Solitary intramuscular cysticercosis-A report of two cases

Sushma Ramraje[1], Varsha Bhatia[2], Aparajita Goel[2]

1. Associate Professor
2. Resident
Department of Pathology, Grant Medical College, Mumbai- 400008

CASE REPORT

Please cite this paper as:
Ramraje S, Bhatia V, Goel A. Solitary intramuscular cysticercosis-- A report of two cases. AMJ 2011, 4, 1, 58-60
Doi: http://doi.org/10.21767/AMJ.2011.483

Corresponding Author:
Ramraje. Sushma .N
2/15, Dhanwantari,
Doctors Quarters,
JJ Hospital Campus,
Byculla, Mumbai-400008
Email@address:sushmaramraje@yahoo.com

Abstract

Cysticercosis, infestation with the encysted larval stage of Taenia *solium,* is a major health problem in most countries of Latin America, Asia, and Africa. It involves mainly the central nervous system. Muscle involvement is also seen, although it usually remains asymptomatic. Solitary intramuscular cysticercosis, without involvement of central nervous system is a rare entity. We present two cases of solitary intramuscular cysticercosis, without any systemic or neurologic manifestations.

Key Words: Cysticercosis; Intramuscular

Introduction

Cysticercosis is no longer an endemic disease of the developing countries. It has become a 'global problem', because of immigration from endemic areas. The larvae form cysts commonly in the brain, meninges, and eyes, which together constitute 86% of the cases. The other locations are muscle, heart, lungs, and peritoneum. Cases in the maxillofacial region, including the tongue and cheek muscles, are rarely reported (1). Most soft tissue and muscular cysticercal affection is associated with central nervous system involvement or multiple cysts. Solitary cysticercosis of muscle without involvement of central nervous system is rare causing diagnostic dilemma due to lack of specific features. Only a few sporadic case reports are seen in literature (2). We present here, two cases of solitary intramuscular cysticercosis.

Case summary

Case 1--30 year old male presented to the surgical outpatient department with a painless swelling over the right scapular region. On examination the swelling was ill-circumscribed measuring 4x3x2cms and located deep to trapezius muscle. Haematological parameters showed normal complete blood count. He had no history of seizures or neurological abnormalities and no neurological or systemic abnormalities were elicited on physical examination. The mass was surgically excised and an intra-operative diagnosis of intramuscular cyst was made. We received two tissue bits, a larger tissue measuring 3x2x1cm with brownish yellow areas on cut surface and a smaller pearly white cyst about 1 cm in size containing clear fluid. Microscopic examination of the cyst showed remnants of a cysticercosis cyst showing degenerative changes. The degenerated parasitic wall had a wavy dense cuticle Tegumental cells displaying degenerative changes were seen in the inner layer of the cyst wall. Scolex could not be found in the specimen. Thus the diagnosis of degenerated cysticercus cellulosae was confirmed (Fig 1and2).

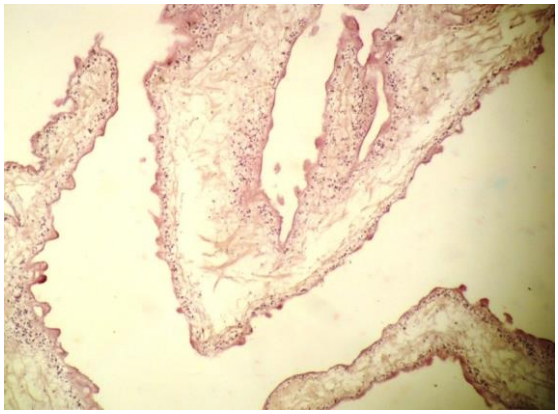

Figure 1: Photomicrograph showing microscopic examination of the cyst with degenerative changes. (H&E, 100X)

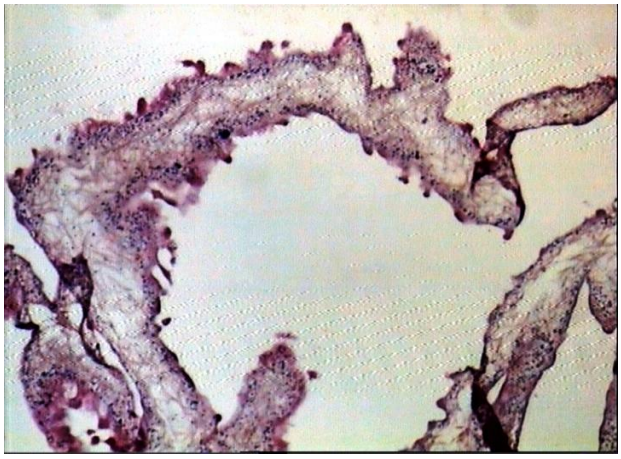

Fig 2. Photomicrograph showing the degenerated parasitic wall having a wavy dense cuticle. Scolex was not found (H&E, 100X)

