



Enfermedades Infecciosas y Microbiología Clínica

www.elsevier.es/eimc



Diagnosis at first sight

A man with recurrent axillary abscess

Un hombre con absceso axilar recurrente

Gamze Durmaz^a, Esin Beycan^a, Abdurrahman Kaya^{a,*}, Ali Mert^b

^a Department of Infectious Diseases, İstanbul Training and Research Hospital, Turkey

^b Infectious Diseases and Clinical Microbiology, Faculty of Medicine, İstanbul Medipol University, Turkey

Clinical description of the case

A 35-year-old male presented with complaints of a 15-day history of a painful swelling under his right armpit and fatigue. His physician prescribed amoxicillin/clavulanic acid and ciprofloxacin for a possible bacterial infection but no regression was observed. Physical examination revealed a tender, erythematous mass in the right axillary region, measuring approximately 3 cm × 4 cm in diameter, without fluctuation. In his medical history, he had a cat at home but no bite and scratch were noted. The same antibiotics were continued. The patient's laboratory results were as follows: leukocyte count 4720/mm³; hemoglobin: 14.7 mg/dL; hematocrit 43%; C-reactive protein: 23 mg/L; sedimentation rate 8 mm/h. Ultrasonography (USG) revealed a reactive appearance of lymph node with a distinct cortex and diffuse thickening of the cortex in the right axillary region measuring 33 mm × 22 mm. Other examinations were normal. Urinalysis, basic chemistry, and hepatic function testing results were within normal limits. Serologies for syphilis, human immunodeficiency virus, Epstein-Barr virus, toxoplasmosis, cytomegalovirus and brucellosis were unremarkable.

Diagnosis and evolution

Despite the administration of 2 weeks of antibiotics, the patient reported further enlargement of the swelling in the right axillary region, increased erythema, and fluctuation of the mass (Fig. 1). USG showed a dense, echogenic fluid collection measuring 53 mm × 47 mm in the subcutaneous superficial region of the right axilla, consistent with an abscess. Fine needle aspiration was performed from the abscess and the material was sent for analysis for cat scratch disease (CSD), tuberculosis and other infections (Fig. 2). The sample revealed predominantly mononuclear leukocytes with no bacteria observed on Gram staining. Cultures of the material from the abscess in solid and liquid media were sterile. Chest X-ray was normal and the tuberculin skin test was nega-



Fig. 1. Tender, erythematous and fluctuant lymphadenopathy and marks of cat-flea bites (arrows).

tive. The Ehrlich–Ziehl–Neelsen, culture and PCR of the sample for tuberculosis were negative. The antibiotics were continued after drainage. However, 5 days later, the swelling reappeared. The mass was re-drained and the aspirate was re-analyzed but no specific etiology was reached. The sample was tested for *Bartonella* spp. by PCR and the result was positive. After the administration of azithromycin, the mass decreased in size and the pain gradually

* Corresponding author.
E-mail address: dr.abdkaya@hotmail.com (A. Kaya).



Fig. 2. Macroscopic appearance of the abscess fluid.

resolved within ten days. The patient has been doing well without recurrence for 3 months.

CSD is a rare bacterial infection that is usually transmitted from a scratch or bite from a cat infected with *Bartonella henselae*, as well as from exposure to cat-fleas infected with the bacteria.^{1,2} In our patient, upon re-evaluation of the patient's history, it was revealed that he worked in an area surrounded by numerous fleas-infested cats. He admitted to be bitten several times from fleas and there were some bite marks near the abscess (Fig. 1, arrows). CSD often begins with a skin lesion at the site of inoculation and then involves the lymph nodes. It typically persists for one to three weeks. However, this lesion is not seen in flea-borne infection as in our case.¹ Enlarged lymph nodes appear proximal to the inoculation site and are almost always tender, often have erythema of the overlying

skin, and occasionally suppurate.³ Most CSD are self-limited and do not require medical therapy. In some cases, azithromycin is an effective choice and shorten the duration of symptoms.

The differential diagnosis of axillary lymphadenopathy (LAP) includes pyogenic lymphadenitis, cat scratch disease, tularemia, tuberculosis, toxoplasmosis, HIV, lymphoma and metastatic cancer. The first four conditions can lead to abscess formation over time. Acute suppurative lymphadenitis is often caused by *Staphylococcus aureus* or group A *Streptococcus*. Both bacteria are easily seen on Gram stain and grow on culture media. They also respond well to the antibiotics mentioned above and to drainage. On the other hand, a diagnosis of lymphoma is unlikely because the erythrocyte sedimentation rate was normal, there were no B symptoms, and the lesion was completely healed. Tularemia can also cause similar symptoms/findings and is associated with recent exposure to the outdoors, animals or insects. However, there were no index cases in the surrounding area. Additionally, tularemia does not respond to azithromycin. In countries where tuberculosis is endemic, it is considered the primary etiology of fluctuating LAP. In our case, all tests were negative for tuberculosis. In addition, tuberculosis LAPs are frequently localized in the cervical region. In our patient, serological tests for CSD could not be performed and the biopsy was not taken, nor was the sample stained with Warthin-Starry stain. In CSD, axillary LAP is a common feature, and these clinical symptoms and the development of suppuration are typical. This case was considered as CSD based on patient history, the positive PCR result, despite a 10–20% of false positive rate, and the exclusion of alternative diseases. Its response to azithromycin further supported the diagnosis.

In conclusion, CSD can present as a lymphadenopathy without a history of cat scratch and bite. If treatment is delayed, suppuration develops in the lesion, thereby becoming abscess formation. In such situation, multiple drainages may be also required in addition to the administration of antibiotic.

Conflict of interest

There is no conflict of interest.

References

1. Jacob MB, Courtney WM. The flea's knees: a unique presentation of cat scratch disease. *Am J Emerg Med*. 2021;44, 477.e5–477.e6.
2. Oka K, Takagi Y, Hagiya H, Otsuka F. Cat scratch disease without a history of cat exposure. *Clin Case Rep*. 2022;10:e04816.
3. Ridder-Schröter R, Marx A, Beer M, Tappe D, Kreth HW, Girschick HJ. Abscess-forming lymphadenopathy and osteomyelitis in children with *Bartonella henselae* infection. *J Med Microbiol*. 2008;57:519–24.