

CYSTICERCOSIS REPORT OF THREE CASES FROM QATAR

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Abstract:

This article reports three cases of cysticercosis seen in the State of Qatar between 1983 to 1996. The lesion in case 1 was present in the left side of the neck in a 24-year-old Indian woman, simulating branchial cleft cyst; In case 2 the cyst had involved soft tissue and muscle of the chest wall in a 17-year-old Qatari girl, presenting as left breast mass, presumed to be a fibroadenoma; Case 3 was a 24-year-old Bangladeshi man who presented with discharge from the left eye which on ophthalmologic examination was found to be from a conjunctival cyst. He had a history of headache and double vision. A brief account of the geography, life cycle, clinical features, pathology, diagnosis and treatment of cysticercosis is presented.

Introduction:

Cysticercosis is endemic on all continents except Australia. It is prevalent wherever pigs are extensively raised. In Europe it is generally believed to be limited to the countries formerly known as "Eastern bloc". In Asia it has a focal distribution, while in Irian Jaya (West New Guinea) there is now a high incidence due to recent infection of the pigs with *T. solium*, the extensive pig culture of the inhabitants (such as the use of worm segments as medicine) and direct and indirect oro-anal sexual contacts. In the American continent the disease is heavily endemic in Mexico and other South American countries⁽¹⁾.

The purpose of this article is to report three cases of cysticercosis from the State of Qatar diagnosed at Hamad General Hospital, between 1983 - 1996.

Case Reports

Case 1:

A 24-year-old Hindu Indian female had a small firm mass on the left side of the neck anterior to the sternomastoid muscle. An oval cyst thought to be related to branchial cleft system was resected. The cyst was one centimeter in maximum diameter with a paper thin wall and contained semi-solid greyish white material.



Fig. 1

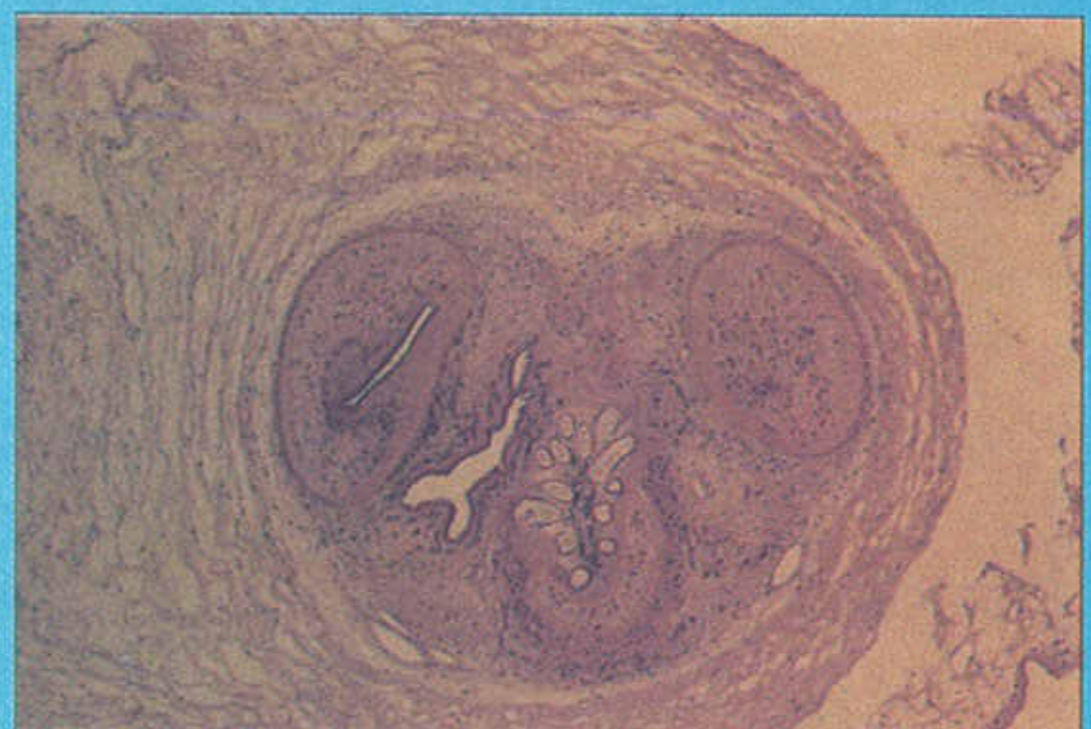


Fig. 2

Fig 1,2 & 3: H & E Stain. Cysticercosis, surrounded by inflammatory cellular infiltrates.