The microscopy of the other tissue bit showed granulation tissue, foreign body giant cell reaction and collections of foamy macrophages which led to a false diagnosis of hibernoma. The foamy macrophages were negative for S100 protein thus ruling out the diagnosis of hibernoma.

Case 2—35 year old female presented to the orthopaedic out-patient department with a swelling over the lateral aspect of left forearm. On examination the swelling measured 3x2x1 cms. Haematological parameters and physical and radiological examinations were within normal limits. A clinical diagnosis of myoma was made and surgical excision was done. We received two tissue bits, a larger tissue measuring 2x1x1 cm, partly cystic on cut surface with presence of grumous material and a smaller, pearly white cyst measuring 1 cm. Microscopic examination of the cyst included an investing tegument or 'cuticle', subcuticular cells, and one sucker thus confirming cysticercus cellulosae (Fig 3and4).

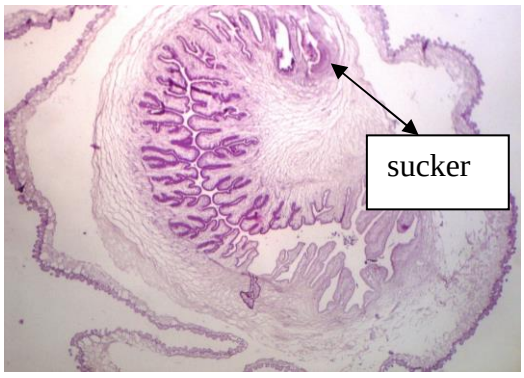

Fig 3. Photomicrograph showing the cyst having an investing tegument or 'cuticle', subcuticular cells, and one sucker thus confirming cysticercus cellulosae (H&E, 40X)

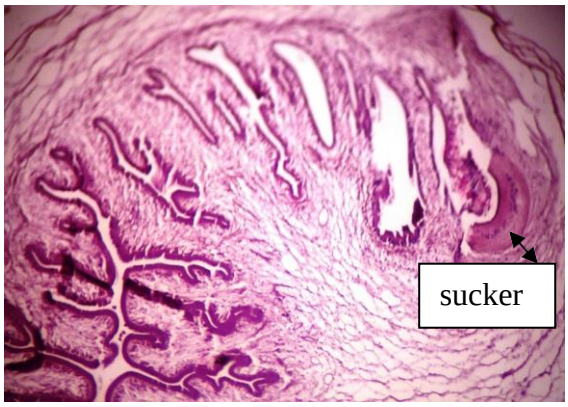

Fig 4. Photomicrograph showing higher power of Fig 3 (H&E, 100X)

The microscopy of the other tissue bit showed granulation tissue, foreign body giant cell reaction and collections of foamy macrophages (Fig 5).

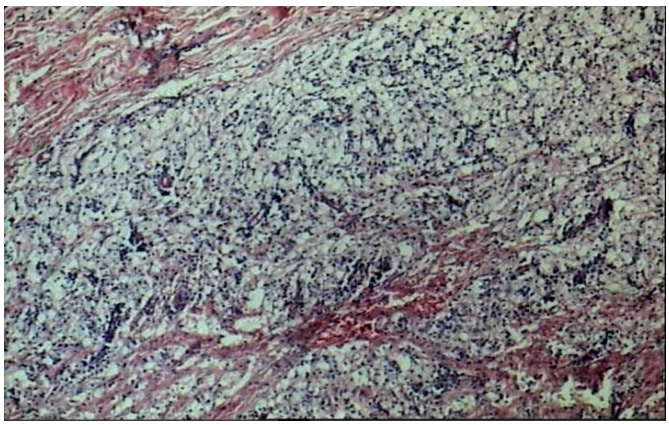

Fig 5. Photomicrograph showing collections of foamy macrophages. (H&E, 200X)

Discussion

Human cysticercosis is an infection by the larval (cysticercus) stage of the tapeworm *Taenia solium*. It is seen in Central and South America, Africa, India, and China and is rare in Europe and North America. Cases of this infection in the West may be related to immigration and increase in travel to tropical countries.

