



## CYSTICERCOSIS IN (ULNAR HALF) FLEXOR DIGITORUM PROFUNDUS MUSCLE OF FOREARM PRESENTING CLAWHAND LIKE DEFORMITY-A RARE CASE REPORT

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<p><b>Article Info</b> <i>Received 15/05/2016</i> <i>Revised 27/05/2016</i> <i>Accepted 20/06/2016</i></p> <p><b>Key words:</b> Cysticercosis; Flexor Digitorum Profundus muscle; Forearm region.</p>	<p><b>ABSTRACT</b> Introduction: Cysticercosis is an infection by the larval stage (cystercercus cellulosae) of the cestode, Taenia Solium (pork tape worm). It occurs especially in those individuals who live in the endemic areas. After gaining entry into the body, the larva become encysted and may lie in subcutaneous tissue, striated muscle, vitreous humor, or other tissues like brain as well. Case report: We report an unusual case of cysticercosis of the flexor digitorum profundus (FDP) muscle, which presented as localized swelling at the ulnar aspect of right forearm. The diagnosis was confirmed on the musculoskeletal ultrasonographic examination of the forearm. It revealed the Cysticercus cellulosae as hyperechoic lesion surrounded by fluid. MRI was done later which localized the larval stage in the Flexor Digitorum Profundus muscle at forearm. Conclusion: For swelling in the region of forearm in endemic areas of tapeworm infestations, the differential diagnosis of muscle cysticercosis should also be considered.</p>
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### INTRODUCTION

Cysticercus cellulosae (the larval form of Taenia Solium) has been found to infest the brain, musculoskeletal system, the eye, striated muscle, subcutaneous tissue, and rarely, other tissues. [1]. Here, we report an unusual case in which an infestation by the cysticercus of the Flexor Digitorum Profundus (FDP) muscle presented as a swelling with pain in the forearm region. While working on differential diagnosis in patients presenting with forearm swelling, diagnosis such as pyogenic abscess, painful neuromas, tennis elbow, rheumatoid nodules and lipomatosis are considered. Our case shows that a diagnosis of Cysticercus cellulose should also be considered specially in individuals who live in endemic areas.

**CASE PRESENTATION:** We present the case of a 35 year old female patient, a housewife of good socio-

economic status who attended the outpatient department (OPD) of Orthopedics & Trauma at VPIMS, Lucknow with the complaint of swelling in the anteromedial aspect of forearm since last 6 months. Initially, the swelling was approximately the size of a pea, and it remained so for about 6 months. However last 2 weeks, it gradually increased in size and became diffused. It was associated with mild pain. The patient is nonvegetarian and with no history of trauma, abnormal bowel habits, weight loss, fever, headache, cough, urinary complaints, seizures, vomiting, loss of appetite, eye problem, Xanthelasma, other joint involvement or distal neurovascular deficit. On examination, the size of the swollen area was 6 x 4 cm. It had diffuse margins with a palpable pea sized firm area within this diffuse swelling. It was mildly tender with slightly increased local temperature. No cross fluctuation, transillumination or pulsations were noted. It was attached



to the underlying flexor muscles of forearm and was confirmed by its movement on wrist and finger flexion. She was having flexion deformity at DIP joint of ring and little finger and flexion deformity was correctible after full flexion of wrist(Fig no 1). Flexor Digitorum Profundus does flexion at DIP joint of all fingers and in her case ulnar half of FDP was involved due to cyst leading to fibrosis in the muscle leading to flexion deformity of DIP joint of ring and little finger only. The overlying skin was freely mobile with no venous prominences.

**Investigation**

A hemogram showed normal haemoglobin, Total leucocyte count-TLC: 13,000/mm<sup>3</sup>, eosinophil (17% of the WBC'S) with increased Erythrocyte Sedimentation Rate (ESR) of 30mm/1hr, with leucocytosis. Rheumatoid factor was <5 IU, random Blood Sugar was 90mg% & serum uric acid levels was 3.2mg%. Stool examination was done for ova and cyst of Taenia Solium. However, it was found to be negative. Digital skiagram of her right forearm showed no abnormality (Fig no 2). High resolution ultrasonography and color flow imaging with direct contact scanning technique with 10 and 12 mhz transducer-there is evidence

of well defined thick walled cystic mass seen on flexor aspect of forearm along with diffuse soft tissue oedema. Two well defined echogenic nidus are seen in the muscle, size is 2x2 mm. On color flow imaging , increased flow is seen around nidus suggestive of cysticercosis cyst(Fig no 3 and 4). MRI of right forearm with contrast: Post contrast T1W sequence were acquired in axial, coronal and saggital planes- extensive heterogeneously enhancing lesion in muscle flow on flexor aspect of forearm, medially mainly involving flexor digitorum profundus with an interspersed small cystic lesion/ fluid collection and oedema in the adjacent intermuscular and subcutaneous fat plane ?inflammatory, neoplastic lesion? (Fig no 5). USG & MRI results helped us to make the definitive diagnosis of Cysticercosis.

