

中文題目：脊椎骨髓炎併心內膜炎導致心臟衰竭及齲齒的相關性

英文題目：Case report : the correlation of vertebral osteomyelitis and endocarditis with heart failure with dental caries

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Introduction

Infective endocarditis is a complicated infectious disease accompanied with severe cardiac complication, comorbidity of organ damage, and underlying conditions such as dental and intestinal diseases. The clinical signs are protean, nonspecific fever, septicemia and osteomyelitis. Duke's criteria focuses on cardiac valvular change and causative microbes is most commonly used to diagnose endocarditis. Although cardiac echogram is an essential tool, transthoracic cardiac echogram is less sensitive and transesophageal echogram is unbearable by the patients. When a patient suffered from the endocarditis causative microbes with osteomyelitis and dental disease should be re-evaluated by cardiac echogram. We hereby present a male patient who presented pneumonia with a micromobial finding of *Streptococcus gordonii* Septicemia, and vertebral osteomyelitis and caries with cardiac valvular vegetation. He was rescued by cardiac surgical intervention with biomaterial valve replacement and valvular repairment. By means of presenting this case, we would like to point out the insufficient sensitivity of transthoracic cardiac echogram and the ignorance of dental caries which potentially would cause endocarditis and subsequent life threat. From the above evidences, we believe that bacteria of dental origin (*Streptococcus gordonii*) is very likely to cause endocarditis and tooth decay be imperative to be treated in advance to avoid serious consequence.

Case report

A 36 year-old male , previously healthy ,history of service as navy soldier , was admitted because of exertional progressive shortness of breath for 2 weeks, which worsened while lying supine. In addition, he reported a low grade fever of 38 °C with chills, generalize soreness and lumbar backache without any trauma or strain. The patient suffered from poor dental hygiene but not received any evaluation and treatment.The physical examination revealed a 39 °C temperature, a grade 5/6 systolic murmur with maximal intensity at the left lower sternal border and significant lower back midline tenderness. There were no stigmata of endocarditis, such as Osler's nodes,

Roth's spots or splenomegaly. Laboratory testing revealed normocytic anemia (Hb 10.8 g/dl), a peripheral white cell count of 19,130/ μ l (with 92% neutrophils), an erythrocyte sedimentation rate (ESR) of 49 mm, C-reactive protein (CRP) 11.6 mg/dl (normal up to 0.5), AST 23 U/l and ALT 42 U/l. An urgent lumbar spine MRI showed abnormal high signal change on T2 fat suppression image at disc, endplate and vertebral bodies of L4-L5, enhancement noted after contrast administration, suspect discitis and osteomyelitis, right L4 and L5 nerve root compression noted.

One day after admission, two blood cultures yielded *Streptococcus gordonii*, so the patient was started on continuous, intravenous ampicillin 2000 mg every 4 hours per day and cefotaxime 2000 mg four times per day. Initially, transthoracic echocardiography (TTE) was performed and failed to find evidence of endocarditis and transesophageal echocardiography (TEE) was failed to be performed because of severe gag reflex. Since he was noted with dental caries, bacteremia of *Streptococcus gordonii* with lumbar spinal osteomyelitis, and orthopnea suspected as syndrome of heart failure, hence a follow-up transthoracic echocardiography (TTE) was done to reveal one 1.06x1.51 cm² vegetation on anterior mitral leaflet with severe MR, and another 0.76x1.72 cm² vegetation on aortic valve with moderate AR and an periaortic abscess. Subsequent blood culture remained negative, however his clinical condition was worsening with progressive symptoms of heart failure, so cardiac surgical intervention was thus performed. Aortic valve replacement and Mitral valvuloplasty with bovine pericardial patch and DeVega's annuloplasty was performed to salvage his heart failure successfully and pathology of mitral and aortic valve showed sclerosis with calcification. A prolonged antibiotics treating course of six-week high dose penicillin was performed, then he was discharged with relative stable condition with oral antibiotics, clavunate-amoxicillin, for both lumbar osteomyelitis and dental caries. He is still followed up at outpatient clinics for his heart condition, osteomyelitis and scheduled dental treating plan.

Discussion

Musculoskeletal symptoms (arthralgia, myalgia, back pain) are frequent during IE and lumbar pain is the most common symptom in patients with IE and vertebral osteomyelitis. The prevalence of spondylodiscitis in patients with IE is about 1.8–15%[1]. Pyogenic vertebral osteomyelitis occurs in 4.6–19% of IE patients with a high incidence of streptococcal and staphylococcal bacteremia[2][3]. Perivalvular abscess is associated with increased risk of systemic embolization and death. In one study including 118 patients with IE noted higher mortality among patients with perivalvular abscess (23 versus 14 percent)

[9]. Guidelines for surgical treatment of infective endocarditis are as below: Indications for surgical valve repair or replacement include acute complications, such as valve dysfunction resulting in heart failure, which are associated with a higher risk of mortality or major morbidity than if treated with antibiotic therapy alone. Other complications include abscess, recurrent embolic events with residual vegetation, multidrug resistant organism, or persistent bacteremia . For Candida endocarditis, the decision to treat surgically should be based on surgical indications, such as heart failure, heart block, annular abscess, or destructive lesions [4]. In conclusion, the diagnosis of endocarditis and vertebral osteomyelitis should be considered in any patient with recent onset severe lower back pain, fever and heart murmur, especially if the patient is found to have a leukocytosis, elevated ESR or CRP . and , however, careful attention to individual patient characteristics, the type of pathogen, and risk of the sequelae of infective endocarditis must be considered when making therapeutic decisions.