

## Case Report

# Extensive intramuscular cysticercosis without any neurological involvement: A rare case report

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### ABSTRACT

Human cysticercosis is a common tropical disease which 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. Extensive intramuscular Cysticercosis without any other systemic involvement is a very rare finding. Here, we report a case of intramuscular Cysticercosis incidentally diagnosed by plain radiographs in a 51 year-old man who presented with osteoarthritis right knee joint and Cysticercosis was an incidental finding.

**Keywords:** Cysticercosis, *Taenia solium*, Muscular pseudohypertrophy, Rice-grain calcification

### INTRODUCTION

Cysticercosis is a tissue infection caused by a young larval stage of *Taenia solium*, *T. saginata*, *T. crassiceps*, *T. ovis*, *T. formis* or *T. hydatigena* cysticercosis.<sup>1,2</sup> The two-host life cycle of the tapeworm involves humans as definitive hosts and pigs as intermediate hosts. Infected pigs are the source of human cysticercosis, an intestinal tapeworm infestation acquired by eating uncooked pork contaminated with cysticerci, the larva stage of the cestode.<sup>3</sup> Cysticercosis, however, is acquired by ingesting tapeworm eggs shed in the faeces of a human tapeworm carrier. It may occur in humans who do not eat pork or share environments with pigs. In such cases drinking water and uncooked vegetables are the major source.<sup>4</sup>

Cysticercosis may occur anywhere in the body but commonly develop in the muscles, subcutaneous tissues, or brain and almost always presents as neurocysticercosis.<sup>5,6</sup> Intra muscular Cysticercosis alone without neurological or ocular involvement is a very rare finding.<sup>7,8</sup>

We present a patient who had diffuse involvement of the skeletal muscles with cysticerci without neurological or any other systemic involvement. This case is important because, in spite of the diffuse involvement of various skeletal muscles the patient presented with only osteoarthritis, and Cysticercosis was an incidental finding.

### CASE REPORT

A 51 year old Muslim patient from Sangam Vihar locality, New Delhi, presented to Medicine OPD (Unani Medicine) with pain and swelling in the right knee joint for five years. Pain and swelling was gradual in onset, progressive, present throughout the day and aggravated on joint movement. He also had nocturia for three months. Patient was tailor by occupation. He was on mixed diet including beef and leafy vegetables like cabbage, spinach etc. Being a Muslim he did not consume pork any time in life. There was no history of morning stiffness or involvement of small joints, recurrent fever, chronic cough, chronic diarrhoea, weight loss, decreased appetite etc. He had history of fall from the stairs and got his left shoulder hit against the iron

railing. He had no past/present history of seizures or any neurological deficit. On examination, the patient was alert, conscious and cooperative. All the joints were normal except bilateral knee joints and left shoulder joint; both knee joints were tender and painful on movement. In left shoulder joint difficulty in extension, external and internal rotation was noted. There was mild symmetrical hypertrophy of both upper and lower limb muscles including neck and shoulder region. This was more prominent in the calf muscle as well as deltoid and biceps muscles, but no subcutaneous nodules were present.



**Figure 1: Hypertrophy of calf muscles.**



**Figure 2 (a, b, c, d): Muscular hypertrophy.**

His systemic examination was clinically normal, though he was mildly hypertensive.

On ophthalmic examination no evidence of cysticercosis was found.

On blood examination, haemoglobin was 13.5 gm%, total white blood cells (WBC) count was 9600 cells/cmm of blood while Differentia 1 leucocyte count (DLC) showed polymorphs 54%, lymphocyte 40%, eosinophils 4% and monocytes 2%. ESR was 16 mm/1<sup>st</sup> Hr and Kidney & liver function tests were normal. Fasting and Postprandial Blood sugar was 107 mg/dl and 167 mg/dl respectively. However, glycosylated haemoglobin (HbA<sub>1c</sub>) was in non-diabetic range (>5.5%). Total Cholesterol was 302mg/dl, Triglycerides were 694 mg/dl, HDL-45 mg/dl, LDL was 165 mg/dl and VLDL 138. 84 mg/dl. Absolute Eosinophil Count was 510 /cmm. Arthritic profile showed that Rheumatoid Factor was positive with negative CRP and ASO titre in 1:200 ratio. Antiphospholipid Antibody-IgM was 5.48 MPL U/mL. Urine routine and microscopic examination showed crystal of calcium oxalate, while, stool was found normal on routine and microscopic examination and not revealed any parasitic infestation.



**Figure 3: Plain radiograph showing rice-grain opacities in calf muscles.**

Radiograph of right Knee (AP /Lat. view) showed multiple rice grain opacities in soft tissue around the joint. Radiographic film of left leg (AP/Lat. view) also showed multiple, oval calcified nodules in soft tissue on leg.



**Figure 4: Plain radiograph showing rice-grain opacities in thigh & calf muscles.**



**Figure 5: Plain radiograph showing rice-grain opacities in chest, shoulder & arm muscles.**

Radiograph of left shoulder showed sclerosis over the humerus head and diminution in the joint space suggestive of osteoarthritic changes. This X-Ray of shoulder joint also showed calcified granules in soft tissue. Chest X-Ray film showed few calcified oval shadows in the soft tissue of bilateral chest wall and neck. X-ray of the skull and USG abdomen were normal.

ECG was suggestive of probable left atrial enlargement, left anterior fascicular block and ventricular hypertrophy. Ecocardiography showed Grade-1 Diastolic dysfunction. No active or calcified lesions of Cysticercosis were seen in Echocardiography.

## DISCUSSION

Human cysticercosis is caused by the dissemination of the embryos of *Taenia solium* from the intestine via the hepatoportal system to the tissues and organs of the body.

The organs most commonly affected are subcutaneous tissues, skeletal muscles, the lungs, brain, eyes, liver and, occasionally, the heart.

Intramuscular Cysticercosis is reported in majority with the disseminated form of the disease. Patients with the muscular cysticercosis are mostly asymptomatic as was seen in our case. Three types of clinical manifestations have been described in the muscular form, i.e. the myalgic type, the mass-like (pseudotumour or abscess-like type) and the rare pseudohypertrophic type.<sup>9</sup> Muscle hypertrophy is usually asymptomatic in pseudohypertrophic type and the muscles are generally nontender. Our case showed the features of pseudomuscular hypertrophy with no symptoms or tenderness. Plain radiographs rarely show cysticerci unless they are degraded and get calcified. X-rays of the soft tissues like the calf/thigh muscles could reveal the calcified 'rice- grain' like cysticerci along the muscle fibers confirming the diagnosis of Cysticercosis. In our case multiple rice-grain opacities were shown in plain radiographs.

In conclusion the possibility of intramuscular cysticercosis should be thought in endemic regions like india, whenever a patient presents with a nodule or swelling over the body.

## CONCLUSION

Disseminated intramuscular cysticercosis without involvement of other systems is a very rare finding and its clinical suspicion is difficult. It is usually diagnosed incidentally when a patient undergo laboratory investigations for some other suspected disease. Cysticercosis, thus, should always be part of the differential diagnosis of subcutaneous and intra-muscular swellings.

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