

CAT SCRATCH DISEASE IN 9-YEAR-OLD PATIENT – A CASE REPORT

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Cat scratch disease (CSD) – bartonellosis, is zoonosis caused by the intracellular gram negative bacterium *Bartonellahenselae* or *Bartonella quintana*. The pathogens of this disease enter the human body usually as a consequence of a bite or scratch by young cats which are the natural source of such bacteria. The illness proceeds asymptotically or with topical symptoms of infection such as a lump, spot or blister. Within 14 days a high fever and topical lymphadenopathy are observed. Lymph nodes are sore and start suppurating. In half of patients, these symptoms may resemble malignancy, and in single cases there are symptoms associated with the musculoskeletal system, such as: osteitis, arthritis and myositis.

In paper presented case of 9 year-old girl patients, treated in Oral Surgery Unit due to odema and lymphadenopathy in right submandibular space. Primary surgical treatment of deciduous teeth was conducted without recovery. In few months follow-up, biopsy of lymph node of submandibular group was taken and provisional diagnosis of cat scratch disease was set. Patient was referred to the Infectious Diseases Unit where serological test confirmed cat scratch disease, and pharmacological treatment was conducted with success and recovery of young patient.

Key words: cat scratch disease, extraoral fistula, lymphadenopathy, *Bartonella*, zoonosis

Cat scratch disease – bartonellosis, is an infrequent zoonosis caused by the intracellular gram negative bacterium *Bartonella henselae* or *Bartonella quintana*. The pathogens of this disease enter the human body usually as a consequence of a bite or scratch by young cats which are the natural source of such bacteria. Carriers of such bacteria may be ticks and fleas. At the onset, the illness proceeds asymptotically or with topical symptoms of infection such as a lump, spot or blister. Then, within 14 days, there follows a high fever and topical lymphadenopathy. Lymph nodes are sore and start suppurating. Progression of the bacteria leads to emission of pro-inflammatory factors, growth factors and apoptosis' stop, which presents as new lumps in the blood vessels. In half of patients, these symptoms may resemble malignancy, and in single cases there are symptoms as-

sociated with the musculoskeletal system, such as: osteitis, arthritis and myositis (1, 2, 3). Among generally healthy patients, infection proceeds gently and may control itself. However, in many cases it requires antibiotic therapy.

A diagnosis is based on laboratory studies of blood serum, in which doctors claim individualistic antibodies in rank IgM and IgG. The process also finds a study of histopathologically augmented lymph nodes where a DNA of *Bartonella* (the most frequent gen of citrate synthase *gltA*) is signed by a PCR method. Imaging of infected lymph nodes shows granulation tissue with necrosis and star-shaped micro stumps (4, 5, 6). In Poland from 1998 to 2001, 265 samples of serum were collected from persons with Bartonellosis, and individualistic antibodies for *Bartonella henselae* were detected in 144 of them.

In the Mazowieckie province there was the most frequent statistics – 30.1%, and in the Dolnośląskie province – 19.2%. The disease usually affects children and youth from the ages of 8 to 16 (7, 8). Bartonellosis is not a well-known contagious disease. However, taking data and clinical testing into consideration, you must think about it in differential diagnosis.

The target of this work was to demonstrate the circumstances of cat scratch disease in a young girl, who presented herself to the Department of Oral Surgery Medical University in Lublin in order to draw attention to the various etiology of inflammation in some parts of the head and neck.

CASE REPORT

In November 2012, a 9-year-old patient presented herself to the Department of Oral Surgery Medical University in Lublin with painful swelling in the lower jaw. After an oral examination, a doctor affirmed dental caries in the 84, 85, 74 and 75 teeth (fig. 1). On her cheek there was a wound which was near the right side of the jaw, as well as augmented right-sided lymph node of the B. group, which was painful during palpation. Due to the fact that tooth no. 85 was covered with dental caries, extraction was required. After 7 days, upon medical follow-up, a dentist affirmed that there was no recovery. A diagnostic puncture was carried out to acquire pus for testing. The wound was bathed with peroxide and dressed with a bandage. Upon the next follow-up, the



Fig. 1. Ortopantomogram, radiological view at the moment of the first outpatient admission
Infected deciduous teeth 83 and 85 were extracted, as a potential reason for edema and lymphadenopathy as a primary surgical treatment

wound was visibly smaller and there was not any pus; thus the next follow-up was scheduled in 7 days. The result of histopathology was: *massae necriticae et purulentae*.

The next stage of treatment required extraction of tooth no. 84 due to chronic lymph node augmentation and active fistula (fig. 2). A doctor ordered a complete blood count – the given results were positive (WBC- 8.300/ μ l, lym%-44.4, mon% 6.3, gra% 49.3). Only the level of c-reactive protein was raised to 6 mg/l.

After 3 months of treatment, a doctor affirmed a persistent augmentation of the right-sided lymph node in a jaw, and a persistent wound on a cheek next to the jaw. Moreover, near the decayed teeth 74 and 75, fistulae appeared along with purulent exudate from the 75 pocket; there followed extraction of these teeth. The wound was surgically dressed and the patient was directed to a family doctor and a pediatrician.

