



SCIENTIFIC LETTERS

Disseminated cat scratch disease: The wide variety of clinical presentations[☆]



Enfermedad diseminada por arañazo de gato: el amplio espectro de la presentación

Dear Editor:

Cat-scratch disease (CSD) is a benign and self-limiting disease caused by *Bartonella henselae*. It typically presents with regional lymphadenopathy, but it can have a systemic presentation in 5–15% of cases¹ and is part of the differential diagnosis of fever of unknown origin (FUO). We present 2 patients with disseminated CSD managed at Nationwide Children's Hospital of Columbus, Ohio (United States).

The first patient was a male of 14 years of age, otherwise healthy, presenting with fever of 16 days' duration, asthenia, headache and weight loss. He reported pain in the right hip, shoulder and abdomen in the past week. The patient had contact with dogs and turtles. The main finding on the physical examination was pain on passive movement of the right shoulder. An abdominal ultrasound revealed multiple hypoechoic foci in the spleen, a finding that led to suspect CSD and referral for an ophthalmologic evaluation was placed that led to the detection of granulomas in the left retina and optic disk (Fig. 1). A shoulder MRI scan detected multifocal osteomyelitis involving the right scapula and the proximal region of the humerus as well as myositis. At this point, the patient did report contact with cats.

As part of the evaluation for FUO, the patient tested positive for *B. henselae* (Table 1). A diagnosis of disseminated CSD was made based on the presence of splenic microabscesses, granulomatous retinitis and multifocal osteomyelitis, and treatment was initiated with gentamicin, rifampicin and doxycycline (RIF/DOX), with resolution of fever at day 3. The patient completed 7 weeks of RIF/DOX and had a favourable outcome.

The second case corresponded to a male age 13 years with underlying asthma that presented with swelling in the left side of the neck, loss of appetite and asthenia of 3 weeks' duration. The patient had no fever. He was diagnosed

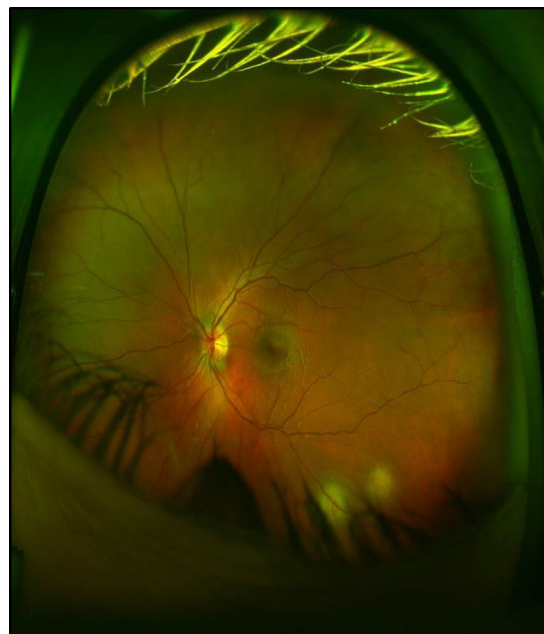


Figure 1 Fundoscopy demonstrating two granulomatous lesions on the lower archade

with CSD in the outpatient setting (Table 1) and received treatment with azithromycin, with initial improvement of symptoms until day 4 when he developed respiratory distress requiring admission to the PICU. The patient lives with 10 cats. The main findings of physical examination were tachypnoea and a painless conglomerate of enlarged cervical lymph nodes without erythema that required drainage, with subsequent detection of *B. henselae* by PCR. The chest X-ray revealed interstitial infiltrates and bilateral pleural effusions requiring drainage. After 72 h of treatment with levofloxacin and vancomycin, the patient showed clinical improvement and was transferred to the paediatric ward, where he developed fever and enlargement of the cervical mass that required a second drainage, after which he remained afebrile. An abdominal ultrasound revealed hypoechoic lesions in the spleen, which led to the addition of rifampicin, while azithromycin was replaced by doxycycline because of a prolonged QT interval.

The patient was diagnosed with disseminated CSD with an atypical presentation including extensive lymphadenopathy and lung involvement as well as splenic microabscesses, thus he underwent a basic immunologic work-up, with negative results (Table 1). The patient was followed as an outpatient

[☆] Please cite this article as: Maiques-Tobias E, Tomatis-Souverbielle C, Watson J, Ramilo O, Mejias A. Enfermedad diseminada por arañazo de gato: el amplio espectro de la presentación. An Pediatr (Barc). 2019;90:393–395.

