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Case Report

Pathology Section

Non Specific Inflammation: A Waste-Basket Diagnosis Harboring Cysticercus–Report of Two Cases

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ABSTRACT

Cysticercosis is a well known parasitic infestation occurring at multiple sites including brain, muscles, liver, lungs, heart and peritoneum. Clinical presentation may be misleading most of the times. We herewith report two cases of oral cysticercosis which we encountered in our setup within a week. Both patients were young, urban vegetarian females presenting with cheek swelling. One had a diffuse swelling while other developed a cystic lesion. We found dead worm in the haematoxylin and eosin stained sections, but one may not always find it. Therefore, a high index of suspicion is needed in endemic areas. In cases of nonspecific inflammation serial sectioning and processing of the whole specimen is recommended before signing off a case as non specific inflammation even more, if we have calcific deposits. The correct diagnosis is of huge importance as involvement of other organs may give rise to serious complications.

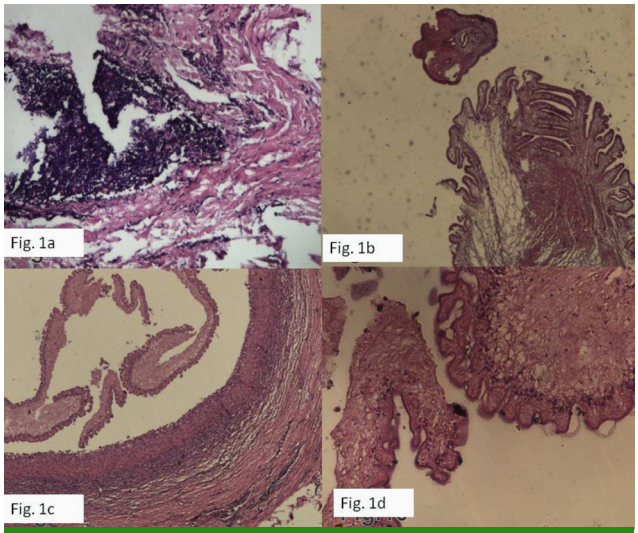
We report two cases of oral cysticercosis which reveal the importance of the histopathologic examination, emphasizing the need to include cysticercosis in the differential diagnosis of oral nodular lesions in endemic areas. Informed consent was taken from both the patients prior to the examination.

Keywords: Calcific deposits, Granulation tissue, Histopathology

Case 1: A 27-year-old vegetarian female presented with swelling over right malar region since four months. The swelling was gradually progressive and associated with pain. The swelling was excised by intraoral approach and a small nodule was identified in the swelling. The swelling measured 2.5x2x0.5 cm while the nodule measured 0.3 cm in greatest dimension. Histopathological examination of the tissue revealed cheek muscles displaying splaying of muscle fibers with dense fibrous bands and well formed lymphoid follicles along with areas of granulation tissue [Table/Fig-1a].

Section from nodule showed eosinophilic layer with some calcific deposits. With a high index of suspicion, a serial was ordered and a well formed cuticle along with well developed suckers was found [Table/Fig-1b]. A diagnosis of Cysticercosis of oral cavity was hence given.

Case 2: A 16-year-old female presented with a swelling in the right buccal mucosa since 6 months. The swelling was non progressive and not associated with pain. She was a vegetarian. On gross examination, the swelling was cystic and measured 0.8 cm in diameter. On cutting straw coloured fluid came out. Histopathological examination revealed a cyst wall comprising of three layers [Table/Fig-1c]. Outer layer comprised of waxy eosinophilic acellular cuticle. Middle layer i.e. the germinal layer comprised of bland round to oval nuclei and the inner reticular layer was made up of fibro collagenous tissue [Table/Fig-1d]. The case was also therefore diagnosed as cysticercosis of oral cavity.



[Table/Fig-1a-d]: 1a&b, Sections from case 1 shows splaying of cheek muscle fibres with lymphoid aggregates and dead worm with suckers (H&E x 100). 1c&d, Cystic swelling in the case 2 displaying outer fibrous layer and inner chitinous layer of the cyst in high power view.

