Peptostreptococcus Induced Native-Valve Endocarditis

R Pathak, A Ngwe, H Enuh, J Saverimuttu

Citation

R Pathak, A Ngwe, H Enuh, J Saverimuttu. *Peptostreptococcus Induced Native-Valve Endocarditis* . The Internet Journal of Infectious Diseases. 2013 Volume 12 Number 1.

Abstract

The most common cause of Infective Endocarditis is aerobic bacteria. Others are mainly caused by microaerophiles and a few by anaerobes. Peptostreptococcus has been rarely implicated as an anaerobic cause of infective endocarditis mostly affecting prosthetic valves. However, we describe a rarer case of anaerobe induced native valve infective endocarditis caused by peptostreptococcus in a patient who had a recent colonoscopy.

INTRODUCTION

The most common cause of Infective Endocarditis is aerobic bacteria. Others are mainly caused by microaerophiles and a few by anaerobes. Peptostreptococcus has been rarely implicated as an anaerobic cause of infective endocarditis mostly affecting prosthetic valves. However, we describe a rarer case of anaerobe induced native valve infective endocarditis caused by peptostreptococcus in a patient who had a recent colonoscopy.

CASE REPORT

A 76 year old African American male presented to our hospital with three weeks history of progressive fatigue, malaise, fever and chills. He reported no dyspnea, orthopnea or sick contacts. He also complained of right-sided neck and shoulder pain, without a history of trauma. His past medical history was significant for Hypertension, Atrial fibrillation, Congestive heart failure on pace maker and End stage renal disease with failed kidney transplant, on hemodialysis. Patient had a diagnostic colonoscopy for gastrointestinal bleeding four months before the onset of his symptoms. Importantly, he denied the use of intravenous drugs. Examination revealed an elderly man in mild pain with an oral temperature of 98.0 F, respiratory rate of 18, pulse rate of 67 and blood pressure of 115/59 mmHg. Mild conjunctival pallor with no conjunctival hemorrhage. There was no peripheral lymph adenopathy and no stigmata of endocarditis. The lungs were clear to both percussion and auscultation. The cardiac examination was normal except for new grade 3 systolic and diastolic murmurs. The abdominal, neurological and extremities examinations were within normal limits.

Hemoglobin was 8.2g/dl, hematocrit 27.0 g/dl and white blood count 16.6 X 109/l with a normal differential. The sedimentation rate was 20 mm in the first hour. The basic metabolic profile was within normal limits except for blood urea nitrogen of 39.8 mg/dl, creatinine 6.9mg / dl. Two separately collected peripheral blood cultures grew Peptostreptococcus species within twenty four hours. A further work up with transesophageal echocardiogram (TEE) revealed large vegetation on the mitral valve, severe mitral regurgitation and a moderate tricuspid regurgitation which were new findings compared to a prior echocardiogram twenty months ago.

He was treated with vancomycin because of a penicillin allergy. The patient's symptoms gradually resolved. Subsequent blood cultures were negative and a repeat TEE after six months showed no vegetation.

DISCUSSION

Anaerobic endocarditis accounts for 2-16% of infective endocarditis. Anaerobes involved are mainly Propionibacterium acnes and Bacteroides fragilis1. Peptostreptococcus species is part of the normal mucosal flora of the gastrointestinal, respiratory and genitourinary systems2. Peptostreptoccocus endocarditis is rare; of the 40 cases of anaerobic endocarditis reviewed by Felner et al. only 2 were caused by Peptostreptococcus spp3and currently, only 21 cases have been reported5. Peptostreptococcus magnus is the commonest specie implicated2 ,it may have been under diagnosed because P.magnus is poorly isolated from the conventional BacT/Alert system blood culture media , it requires a specific growth media like thioglycollate 4.Like other causes of endocarditis, the mitral valve is mostly involved and a

very few bivalvular involvement 5. Intravenous drug use, congenital heart disease, septic arthritis, dental procedures, heart valve replacement, immunosuppression, gynecological procedures and gastrointestinal procedures are the predisposing factors for peptostreptococcus infective endocarditis5, 6. It is not clear if there was an association between the prior colonoscopy and the development of endocarditis in this patient. Endoscopy is generally considered a safe procedure with a negligible risk of endocarditis. Recently, a handful of cases of infective endocarditis after colonoscopy have been described. Notwithstanding, antibiotic prophylaxis for prevention of infective endocarditis after gastrointestinal procedures is not recommended7. The prognosis is better than other causes of infective endocarditis 5 however, serious complications like systemic and pulmonary embolization, cardiogenic shock and death from peptostreptococcus endocarditis have been reported8. First line treatment remains penicillin for 6 weeks, but vancomycin, metronidazole or clindamycin are alternatives for patients with penicillin allergy. Peptostreptococcus species is a rare cause of infective endocarditis in native and prosthetic heart valves. It can be fatal if not treated on time. Some species are difficult to isolate requiring specific culture medium and high index of suspicion is needed for diagnosis in patients with or without predisposing factors.

References

1. Brook I. Endocarditis due to anaerobic bacteria. Cardiology 2002, 98: 1-5
2. Wenisch C, Wiesinger E, Werkgartner T et al. Treatment of Peptostreptococcus micros endocarditis with teicoplanin. Clin Infect Dis 1995; 21(2):446-7
3. Felner J, Dowell V, J Anaerobic bacterial endocarditis. N Engl J Med 1970; 283: 1188-92
4. Eric R. van der Vorm, Dondorp A et al. Apparent Culture-Negative Prosthetic Valve Endocarditis Caused by Peptostreptococcus magnus J Clin Microbiol. 2000; 38(12): 4640–2
5. Minces L, Shields R, Sheridan k et al. Peptostreptococcus infective endocarditis and bacteremia. Analysis of cases at a tertiary medical center and review of the literature. Anaerobe 2010; 16: 327-30
6. Lassmann B, Gustafson D, Wood C, et al. Reemergence of anaerobic bacteremia. Clin Infect Dis 2007; 44:895-900
7. Tseng C, Green R, Burke S et al. Bacteremia after endoscopic band ligation of esophageal varices. Gastrointest Endosc 1992; 38:36-7
8. Malondra B, Garcia G, Cladera A et al. Peptostreptococcus endocarditis: report of two cases and review of literature .An Internal Med (Madrid) Madrid 2008; 25:5

Author Information

Rahual Pathak
Department of medicine, Richmond University Medical Center, NY
New York, USA

Aye Ngwe
Department of medicine, Richmond University Medical Center, NY
New York, USA

Hilary Enuh
Department of medicine, Richmond University Medical Center, NY
New York, USA

Jessie Saverimuttu
Department of medicine, Richmond University Medical Center, NY
New York, USA