Fig 4: Birefringent hooklets are highlighted by PAS stain under Polarised light

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Sections showed cysticercosis, surrounded by rather intense inflammatory cellular infiltrates including lymphocytes, lymphoid follicles, palisading epithelioid cells and macrophages (Fig 1,2).

Case 2:

A 17-year-old muslim Qatari female living with her family presented with a left breast swelling of two weeks duration suspected to be a fibroadenoma or fibrocystic disease of the breast. She had travelled to Bahrain and London. A cyst located in the muscles under the breast and 4x3x0.7 cm of the muscle and fibroadipose tissue were resected. The cyst measured one centimeter in diameter with a translucent wall and contained clear fluid. Sections showed cysticercosis (Fig 3,4) with chronic inflammatory cellular infiltrates in the surrounding muscle and connective tissues. Stool examination was negative for ova of *T. solium*. No other cyst was found in the body. Computed tomography of the brain was normal. She was discharged home in good condition.



Fig. 3

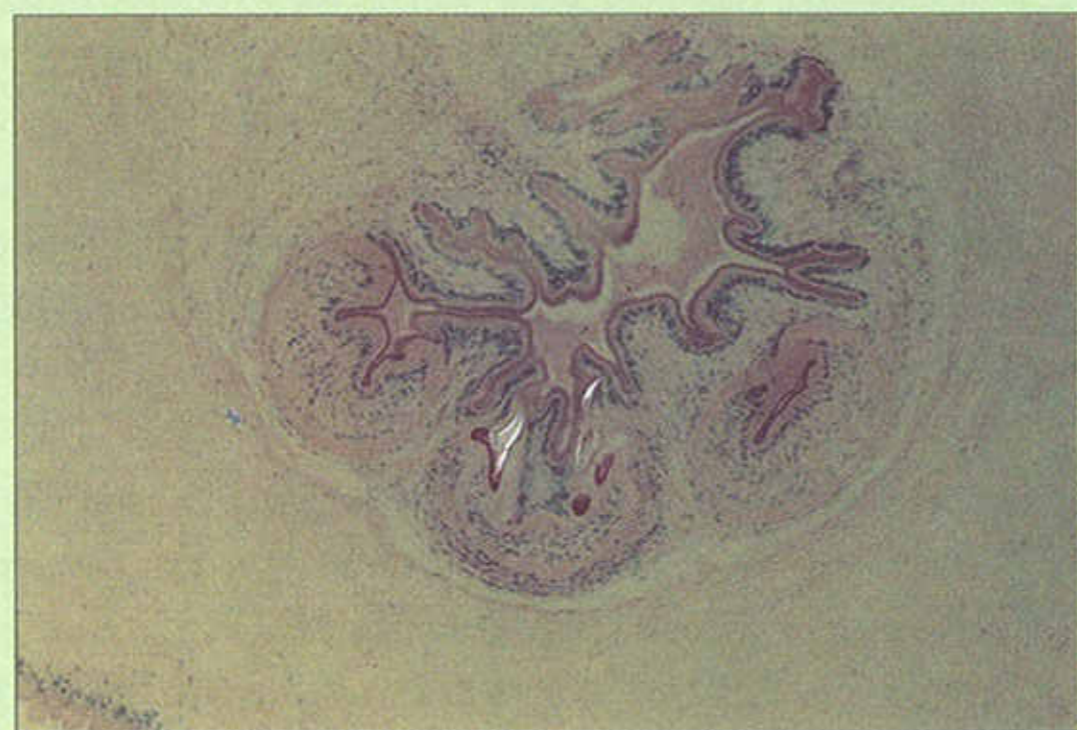


Fig. 4

Case 3 :

A 24-year-old Muslim Bangladeshi man was seen in the ophthalmology clinic because of discharge from his left eye, which on examination was found to be from a conjunctival cyst. Several months earlier he had complained of headache and double vision. The conjunctival cyst resected was 0.8 cm in diameter and on histopathological examination proved to be cysticercosis associated with superimposed bacterial and fungal infection. Stool examination was negative for ova of *T. solium*. There was no evidence of central nervous system involvement on clinical examination.

