

CASE REPORT

An abscess due to *Pasteurella multocida* after a cat scratch: Case report and evaluation of antibiotic prophylaxis

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ABSTRACT

Pasteurella multocida has been isolated from 50% to 70% of healthy cats and most commonly associated with acute skin and soft tissue infections following an animal bite or scratch. Location and depth of injury can lead to more serious infections such as deep tissue infections, septic arthritis and osteomyelitis. However, no predictive factor showing which wound would be infected. In our case, patient whom applied with abscess after a cat scratch and *P. multocida* was found as a causative agent. This situation has caused to review us, once more, that which cases should be taken antibiotic prophylaxis in addition to immunoprophylaxis (for rabies post-exposure prophylaxis, and anti-tetanus prophylaxis) in the first admission. Antibiotic prophylaxis should be used for 3-5 days in selected cases if they include; moderate to severe crushing injuries especially edematous form, less than 8 hours old, bone or joint penetration, hand wounds, especially emphasizes the importance of hand injuries and deep penetrations. *J Microbiol Infect Dis 2014; 4(4): 159-161*

Key words: *Pasteurella multocida*, cat scratch, antibiotic prophylaxis

Kedi tirmalaması sonrası *Pasteurella multocida*'ya bağlı abse: Olgu sunumu

ÖZET

Sağlıklı kedilerin %50 ile %70'inde *Pasteurella multocida* izole edilmekte ve hayvanın tirmalaması ya da ısırmasını takiben gelişen deri ve yumuşak doku infeksiyonlarına sıklıkla neden olabilmektedir. Yaralanmanın olduğu bölge ve derinliği itibarıyla derin doku infeksiyonları, septik artrit, osteomyelit gibi çok daha ciddi infeksiyonlara yol açabilmektedir. Buna rağmen hangi yaranın infekte olacağını gösteren prediktif faktör yoktur. Bizim olgumuz kedi tirmalaması sonrası oluşan abse nedeniyle başvurdu ve etken olarak *P. multocida* saptandı. Bu durum, "ilk başvuruda immünoprofilaksiye (temas sonrası kuduz ve tetanoz profilaksisi) ilaveten antibiyoprofilaksi hangi vakalara uygulanmalı?" sorusunu bir kez daha gözden geçirmemize neden oldu. Seçilmiş vakalarda; orta ve şiddetli ezilme şeklinde yaralanmalarda özellikle ödematöz formda, yaralanmanın üzerinden sekiz saatten az bir zaman geçmişse, kemik veya eklem penetrasyonu ihtimali varsa, el yaralanmalarında, 3-5 gün süre ile antibiyoterapi önerilmekte ve özellikle el yaralanmaları ve derin penetrasyonlarda antibiyoterapinin önemi vurgulanmaktadır.

Anahtar kelimeler: *Pasteurella multocida*, kedi tirmalaması, antibiyotik profilaksisi

INTRODUCTION

Pasteurella multocida infections are occasionally found on the extremities of the body due to cat scratch.¹ *P. multocida* has been isolated from 50% to 70% of healthy cats and most commonly associated with acute skin and soft tissue infections following an animal bite or scratch.² There is no predictive factor indicating which wounds may be infected. Antibiotic prophylaxis is recommended for a period of 3-5 days in selected cases.² According to our knowledge; our case report is one of the few

reports about *P. multocida* infection associated with cat scratch in Turkey.

CASE

60-year-old male patient was admitted to the Infectious Diseases Clinic because of the wound on the left arm and hand caused by cat scratch four days ago. On examination, there were numerous deep line and crusted over scratches of the patient forearm and hand. There was an abscess that 2x3 cm in size on the patient forearm, and little pus was

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presented spontaneously. In his history the patient was admitted to Emergency Department within 24 hours, immunoprophylaxis was performed by physician, but he had not received antibiotic treatment. Abscess formation developed on the third day of cat scratch. Around the holes, pain, tenderness and pruritus were seen as symptoms. The patient had no fever. On laboratory, white blood cell count was 6300/mm³, Erythrocyte sedimentation rate (ESR) was 6 mm/h, C reactive protein (CRP) was 6.5 mg/L and routine biochemical tests were within normal limits. *P. multocida* was isolated from the wound culture.



Figure 1. An abscess on the left arm caused by cat scratch

Amoxicillin-clavulanic acid 1 g was administered q12 h, and debridement of the wound performed by the physician. Finally, the patient completely recovered after ten days of therapy.

DISCUSSION

Cat bites are the second most common mammalian bites.¹ While cat and dog bites often cause minor lesions that can be treated by thorough wound care if presented early, the importance of possible late complications should not be overlooked.³ Cellulitis is one of the most common infections after cat bites. Local infections are characterized by the rapid ap-

pearance of erythema, warmth, tenderness, and frequently purulent drainage. 21% to 39% of cases present wound drainage.⁴ *P. multocida* is the most common microorganism in soft tissue infection due to cat bites and abscess is most common complication.⁵ Zong et al.⁴ reported an abscess due to *P. multocida* which developed at the injury site within three days after a cat bite, similar to our case.

In a review that includes 34 cases of *P. multocida* infections, reported the most common infections caused by *P. multocida* which are local wound infections or serious local complications include septic arthritis and osteomyelitis most commonly involving a finger or hand after a cat bite. Bacteremia, meningitis, pneumonia, brain abscess, spontaneous bacterial peritonitis, intra-abdominal abscess are the other systemic infections caused by *P. multocida* infection.⁴⁻¹²

Microorganisms are frequently isolated from wound infection occurred by bite injuries and injuries ranged from relatively minor wounds to major injuries that included open fractures, persistent deep infection including osteomyelitis, nerve laceration, tendon laceration, or tissue loss.^{2,13} Antibiotic prophylaxis should be performed if bone or joint penetration is possible, especially for hand injuries and immunocompromised patient.¹⁴ We consider performing antibiotic prophylaxis because of the complications.

The antimicrobials selected for therapy of infected animal bite wounds must have activity against the components of the biting animals' oral flora, including *P. multocida* and its subspecies.¹⁵ Recommendations about case selection for antibiotic prophylaxis may vary. Currently recommended regimens include amoxicillin-clavulanic acid orally or ampicillin-sulbactam, carbapenems, or cefoxitin intravenously.¹⁶ However, since about more than 50% cat bite wounds become infected, most experts recommend a short course (3 to 5 days) of oral antimicrobial therapy.⁵ Antibiotherapy should cover *P. multocida*, *S. aureus* and anaerobes. Amoxicillin-clavulanic acid is usually the first choice antibiotic.^{4,16} Clindamycine, doxycycline, moxifloxacin, aztreonam and macrolides are also recommended for local wound infections caused by *P. Multocida*.^{2,16,17} Our case successfully treated with amoxicillin-clavulanic acid with surgical drainage.

As a result, there are some important factors for the risk of infection after a cat scratch; site of injury especially hands and forearm, deep location, multiple injuries neighboring bone or joint. In these

conditions, antibiotic therapy should be started in the first admission.

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