**International Journal of Current Advanced Research**
ISSN: O: 2319-6475, ISSN: P: 2319-6505, Impact Factor: 6.614
Available Online at www.journalijcar.org
Volume 11; Issue 06 (B); June 2022; Page No.1115-1116
DOI: http://dx.doi.org/10.24327/ijcar.2022.1116.0249

**Case Report**

# A RARE CAUSE OF CALF PAIN: ISOLATED MUSCULAR CYSTICERCOSIS- A CASE REPORT

**Abhey Minhas[1], Vivek Rajdev[2], Rakesh Gupta[2] and Arun Chauhan[2]**

[1]Civil Hospital, Arki, Solan, H.P.
[2]Depratment of Surgery, IGMC, Shimla, H.P.

**A R T I C L E I N F O**

***Article History:***

Received 4th March, 2022
Received in revised form 25th April, 2022
Accepted 18th May, 2022
Published online 28th June, 2022

***Keywords:***

*Taenia solium*, calf cysticercosis, calf pain

**A B S T R A C T**

Human cysticercosis is caused by *Cysticercus cellulosae*, larvae of a tapeworm, *Taenia solium*. Cysticercosis can involve any tissue in the body; the most common affected sites are central nervous system, subcutaneous tissue, eyes, and muscles. Symptomatic involvem ent of isolated skeletal muscle by solitary cysticercosis cyst is extremely rare. We present a case report of isolated involvement of calf muscles with cysticercosis presenting as acute calf pain and the management that follows.



## INTRODUCTION

Human cysticercosis, is a parasitic infestation caused by the larval stage of intestinal cestode *Taenia solium (T. solium)* (pork tapeworm).[1] Human cysticercosis is highly prevalent in African, Eastern European, Mexico, and South-East Asian regions.[2]Combination of rural society, overcrowding, and poor sanitation leading to greater contact between humans and pigs and thus more chances of feco-oral contamination, makes tapeworm infection common in developing countries. Contamination occurs via infected food handlers who do not wash their hands properly before working, or by fruit and vegetables fertilized with contaminated human waste.[3] Humans are the definitive hosts for *T. solium*, whose life cycle begins with ingestion of viable larvae in undercooked pork or by auto-infection. The larvae penetrate the gut mucosa, enter the blood vessels and lymphatics, get distributed in the tissues all over the body and get located in brain, skin, heart, liver, lungs and muscles. The larvae transforming to adult tapeworms shed proglottids into human faeces that can contaminate the pig food supply. Eggs ingested by pigs develop into the larval stage, enter the bloodstream through the intestinal wall, lodge in various pig tissues, and form *cysticercus cellulosae*, which is the encysted larval form.[4]

Cysticercosis most frequently involves the central nervous system, which is referred to as neurocysticercosis. However, rarely it may cause isolated involvement of ocular muscles, subcutaneous tissue or skeletal muscles.

**Corresponding author:* **Abhey Minhas**
Civil Hospital, Arki, Solan, H.P.

Here we present a rare case report of isolated involvement of calf muscles by cysticercosis.

## CASE REPORT

A 71 years old gentleman with no known co-morbidities, who consumed non-vegetarian diet presented to Surgery OPD with complaints of pain in right knee and calf region for the past 1 month. He had no relief even after taking analgesics or applying ointment. The patient was examined and investigated. The clinical examination was normal, except for localised deep tenderness.

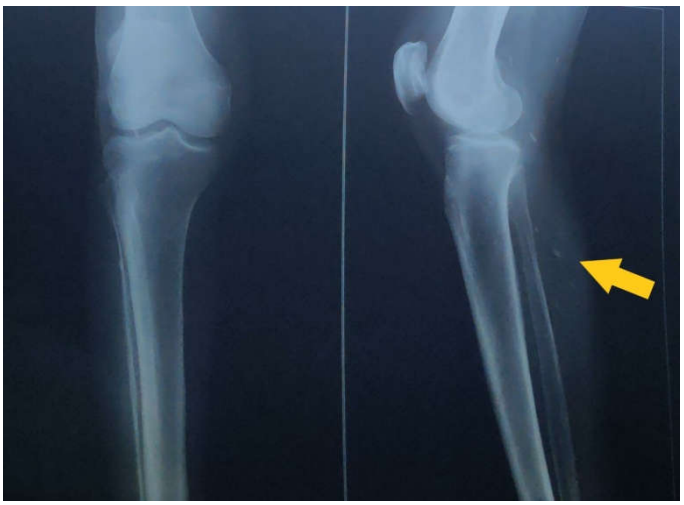

**Figure 1** X-ray right knee- AP and Lateral view showing multiple rice grain like radio-opaque shadows in soft tissue area (yellow arrow)

On investigating, patient had eosinophilia. Rest of the biochemical investigations were within normal limits. X-ray right knee was done which revealed multiple radio-opaque lesions in soft tissue of leg giving rice grain appearance [Figure 1]. This finding was suggestive of cysticercosis. The patient was treated with Albendazole 400 mg twice daily for 6 weeks along with NSAIDs for first few days for pain relief. He responded and at the end of 6 weeks, was completely asymptomatic. A follow up X-ray after 3 months showed the resolved lesion.