Discussion :

Taenia solium (the pork tapeworm) causes two distinct types of diseases in man^(1&2). Ingestion of inadequately cooked pork infested with cysticerci can result in the development of adult tapeworm in the intestine (Fig 5). This is associated with such symptoms as abdominal pain, weight loss, weakness and passing of proglottid segments of the worm in the faeces.

The second disease entity is cysticercosis. This is caused by ingestion of the eggs of *T. solium*, present in food contaminated by faeces of an infected person; or, in individuals infested with an intestinal worm by autoinfection (hand-to-mouth fecal transmission or regurgitation of egg-laden proglottids into the duodenum or stomach)^(1&2). It is important to realize that cysticercosis can be caused only by ingestion of the eggs and that man is the only source of the eggs in nature (Fig 5). Stool examinations did not show evidence of *T. solium* infestation of the intestines in any of our patients. We believe they contracted cysticercosis by eating food contaminated by individuals who were harbouring *T. solium* in their intestines and were secreting eggs of the parasite in their faeces.

The ingested eggs hatch in the stomach and upper intestine, and the resultant oncospheres circulate in the blood to various tissues. Cysticercosis has been found most commonly in the subcutaneous tissue and muscles of the tongue, neck or ribs, next in the eye and then in the brain. Less commonly they are found in the heart, liver, lungs and abdominal cavity^(1&2).