After 14 days, the girl presented herself with a USG picture, after which she was directed to a pediatric surgeon. In testing, a doctor affirmed a hypoechogenic area with a 6 mm diameter, strongly vascularized, inflammatory infiltration was located there where a fistula was placed first (fig. 3 and fig. 4). There was also a lymph node the size of 12x7mm with increased stream and with an area of hypoperfusion. The intraoral study found no evidence of inflammation. In infiltration anaesthesia, an incision was made. It took place in the area of an augmented lymph node, and as a result some pus discharged. A swab of secretion was taken and it was sent for histopathological testing. The wound was bathed with metronidazol and dressed. 7-days of antibiotic therapy with Cefuroximum was directed. Because



Fig. 2. Ortopantomogram, status after deciduous teeth extraction and 3 months follow-up



Fig. 3. USG affirmed a hypoechoic area with a 6 mm diameter, strongly vascularized, inflammatory infiltration was located respectively to extra-oral fistula

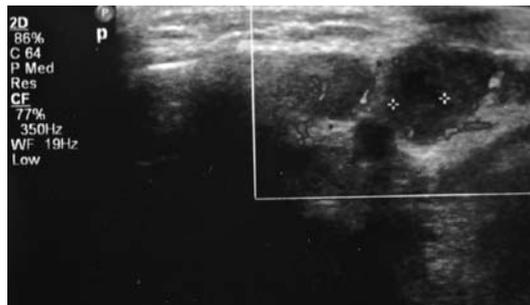


Fig. 4. Clinically persistent augmentation of the right-sided lymph node in a jaw, fistula, and a persistent wound on a cheek next to the jaw

of the lack of recovery after the antibiotic therapy and drainage with histopathological result, necrosis of the multifocalis inflammation granulomatosa- granulomata imaturae focale haemorrhagica et purulenta”, which suggested a cat scratch disease, the patient was directed to the Infectious Diseases` Clinic (fig. 5, 6). The department of infectious diseases used broad spectrum antibiotic therapy – Klacid. The patient was also subjected to serological diagnosis, which approved histopathology. The result showed the presence of antibodies IgM against Bartonella henselae and the lack of immunoglobulin M against Bartonella quintana. Given these results, a doctor directed Rovamycine 3 mln j.m. in the morning and 1.5 mln j.m. in the evening, protectively Lacidofil and Nystatin: 1 tablet twice a day proactively. A medical follow-up at the Infectious diseases` clinic was ordered after 2

weeks. Following treatment, the lymph nodes diminished, and a scar resulted on the face after the fistula had healed.

DISCUSSION

Cat scratch disease is often a rare and ignored illness, but it is important for practitioners to consider because it appears in soft tissues, lymph nodes and even the parotid gland (9). Bartonellosis demands diversity of lymph nodes` augmentation against unspecific, individualistic or odontogenic inflammation and tumors (10, 11). This disease usually controls itself and does not require antibiotic therapy. If chemotherapy is needed then such drugs used are: clarithomycin, azithromycin, ciprofloxacin, trimethoprim, sulfamethoxazole, cotrimaxozole, aminoglycoside and β -lactam antibiotics. In difficult cases, we can combine two or three antibiotics for a few weeks (12).

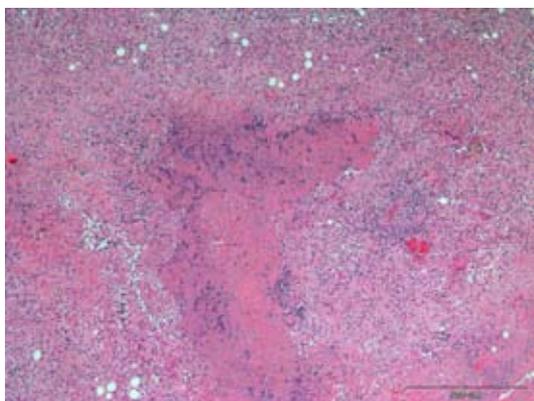


Fig. 5. Lymph node specimen. Necrosis focus inclusive shadows of necrotizing cells and granulocytes with histiocytes and epithelioid cells (H+E, 100x)

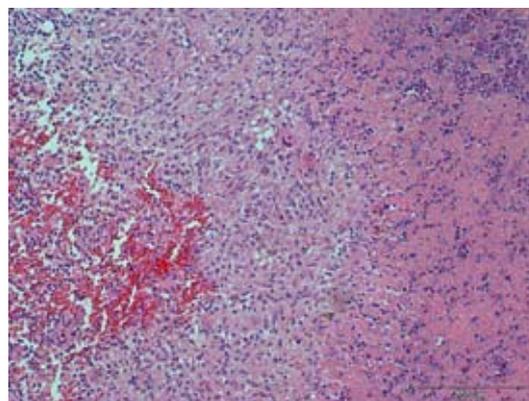


Fig. 6. Lymph node specimen. Necrosis focus with granulocytes surrounded by epithelioid cells (H+E 200x)

Complications after infection rarely occur, more often in people with lower resistance. The most frequent complication is encephalopathy (0.3-2% of ill people) with symptoms of: coma, convulsions, and peripheral and cephalic nerves` disorders. It can also lead to inflammation of the retina and optic nerve, resulting in unilateral impaired vision. Complete resolution of symptoms is after 1-3 months. Other rare complications are: erythema nodosum, infective endocarditis, arthralgia, hepatomegaly, pneumonia and osteomyelitis (12).

In each case of persistent local lymph node enlargement with local inflammatory reaction that does not diminish after the elimination of inflammation in a mouth, consideration should include the introduction of the extended diagnosis (biopsy, ultrasound, laboratory testing). If a patient is suspected to suffer from cat scratch disease he should be immediately referred to the infectious diseases department for further specialized treatment. Properly established diagnosis allows for the implementation of targeted antimicrobial therapy.

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