## DISCUSSION

Cysticercosis has widespread involvement in humans. The most common site of involvement iscentral nervous system. Others sites commonly affected are eyes, heart, skeletal muscles, subcutaneous tissues, pleura and mucous membrane.[5]

Most common form of involvement is disseminated form where multiple cysts are present. Solitary cysts are asymptomatic and hence go undetected. The clinical spectra of disease depend on the location of the cyst, the cyst burden and the host reaction. Isolated cysticercosis of skeletal muscle is rare.The skeletal muscle involvement may be asymptomatic to mild tenderness and either muscle atrophy or hypertrophy.[6] Cysticercosis of the calf muscles is an extremely rare cause of acute calf pain and hence is a diagnostic challenge. In our case, the patient presented with calf pain of short duration with difficulty in walking but on local examination there was no nodule, muscular atrophy or hypertrophy except localized deep tenderness. Moreover, patient was a non-vegetarian farmer thriving from endemic zone.

Imaging modalities like CT and MRI are useful in anatomical localization of the cysts, CT is sensitive for detecting small calcifications while MRI is more sensitive as it identifies scolex and the cyst. Muscular form of cysticercosis, if confined to muscles, is mostly asymptomatic, but three clinical manifestations have been described, the myalgic or myopathic type; the nodular type; the pseudohypertrophy type. The pain associated with myalgic type is due to the inflammatory process due to release of antigens from the cyst causing focal myositis as was in our case.[7]

Plain radiographs are not of much help in acute cases, as it more sensitive to pick up the calcified lesions. But, they can detect chronic lesions, like it was helpful in our case. It can then prevent unnecessary further investigations. Ultrasonography can be helpful in demonstrating cystic lesion. MRI is the diagnostic modality of choice for soft tissue cysticercosis imaging,[8] but it could not be done in our case because of financial constraints. History, clinical and radiological examination helped in ruling out other common causes of acute calf pain like Deep Venous Thrombosis, cellulitis, Baker's cyst, muscular injury, Popliteal artery aneurysm and Achilles tendon rupture.

Lab findings of blood profile show eosinophilia, raised IgG E and most importantly a positive ELISA tests for IgG antibody against *T. solium*.[9] Only a minority of patients with cysticercosis will harbour a tapeworm, rendering the stool sample ineffective for the diagnosis. Hence imaging along with serological investigations helped in reaching correct diagnosis of a very rare entity by non-invasive methods. And after correct diagnosis we could treat the patient medically without any need of surgical intervention. Similar isolated cyst has been reported in literature in biceps, triceps and masseter muscle, but they were diagnosed after surgical excision.

Use of steroids along with the antihelminthic treatment has been recommended for disseminated cysticercosis and neurocysticercosis where there is extensive release of parasitic antigen from dying parasite.[10] But in isolated lesion, only Albendazole therapy is enough.

Cysticercosis is preventable and eradicable by teaching key preventive measures in basic sanitation which includes pork inspection, well washed vegetables, well-cooked meat consumption of boiled or filtered water and careful hand washing before meals.[11]

## CONCLUSION

Cysticercosis is a common disease in endemic areas. It commonly presents as neurocysticercosis or disseminated cysticercosis. However, isolated involvement of calf muscles is rare. Proper history, examination and radiological investigations aid in making the correct diagnosis as it can be managed conservatively and there is no need of surgical intervention. It is a preventable disease which can be prevented by improving hygiene practices.

## References


1. White AC, Jr. Neurocysticercosis: Updates on epidemiology, pathogenesis, diagnosis and management. *Annu Rev Med.* 2000; 51:187–206.
2. Bothale KA, Mahore SD, Maimoon SA. A rare case of disseminated cysticercosis. *Trop Parasitol.* 2012; 2(2):138–141.
3. Ramraje S, Bhatia V, Goel A. Solitary intramuscular cysticercosis-A report of two cases. *Australas Med J.* 2011;4(1):58–60.
4. Patnayak R, Kalyani D, Rao SI, Prayaga A, Sundaram C, Jena A. Cysticercosis: the hidden parasite with short review of literature. *Int J Infect Dis.* 2007;6:1.
5. Mittal A, Das D, Iyer N, Nagaraj J, Gupta M. Masseter cysticercosis-a rare case diagnosed on ultrasound. *DentomaxillofacRadiol.* 2008;37:113–116.
6. Jhankaria BG, Chavhan GB, Krishnan P, Jhankaria B. MRI and ultrasound in solitary muscular and soft tissue cysticercosis. *Skeletal Radiol.* 2005;34:722–726.
7. Mishra P, Pandey D, Tripathi BN. Cysticercosis of Soleus muscle presenting as isolated calf pain. *Journal of clinical orthopaedics and trauma*. 2015; 6(1), 39–41.
8. Kumar A, Bhagwani DK, Sharma RK. Disseminated cysticercosis. *Indian Pediatr.* 1996;33:337–339.
9. Ogilvie CM, Kasten P, Rovinsky D, Workman KL, Johnston JO. Cysticercosis of the triceps-an unusual pseudotumor. A case report and review. *ClinOrthopRelat Res.* 2001, Jan;382:217–221.
10. Kumar BD, Dave B, Meghana SM. Cysticercosis of masseter. *Indian J Dent Res.* 2011, Jul–Aug;22.
11. Gilman RH, Gonzalez AE, Llanos-Zavalaga F, Tsang VC, Garcia HH; Cysticercosis Working Group in Peru. Prevention and control of *Taenia solium* taeniasis/ cysticercosis in Peru. Pathog Glob Health. 2012 Sep;106(5):312-8.