard. Pansystolic murmur heard in tricuspid area. Respiratory, abdominal examination and Central nervous system were normal.

### INVESTIGATION

Complete blood count showed elevated total counts of 23,000 and ESR of 32. A routine AFI profile was done and was negative for Malaria, Dengue and Typhoid. Blood culture & sensitivity were obtained from 2 sites and showed Staphylococcus bacteremia which was sensitive to methicillin.

Wound cultures showed staphylococcus aureus growth. ECG was normal. ECHO showed vegetation in tricuspid valve.

### DISCUSSION

The diagnosis was made with the help of Duke's criteria  
Diagnostic: 2 Major Criteria and 0 Minor Criteria  
Diagnostic: 1 Major Criteria and 3 Minor Criteria  
Diagnostic: 0 Major Criteria and 5 Minor Criteria

### Major Diagnostic Criteria

- Positive blood culture for typical Infective Endocarditis organisms (strep viridins or bovis, HACEK, staph aureus without other primary site, enterococcus), from 2 separate blood cultures or 2 positive cultures from samples drawn > 12

hours apart, or 3 or a majority of 4 separate cultures of blood (first and last sample drawn 1 hour apart)

- Echocardiogram with oscillating intracardiac mass on valve or supporting structures, in the path of regurgitant jets, or on implanted material in the absence of an alternative anatomic explanation, or abscess, or new partial dehiscence of prosthetic valve or new valvular regurgitation

### Minor Diagnostic Criteria

- Predisposing heart condition or intravenous drug use
- Temp > 38.0° C (100.4° F)
- Vascular phenomena: arterial emboli, pulmonary infarcts, mycotic aneurysms, intracranial bleed, conjunctival hemorrhages, Janeway lesions
- Immunologic phenomena: glomerulonephritis, Osler nodes, Roth spots, rheumatoid factor
- Microbiological evidence: positive blood culture but does not meet a major criterion as noted above or serological evidence of active infection with organism consistent with endocarditis (excluding coag neg staph, and other common contaminants)
- Echocardiographic findings: consistent with endocarditis but do not meet a major criterion as noted above

Diagnosis was made by 2 major criteria. Despite recent advances in both diagnosis and treatment of IE, S. aureus IE continues to be associated with a high morbidity and mortality<sup>[3]</sup>. Treatment failure (ie, death within 30 days following treatment, persistent bacteremia >10 days after initiation of appropriate therapy, or recurrence of bacteremia within 60 days of discontinuing therapy) is fairly common in patients with S. aureus bacteremia, particularly in the setting of infection due to MRSA.

Patient was started with methicillin and wound care was given. Repeat CBC after a course of antibiotic was back to normal.

### CONCLUSION

Staphylococcus aureus bacteraemia is associated with a high prevalence of Infective endocarditis. Routine investigation including blood culture and screening ECHO should be done. Judicial use of antibiotics should be followed in view of MRSA and VRSA.

### REFERENCE

- Lodise TP, Graves J, Evans A, Graffunder E, Helmecke M, Lomaestro BM, Stellrecht K. Relationship between vancomycin MIC and failure among patients with methicillin-resistant Staphylococcus aureus bacteremia treated with vancomycin. Antimicrob Agents Chemother. 2008 Sep;52(9):3315-20. doi: 10.1128/AAC.00113-08.
- Mylotte JM, McDermott C, Spooner JA. Prospective study of 114 consecutive episodes of Staphylococcus aureus bacteremia. Rev Infect Dis. 1987 Sep-Oct;9(5):891-907. Review.
- Fowler VG, Jr, Miro JM, Hoen B, Cabell CH, Abrutyn E, Rubinstein E, et al. Staphylococcus aureus endocarditis: a consequence of medical progress. JAMA. 2005;293:3012-21.

4. Røder BL, Wandall DA, Frimodt-Møller N, Espersen F, Skinhøj P, Rosdahl VT. Clinical features of *Staphylococcus aureus* endocarditis: a 10-year experience in Denmark. *Arch Intern Med*. 1999 Mar 8;159(5):462-9.
5. Durack DT, Lukes AS, Bright DK. New criteria for diagnosis of infective endocarditis: utilization of specific echocardiographic findings. Duke Endocarditis Service. *American Journal of Medicine*. 96(3):200-9, 1994.