

# Epitrochlear Febrile Lymphadenopathy Secondary to *Bartonella Henselae*

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## Abstract

**Background:** Isolated local epitrochlear lymphadenopathy is a rare pathology. Most commonly, it occurs in the context of systemic lymphadenopathy.

**Aims:** The purpose of this paper is to present the case of febrile epitrochlear lymphadenopathy caused by *Bartonella Henselae*.

**Case Report:** A 23-year-old male patient, presented himself to the Infectious Diseases Service with a fever of up to 38°C, lymphadenopathy of the epitrochlear area and axillary dexter of one-week progressive increase of these symptoms, reduced motion abilities of the right arm abduction, pain in this area, asthenia. In the epidemiological history, the patient reports of frequent contact with a cat, and

recently having a kitten at home. He does not recall of having had either any similar previous episodes or cat bites and scratches. Ultrasound of the soft tissues of the epitrochlear and axillary area shows a conglomeration of adenopathy with ruptured capsules in 1/3 distal of the right arm, hypoechoic adenopathy in the right axilla, 2.8 cm in diameter, and right subclavian adenopathy. Laboratory tests revealed a normal blood count, preserved renal and hepatic function, slightly positive antinuclear antibodies, and negative INF gamma. Serology for *Toxoplasma gondii*, *Brucella*, *Leishmania*, EBV, CMV and HIV resulted negative, but serology for *Bartonella Henselae* was IgG positive. Lymph node biopsy revealed an inflammatory reaction of the

granulomatous type, with granulomas composed of granulocytes, and histiocytes. Based on the clinical, epidemiological, laboratory and imaging data, the case was diagnosed/identified as CSD (cat scratch disease). The patient was treated with doxycycline and nonsteroidal anti-inflammatory drugs (ibuprofen) and subsequently had a remarkably positive outcome.

**Conclusions:** The differential diagnosis of febrile lymphadenopathy represents a clinical challenge. The synthesis of clinical, epidemiological, laboratory-imaging, histological and therapeutic data is particularly important for its etiological evaluation.

**Keywords:** Epitrochlear Lymphadenopathy, CSD(Cat-scratch disease), B. Henselae

## INTRODUCTION

Isolated local epitrochlear lymphadenopathy is a rare pathological entity. It is primarily in the context of systemic lymphadenopathy (1). In its differential diagnosis, CSD is distinguished from conditions such as toxoplasmosis, extrapulmonary tuberculosis, leishmaniasis, filariasis, tularemia, lymphomas, melanoma, as well as diseases of an inflammatory nature (1,2,3,4). Cat scratch disease is caused by *Bartonella Henselae*. It is common among children but is also encountered among adults. The incubation period varies from 3 to 14 days (5). It is clinically manifested by fever and granulomatous lymphadenopathy. It is one of the most common nosology causing epitrochlear lymphadenopathy (6,7). *Bartonella Henselae* is difficult to be isolated in cultures. Diagnosis is based on the evaluation of epidemiological, clinical, imaging, histological and serological data (7). In most of the cases, this diagnosis is made through evaluation of epidemiological history related to exposure to cats as well as serological tests with high titres (more than 1: 256) of G immunoglobulins against *B. Henselae* using immunofluorescence assay (IFA) and ELISA.

We aim to present a case of febrile epitrochlear lymphadenopathy caused by *Bartonella henselae*, namely, the first of its kind in our country.

## CASE REPORT

A 23-year-old boy from Tirana presented himself to the Infectious Diseases Service, University Hospital Center of Tirana “Mother Theresa”, with fever of up to 38 °C, lymphadenopathy of the epitrochlear area and axillary dexter with one-week progressive increase of these symptoms, reduced motion abilities of the right arm abduction, pain in this area, asthenia. In the epidemiological history the patient states of having had contact with a cat three weeks before. He does not recount of any previous similar episodes and refers to the fact that there had been a lick from a cat three weeks before in his right hand palm where there was an open wound on the index finger of this hand. During the physical examination, 3-4 lymph nodes are palpated in the epitrochlear dexter area with a diameter of about 4 cm and in the right axilla with a diameter of about 3 cm, hard, fixed and painful (Figure 1).



**Figure 1.** Epitrochlear lymphadenopathy, lymph nodes 4 cm palpable and dolent

Our first medical evaluation with a soft tissue ultrasound of the epithelial and axillary area reveals a conglomeration of adenopathies with ruptured capsules in the distal 1/3 of the right arm, hypoechoic adenopathy in the right axilla, 2.8 cm in diameter and adrenal to the right.

