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LETTER TO THE EDITOR

TAPEWORM INFECTION IN THE TONGUE

February 20, 2011

Dear Editor,

The tongue is prone to a variety of lesions, which have been widely studied in recent decades[1]. Some tongue conditions, such as parasitic infection, are reported to be rare[7]. Here, the authors describe a patient with tapeworm infection in the tongue and add this case to the 43 reports of tongue cysticercosis that have been published over the past 35 years (Medline/Pubmed and Lilacs/Scielo databases).

The case was a 36-year-old male with a slow growing swelling in the posterior portion of the tongue. The patient complained of drooling, especially upon waking up, and gingival bleeding when brushing his teeth. He also reported the elimination of "bugs" in the feces, but had not been submitted to a parasitological exam. Clinical inspection of the oral cavity revealed a cystic lesion on the right edge of the middle portion of the tongue, measuring approximately one cm in diameter. Surgical resection was performed for treatment. Pathologic examination revealed a firm, grayish, approximately ellipsoid fragment measuring 1.2 x 1.0 x 0.8 cm, with a raised, whitish central area. After the cut, the specimen exhibited a cystic cavity with a translucent, partially solid, partially liquid content. A microscopic exam revealed that the tongue fragment had a cystic cavity with a thick wall due to fibrosis and mononuclear inflammatory infiltrate, exhibiting larval stage *T. solium* (cysticercus) in its interior (Fig. 1).

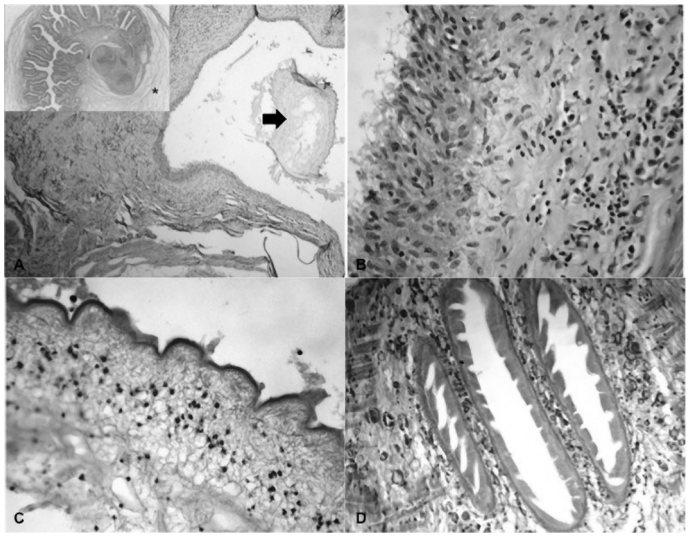

Fig. 1 - A) Thick fibrous capsule surrounding a cystic cavity (black arrow) containing the larval stage of *Taenia solium* (asterisk) (HE, x100); **B)** Fibrous capsule with dense inflammatory infiltrate (HE, x400); **C)** Double layered membrane around the parasite (HE, x400); **D)** The ductilike invaginations of the larval body surrounded by hyaline degeneration of the membrane with numerous mineralized granules (HE, x400).

Cysticercosis is a parasitic infection caused by the larval stage of *Taenia solium* and constitutes an important public health problem[2]. It is the most common parasitic disease worldwide, with an estimated prevalence of more than 50 million individuals infected[3]. Although the oral cavity is a rare site for the incidence of cysticercosis, the oral mucosa, lips, gums and tongue may be affected by solitary or multiple lesions[4]. A Medline and LILACS search of literature comprising all studies on histopathologically confirmed tongue cysticercosis between 1975 and 2010 identified patients ranging from three to 70 years (mean: 25 years). A total of 56.8% of the cases were females, and 43.2% were males, with a male to female ratio of 1:1.3. The peak incidences of lesions were in the first and fourth decades of life.

The case described here was the only case of oral cysticercosis seen at the Division of Pathology, Federal University of Ceará (Brazil) between March 1999 and December 2010. Cysticercosis in the oral cavity does not exhibit pathognomonic clinical characteristics and commonly presents as an asymptomatic tumefaction without bleeding[2,3]. This requires a differential diagnosis involving mucoceles, benign tumor of the minor salivary glands[2], lipoma, fibroma, hemangioma, myoma, glandular cell tumor[2] and sebaceous cyst[3]. Tumefactions in the oral cavity associated with multiple subcutaneous nodules strengthen the clinical diagnosis of cysticercosis[3]. The preoperative diagnosis can be performed using fine-needle aspiration cytology[5,6]. Conventional radiographs may also be useful for the visualization of calcifications in muscle tissue[6]. Advanced imaging methods, such as computed tomography and magnetic resonance, may be important in the assessment of patients with a suspicion of neurocysticercosis[4]. Other expensive exams can be used to determine the diagnosis such as an enzyme-linked immunosorbent assay (ELISA) or enzyme-linked immunoelectrotransfer blot test (EITB)[6]. However, surgical excision followed by histopathologic analysis is an often-employed means of diagnosis and treatment[6], as performed in the present case. The larval stage of the *T. solium* cysticercus was easily spotted and identified during the histological sectioning. The histological appearance of *Cysticercus cellulosae* consists of an outer capsule formed by a dense layer of fibrous tissue with numerous inflammatory cells. The cyst cavity contains the larval form of *Taenia solium.* The cranial part of the larva consists of the scolex, with four suckers and a double crown of rostellar hooks for the worm to attach itself to the intestinal wall. The caudal part has an invagination segment - a space lined with papillary projections[2,4,6,7].

In summary, the oral mucosa is a rare site for the occurrence of a cysticercus infection, but the tongue is a possible location. The present case reinforces the importance of the anatomopathologic study of any tissue removed from the oral cavity, as neither the clinical examination nor the

patient history suggested any diagnosis other than a benign lesion. Knowledge and the study of parasitic infections of the oral cavity are essential to healthcare professionals who work with diagnosis and surgery.

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