

Case Report

CAT SCRATCH DISEASE DIAGNOSED BY FINE NEEDLE ASPIRATION CYTOLOGY

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The diagnosis of cat scratch disease is frequently based on clinical grounds. The detection of antibodies to *Rochalimaea henselae* has recently been used as supporting evidence for the diagnosis of this condition. While specific fine needle aspiration cytology findings have been described in this infection, there is little emphasis on this diagnostic modality in the medical literature. In this report, a patient with typical manifestations of cat scratch disease is presented. The diagnosis was made by demonstrating characteristic cytological findings on fine needle aspiration material. It was further confirmed by the demonstration of elevated antibody titre to *R. henselae* in the patient's serum.

Cat scratch disease (CSD) is the most common cause of chronic benign lymphadenopathy in children and young adults and around 24,000 cases are diagnosed each year in the United States¹. The disease is a self limited condition which resolves spontaneously within a period of 2 to 6 months^{1,2}. The diagnosis of CSD is based on the presence of three of four criteria; history of a scratch by a cat with regional lymphadenopathy developing about two weeks after the contact with an animal, exclusion of other causes of lymphadenopathy, a positive skin test or serologic test and characteristic histological findings².

We present a case of CSD where clinical diagnosis was confirmed by fine needle aspiration cytology (FNAC).

THE CASE

A 5 years old boy presented with left cervical lymphadenopathy of two weeks duration. There was no history of fever or other symptoms. His physical examination was normal except for the presence of three

tender, mobile nonfluctuant cervical lymph nodes with overlying skin erythema. The largest node measured 2 x 2 cm. An intradermal PPD test was done and the patient was started on oral cloxacillin. On follow-up one week later the nodes were of the same size. His PPD was negative and his white cell count was normal. The patient was referred for FNAC.

Aspiration was performed using 25 G needle attached to a 20 ml syringe fitted into the aspiration gun. One pass was made into a left cervical lymph node. The aspirated material was smeared onto glass slides and stained with May-Grunwald-Giemsa and Papanicolaou methods.

Cytological examination showed numerous scattered large aggregates of spindle epithelioid cells with a stellate appearance due to palisade arrangement of cells at the peripheral edges. Intermingled with these epithelioid cells were neutrophilic leukocytes. Single neutrophils and necrotic debris were also seen. The cytologic findings were consistent with CSD.

The indirect immunofluorescence test of blood collected at the time of FNAC was positive for *Rochalimaea henselae* antibodies at 1:64 dilution.

At this stage the patient admitted that at the time preceding the onset of his illness he played on several occasions with the neighbour's cat and its young kitten. However, he did not admit to scratch or other injury. On follow-up after 6 weeks the patient was well and lymph nodes were smaller. A repeat PPD test was negative.

DISCUSSION

Cat scratch disease, which was first described in 1950 by Debre et al³, mostly affects children and young

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adults^{2,4,5}. Almost all patients have history of contact with a cat, especially with a kitten^{1,2,5}. Previously *Afipia felis* was implicated as the causative organism of CSD⁶. Recently other studies have provided strong evidence supporting *R. henselae*; now called *Bartonella henselae*; as the primary aetiologic agent of CSD^{7,8}. Serologic methods such as indirect fluorescent antibody testing are available to confirm the diagnosis^{5,9}. In the present case this serologic test was positive.

The most common clinical manifestation of CSD is a chronic tender regional lymphadenopathy which appears approximately two weeks after contact with a cat. Inoculation site, when is well searched for, may be found in about 65% of cases².

The inoculation lesion may last from few days to several months. The most commonly involved lymph nodes are the axillary and cervical groups. They vary in size from 1 to 5 cm. Initially, the lymph nodes are tender and erythema may be present in the overlying skin. The tenderness and erythema may last for about one month. The disease is self limited and the lymphadenopathy generally regresses in 2-6 months, as in the present case. Despite lymphadenopathy, no major constitutional symptoms are generally present. Only mild malaise and low grade fever may be present.

Occasionally CSD may have an atypical presentation. In cases of direct eye inoculation as a result of rubbing the eye with hands after contact with a cat, a conjunctival granuloma and preauricular adenopathy may develop. Less commonly central nervous system involvement in the form of encephalopathy, encephalitis, radiculitis, polyneuritis, myelitis, or neuroretinitis may be present². But even these patients recover completely within one year without any neurologic sequelae. Systemic CSD with hepatosplenic involvement has also been reported recently¹⁰.

Treatment of CSD has usually been symptomatic. Most of the commonly used antibiotics have not been effective. However, the use of rifampin, ciprofloxacin, trimethoprim-sulfamethoxazole or gentamicin has been associated with improvement in patients with moderate to severe disease. Symptomatic treatment is recommended for most patients with CSD, and the use of antibiotics is to be considered for patients with severe manifestations⁴.

The histopathological picture of CSD depends on the stage of disease¹¹. Early in the course of CSD, non-

specific reactive lymphoid hyperplasia is seen. Later, characteristic necrotizing granulomas near or within germinal centres are observed. Giant cells are often seen but without caseation. With the advance of the disease granulomas coalesce to form multiple micro abscesses. Histopathologic differential diagnosis of CSD includes all lymphadenopathies that have suppurative granulomas such as lymphogranuloma venereum, tularemia, brucellosis and listeriosis. Also many granulomatous processes like tuberculosis, sarcoidosis, or leprosy should be considered. Proper clinical evaluation and appropriate studies exclude most of these entities.

Since FNAC features closely parallel the histopathology, aspiration biopsy is an acceptable way to make a diagnosis¹². However, despite the fact that CSD is so common, not many FNAC reports have been published^{12,13}. This simple, fast, outpatient procedure makes hospitalization and surgery unnecessary, especially in view that CSD is a self limited condition and no treatment is required in most patients.

CONCLUSION

FNAC provides a rapid and reliable diagnosis in CSD. It is recommended that FNAC be used more frequently in conjunction with other diagnostic methods in the work-up of patients with adenopathy; particularly in children with cervical lymph node enlargement.

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