
Cysticercosis of Temporalis Muscle: A Histological Surprise

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Article ID: WMC004313

Article Type: Case Report

Submitted on: 28-Jun-2013, 09:41:54 AM GMT **Published on:** 28-Jun-2013, 09:53:25 AM GMT

Article URL: http://www.webmedcentral.com/article_view/4313

Subject Categories: OTORHINOLARYNGOLOGY

Keywords: Cysticercosis, musculoskeletal swelling, tapeworm infestation, temporalis.

How to cite the article: Shah PN, Mahajan GD, Ghate G, Thomas J. Cysticercosis of Temporalis Muscle: A Histological Surprise. WebmedCentral OTORHINOLARYNGOLOGY 2013;4(6):WMC004313

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Source(s) of Funding:

None

Competing Interests:

None

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Abstract

Cysticercosis, a parasitic infection caused by the larval form of the pork tapeworm, *Taenia solium*. Cysticercosis usually involves musculoskeletal system and CNS. Here we present an isolated involvement of right sided temporalis muscle. There was no any other system involvement including CNS. So it was very difficult to diagnose the condition. All the investigations done were not pointing to any diagnosis. The condition was diagnosed only after the excision of the cyst.

Keywords – Cysticercosis, musculoskeletal swelling, tapeworm infestation, temporalis.

Introduction

Cysticercosis is a systemic parasitic infestation caused by the pork tapeworm, *Taenia solium*. The occurrence of cysts in humans in order of frequency is the central nervous system, eye, subcutaneous tissue, striated tissue and rarely other tissues (1). Most muscular disease is associated with central nervous system involvement, presence of multiple muscular cysts or both. Neurocysticercosis is the most frequent cause of adult-onset seizures in Latin America, South East Asia and Africa; it is rare in Western Europe and mainly occurs in immigrants from endemic regions (2). Isolated muscular involvement is a rare finding (3) and because of nonspecific symptoms, isolated soft tissue cysticercosis is very difficult to diagnose (4). Till date there are very few reported cases of isolated muscular cysticercosis (5). We present a 30 yrs male case of isolated cysticercosis of the right temporalis muscle.

Case Report

A 30 years male presented with a swelling in right suprazygomatic region since 3 months. Patient noticed the swelling of size of a berry 3 months back. Gradually swelling became painful on chewing. Tenderness was localised on the right temporalis muscle area. There was no history of any discoloration of the skin or discharge from the swelling. On

palpation the swelling was measuring 2cm x 1.5cm in dimension, firm in consistency with indistinct margins and the overlying skin was mobile. The swelling was fixed on clenching the teeth. Radiographic examination did not reveal any significant abnormality. FNAC was inconclusive showing only inflammatory changes. So to know the exact extent and nature of swelling patient was subjected to a CT scan which revealed a circular lesion measuring 1.5 cm in diameter located in the region of the right temporalis muscle.

Since the swelling was painful on chewing, excision biopsy was planned. Right sided suprazygomatic vertical incision was taken in the hairline. The fibrous tissue and the temporalis fascia dissected and well encapsulated, circumscribed swelling found in the temporalis muscle tissue. There was a plane between the swelling and the muscle. The swelling could be dissected in toto out of the muscle. The incision was sutured in layers. The swelling was sent for examination. The report was a histopathological surprise. It turned out to be cysticercosis. To rule out other system involvement a MRI brain and eyes was done, which did not show presence of any cysts. Sutures were removed on 7th day. The wound healed nicely. Retrospectively when the patient was inquired about his diet, he gave the history of mixed dietary habit. After a month follow-up patient did not have any pain on chewing.

Discussion

Cysticercosis is a systemic parasitic infestation caused by the pork tapeworm, *Taenia solium*. The symptoms of this illness are caused by the development of characteristic cysts (cysticerci) which most often affect the central nervous system (neurocysticercosis), skeletal muscle, eyes, and skin. Many individuals with cysticercosis never experience any symptoms (asymptomatic). The disease was also recognized by Muslim physicians and is thought to be the reason for Islamic dietary prohibition of eating pork. In the 1850s, German investigators described the life cycle of *T. solium*.

Humans are the host for *Taenia solium*, and they may

carry the tapeworm in their intestine, often without symptoms. The tapeworm eggs are periodically shed in the faeces by the human reservoir, and typically pigs ingest the eggs in contaminated food or water. The pigs subsequently become infected and develop cysticerci in their body tissue. When humans eat infected raw or undercooked pork, the life cycle of the tapeworm is complete and the cycle continues.

Human cysticercosis, however, develops after humans ingest *Taenia solium* eggs. The eggs are typically spread via food, water, or surfaces contaminated with infected faeces. Many times the eggs may be spread from the hands of infected food handlers who do not clean their hands or from foods fertilized/irrigated with water containing infected human faeces. Though the source of this faeco-oral transmission often occurs from other infected individuals, it is also possible for individuals who carry the tapeworm to auto infect themselves. Cysticercosis usually involve nervous system, it is called as neurocysticercosis. Involvement of other body tissue can occur affecting eyes, musculoskeletal system and subcutaneous tissues.

In conjunction with the stool examination the radiological imaging may lead to the diagnosis of cysticercosis. Blood testing may sometimes help but is not very accurate. Rarely biopsy is needed to arrive at the diagnosis.

The complications that may be seen with cysticercosis are seizures, stroke, vision changes, and cognitive problems. The prognosis for the majority of patients with cysticercosis is excellent with proper management.

