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Primary Soft Tissue Hydatid Cyst in Neck: A Case Report and Review of Literature

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Abstract: **Primary hydatid disease in the muscle is very rare. Hydatid cysts develop most frequently in the liver and lungs, but they are occasionally found in other organs. Hydatid cysts in the neck are an extremely rare event in areas where the disease is endemic.**

Here, we report our experience to conclude the fact that hydatid cyst should be included in the differential diagnosis of cystic mass to avoid investigations like FNAC because the rupture of cyst may not only result in its complete surgical resection is difficult but also there is risk of anaphylaxis, recurrence and dissemination to other sites.

Keywords: **Echinococcosis, Intramuscular, Hydatid cyst.**

I. INTRODUCTION

Cystic echinococcosis (hydatid cysts) are common in societies in which agriculture and raising animals are common, and hydatid disease continues to be a serious public health problem in many countries like Mediterranean region, particularly Lebanon and Greece. Disease is also endemic in India like Central India and Tamilnadu.

LIFE CYCLE

Echinococcal disease is caused by infection with the metacestode stage of*Echinococcus* tapeworms of the family Taeniidae. Four species of *Echinococcus* cause infection in humans; *Echinococcusgranulosus* and *E. alveolaris* are the most common, causing cystic and alveolar echinococcosis, respectively. The primary carriers are dogs and wolves, whereas the intermediate hosts are sheep, cattle, and deer. Humans, who are accidental hosts and do not play a role in the biological cycle, are infected by ingesting ova from soil or water contaminated by the feces of dogs.1–4 When ingested, the eggs lose their enveloping layer in the stomach and release embryos. The embryos pass through the intestinal mucosa and reach the liver through the portal vein, where most larvae become trapped and encysted. Some larvae may reach the lungs, and occasionally, may pass through the capillary filter of the liver and lungs and enter the circulation(**Figure 1**).5

Hydatid cysts may develop in any organ of the body, but occur most frequently in the liver (50%–80%) and lungs (15%–47%), and occasionally in the spleen, kidney, pancreas, intraperitoneal space, heart, ovaries, prostate, incision scar, retroperitoneal space, thyroid, vesicaurinaria, orbita, head and neck, chest wall, brain, musculoskeletal and soft tissue, breast, and axillary space.1–4,6–12 Neckhydatid cysts are extremely rare, with only a few cases reported in the English

language literature.6–11 We present a case of hydatid cyst in the neck due to its outstanding rarity and clinical confusion with other causes of neckmasses.

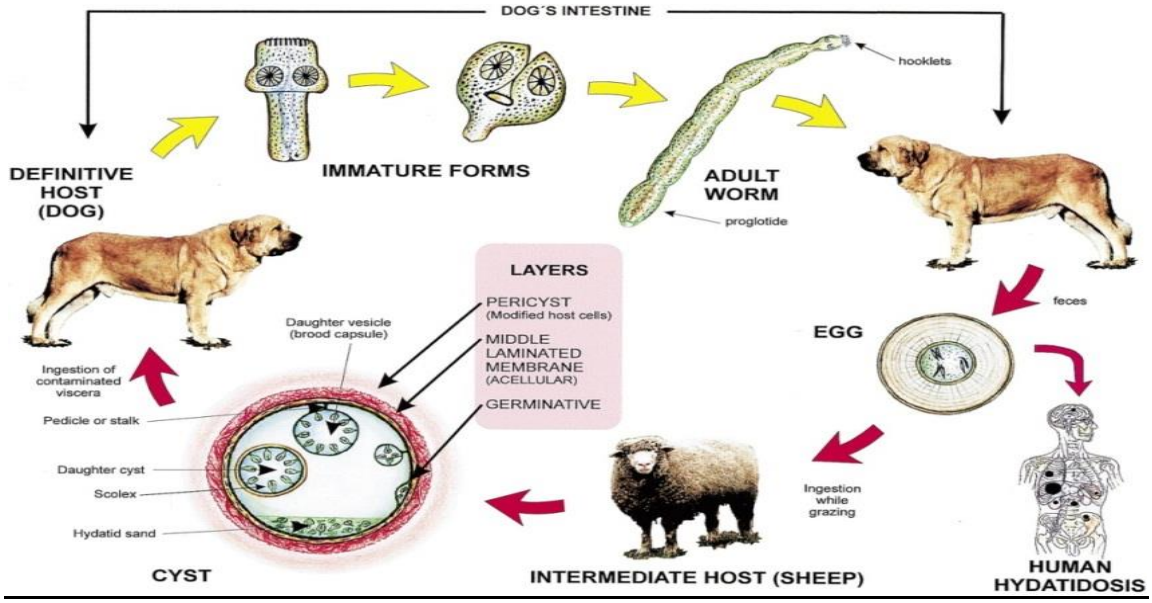

Figure 1:- Showing life cycle of hydatid cyst

CASE REPORT

A 56 year old female presented in OPD of Department of Surgery with chief complaints ofswelling over right side of neck since 11 months. Swelling was painless and gradually progressive.

No h/o fever, increased or decreased appetite,weight gain or loss,heat or cold intolerance,dysphagia,any pressure symptoms,cough, abdominal pain, or trauma No h/o any associated comorbidities. No H/O similar episode in past.

On local examination a single swelling of size aprox. 3 x 2-cm, over right side of upperneck just anterior to medial border of sternocleidomastoid muscle, soft, cystic, nontender, nonfluctuant, nontransilluminant, and slightly mobile in both vertical and horizontal dimension with smooth borders(**Figure 2&3**). Skin over the swelling is normal. There was no erythema, ecchymosis, increased warmth, or any other palpable lymphadenopathy.. The neck has full range of motion. Other general and systemic examination was within normal limit.

