An asymptomatic tongue nodule

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Abstract

Cysticercosis is a major health concern in developing countries, as it is a major cause of seizures in these countries. The tissues commonly affected are the neural tissues, muscle, heart, lungs, liver, subcutaneous layers and peritoneum, but oral manifestations are rare. Present case is of an asymptomatic tongue nodule which was diagnosed as cysticercosis on histologic examination. Thus, emphasizing the importance of routine microscopic examination and diagnosis of apparently innocuous lesions of the oral cavity.

Keywords: Cysticercosis, intra-oral, neurocysticercosis, tongue

Introduction

Cysticercosis is a potentially fatal parasitic disease caused by the larva (cysticercosis cellulosae) of tapeworm Taenia solium. Aristophanes and Aristotle in 3rd century BC first described cysticercosis in pigs. Cysticercosis is common in communities where humans and pigs live in close proximity with poor pig husbandry practices, undercooked pork consumption and where the basic sanitary facilities are lacking. Whereas, it is almost non-existent in the Islamic countries as there is religious proscription on consumption of pork. In humans, cysticerci are commonly located in the CNS where they produce a clinical condition known as neurocysticercosis. It may also be located in muscle, heart, eyes and skin, but oral involvement is rare in humans.[1, 2]

Taenia solium can cause two distinct forms of infections, determined by the developmental stage of the tapeworm. Taeniasis (ICD-9-CM 123.0) is infestation of the adult worm in the human intestines, while larval infection in tissues is known as cysticercosis (ICD-9-CM 123.1)[1]. Humans are the only definitive hosts, while pigs are usual intermediate hosts and can harbour larvae of the helminth in different internal organs including brain. Terminal segments of the human intestinal parasite (proglottids) contain eggs and are excreted in faeces which are ingested by pigs under unhygienic conditions. The eggs are dissolved and embryos are liberated in the pig gastrointestinal tract, which penetrates the mucosa and gains access to the lymphatic or vascular channel. Further they are distributed to various organs and tissues specially muscles. This contaminated, undercooked meat when taken by humans leads to larva reaching the intestines and develop into adult tapeworm. Under rare conditions humans can be intermediate host when they ingest the eggs or proglottids and develop the larval stage. This may happen in conditions where carriers infect themselves through faeco-oral route or regurgitation.[1, 2, 3]

Case Report

A 40-year-old person reported to Department of Oral Pathology with a complaint of painless nodule on the tongue since 1 year. Medical and dental histories were non-contributory and dietary history revealed that he was non-vegetarian (occasional pork consumption). No history of trauma, bleeding, pain or paresthesia was present. Intra-oral examination revealed a firm, non-tender, non-ulcerated, well circumscribed, mucosal colored mass of 1cm X 1cm dimensions on the dorsum of tongue [Figure 1]. Candidiasis was observed along with loss of papilla over the dorsum of tongue. A provisional diagnosis of fibroma was made, with differential diagnosis of lipoma, pleomorphic adenoma, mucocele and rhabdomyoma. Excision of the lesion was performed was routine hematological examination. The gross specimen consisted of a well circumscribed, nodular mass of 1cm X 1cm X 1 cm.

On microscopic examination, sections stained with Hematoxylin and Eosin revealed a well circumscribed cyst wall with no surrounding inflammatory cell infiltrate. Cyst wall showed irregular invaginations [Figure 2]. On higher magnification an outer, wavy, eosinophilic cuticular layer

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with single layer of subcuticular cells was notice with thin underlyng myxoid tissue [Figure 3]. Finally a diagnosis of cysticercosis cellulosea was made. Systemic examination and MRI revealed no other foci of cyst.

Management of cysticercosis is multidimensional and includes: Surgical excision of the lesions wherever possible, and anticonvulsants if required. Medical management includes antiparasitic and anti-inflammatory drugs. Serial monitoring is necessary; given the risk for neurologic deterioration in the setting of inflammatory reactions to dying parasites. In the present case excision of the nodule was itself curative as stool examination ruled out taeniasis and no systemic foci were observed. The patient was asymptomatic after excision till [Figure 4].

**Discussion**

Clinical spectrum of the disease depends upon the location, developmental stage and number of cysts. Neural cysticercosis has no specific symptom or sign, but acute symptomatic seizures are the most common. Others include headache, hydrocephalus, chronic meningitis, focal neurological deficits, psychological disorders, and dementia. Extra neural cysticercosis commonly involves subcutaneous tissues and muscle presenting as clinical nodules. Cardiac muscles if involved can cause arrhythmias and conduction blocks. Hematological profile often remains unaltered. Occasionally eosinophilia may be noted when there is leakage of parasitic antigen into surrounding tissues. Intra-orally, they present as painless, submucosal nodules most commonly involving the tongue. Prognosis of maxillofacial region is excellent with no recurrence, in contrast to other cerebral, ocular, cardiac sites.

On searching the pubmed for terms like cyticercosis and oral cysticercosis, we found 91 cases of oral cysticercosis reported in English, Chinese, Spanish and Portuguese literature. No gender and age predilection has been reported. Among the intra-oral sites, tongue was the most common site, but cases...
involving rare sites like lip. Masseter, mylohyoid and parotid were also reported.\cite{5, 6, 7, 8}

Though the incidence of oral cysticercosis is rare, it should always be considered on observing a nodular oral mass in endemic areas or if a history of visit to endemic areas is present. Normal eosinophil counts and vegetarian dietary habits at times cannot rule out the possibility of cysticercosis. Therefore, histopathological examination is a must.

**Take Home Message**

1. Whenever looking at an innocuous nodule intra-orally, histopathological evaluation is a must.
2. Eating pork is a risk factor for teniasis but not for cysticercosis, which is acquired by the consumption of *T. solium* eggs.
3. Cysticercosis can be easily prevented by good personal hygiene practices, effective faecal disposal and proper treatment and prevention of intestinal infection.
4. Though a potentially eradicable disease; still no vaccine has been developed due to complex immunology of the parasite, occult nature of infection and minimal morbidity.

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