Asymptomatic patients may not require any treatment. Specific anthelmintic therapy with albendazole or praziquantel is recommended for patients with non-calcified, viable cystic lesions (6,7). Accompanied corticosteroids prevent increased inflammation due to cyst degeneration under anthelmintic treatment (8). Surgical intervention can be necessary in the setting of intracranial hypertension caused by hydrocephalus or giant cysts (9).

Conclusion

When the patient presents with a musculoskeletal swelling of uncertain aetiology especially in the endemic areas of tapeworm infestations, differential diagnosis of cysticercosis should be considered. Excisional biopsy gives the final diagnosis when other

investigations like FNAC or USG do not point towards it.

References

1. Mittal A, Das D, Iyer N. Masseter cysticercosis- a rare case diagnosed on ultrasound. *Dentomaxillofacial Radiology* 2008; 37:113-16.
2. Garcia HH, Del Brutto OH: Neurocysticercosis: updated concepts about an old disease. *Lancet Neurol* 2005, 4:653-661.
3. Zemen-Alanis GH: A classification of human cysticercosis. Fissler A, Willms K, Laclette JP et al. *Cysticercosis: Present state of knowledge and perspectives*. New York, Academic Press 1982; 107-27.
4. Boris Michael Holzapfel MD, Christoph Schaeffeler MD, Ingo Jorg Banke, Simone Waldt case report: A 37 year old man with a painless growing mass og the thorax. *Clin Orthop Relat Res* 2010; 468:1193-98.
5. Jankharia BG, Chavan GB, Krishnan P. MRI and ultrasound in solitary muscular and soft tissue cysticercosis. *Skeletal Radiol* 2005; 34:722-26.
6. Garcia HH, Del Brutto OH, Nash TE, White AC Jr, Tsang VC, Gilman RH: New concepts in the diagnosis and management of neurocysticercosis (*Taenia solium*). *Am J Trop Med Hyg* 2005, 72:3-9.
7. Garcia HH, Pretell EJ, Gilman RH, Martinez SM, Moulton LH, Del Brutto OH, Herrera G, Evans CA, Gonzalez AE: A trial of antiparasitic treatment to reduce the rate of seizures due to cerebral cysticercosis. *N Engl J Med* 2004, 350:249-258.
8. Jung H, Hurtado M, Medina MT, Sanchez M, Sotelo J: Dexamethasone increases plasma levels of albendazole. *J Neurol* 1990, 237:279-280.
9. Colli BO, Carlotti CG Jr, Assirati JA Jr, Machado HR, Valença M, Amato MC: Surgical treatment of cerebral cysticercosis: long-term results and prognostic factors. *Neurosurg Focus* 2002, 12:e3.

Illustrations

Illustration 1

CT scan images showing circumscribed lesion in region of right temporalis muscle

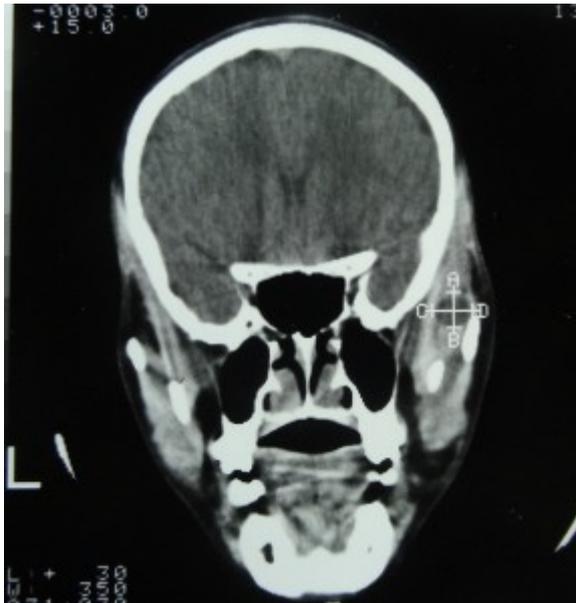
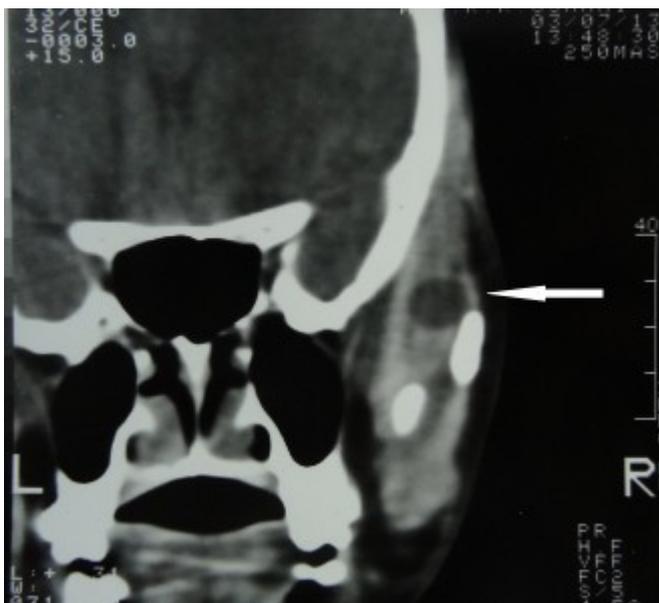


Illustration 2

CT scan images showing circumscribed lesion in region of right temporalis muscle



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