

## Primary subcutaneous hydatid cyst medial thigh: A case report

### IN BRIEF

Hydatid disease is common in some parts of the world and is usually located in the liver and lungs. Musculoskeletal hydatidosis is very rare which accounts for 1-5.4% of all cases of echinococcosis. Primary subcutaneous hydatid cyst is very rare and the incidence is unknown.

On clinical examination, it mimics a soft tissue tumour and the pre-operative radiological diagnosis is very important to avoid biopsy.

We report a case of primary subcutaneous hydatid cyst in the right medial thigh.

**Key Words:** Subcutaneous tissue; hydatid cyst.

### INTRODUCTION

A hydatid cyst is a parasitosis caused by the larval form of echinococcus granulosus or rarely echinococcus alveolaris. The main hosts for Echinococcus granulosus are predators such as dogs, foxes, while intermediate hosts include sheep, goats, and cattle. Humans are a coincidental intermediate host. The disease is common in Middle East, Central Europe, Australia and South America. The liver is commonly affected (70%) and then lungs (10-15%); other locations are extremely rare (10%) [1].

Subcutaneous hydatid cyst may be primary or secondary. Reports of primary subcutaneous hydatid cysts are very rare. In secondary cyst, there is primary location of hydatid disease like liver, lungs or spleen that is operated or not operated [2]. The mechanism of primary subcutaneous localization is unclear. It is possible that systemic dissemination via the lymphatic route accounts for solitary cyst in an uncommon site [3].

Serology is a useful tool for the diagnosis. The indirect hemagglutination (IHA) test is positive in more than 80% of liver hydatid cysts. The treatment of choice is total surgical excision without opening the cyst and irrigating the cyst pouch with scolicidal solution.

**\*Jyothi S. Karegoudar, \*\*P.J. Prabhakar,  
\*\*\*Anitha M.R, \*\*\*\*Vijayanath V.**

---

**Author's Affiliation:** \*Associate Prof. Gen Surgery, S.S.I.M.S & R. C, Davangere, Karna-taka, \*\*Prof & HOD. Gen. Surgery, S.S.I.M.S & R.C, \*\*\*Assistant Professor, Department of Anatomy, VMKV Medical College, Salem, Tamil Nadu, \*\*\*\*Associate Professor, Department of Forensic Medicine & Toxicology.

**Reprint's request:** Dr. Jyothi. S. Karegoudar, Associate Prof. Gen Surgery, S.S.I.M.S & R. C, Davangere, Karnataka.

---

Refreed Paper

Accepted on 19 June 2011

## CASE PRESENTATION

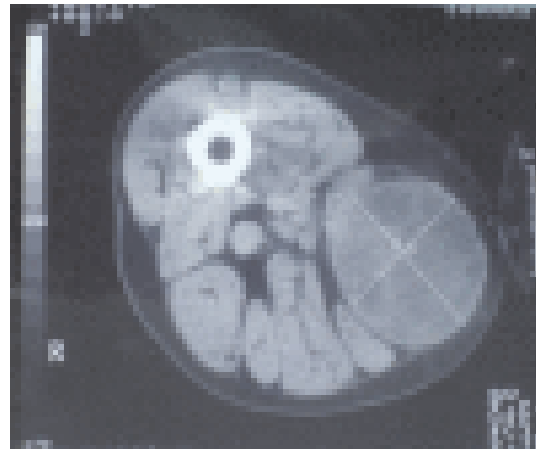
A 48 year old male farmer visited our clinic with history of swelling in the right upper thigh that had grown during the last 2 years. On examination a painless, mobile, fluctuant 8x10cm mass was present. The skin over the swelling was normal (Fig 1). The erythrocyte sedimentation rate (ESR) was increased to 64mm/hr. No history of surgery for a hydatid cyst in another organ was known clinically, it

was diagnosed as cystic swelling. Ultrasonography and CT scan showed a lesion resembling a hydatid cyst pushing the muscles laterally (Fig 2). The surgical exploration was done under spinal anaesthesia, the skin and subcutaneous layers were incised and the cyst was excised. Hypertonic saline (3%NaCl) was injected into the cyst and after 10 minutes, the cyst was excised completely (Fig 3). The surgical site was irrigated with iodine and incision closed in standard manner.

**Fig 1. Soft swelling over upper medial part of right thigh**



**Fig 2. Subcutaneous Hydatid Cyst in the right thigh displacing the muscles laterally**



**Fig 3. Hydatid cyst with many daughter cysts**



## DISCUSSION

Hydatidosis is known since Hippocrates. Hydatid disease is the commonest disease in humans caused by helminths, but primary skeletal or muscular involvement seldom occurs. Primary subcutaneous hydatid cyst is very rare and the incidence is unknown. The incidence of musculoskeletal echinococcosis, including involvement of subcutaneous tissue is 1-5.4% among all cases of hydatid disease [5]. It has been suggested that muscle provides a poor environment for the parasite because of the presence of lactic acid. The mechanism of primary subcutaneous localization is unclear. It is possible that systemic dissemination via the lymphatic route accounts for solitary cyst in an uncommon site [3]. Direct spread from adjacent sites may be another mechanism of infection following micro-rupture [6].

