

A CASE WITH DIABETIC FOOT INFECTION, ACUTE INFECTIVE ENDOCARDITIS AND SPONDYLODISCITIS CAUSED BY METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS

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Date Received: October 01, 2015

Date Revised: November 27, 2015

Date Accepted: December 03, 2015

Contribution

KEV conceived data, literature, final draft and acquired photograph, also did final review of case report. All authors contributed significantly to the submitted manuscript.

All authors declare no conflict of interest.

This article may be cited as: Yardimci. A case with diabetic foot infection, acute infective endocarditis and spondylodiscitis caused by methicillin-resistant staphylococcus aureus. Pak Heart J 2016;49(02): 88 - 90.

ABSTRACT

Infective endocarditis (IE) is the endovascular microbial infection of cardiovascular structures (cardiac valve, ventricular or atrial endocardium) including endarteritis of large intrathoracic vessels.^{1,2} Orthopedic diseases, particularly spondylodiscitis and osteomyelitis are frequently associated with infective endocarditis and prevalence varies between 3.7-15%. Diabetic foot infection is a complication which develops as the result of peripheral neuropathy and insufficient tissue perfusion, proceeds to deeper tissues unless treated and impairs the quality of life of the patients, even it may be life-threatening. *S.aureus* and beta-hemolytic streptococcus are the most commonly isolated bacteriae.³

CASE REPORT

A 57-year-old male patient with purulent foot wound in the sole for 9 years was admitted to our clinic with complaints of fever elevating with shivering, low back pain, musculoskeletal pain, fatigue, loss of appetite. The patient stated that his wound did not recover despite treatment with various antibiotics. His back pain had been continued for 2 weeks. On his medical history, he had diabetes mellitus for 10 years and hypertension for 5 years.

Arterial blood pressure was 178/95 mmHg, with 1-2/6 systolic murmur, his 2nd and 3rd toe fingers had been amputated. He had a purulent diabetic foot ulcer with a profound tissue loss on his sole. His laboratory findings were as follows: white blood cell count 23400 (neutrophil88%), CRP 197mg/l, erythrocyte sedimentation rate (ESR) 83 mm/h. Piperacillin/tazobactam and daptomycin treatment was started. Thoracolumbar MRI obtained for low back pain revealed paravertebral abscess in corpus of T10-11 spines consistent with spondylodiscitis. MRSA grew in smear culture and MRSA grew in blood culture. Dyspnea, tachypnea, orthopnea and fever developed. However CRP and leucocyte count regressed on day 3 of treatment.

Left ventricle walls were concentric hypertrophic, 4-5 vegetations with diameter of 0.3-0.6 cm were detected on atrial surface of mitral valve leaflets and moderate mitral insufficiency were detected on echocardiography and the patient was diagnosed with endocarditis. The patient was followed up in intensive care unit, fever was controlled, infection parameters improved on day 6 however cardiac failure findings deteriorated. The patient was evaluated by cardiovascular

surgeons and he underwent operation. During the operation surgeons found two 10mm vegetations on the posterior mitral leaflet. Prosthetic valve replaced and the operation terminated properly.

Antibiotic therapy continued postoperatively, his complaints and fever did not recur and treatment was done for one month. On his discharge, teicoplanin (as outpatient parenteral therapy), amoxicillin/clavulanate and ciprofloxacin treatment was planned for 2 months. His ESR, CRP and hemogram values were normal on his control at the end of the treatment.

DISCUSSION

Staphylococcus-associated IE is a severe and life-threatening infection which approximately consists one-third of IE cases. Chronic hemodialysis, diabetes, presence of intravascular supplies are the main factors associated with staph aureus endocarditis. Between 70-80 years of age was found to be 14.5 episodes per 100,000 person-years.⁴ It can be rapidly progressive, subacute and chronic infections. The scarcity of low-grade fever and symptoms can hide the situation. About 90% of patients have fever, chills, loss of appetite and 85% have detected heart murmur. Today Duke modified criteria for the diagnosis of infective endocarditis are used.⁵ Successful results in daptomycin therapy have been reported since 2006.⁶

MRI has been effective to detect the silent infection site which could not be detected by other ways in our case. Three main indications for early surgery in infective endocarditis heart failure, prevention of uncontrolled infection and embolic phenomena. Embolism is highest in the first 2 weeks of treatment with antibiotics. Risk is high in vegetations over 10mm in size.⁴ About 14% (3-15%) of patients with infective endocarditis have peripheral arthritis including spondylodiscitis.^{7,8}

In one study, patients with infective endocarditis, pyogenic vertebral osteomyelitis was found in 4.6%, while patients with pyogenic vertebral osteomyelitis had infective endocarditis in 30.8%.⁹ Extended antibiotic therapy is required, usually at a definite spondylodiscitis. In our case, Staph. Aureus which grew both in blood culture and deep smear culture was resistant to methicillin.

Treatment should be comprehensive including plasma glucose regulation, surgical debridement when required, drainage of abscess and antibacterial treatment regimens. We successfully treated our patient with daptomycin and piperacillin/tazobactam.

CONCLUSION

In the case of well-defined infective endocarditis patients complaining of back pain, assessment should be made keeping in mind Spondylodiscitis diagnosis, and also

Figure 1: Diabetic Foot with Amputation and Infection



patients with spondylodiscitis must be looked up for IE.

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