The laboratory tests show a normal complete blood cell (RBC 4.4 milion,HGB 14.1 g/dl, HCT 41,6%,WBC 4000, neutrophils 40%, lymphocyte 26%, monocytes 8%, eosinophils 0%, basophils 0%, PLT 160.000) preserved renal and hepatic function, normal electrophoresis, antinuclear antibodies that are slightly positive, and a negative INF gama for TB. The pulmonary radiography and abdominal ultrasound resulted in normal findings, and the radiography of the cubiti dexter joint is normal. The all-body CT scan revealed nodular formations in the middle 1/3 of the right arm, up to 3.2 cm which gain contrast after the injection of endovenous contrast favouring the adenopathy as well as right axillary lymphonodes up to 2.2cm with changes of the inflammatory type. Serology for Toxoplasma gondii, Brucella, Leishmania, EBV, CMV and HIV were negative, while the serology for Bartonella Henselae resulted IgG positive, using immunofluorescence assay (IFA) and ELISA with titters > 640 (Figure 2).

Type of analyse	Result	Normal value
Anti - Bartonella henselae IgG	640	<320 Negative >320 Positive
Anti - Bartonella henselae IgM	<100	<100 Negative >100 Positive

**Figure 2.** Serological test for Bartonella Henselae

Lymphonode biopsy was performed to facilitate the differential diagnosis of an inflammatory, infectious or malignant lymphadenopathy, where an inflammatory reaction of the granulomatous type was detected, with granulomas composed of granulocytes, histiocytes.

Based on clinical, epidemiological, laboratory and imaging data the case was identified as CSD (cat scratch disease) and treated with doxycycline and a nonsteroidal anti-inflammatory drug (ibuprofen). The patient's fever went down 4 days after the start of doxycycline, the pain began to decrease after 5 days from the start of therapy. After 2 weeks the patient presented himself for a re-examination with significantly reduced lymphonodes and no new symptoms.

## DISCUSSION

Febrile epitrochlear lymphadenopathy is an extremely broad nosologicall unit of the etiological diagnosis, part of which are a series of pathologies (6,7). The most common is Cat

scratch disease, which in most cases is encountered in children but also in adults (8), as in our case in question, a 23-year-old male patient. The epidemiological history has special importance for this disease as it is the primary one that leads to the diagnosis as well as to the differential diagnosis of clinically similar diseases. Regarding our patient, it is worth calling attention to the route of transmission of *B. Henselae*. There is no record in the patient's history of scratching or biting by the cat except for the presence of a wound on the index finger of the right hand where, 25 days after contact with the cat, local lymph nodes appeared; consequently, the route of transmission in our case must be the licking of the open wound by the cat, reference of which can be found in the literature, but there is no evidence of a specific case describing this route of transmission. The incubation period is another aspect that is worth considering. In the literature, the incubation period ranges from 3-5-14 days (6,7,5,4,9) except for Moroni et al. "Manuale di Malattie Infettive", second edition, 201/10 who states of an incubation period lasting several weeks. The patient in question refers to have had contact with a cat (kitten) 3 weeks before the onset of the disease, which makes the incubation period of our patient longer than the ones described in the literature. We must bear in mind that we are dealing with cat scratch disease and not bartonellosis as an even broader nosology whose incubation period has been recorded to last up to

35 days. Regarding the time of onset of lymphadenopathy, it is 25 days from contact, which is consistent with what is recorded in the literature where this time of onset varies from 5 to 50 days on an average of 12 days (10). Differential diagnosis of this pathology with clinically similar pathologies such as: Tularaemia, Kawasaki, Brucellosis, Mycobacterial Infections, Lymphoma, Autoimmune Lymphadenitis, etc. is done through histological examination, in the presence of granulomatous formations, lymphocytic infiltrates, or stellar abscesses, described in the literature, in cases with CSD as well as serological one for *B. Henselae* whose positivity in IGG titers above 1: 256 strongly suggests recent infection. It is worth pointing out that IgM positivity has got a very short duration, which makes it difficult to detect and at the same time less relevant in the diagnosis of CSD (8). Such evidence can be found in the case in question. Based on what we said above, we can say to conclude that the diagnosis of this disease must be grounded in the synthesis and correlation of epidemiological history, clinical data, serological and histopathological examination.

## CONCLUSIONS

The ethio-nosological diagnosis of febrile lymphadenopathy is considerably difficult. The synthesis of clinical, epidemiological, laboratory-imaging, histological and therapeutic data is particularly important for its etiological evaluation.

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**Conflict of Interest Statement:** The authors declare that they have no conflict of interest.

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