Tapeworm infection is commonly seen in developing countries due to a combination of factors like rural society, crowding and poor sanitation allowing greater contact between humans and pigs and thus more opportunities for faecal contamination of food and water.(3)

Infection with the adult worm takes place by the ingestion of uncooked or ill-cooked pork containing encysted larvae of *Taenia solium*. The larval wall is destroyed by secretions in the stomach, releasing the tapeworm head which passes into and attaches to the intestinal mucosa,

and grows into an adult worm in 5-12 weeks .Eggs and proglttids are passed into the faeces. Eggs are thick shelled and hence are not destroyed in the soil for days together. When pigs or humans ingest the eggs, the gastric secretions break the egg wall. The oncospheres are released which penetrate the intestinal wall , enter the mesenteric venules ,spread throughout the body, and reach the subcutaneous and intramuscular tissues, eye, brain and other body sites. (4)

The clinical symptoms of cysticercosis depend on the number and location of cysticerci, and the associated inflammation. Most often invasion of the central nervous system, eye, subcutaneous tissue, skeletal muscle and heart is seen but occasionally the lungs, liver and kidney may be affected. In the muscular form, three types of clinical manifestations have been described: the myalgic type; the mass-like, pseudotumour or abscess-like type; and the rare pseudohypertrophic type (3).

Solitary muscular and soft tissue cysticercal involvement is a rare disease and has been used as a marker of neurocysticercosis. Therefore, central nervous system or ocular involvement should be ruled out if systemic involvement is suspected. However, in both our cases no systemic involvement was suspected, hence a computerised tomography scan was not performed. The intramuscular cysts may remain asymptomatic and finally disappear quietly; rarely do they calcify. Very rarely, they become inflamed and manifest as a growing area of redness, oedema and pain. Inflammation of the tissue suggests death or degeneration of the parasite with leakage of the antigens and cellular response of the body. In our cases, the cyst wall might have ruptured with release of antigens inciting an inflammatory reaction. Our patients had a mass-like presentation, which simulate benign neoplastic conditions of muscles or an intramuscular abscess (2).

People of any age may be affected but children commonly suffer because of increased chances of fomite infection. A diagnosis of cysticercosis is made by surgical biopsy of at least one lesion and exclusion of other entities. The differential diagnosis of muscular cysticercosis includes lipomas, epidermoid cysts, granular cell tumours, neuroma, neurofibromas, pseudoganglia, sarcoma, myxoma, pyomyositis or tuberculous lymphadenitis.

Sonography is not widely used in diagnosing muscular cysticercosis; however, with the advent of high-resolution sonography, it can be used liberally for diagnosis. High-resolution sonography, being non-invasive and non-ionizing, plays an important role in establishing the diagnosis in patients with muscular cysticercosis without any need of FNAC or biopsy and is easy to manage conservatively (3).

Surgical removal is indicated for localized lesions that cause obvious symptoms. Medical treatment with praziquantel has been recommended for neurocysticercosis and subcutaneous cysticercosis.

Although intramuscular cysticercosis is generally asymptomatic, awareness of such lesions may lead to early diagnosis and prevent irreversible damage.

Collections of foamy macrophages in a muscular location can often lead to a false diagnosis of hibernoma, as was suspected in our case. Cysticercosis should always be kept as a differential diagnosis in all kinds of subcutaneous swellings in endemic regions.

References

1) Sidhu R, Nada R, Palta A , Mohan H, Suri S. Maxillofacial cysticercosis. Uncommon appearance of a common disease.*J Ultrasound Med* 2002; 21:199-202.
2) Tripathy SK, Sen R K, Sudes P, Dhatt S. Solitary cysticercosis of deltoid muscle in a child: The diagnostic dilemma and case report. *J. Orthopaedics* 2009; 6: e11.
3) Singal R, Mittal A , Gupta S, Gupta R, Sahu P, Gupta A. Intramuscular cysticercosis diagnosed on ultrasonography in thigh: A rare case report. *North Am J* Med *Sci* 2010; 2: 162-164.
4) Intestinal cestodes. In: Garcia LS, Bruckner DA (ed) Diagnostic Medical Parasitology. New York:Elsevier ; 1988:216-218.

PEER REVIEW
Not commissioned. Externally peer reviewed.

CONFLICTS OF INTEREST
The authors declare that they have no competing interests.

FUNDING
Nil