

Septic Arthritis Caused By Pantoea Agglomerans as A Result of Penetrating Injury of Knee

Dizin Delici Yaralanması Sonucu Oluşan Pantoea Agglomerans Kaynaklı
Septik Artrit Olgusu
Ortopedi ve Travmatoloji

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Özet

Kırk iki yaşında erkek hasta 1 gün önce gelişen dizin delici yaralanması sonucu septik artrit tablosu ile başvurdu. Bu yazımızda, artroskopik drenaj ve eklem irigasyonu yapılan ve etken, nadir bir mikroorganizma olan "Pantoea Agglomerans" saptanan hasta sunulmuştur.

Anahtar kelimeler: *Pantoea agglomerans, Diz Septik artrit*

Abstract

A 42 year male old patient admitted with symptoms of septic arthritis after a penetrating knee trauma. He underwent arthroscopic decompression with joint irrigation and a rare microorganism "Pantoea Agglomerans" was found as the causative agent.

Keywords: *Pantoea agglomerans, Knee Septic arthritis*

Introduction

Pantoea Agglomerans is usually reported as the causative microorganism of plant thorn injuries ¹. It is a facultative aerobic gram-negative rod, belongs to Enterobacteriaceae family and founds in soil, feces and plants. Most common clinical presentations are septic arthritis and synovitis especially among children. Rarely it causes systemic nasocomial infections, peritonitis and respiratory tract infections in patients with underlying disease ². Here we report a diabetic patient presented with septic arthritis caused by Pantoea Agglomerans.

Case Report

A 42 year old man was admitted to our hospital for knee pain. He had talked about a penetrating injury to his knee by the nails of a pallet on the previous day. He was complaining of pain and swelling of his right knee. Past medical history revealed diabetes mellitus for three years. On physical examination he had fever of 38,4°C and at the anterior part of right knee, there were two access lesions of nails and the skin was hyperemic, warm and swollen resembling cellulitis. Also there was limitation of active and passive range of motion.

Blood leukocyte count was 13.230/mm³ with 76% neutrophils, C-reactive protein level was 7,5 mg/L (0-0,5) and erythrocyte sedimentation rate was 70 mm/h. Plain radiographic examination was normal. Diagnostic joint aspiration was not performed in order to avoid inoculation of the bacteria causing cellulitis into the joint. Therefore magnetic resonance imaging (MRI) was performed, joint effusion and the tract of the nail penetrating into suprapatellar region were detected (Figure 1).



Figure 1
Preoperative MRI image of the patient.

Patient had undergone to surgery after three hours on admission. Arthroscopic decompression with joint irrigation was performed, synovial fluid cultures were obtained and Ampicillin Sulbactam 2 gr intravenously 4 times daily was started. Bacterial growth was detected 48 hours after inoculation of the synovial fluid in a BACTEC Plus F broth (Becton Dickinson) incubated at 37°C in BACTEC9050. A gram-negative rod was observed and subcultured. *Pantoea Agglomerans* was identified susceptible to Ampicillin.

After three weeks of intravenous antibiotherapy, additional three weeks of oral treatment was continued. At the fourteenth day of treatment inflammatory markers were in normal limits. The patient recovered completely with good functional results at the end of sixth week. After one year of follow up, there were no evidence of degenerative signs and the clinical outcome was good.

Discussion

Arthritis caused by penetration of organic materials from plants is well described. Because of the mechanism of the injury, the most effected joint is knee and the majority of the previous reports are in children³. However, infection with a contaminated nonorganic material, without a foreign body in the joint space is rare. Almost all of *Pantoea Agglomerans* arthritis cases in the literature were caused by plant thorns and the clinical presentation of these cases were subacute causing long lasting monoarthritis. It's concluded that chronic inflammation may develop long after the thorn injury, even 9 months⁴. Whereas, the clinical presentation of our case was acute and the symptoms appeared within 24 hours after contaminated nail injury. The infection was occurred by direct inoculation of microorganism into the joint, as there were no foreign body detected on MRI and arthroscopic surgery.

Although *Pantoea Agglomerans* is an opportunistic infection, most of the effected patients were healthy children and rarely adults. Nevertheless, our patient had diabetes mellitus and it may explain the acute course of the disease as it is an immunosuppressive condition.

Usually *P. agglomerans* causes localized infections in healthy individuals; however in immunocompromised patients and newborns this bacterium may cause severe systemic infections. The mortality of newborn sepsis with *P. Agglomerans* is very high as 87.5%⁵. In the study of Popoca et al. *P. Agglomerans* was the most frequently identified opportunistic bacteria in 32 immunocompromised patients with clinical respiratory symptoms⁶.

Pantoea Agglomerans may cause septic arthritis with the trauma of contaminated nonorganic materials and may have an acute clinical presentation especially when there is an underlying immunosuppressive disease.

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Information Presentation

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