Table 1 Clinical, diagnostic and management characteristics.

	Case 1	Case 2
<i>Demographic data</i>		
Age (years)/sex	14; M	13; M
Race	Caucasian	Caucasian
Weight	84 kg	94 kg
<i>Clinical characteristics</i>		
Total days of fever (until admission + at hospital)	20 (15 + 5)	7 (0 + 7)
Maximum temperature	40 °C	40.2 °C
Lymphadenopathy	No	Yes (cervical)
Hepatomegaly	No	No
Splenomegaly	No	No
Abdominal pain	Yes	No
Constitutional symptoms	Yes	Sí
Other manifestations	Hip and shoulder pain	Difficulty breathing, chest pain and cough
<i>Laboratory characteristics</i>		
Na/K; mEq/L	140/4.1	139/4.4
Creatinine; mg/100 ml	0.68	0.64
AST/ALT; mIU/mL	27/34	27/14
Leucocytes/mm ³ ; (N%; L%)	12 700 (N58%; L31%)	10 700 (N78%; L17%)
Hb/Hct	13.6/39.4	14.5/42.5
Platelets/mm ³	369 000	438 000
CRP mg/dL	6.9	2.6
ESR mm/h	39	20
<i>Microbiologic testing</i>		
Blood culture	Negative	Negative
EBV, CMV serology/PCR	Negative	Negative
Mantoux test	Negative	Negative
HIV (serology)	Negative	Negative
Other ^a	–	^a
Bartonella Hensalae PCR in blood	Negative	Negative
Bartonella Hensalae PCR in fluids/tissue	NP	±LAD
<i>Bartonella henselae</i> IgM	>1:32	<1:20
<i>Bartonella henselae</i> IgG	>1:128	>1:512
<i>Imaging studies/other evaluations</i>		
Chest X-ray	Normal	Diffuse infiltration and pleural effusion
Abdominal ultrasound	Splenic microabscesses	Splenic microabscesses
MRI/CT	Multifocal osteomyelitis multifocal	Conglomerate lymph nodes/necrosis
Fundoscopy exam	Granulomatous retinitis	Normal
<i>Treatment</i>		
Antibiotics	Doxycycline 100 mg/12 h Rifampicin 300 mg/12 h	Doxycycline 100 mg/24 h Rifampicin 600 mg/24 h
Duration	7 weeks	3 weeks

BH, *Bartonella henselae*; Hb, haemoglobin; Hct, haematocrit; M, male; NP, not performed.

^a Negative serologic tests for fungi and antigen tests for histoplasmosis in blood/urine samples. Immunologic testing with antibody tests (IgG, IgM, IgA and IgE), vaccine titre tests (pneumococcus and tetanus) and basic immunophenotyping of T and B cells (CD3, CD4, CD8 and CD19) all within normal ranges, HIV-negative.

and completed a 3-week course of RIF/DOX, with a good response.

Cat-scratch disease is a common disease worldwide, although its actual incidence is unknown.² It presents more frequently in the form of an isolated, subacute cervical lymphadenopathy, which is usually afebrile. However, a small

proportion of affected individuals develop disseminated CSD, which can have involvement of the liver, spleen, retina or osteoarticular system.³ In these cases, the most frequent reason to seek medical attention is FUO (1–3 weeks), which occurred in one of our patients. This diagnosis should be suspected from the initial history and the physical examina-

tion, with emphasis on past contact with cats, as especially kittens, are the main reservoir of *B. henselae*.⁴ The microbiologic diagnosis is based on the detection of high titres of antibodies (IgG/IgM) against *B. henselae* in the acute phase of disease. Nevertheless, if there is a high suspicion of CSD and the initial antibody titers are negative, they should be repeated in 2–3 weeks. Another available option is PCR for detection of *B. henselae* in blood, tissue and other fluids.

The diagnosis of CSD in patients with an atypical presentation poses a challenge. In patients with FUO and suspected CSD, performance of an abdominal ultrasound is a prudent measure while awaiting the results of serologic tests, as this is a non-invasive test that can detect the characteristic microabscesses in the liver or spleen, in addition to an eye funduscopy, whose findings can not only guide the differential diagnosis of rheumatologic diseases but can also support the diagnosis of CSD.⁵ We also ought to underscore that there should be a high index of suspicion of osteomyelitis in these cases, as the findings of the physical examination may be unremarkable and the levels of inflammatory markers within normal range.⁶

The optimal antibiotic treatment for disseminated CSD is still under debate, although courses lasting 2–6 weeks are generally recommended depending on the extent of disease.¹ Our patients received combined therapy with RIF/DOX, antibiotics that have been found to achieve adequate control of the disease in the past. In brief, we present 2 cases of disseminated CSD that responded to antibiotic therapy, emphasising the importance of taking a detailed history, with emphasis on the investigation of epidemiologic factors, and a thorough physical examination to assess the possibility of CSD and avoid unnecessary tests when the diagnosis of FUO is being considered.

