

ORAL CYSTICERCOSIS: A CASE REPORT

Naheela Rasheed Ansari,¹ Aakanksha Peer,² Ambika Chaudhary,³ Narendra Nath Singh,⁴
Post Graduate student¹⁻³, Professor & Head⁴

1-4 Department of Oral Pathology & Microbiology Kothiwal Dental College and Research Centre

Abstract

Taenia solium causes parasitic infection named, Cysticercosis. The larval stage of *T. solium*, is *Cysticercus cellulosae*, which resides in muscles and other tissues in pigs and serves as an intermediate hosts. Oral cysticercosis is rare condition with not many cases reported to date in literature. Oral cysticercosis usually presents as painless nodules and may be misdiagnosed. Definitive diagnosis is made by surgical excision and histopathologic examination. A case of 40 year old female with painless swelling on buccal mucosa is reported. The lesion was excised and on histopathological examination a capsule of fibrous connective tissue surrounding a cystic space containing a *Taenia solium* larva was revealed.

Keywords: Oral cysticercosis, *Taenia solium*, *Cysticercus cellulosae*

Introduction

Taenia solium causes parasitic infection named, Cysticercosis. The larva, *Cysticercus cellulosae*, is found in muscles and other tissues in pigs which serves as an intermediate hosts.¹ It resides in the small intestine of humans, who have ingested raw or improperly cooked pork², unclean water, or vegetables or by autoinfection caused by egg reflux in the stomach of people who are infected with adult *T. solium*.¹ Inside the small intestine, the scolex part of the larva gets evaginated from the cyst and is attached to the bowel wall. The adult tapeworm develops after 3 months, within its definitive host, which are human beings and leads to a condition known as taeniasis which after begins to form proglottids, which are released from the distal end of the worm and are excreted in the faeces. 50,000 to 60,000 fertile eggs are contained in each proglottid, which remains viable for a longer time in water, soil, and vegetation.

These eggs when ingested by humans and pigs, causes Cysticercosis and embryos get released by gastric acid and intestinal fluids action. The bowel wall is actively crossed by embryos which then enters the blood stream and invade several other tissues and organs where they mature into larval vesicles or cysticerci.²

Brain, meninges and eyes are the common places where larval form can be commonly seen. The other areas where they can be found are in heart, lungs, peritoneum and various muscles. Cases in the Oral & maxillofacial region are rarely reported.³

Oral cysticercosis is rare condition with not many cases reported to date in the dental literature. Oral cysticercosis usually presents as painless nodules and may be misdiagnosed. Definitive diagnosis is made by surgical excision and histopathologic examination.⁴

Case report

A 40 year old female patient reported to our department with a swelling on left buccal mucosa (fig-1). The patient gave history that the lesion was present since 4 years and there was no associated

pain with the lesion. On intra oral examination, it was found that shape of the lesion was spherical, 2x2 cm in size, on palpation it was



Fig – 1 Intra oral photograph showing well circumscribed nodule on buccal mucosa

firm & compressible, the surface of the lesion was smooth, and it was mobile within the soft tissue of the buccal mucosa, with well defined borders. A clinical differential diagnosis of fibroma, pyogenic granuloma, lymphoid follicle and lipoma was made.



Fig – 2 Gross Specimen

On excisional biopsy, the tissue was easily enucleated (fig-2). On microscopic examination,

Haematoxylin and Eosin (H&E) stained sections revealed the presence of a fibrous connective tissue capsule, surrounded by a cystic space containing a *T. solium* larva (fig-3).

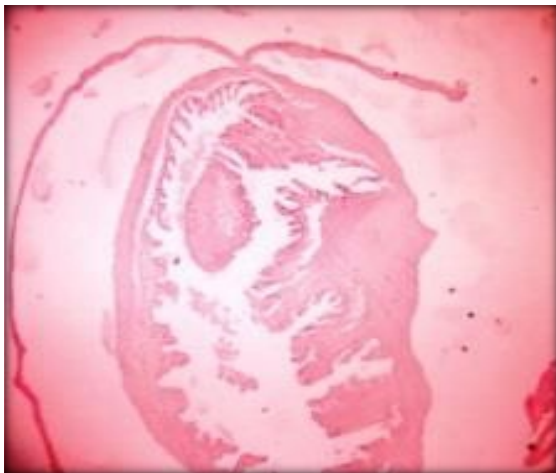


Fig – 3 microscopic view of *Cysticercus cellulosae*, The *Tenia solium* larval form 1). Capsule of fibrous connective tissue, 2) Scoelx

The scolex with sucker and double crown of hooks forms the cranial end of the larva. The caudal end exhibits a homogenous invaginated segment which is formed by figure like papillary projections.

These findings were similar to the cases of oral cysticercosis reported previously in literature, and based on this; diagnosis of Oral cysticercosis was made.

