

Asymptomatic Disseminated Cysticercosis: A rare case report from India

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Abstract: Cysticercosis is a common tropical disease and a major public health problem in the developing countries like India where it is endemic. We report a patient of osteoarthritis knees and hips who was incidentally found to have asymptomatic disseminated Cysticercosis.

Keywords: Cysticercosis, disseminated cysticercosis, *Taenia solium*, Neurocysticercosis

INTRODUCTION

Cysticercosis is caused by larval form of pig tapeworm *Taenia solium* called *Cysticercosis cellulosae*. Faeco-oral contamination with *Taenia solium* eggs from pig tapeworm carriers is the route of transmission to humans [1]. Neurocysticercosis (NCC) is the most common parasitic infestation of the central nervous system and is the most common manifestation of Cysticercosis in India [2, 3]. Only 1 patient in a series of 450 patients with Cysticercosis in India was found to have disseminated disease [3]. Disseminated Cysticercosis (DCC) manifests as intractable epilepsy, dementia, enlargement of muscles and subcutaneous nodules [4, 5]. Asymptomatic presentation of the DCC is very rare and highlights the significance of this case.

CASE REPORT

A 70 years old female came from Sirmour, Himachal Pradesh with complaints of low backache, pain in hips and knees since 8 years which was gradual in onset, progressive, continuous and aggravated by exertion. She denied any history suggestive of seizures. She has been on a vegetarian diet throughout her life but had poor personal hygiene. There was no history of tuberculosis in the past. She never underwent any imaging study in the past. The general physical examination was unremarkable except for obesity and

swelling of bilateral knee joints. Her systemic examination was normal and ophthalmologic examination revealed reduced visual acuity and age related macular degeneration and absence of Cysticerci in the optic fundi. The investigations revealed normal hemogram and cell counts and differential cell counts. Erythrocyte sedimentation rate was 32 mm 1st hour. Rheumatoid factor was not detected. Routine biochemistry including random blood sugar, renal function tests and liver function tests were normal. Viral serology was negative for Human Immunodeficiency virus 1 and 2, Hepatitis B surface antigen and IgM or IgG antibodies to hepatitis C virus. The X-ray exposure antero-posterior and lateral view of the bilateral knee joints revealed osteoporotic and osteoarthritic changes and diffuse multiple linear calcified Cysticerci in the muscles and subcutaneous tissues.

The X-ray exposure Lumbosacral spine and pelvis antero-posterior and lateral view revealed straightening of the lumbar spine, osteoporotic and osteophytic changes in the lumbar vertebrae and diffuse multiple calcific Cysticerci in the paravertebral soft tissue and the soft tissue surrounding the pelvic skeleton.



Fig. 1a and b: Plain radiographs of the lower limbs showing extensive involvement of the subcutaneous tissues and muscles



Fig. 2a and b: Radiograph of the lumbosacral spine and hips showing calcified Cysticerci teeming in the soft tissues

DISCUSSION

Cysticercosis is endemic in the developing world and neurocysticercosis is the most common helminthic disease of the central nervous system (CNS). The factors favouring the transmission of cysticercosis include warm climate (tropics), poverty and illiteracy [6-8]. Man is the only definitive host and the adult *Taenia solium* attaches to the wall of small intestine. The gravid proglottids get detached from the distal end of the worm and are passed with the feces, liberating thousands of fertile eggs to the environment. The ingestion of improperly cooked pork meat results in release of cysticerci in the small intestine, whereby the action of digestive enzymes, their scolices evaginate and attach to the intestinal wall [9]. Humans can also be intermediate hosts of *T. solium* after ingesting its eggs. Under these circumstances, human cysticercosis develops. Humans acquire cysticercosis from ingestion of food contaminated with *T. solium* eggs or by the fecal-oral route in individuals harboring the adult parasite in the intestine [10]. The cysts of cysticercosis may occur anywhere in the body but commonly develop in the muscles, subcutaneous tissues, or brain and

almost always presents as neurocysticercosis [11, 12]. Up to 6% of the population in endemic villages may harbour adult *T. solium* tapeworms at a given time [13]. Tapeworm infections are more common in younger than older individuals, especially in the female population. Consistently, cases of intestinal taeniasis cluster in houses, probably as a result of similar food consumption habits [13, 14]. In a series of 38 paediatric patients mean age of the presentation was 8.47 ± 3.19 years and 52.6% of the patients were female [15]. Although cysticercosis is quite common, DCC with multiple organ involvement is rather rare. So far, around fifty cases have been documented in the English literature [16]. Though Cysticercosis is a common problem worldwide, disseminated cysticercosis (DCC) is rare and still rarer is asymptomatic disseminated cysticercosis [17]. The diagnosis of intestinal *T. solium* infection is made by the detection of eggs or proglottids [18].

The treatment of DCC includes antiepileptics for seizures and steroids to reduce perilesional edema around active cysts, surgical (removal of cysts and

ventriculoperitoneal shunt) and cysticidal drugs. Albendazole (15 mg/kg/day for 30 days) or praziquantel (10-15 mg/kg/day for 6-21 days) are the commonly used and available cysticidal drugs but the actual duration of treatment required and the parameters to be monitored during follow-up are still controversial [19].

CONCLUSION

This lady had complaints suggestive of osteoarthritis and was incidentally found to have DCC without seizures or dementia. The treatment guidelines for asymptomatic DCC are not clear. We treated her with albendazole for 4 weeks with an advice to stay in close follow-up.

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