References

1. Florin TA, Zaoutis TE, Zaoutis LB. Beyond cat scratch disease: widening spectrum of *Bartonella henselae* infection. *Pediatrics*. 2008;121:e1413–25.
2. Windsor JJ. Cat-scratch disease: epidemiology, aetiology and treatment. *Br J Biomed Sci*. 2001;58:101–10.
3. Arisoy ES, Correa AG, Wagner ML, Kaplan SL. Hepatosplenic cat-scratch disease in children: selected clinical features and treatment. *Clin Infect Dis*. 1999;28:778–84.
4. Gracia MJ, Marcen JM, Pinal R, Calvete C, Rodes D. Prevalence of *Rickettsia* and *Bartonella* species in Spanish cats and their fleas. *J Vector Ecol*. 2015;40:233–9.
5. Krasowska-Kwiecien A, Gozdziak J, Wozniak M, Czogala W. Ultrasound imaging as the basis of a clinical diagnosis of systemic bartonellosis in a patient after bone marrow transplantation. A case report. *J Ultrason*. 2016;16:204–9.
6. Lafenetre M, Herbigneaux RM, Michoud M, Descours G, Debillon T. Osteomyelitis in cat scratch disease: a case report and literature review [Article in French]. *Arch Pediatr*. 2016;23:188–91.

Estefania Maiques-Tobias^a, Cristina Tomatis-Souverbielle^b, Joshua Watson^b, Octavio Ramilo^b, Asunción Mejias^{b,*}

^a *Unidad de Infectología Pediátrica, Hospital Universitario Doctor Peset, Valencia, Spain*

^b *Infectious Diseases, Nationwide Children's Hospital (NCH), Columbus, OH, United States*

* Corresponding author.

E-mail address: Asuncion.Mejias@nationwidechildrens.org (A. Mejias).

2341-2879/

© 2018 Asociación Española de Pediatría. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Is the vertical transmission of *Chlamydia trachomatis* a little known problem in Spain? ☆,☆☆



¿Es la transmisión vertical de *Chlamydia trachomatis* un problema poco reconocido en España?

Dear Editor:

Infection by *Chlamydia trachomatis* is an important public health problem worldwide, and *C. trachomatis* is the

most frequent bacterial cause of sexually transmitted diseases. The infection can be acquired by passage through the birth canal and may cause neonatal nasopharyngitis and/or conjunctivitis (usually with onset 5–12 days post birth) and pneumonia in the first 3 months of life.^{1,2} The aetiological diagnosis of these infections is important, as the symptoms overlap with those caused by other microorganisms and treatments that do not include a macrolide may not be effective against *C. trachomatis*. The aim of our study was to establish the rate of perinatal transmission of infection by *C. trachomatis*.

We conducted a prospective study between October 2010 and September 2015 by performance of real-time nucleic acid amplification tests (NAATs) (Cobas[®] 4800 CT/NG, Roche) to assess for the presence of *C. trachomatis* in 103 newborns of infected mothers identified by screening during the puerperium period at the Hospital Universitario Donostia (HUD).³ The research project was approved by the Ethics Committee of the HUD (memorandum 9/2010). All the participants, as is done routinely in all newborns delivered at the HUD, received ocular prophylaxis with a topical cream (active ingredient: tobramycin through October 2013, and chlortetracycline hydrochloride thereafter). We assessed newborns for vertical transmission 7–10 days post birth by means of a physical examination and collection of a throat

☆ Please cite this article as: Piñeiro L, Korta-Murua J, López-Cuesta S, Lasa I, Cilla G. ¿Es la transmisión vertical de *Chlamydia trachomatis* un problema poco reconocido en España? *An Pediatr (Barc)*. 2019;90:395–397.

☆☆ Previous presentations: This study was presented at the XIX National Congress of the Sociedad Española de Enfermedades Infecciosas y Microbiología Clínica; May 28–30, 2015; Seville, Spain. Also at the Scientific Meeting of the Sociedad Vasco-Navarra de Pediatría, V Memorial of Professor Juan Rodríguez Soriano; October 16, 2015; San Sebastian, Spain.