



## AN UNUSUAL CAUSE OF MASS LOCALIZED UNDER DELTOID MUSCLE: HYDATID CYST

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### INTRODUCTION

It is rare to see hydatid disease pathology in Musculoskeletal system.<sup>[1]</sup> As such a mass grow very slowly without inflammation, its diagnosis is often delayed.<sup>[2]</sup> It is critical to suspect a such a clinical diagnosis in rural endemic areas for preoperative diagnosis of this disease.<sup>[1,2]</sup>

Although primary muscular hydatids is a rare clinical entity,<sup>[3]</sup> A case of a 42-year-old male patient with a primary intramuscular hydatid cyst located under the left deltoid muscle is reported.

### CASE

A 42 year old male without any comorbidity presented with long standing swelling in the front of left shoulder, it was about a size of 8 cms. X 5 cms. It was Non tender, fluctuant, non compressible, immobile, Swelling, under the left deltoid muscle. There was no H/O fever, Trauma, no restriction of movements at the left shoulder. There was no neurological deficit. We aspirated the cystic mass under USG guide but it revealed only clear fluid. Unfortunately the volume of fluid we could aspirate was hardly 2-3 ml. We got the CT scan of Left Shoulder, and then decided to Explore the swelling under General Anesthesia. On exploration it turned out to be Hydatid cyst under the deltoid muscle & it was extending in the left scapular region. The whole cyst was excised.

### Investigations

X ray of left shoulder revealed soft tissue shadow, no involvement of joint bones. FNAC done twice revealed no clue. For differential diagnosis, Further evaluation done by CECT of left shoulder –diagnosed it as Deltoid

Bursa/ Abscess. No other cystic lesions were determined in lung and liver, X ray & Ultrasound scans respectively. In the laboratory tests, normal values, no other pathology was determined in the routine Haemogram and biochemical tests.

### Differential Diagnosis

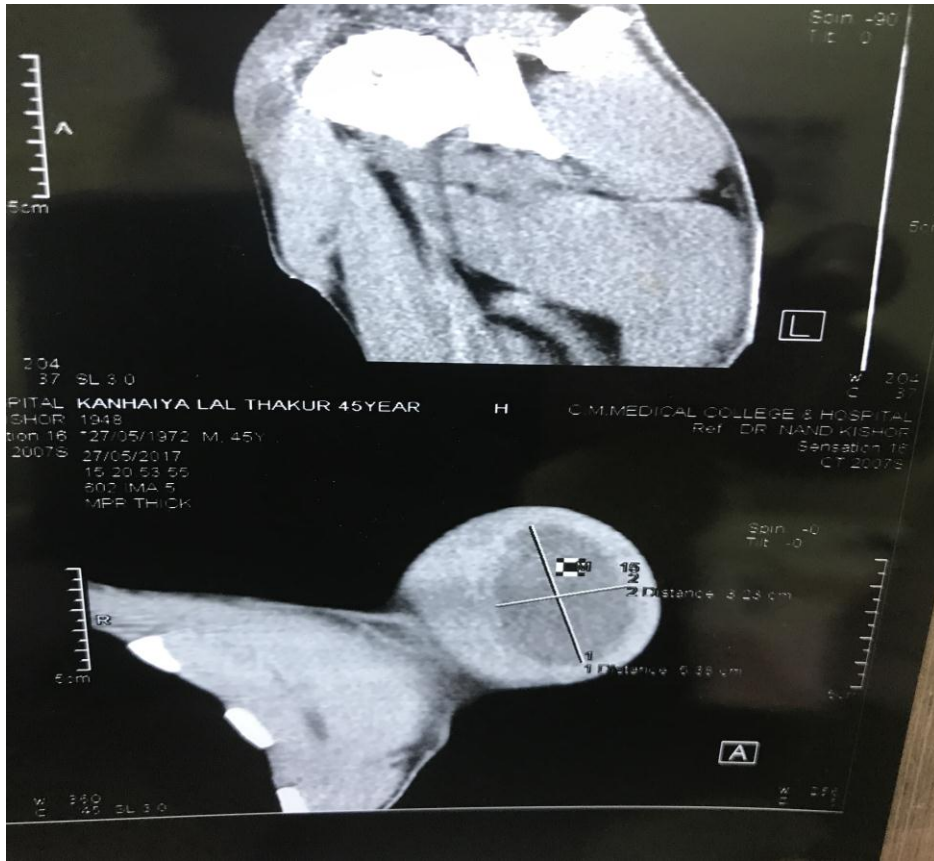
The differential diagnosis of a hydatid cyst localization in skeletal muscle is quite difficult. The differential diagnosis is required for skeletal muscle- localized abscess, hematoma and tumors. We never thought of Hydatid cyst in this region.