Diagnosis of echinococcosis should be considered when slow-growing soft tissue swelling is seen in patients from a rural area, especially in an endemic region. It may resemble any soft tissue tumour such as abscess, chronic hematoma, necrotic malignant tumour. Ultrasonography is useful in diagnosis, showing the size, calcification, localization, type of the cyst and germinative membrane separate from the cyst wall. The sensitivity of sonography is 95%; it will be 100% if vesicular fibrils are present. CT scan should be performed in suspicious cases; it demonstrates the relationship to adjacent organs [7].

The diagnosis can be supplemented by specific IgG, complement fixation, indirect fluorescent and ELISA tests. The sensitivity of various serological tests varies from 64-87%. The positive indirect hemagglutination test is significant, although negative test does not indicate the absence of the disease. The specificity of Casoni skin test is low because of high false positivity (40%). ELISA is 80-100% sensitive and 88-96% specific for liver cyst infestation and 25-26% for other organ

involvement. Hence, the most important diagnostic tool is awareness of the physician, mainly for unusual presentation. After surgical excision of the cyst, reaginic antibody [IgE] titers decrease and become negative after 1-2 years. If titers do not decrease, recurrence of echinococcosis should be considered [8].

If the cyst is not complicated, serology is less sensitive but it may be useful for controlling the recurrence of cyst. Cure depends upon total or subtotal surgical excision of the cysts. Rupture of the parent cyst increases the likelihood of recurrent infestations [9].

In our case, the hydatid cyst was located subcutaneously, the patient had not undergone previous surgery for the same, and no hydatid cysts were found in other organs. Hence, our patient was diagnosed as having primary subcutaneous hydatid cyst. These cysts are prone to rupture since they have not been diagnosed pre-operatively. We did total cyst excision and irrigated the surgical area with hypertonic saline [3%NaCl].

Soft tissue hydatid cyst is very rare. There are a few reports about primary subcutaneous hydatid cyst in the extremities. Chevalier et al reported that the incidence of subcutaneous hydatid cysts was 2%, but some of the patients had hydatid cysts in other organs too; hence it is not the incidence of primary subcutaneous hydatid cyst [10]. Review of literature revealed cases involving the musculature of the chest wall, pectoralis major, sartorius, biceps brachii [11].

## CONCLUSION

Primary subcutaneous hydatid cysts generally look like a benign progressive disease. The echinococcal disease should be considered as differential diagnosis in every cystic mass in every anatomic location, mainly where the disease is endemic. It should be excised totally, with an intact wall to avoid recurrence. There is no reported anaphylaxis during therapeutic intervention.

## REFERENCES

1. Dematteo RP, Chapman WC, Buchler MW, Hann LE, D'Angleca M. Philadelphia, PA: Saunders Elsevier, 2007; 952-970.
2. Ozturk S, Deveci M, Yildirim S. Hydatid cyst in the soft tissue of the face without any primary. *Ann Plast Surg* 2001; 46: 170-173.
3. Engine O, Erdogan M. Solitary Subcutaneous Hydatid Cyst. *Am J Trop Med Hyg* 2000; 62: 583-584.
4. Duncan GJ, Tooke SMT. Echinococcus infestation of the biceps brachii. *Clin Orthop* 1990; 261: 247-250.
5. Desnuelle C, Kleisbacier JP, Serratice G. Kyste hydatique musculaire de la cuisse. Diagnostic pre-operative. *Sem Hop Paris* 1986; 62: 1826-28.
6. Safioleas M, Nikiteas N, Stamatakos M, Safioleas C, Manti CH, Revenas C, Safioleas P. Echinococcal cyst of the subcutaneous tissue; a rare case report. *Parasitol Int* 2008; 57: 236-238.
7. Fikry T, Harfaoui A, Sibai H, Zryoil BL. Echinococcosse musculaire primitive. *J Chir* 1997; 134: 325-328.
8. Tatari H, Baran O, Sanhdag T, Gore O, AK D, Manisah M. Primary Intramuscular hydatidosis of supraspinatus muscle. *Arch Orthop Trauma Surg* 2001; 121: 93.
9. Rao S, Parikh S, Kerr R. Echinococcal Infestation of the spine in North America. *Clin Orthop* 1991; 52: 582-584.
10. Chevalier X, Rhamouni A, Bretagne Martigny J, Piet BL. Hydatid Cyst of the subcutaneous tissue without other involvement. *MR Imaging features AJR* 1994; 163: 645-646.
11. Alvarez-Sala R, Caballero P. Echinococcosis cyst as a cause of chest wall tumour. *Ann Thorac Surg* 1987; 43: 689-690.