Management of cysticercosis is multidimensional and includes: Surgical excision of the lesions wherever possible. and anticonvulsants if required. Medical management includes ant parasitic and anti-inflammatory drugs. Serial monitoring is necessary: given the risk for neurologic 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.

Discussion

Parasitic infections are pervasive and in developing countries, it is a major public health issue. The *T. Solium* infection is commonly seen in the areas with improper sanitation, where humans and various animals live in close contact and in those areas where assessment of meat is not strictly enforced. The developing countries in Central and South America, most parts of Asia (including the Indian subcontinent and China), Eastern Europe, and most of Africa, are specifically those areas where patients with Cysticercosis are found.

Cases reported in developed areas is due to immigration from and tourism to endemic regions.⁵ Till date, small number of cases of oral cysticercosis has been described; the clinical manifestations are consistent with the symptoms

which were observed in the present case, i.e., a firm, slow-growing nodule with well-defined margins covered with normal color mucosa that is asymptomatic. According to the cases reported, the patients in second decade are commonly affected⁶ and data related to gender is still not reported in the literature.⁷

Salivary gland tumors, mucoceles, neurofibroma, vascular tumors, fibroma, lipoma, leiomyoma and schwannoma can be added in list of differential diagnosis for Oral cysticercosis.⁸

Clinical spectrum of the disease depends upon the location of the lesion, developmental stage and number of cysts. Acute symptomatic seizures are the most common symptoms of Neurocysticercosis. Other symptoms include headache, hydrocephalus, chronic meningitis, focal neurological deficits, psychological disorders, and dementia. Extra neural cysticercosis usually involves subcutaneous tissues and muscle presenting as clinical nodules. Cardiac muscles if involved can cause arrhythmias and conduction blocks. Hematological profile is generally unaltered.⁹

Fine-needle cytology aids in diagnosis of cysticercosis, when the larva is aspirated. In a study (Mazhari *et al.*2001), 153 patients with cysticercosis were diagnosed by FNAC.⁶ However, definitive diagnosis of cysticercosis can only be made by histopathological examination.⁶ Histopathological examination reveals findings such as those that were observed in the present case, including a *Cysticercus cellulosae* surrounded by a cystic cavity and fibrous connective tissue permeated by a predominantly inflammatory cell infiltrate.

In asymptomatic patients, treatment of cysticercosis could be unnecessary. However, anti-helminthic drugs such as praziquantel and albendazole are effective agents that are used to treat the disease, in case of neurocysticercosis, specifically when surgical treatment is not possible.¹⁰

References

1. De Souza PE, Barreto DC, Fonseca LM, de Paula AM, Silva EC, Gomez RS. Cysticercosis of the oral cavity: Report of seven cases. *Oral Dis.* 2000; 6:253-255.
2. Venkatraman J., Atul Jain, Pregnes Parmar. Oral Cysticercosis – A Rare Case Report. *Int J Cur Res Rev.*2013; 05(22)
3. Patel K, Shah M, Patel B, Doshi N. Subcutaneous Oral Cysticercosis. *National Journal of Community Medicine.* 2011;2(2):311-313.
4. Chunduri NS, Venkateswarulu Goteki V, Gelli V, Madasu K. Oral Cysticercosis. *Southeast Asian J Trop Med Public Health.* 2013; 44(2) .

5. Sorvillo FJ, L. Portigal L, Giorgio CD, L. Smith L, Waterman LH, Berlin GW, Ash LR, "Cysticercosis-Related Deaths, California," *Emerging Infectious Diseases*. 2004;10(3):465-469
6. Mazhari NJ, Kumar N, Jain S. "Cysticercosis of the Oral Mucosa: Aspiration Cytologic Diagnosis," *Journal of Oral Pathology and Medicine*. 2001;30(3): 187-189.
7. Lustmann J, Copelyn M. "Oral Cysticercosis. Review of the Literature and Report of 2 Cases," *International Journal of Oral Surgery*. 1981;10(5): 371-375.
8. Elias FM, Martins MT, Foronda R, Jorge WA, de Araújo NS. "Oral Cysticercosis: Case Report and Review of the Literature," *Revista do Instituto de Medicina Tropical de São Paulo*. 2005;47(2): 95-98.
9. Rajshekhar V, Joshi DD, Doanh NO, VanDen, Xiaonong Z. Taenia solium taeniosis/ cysticercosis in Asia. Epidemiology, impact & issues. *Acta trop*. 2003; 87:53-60
10. Webb DJ, Seidel J, Correll RW, "Multiple Nodules on the Tongue of a Patient with Seizures," *Journal of American Dental Association*. 1986;112(5): 701-702

Corresponding author

Dr. Naheela Rasheed Ansari
 PG student
 Department of Oral Pathology & Microbiology
 Kothiwal Dental College and Research Centre
 Moradabad, Uttar Pradesh-244001
 Ph no: 0-7895183134
 Email id : nahilarasheed13@gmail.com