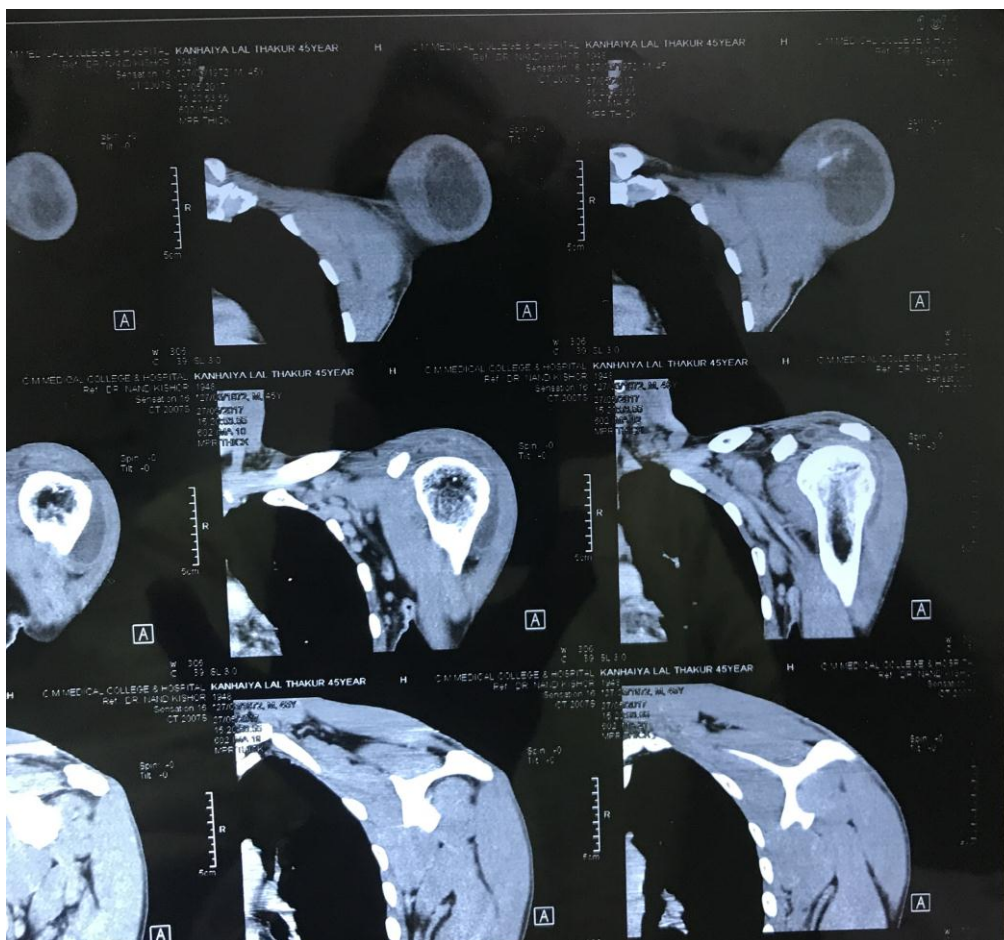
### Treatment

Complete surgical resection of the cystic mass after splitting the deltoid muscle from the surrounding muscle tissue was performed. Cavity washed with Hypertonic Saline and Betadine. Anthelmintic treatment was started and continued for a specified time postoperatively.

### Outcome and Follow up

The diagnosis was confirmed by histopathology as a primary intramuscular hydatid cyst in the under anterior of left deltoid muscle. Patient discharged on 5<sup>th</sup> postoperative day.





## DISCUSSION

Soft tissue hydatid disease is unusual even in endemic areas, and skeletal muscle involvement is extremely rare, with a reported prevalence of 0.5–4.7%.<sup>[4,5]</sup> Musculoskeletal hydatid cyst is usually associated with involvement of other solid organs.<sup>[5–6]</sup> The muscle is considered an unfavorable site for hydatid disease because of its high lactic acid level that creates an unfavorable milieu for growth.<sup>[7,8]</sup> Although there are many reports of intramuscular hydatid cyst but there are only a few reports of hydatid cyst in the region of Shoulder.<sup>[7]</sup> Settlement has been reported at rates of 50–70% in the liver, 11–17% in the lungs, 2.4–5.3% in the soft tissues, 0.5–3% in the heart, 5% in the pericardium and 0.5–4.7% in the muscle and subcutaneous tissue<sup>[4]</sup>

