

## Case Report

# Fine-needle aspiration cytology diagnosis of toxoplasma lymphadenitis: A lesser-known entity

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### Abstract

*Toxoplasma gondii* a protozoan, obligate parasite, causes toxoplasmosis in animals and humans. We report here a case of toxoplasmosis in a 35-year-old female on being referred for fine-needle aspiration cytology of cervical lymph node to rule out lymphoma/tubercular lymphadenitis. Demonstration of toxoplasma bradycyst, a rare feature of diagnosis of toxoplasma lymphadenitis is described here.

**Keywords:** Aspiration cytology, granulomatous, lymph-node, toxoplasmosis

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### INTRODUCTION

*Toxoplasma gondii* a protozoan, is an obligate intracellular parasite, causes Toxoplasmosis in the majority of animals and humans. The disease prevails worldwide affecting 30%–50% of the population.<sup>[1]</sup> Adults affected with toxoplasma show no obvious symptoms. Occasionally, there can be flu-like symptoms like muscle ache and lymph-adenopathy for a few weeks.<sup>[2]</sup>

We here report a case of toxoplasmosis in a previously healthy 35-year-old female on being referred for fine-needle aspiration cytology (FNAC) to rule out lymphoma/tubercular lymphadenitis.

### CASE REPORT

A middle-aged previously healthy lady presented with swelling over the sub-mandibular region of the neck. The patient gave a history of on and off ear pain for over a year

and a history of mild flu-like symptoms 2–3 weeks back for which she has taken antibiotics. Examination revealed multiple soft, nonreducing, painless swelling over the neck on either side, in the submandibular region. A thorough history and physical examination were conducted which yielded no significant details.

Sonology showed multiple enlarged cervical lymph nodes.

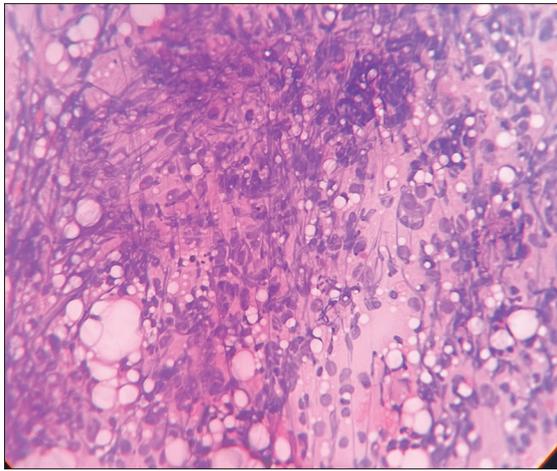
FNAC was sought with the clinical suspicion of lymphoma or tubercular lymphadenitis. FNAC was performed over the largest lymph node using a 22G needle. Smears showed ill-formed granulomas with epithelioid histiocytes in the background of the polymorphous lymphoid population [Figure 1]. Occasional large spherical bradycyst containing numerous crescent-shaped bradyzoites was seen [Figure 2]. A diagnosis of toxoplasma lymphadenitis was made and serology was suggested for confirmation

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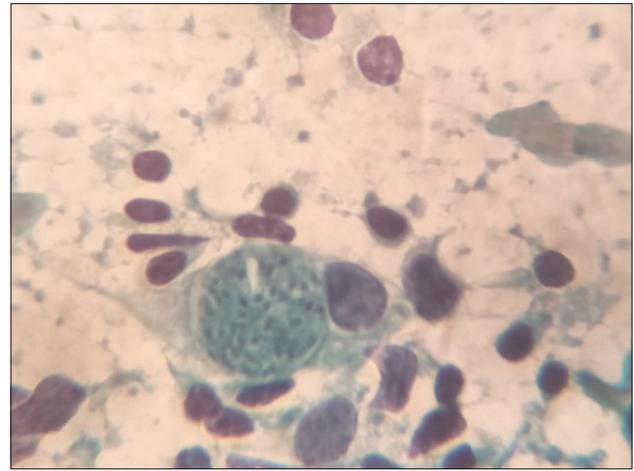
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**Figure 1:** Ill-formed granulomas, epithelioid histiocytes in a background of the polymorphous lymphoid population. Leishman stain, x1000



**Figure 2:** Bradycyst containing numerous crescent-shaped bradyzoites. Papanicolaou stain, x400

of the diagnosis. Serum was sent for anti-toxoplasma immunoglobulin G (IgG) and IgM which showed positive titers.

## DISCUSSION

Toxoplasmosis is caused by *Toxoplasma gondii*. Felines, field cats are the definitive host while other animals and humans serve as intermediate hosts.<sup>[1]</sup> It exists in three forms: Ova, tachyzoites, and cysts. Toxoplasmosis can result from ingestion of raw, uncooked meat containing sporulated cysts or from direct contact with cats and their feces contaminated by ova.<sup>[3]</sup> Cases with vertical transmission during pregnancy may also be seen.

Immunocompetent hosts are generally asymptomatic or sub-clinical with clinical features usually consisting of low-grade fever, cervical lymphadenopathy, fatigue, and myalgia.<sup>[3]</sup>

Cytological features show polymorphic lymphoid cells, tingible-body macrophages, and epithelioid histiocytes. The cystic appearance of intracytoplasmic crescent-shaped organisms within the histiocytes is highly indicative of toxoplasmosis.<sup>[1]</sup>

Ill-formed microgranulomas composed of few histiocytes along with lymphocytes are considered pathognomic.

The identification of granulomatous inflammation and demonstration of the organism in the fine-needle aspiration biopsies and tissue biopsies from an infected individual are considered the gold standard. However, the traditional combination for the diagnosis of Toxoplasmosis is tissue/FNA biopsy and serological studies detecting antibodies against the parasite.<sup>[3]</sup>

## CONCLUSION

Careful examination of smears is essential to establish a diagnosis of toxoplasma lymphadenitis as the organisms can easily be missed. Correlation with serology helps exclude other morphologically organisms and confirm the diagnosis.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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## Conflicts of interest

There are no conflicts of interest.

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