IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 25, Issue 1 Ser. 2 (January. 2026), PP 51-52
www.iosrjournals.org

Infective Endocarditis Caused By An Unusual Pathogen (Staphylococcus Saprophyticus): A Case Report

Dr. Pranali Suresh Pol
Junior Resident,
Department Of General Medicine,
Dr. V. M. Government Medical College, Solapur, Maharashtra, India

Dr. Shubhangi Vithal Dhadke
Associate Professor,
Department Of General Medicine,
Dr. V. M. Government Medical College, Solapur, Maharashtra, India

Dr. Swastik Nadgire
Senior Resident,
Department Of General Medicine,
Dr. V. M. Government Medical College, Solapur, Maharashtra, India

Dr. Hait Jayantilal Savla
Junior Resident,
Department Of General Medicine,
Dr. V. M. Government Medical College, Solapur, Maharashtra, India.

Abstract
Infective endocarditis (IE) is a serious and potentially fatal condition commonly caused by Staphylococcus aureus, viridans group streptococci, and Enterococcus species. Staphylococcus saprophyticus, a coagulase-negative staphylococcus, is classically associated with uncomplicated urinary tract infections and is rarely implicated in invasive infections. We report a rare case of Staphylococcus saprophyticus infective endocarditis in a 17-year-old female with underlying congenital heart disease. The diagnosis was established based on blood culture isolation and echocardiographic evidence fulfilling the Duke criteria. The patient responded favorably to targeted intravenous antimicrobial therapy. This case highlights the importance of considering uncommon pathogens as potential etiological agents of infective endocarditis, particularly in patients with structural heart disease.

Keywords: *Infective endocarditis, Staphylococcus saprophyticus, congenital heart disease, ventricular septal defect*

Date of Submission: 03-01-2026 Date of Acceptance: 13-01-2026

I. Introduction

Infective endocarditis remains a life-threatening disease characterized by infection of the endocardial surface of the heart. Despite advances in diagnostic and therapeutic strategies, it continues to be associated with high morbidity and mortality. The most frequently implicated organisms include Staphylococcus aureus, viridans group streptococci, and Enterococcus species.

Staphylococcus saprophyticus is a coagulase-negative staphylococcus predominantly known for causing uncomplicated urinary tract infections in young women. Due to its low virulence and limited capacity for endothelial adherence, its role in infective endocarditis is exceedingly rare. Only a few cases have been reported in literature, usually in the presence of predisposing factors.

We present a rare case of Staphylococcus saprophyticus infective endocarditis in a patient with congenital heart disease, emphasizing the diagnostic challenges and clinical significance of this uncommon pathogen.

II. Case Report

A 17-year-old female, a known case of acyanotic congenital heart disease, presented with intermittent high-grade fever and progressive dyspnea for six days. She also reported unintentional weight loss. There was no history of urinary symptoms, recent infections, invasive procedures, or prior hospitalization.

On clinical examination, the patient was febrile and tachycardic. Cardiovascular examination revealed a pan-systolic murmur suggestive of underlying structural heart disease. Peripheral stigmata of infective endocarditis, including Janeway lesions, were noted. Based on the clinical presentation, a provisional diagnosis of infective endocarditis was considered.

III. Investigations

Laboratory investigations revealed elevated inflammatory markers with C-reactive protein of 65 mg/L and erythrocyte sedimentation rate of 84 mm/hr. Urinalysis was normal, and urine culture showed no growth.

Two separate blood culture samples yielded growth of Staphylococcus saprophyticus. Subsequent blood cultures were sterile. Ultrasound examination of the abdomen and pelvis revealed no significant abnormalities.

Two-dimensional echocardiography demonstrated a large ventricular septal defect with biventricular hypertrophy and preserved left ventricular systolic function (ejection fraction 60%). An echogenic mass was noted adherent to the margins of the ventricular septal defect, consistent with vegetation. Moderate pulmonary arterial hypertension was also present.

These findings fulfilled the major Duke criteria for the diagnosis of infective endocarditis.

IV. Management And Outcome

The patient was initiated on targeted intravenous antimicrobial therapy with vancomycin (1 g twice daily) and gentamicin (80 mg twice daily). The total duration of treatment was 21 days. Supportive therapy included diuretics, adjusted according to the patient's hemodynamic status.

The patient showed gradual clinical improvement with resolution of fever, reduction in inflammatory markers, and stabilization of cardiorespiratory parameters. She completed the full course of antibiotics without complications.

V. Discussion

Staphylococcus saprophyticus is an unusual cause of infective endocarditis, with very few cases documented in literature. Most reported cases have occurred in patients with underlying predisposing conditions such as congenital heart disease, prosthetic valves, or immunocompromised states.

The pathogenesis of infective endocarditis caused by Staphylococcus saprophyticus is not well understood. Although the organism is commonly associated with the genitourinary tract, transient bacteremia from asymptomatic colonization or minor mucosal breaches may lead to hematogenous seeding in susceptible individuals.

Congenital heart disease, particularly lesions associated with turbulent blood flow such as ventricular septal defects, predisposes to endothelial injury and facilitates bacterial adherence and vegetation formation, even with organisms of low virulence.

This case underscores the importance of considering atypical organisms in the differential diagnosis of infective endocarditis and highlights the role of timely blood culture procurement and early echocardiographic evaluation. Prompt initiation of organism-directed antimicrobial therapy was instrumental in achieving a favorable outcome.

VI. Conclusion

Although Staphylococcus saprophyticus is traditionally associated with uncomplicated urinary tract infections, it should be recognized as a rare but potential cause of infective endocarditis, particularly in patients with underlying structural heart disease. A high index of suspicion, early microbiological diagnosis, and appropriate targeted antimicrobial therapy are crucial for optimal patient outcomes

References

[1]. Murdoch DR, Corey GR, Hoen B, Et Al. Clinical Presentation, Etiology, And Outcome Of Infective Endocarditis In The 21st Century: The International Collaboration On Endocarditis–Prospective Cohort Study. Arch Intern Med. 2009;169(5):463–473.
[2]. Habib G, Lancellotti P, Antunes MJ, Et Al. 2015 ESC Guidelines For The Management Of Infective Endocarditis. Eur Heart J. 2015;36(44):3075–3128.
[3]. Karchmer AW. Infective Endocarditis. In: Jameson JL, Fauci AS, Kasper DL, Et Al., Editors. Harrison's Principles Of Internal Medicine. 20th Ed. New York: Mcgraw-Hill; 2018.
[4]. Hovelius B, Mårdh PA. Staphylococcus Saprophyticus As A Cause Of Infective Endocarditis. Scand J Infect Dis. 1984;16(3):315–318.
[5]. Chu VH, Cabell CH, Abrutyn E. Native Valve Infective Endocarditis. Curr Probl Cardiol. 2004;29(4):165–222.