A hydatid cyst is a parasitosis formed by 99% *Echinococcus granulosus* and 1% *Echinococcus multilocularis*. Infestations formed from *Echinococcus* species randomly settle in humans. The adult parasite settles in the small intestine of carnivorous animals, which are the final host. Eggs are spread into the environment through the feces of those animals. They spread to intermediary hosts through the digestive tract. The embryos which emerge from the eggs pass into the blood from the duodenum and may thus spread to all body tissues.<sup>[1–3]</sup> Although hydatid cyst may be seen in nearly every organ, Particularly in endemic regions, intramuscular hydatid cyst should be considered

in differential diagnosis of cystic soft-tissue masses located in a muscle.<sup>[2]</sup>

MRI is the best method of Imaging for differential diagnosis and planning surgery as the size and appearance of the cyst are shown, the localization can be evaluated and the relationship with surrounding tissues is defined.<sup>[9, 10, 11]</sup> In our case, a cystic mass within a regular border, of 80×50 mm dimensions, As we did not do MRI scan of the patient. The diagnosis on CT was Abscess/Deltoid Bursa. MRI should have been more informative than CT.<sup>[11]</sup>

Preoperative diagnosis of musculoskeletal hydatid cyst is difficult clinically and also radiologically.<sup>[4, 9, 11]</sup> It resembles soft tissue tumor. Ultrasonography(US), computed tomography(CT) and MR imaging have a valuable role in the radiologic diagnosis and follow-up of hydatid disease.<sup>[4,9,11]</sup> MRI is capable of adequately demonstrating most features of hydatid disease.<sup>[8,9,13]</sup> Double-layer wall, daughter cysts and water-lily sign are the specific findings.<sup>[8–11]</sup> The detachment of the germinative membrane from pericyst (water-lily sign) is considered to be pathognomonic and is reported in locations other than the liver and lung<sup>[9, 11]</sup> Radiological view was useful for differentiating hydatid disease and other diseases such as muscle malignancy.

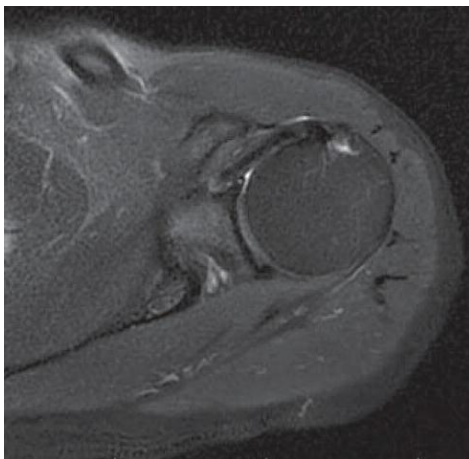


Diagnosis of Hydatid cyst should be considered when slowly growing soft tissue mass is present in a patient from rural area especially endemic area.<sup>[2, 5, 6]</sup> We do not recommend routine biopsy. Surgery is the most effective way to treat hydatid cysts.<sup>[12]</sup> Complete surgical resection and medical therapy is the preferred treatment for isolated echinococcosis.<sup>[6-12]</sup> Rupture or spillage of cysts should be avoided to prevent local or distant dissemination and immediate anaphylaxis.<sup>[13,14]</sup> Irrigation should be made in operation with hypertonic saline in an attempt to kill scoleces.<sup>[5-7,15]</sup> We performed complete excision of the cyst after splitting the Deltoid muscle, combined with hypertonic saline & Betadine irrigation in the cavity.

Medical therapy is used to reduce the rate of local recurrence after radical resection.<sup>[16]</sup> Albendazol is used for hydatid disease, because albendazol has better intestinal absorption and a higher concentration within cystic material, making it a more effective treatment.<sup>[16]</sup> In our case, albendazol was used for medical therapy in post operative period. We advised Albendazol 800 mg/Day for 28 days – then gap of 14 days and continue same cycle X 3 such cycles. Watch for Leucopenia on 10- 15 day of the first cycle.

#### CONCLUSION

In conclusion hydatid cyst in Deltoid Muscle is a very rare disease. Hydatid cyst should be kept in mind when observing soft tissue mass of the extremities in patients from areas endemic of *Echinococcus granulosus*. MRI is the choice of Investigation, as it gives you a relation of the cyst to surrounding structures (Extent) Biopsy is not recommended because of the fear of contamination by daughter cysts. Complete Surgical Excision and irrigation with Hypertonic saline is the choice of Treatment.



**Imaging of a patient of Cystic mass under the Deltoid.**



**Cystic Mass in the region of shoulder under the deltoid- Exploration.**



**Hydatid Cyst with daughter cysts - Left Shoulder under Deltoid Muscle - Exploration**

#### Foot Notes

Conflict of Interest:- None.

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Informed Consent: Obtained from the patient.

Permission from the Ethical committee obtained.

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