**Treatment:** The patient was given Albendazole (a benzimidazole derivative) in a dosage of 400 mg twice daily for two month along with NSAID and physiotherapy for flexion deformity of ring and little fingers. The swelling regressed and patient became asymptomatic and her clawhand deformity also disappeared after 2 month therapy (Fig no 6).

**Figure 1. Clinical photograph of right forearm showing clawhand type deformity in hand.**



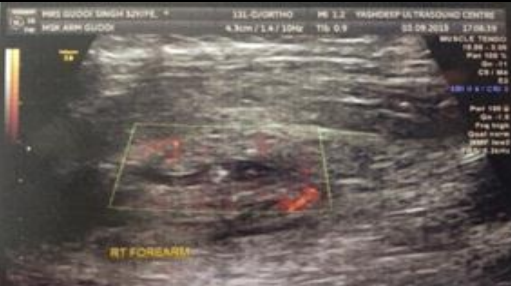
**Figure 2. Digital skiagram of her right forearm**



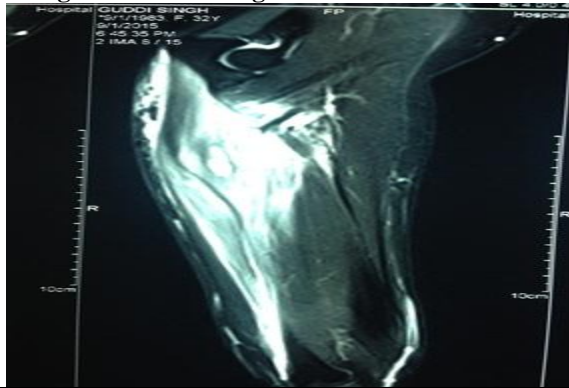
**Figure 3. High resolution ultrasonography of Right forearm**



**Figure 4. High resolution ultrasonography of right forearm**



**Figure 5. MRI of right forearm with contrast**



**Figure 6. Clinical photograph after 2 month of therapy showing straight ring and little finger.**



## DISCUSSION

The solitary swelling present in the anteromedial aspect of the forearm can be due to many reasons. The D/D includes pyogenic abscess, painful neuroma, lipoma and rheumatoid nodule etc. Here we are presenting an unusual case of cysticercosis presented as a painful swelling in the FDP (ulnar half) muscle.

The cysticercosis has been reported in various muscle by different authors, to name few: cardiac muscle [2,3], Ocular muscle [4], biceps brachii [5], temporalis muscle [6], psoas muscle [7], tongue [8], FDP muscle [9], tendo achillies [10] and pronator teres [11].

In present case digital x-ray of forearm right shows no abnormality; however soft tissue calcification has been reported in one of study [12]. In the present case high resolution ultrasonography revealed thick walled cystic mass seen on flexor aspect of forearm along with two well-defined echogenic nidus are seen in the muscle, size is 2x2 mm. On color flow imaging, increased flow is seen around nidus suggestive of cysticercosis cyst. USG provide all information as seen in MRI, and more with regard to muscle pathology [13].

## CONCLUSION

The individual having unexplained painful swelling in the muscle of extremities in the endemic areas of tape worm infestation, then possibilities of cysticercosis should also be taken into account. Inability to suspect and

identify cysticercosis in muscle, may lead to unnecessary excisional biopsy. The aim of presenting the case is to make high degree of suspicion among medical professionals regarding cysticercosis in muscle.

Among all investigation, high resolution ultrasonography shall be sufficient to provide proper diagnosis and specific medical treatment of the parasitic infestation and thus eliminates needs for surgical intervention.

## CLINICAL MESSAGE

Intramuscular Cysticercosis should be considered as a differential for pain and swelling in forearm musculature. This can be easily diagnosed by USG and requires medical management only.

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## CONFLICT OF INTEREST:

The authors declare that they have no conflict of interest.

## STATEMENT OF HUMAN AND ANIMAL RIGHTS

All procedures performed in human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

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