DISCUSSION

Parasitic infestation caused by larvae of *Taenia solium* is termed as cysticercosis. It is common in areas with poor hygiene and improper cooking habits. *Taenia solium* also

termed as the pork tapeworm or armed tapeworm is distributed all over the world [1]. It is a cyclophyllidean cestode and belongs to the family of Taeniidae [2]. This parasite completes its life cycle in man and pig [1]. Man is definitive host of *Taenia solium* with infestation of intestine by adult worm while pig is intermediate host, harboring the larvae. Other sites where aberrant infestation is found in humans are brain, muscle, heart, liver, lungs and peritoneum.

Reported prevalence of oral cysticercosis is 4.1% involving tongue, lips and buccal mucosa. Most common clinical symptom is a painless swelling which is many times clinically misdiagnosed [2-5].

Kuchenmaister in 1855 established that human cysticercosis is caused by the larval stage (cysticercus cellulosae) of the pork tapeworm *Taenia solium* [6]. In the whole life span of *T.solium*, man 'the definitive host' harbors the adult worm [7,8]. Ingestion of improperly cooked pork is implicated in majority cases of the worm infestation [8,9]. Moreover, commonly the fully grown worm is found attached to the wall of small intestine where it may reach a length upto 7m. The adult worms frequently release proglottids (containing 50,000–60,000 fertile eggs) [8]. Ingestion of infected human stools by pigs completes the whole cycle.

But in the present scenario both the ladies were strictly vegetarian, alternatively in such cases; ingestion of food or water contaminated by infected human faeces containing *T. solium* eggs, oral transmission of eggs via the hands of carriers of adult worm, and internal autoinfection by regurgitation of eggs into the stomach after reverse peristalsis occurs. All this is possible because of three major reasons. First the eggs remain viable for longtime in water, soil and vegetation [10,11]. Secondly, soil contamination by defaecation in open. Thirdly, and most importantly ingestion of uncooked vegetables not properly washed.

The clinical symptoms depend on the site and the number of cysticerci in the body. Dead worm incites inflammatory reaction, while live worm is usually well tolerated by human body, one may have mild muscular pain and/or fever [10]. Central nervous system involvement may produce headaches, acute obstructive hydrocephalus, and seizures.

Oral involvement is less reported in literature. This may be due to its uncommon site and often misdiagnosis as a mucocele or a benign tumor of mesenchymal origin [9].

Apart from histopathology, FNA (identification of tegument layer in aspiration sample), imaging and serum assays can confirm the diagnosis, although they are not 100% sensitive [11,12]. Stool examination can also be used to detect its presence.

Histomorphologically the worm may not be always found. A high index of suspicion is needed. In endemic areas, cases of nonspecific inflammation must be thoroughly evaluated for parasitic infestations. Serial sectioning and processing of the whole specimen should furthermore be performed if we have calcific deposits which may signify dystrophic calcifications occurring due to dead worm. Once diagnosed the patient with oral cysticercosis must be further investigated to rule out involvement of other sites.

Treatment of choice for oral cysticercosis is surgical excision. Anti-helmenthic drugs such as praziquantel and albendazole are used for treatment where surgical treatment is risky or not possible, as in cases of neurocysticercosis. Periodic follow-up should be done to rule out further systemic involvement [13,14].

KEY MESSAGE

In cases of oral lesions nonspecific inflammation should not be signed off hastily. Serial sectioning and processing of the whole specimen is recommended even more if we have calcific deposits to rule out parasitic infestations.

CONCLUSION

The above two cases shows clearly confirm the importance of careful histological examination and processing of entire biopsy tissue if we see chronic inflammation along with calcification in oral swelling to make specific diagnosis. We also want to emphasize with these cases that we should always try to establish the cause of chronic inflammation instead of signing out the histology report casually.

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