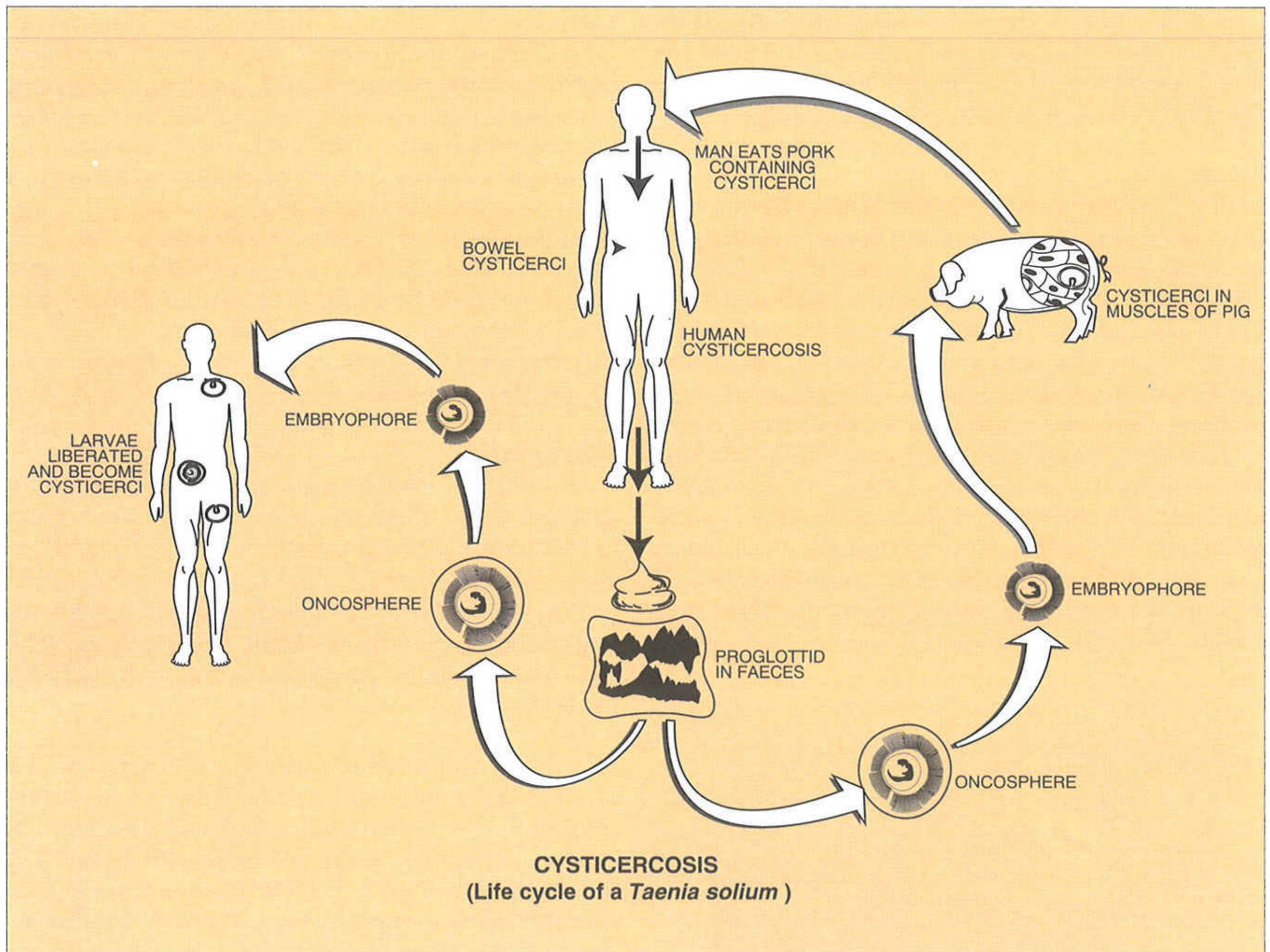


Fig. 5

The diagnosis of cysticercosis can be made with certainty only by biopsy of a cyst. These ovoid, milk-white cysts are usually 1-2 cm in diameter. Cysts larger than 5 cm, and unusually branched cysts known as “*Cysticercus racemosus*” do occasionally arise. The cysts are filled with a water-clear fluid into which a single scolex protrudes. Its inverted tip bears 4 suckers and a double row of hooklets. The parenchyma is loose, rich in polysaccharides and contains minute, rounded basophilic “calcareous bodies” of unknown function. The epithelial layer is a simple syncytium connected to an underlying row of cytons. The hooklets are shark tooth shaped, birefringent (Fig 4), and nearly indestructible. Even degenerated or calcified cysticerci remain histologically recognizable as long as their calcareous bodies and hooklets can be seen⁽³⁾.

Diagnosis can also be made by fine needle aspiration cytology as in the series of 10 subcutaneous cysticercosis reported recently by Kamal & Grover 1995⁽⁴⁾. Assays for the antibody are available, but may be negative in about 20 percent of patients with cysticercosis and may be false positive in those with echinococcosis. The stool examination for *Taenia* eggs may detect concurrent intestinal infestation with the tapeworm but is not directly pertinent to the diagnosis of cysticercosis.

Treatment can involve chemotherapy, surgery and supportive measures. The introduction of praziquantel provided the first medical therapy for cysticercosis, which was previously treated by surgical excision of the lesion. In neurocysticercosis medical treatment with albendazole or praziquantel

is usually preferable to surgical removal. Drug therapy is most effective for parenchymal cysts: is less effective for intraventricular, subarachnoid or racemose cysts; and has no effect on calcified parasites. Patients with only calcified cysts do not need specific therapy⁽⁵⁾. Of the drugs available Albendazole is less expensive and is said to be more effective than praziquantel. Recommended doses are: Albendazole 15 mg per kg body weight per

day (divided in three doses) for eight days or praziquantel 50 mg per kg body weight per day (divided in three doses) for fifteen days. Both drugs provoke inflammatory reactions to dying cysticerci, so, patients need to be hospitalized for treatment. Ocular cysticerci should be treated by surgical removal; drug treatment is not effective and is contraindicated.

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