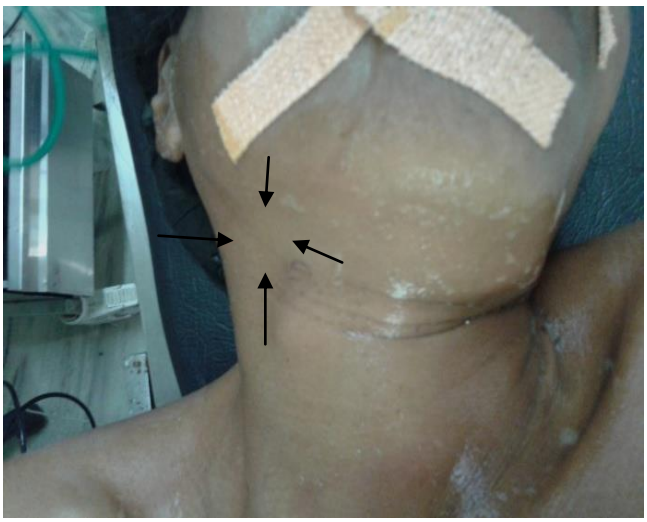

Figure 2: Arrows showing extent of swelling over Right side of neck

Figure 3: Showing swelling just medial to SCM muscle

Complete laboratory data were normal. Thyroid profile was within normal limit.X ray neck was normal. Echocardiography was normal.

Ultrasonography (US) revealed a cystic lesion of size 3.8x1.9 cm in right side of neck just medial to SCM muscle arm seen extending upto subcutaneous soft tissue plane (Figure 4).Thyroid gland was normal and no other cervical lymphadenopathy. Major vessels were normal.

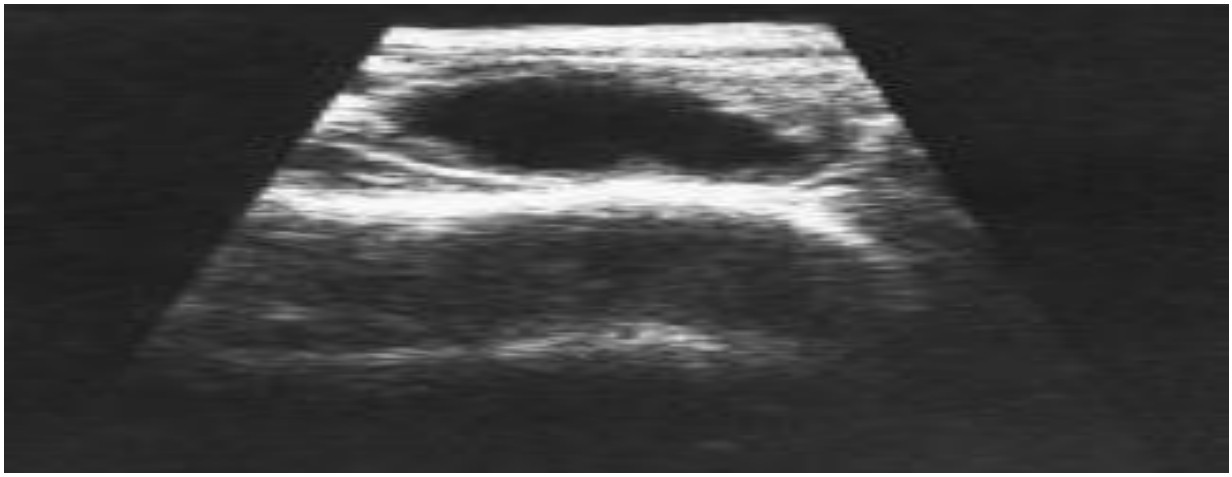

Figure 4- USG Neck

Other tests like USG Abdomen were negative indicating that this was a case of solitary primary hydatid cyst of right side of neck. The patient was treated with oral Albendazole and planned for surgical excision.

After PAC fitness, under general anaesthesia, patient was operated, we carefully tried to isolate the cyst from the surrounding muscles. But the mass was ruptured inadvertently (Figure4&5). Following irrigation of cystic cavity with hypertonic saline solution a suction drain is placed in situ.

Figure 4- Showing ruptured cyst with intact daughter cyst

Figure 5- Showing cystic cavity with daughter cyst

Post –operative period was uneventful, drain removed on 2nd postoperative day and patient discharged with advice of oral Albendazole for 21 days and sutured removed on 8th postoperative day. Histopathology confirmed the diagnosis.

FOLLOWUP

The case followed up for 6 months and there was no recurrence.

II. DISCUSSION

Primary hydatidosis of skeletal muscle is rare, Incidence of musculoskeletal hydatidosis is not clear. According to authors, incidence of musculoskeletal Echinococcosis including involvement of subcutaneous tissue is 1%–5.4% among all cases of hydatid disease. Soft-tissue hydatid cysts occur in 2.3% of cases reported from endemic areas. Primary intramuscular hydatidosis is rare because cyst uses oxygen for growth while muscle usually contains lactic acid . Hydatid cysts tend to grow around the muscles of the neck, trunk and roots of the limbs, perhaps because there is greater vascularisation and less muscular activity in these regions.

Diagnosis of Echinococcosis should be considered when slowly growing soft tissue masses are present in the patients coming from rural areas especially in endemic countries.

Because an intramuscular hydatid cyst in the region of neck have many differential diagnosis like granulomatous lymphadenitis, parasitic diseases, hematoma, abscess, lymphocele, cervical lymphnode metastasis, soft tissue sarcomas,.6 thyroid swelling, solitary thyroid nodule. All these disease are well known clinical entity and requires specific consideration due to their nature and workup generally starts with invasive investigation like FNAC. Preoperative clinical diagnosis of intramuscular hydatid disease is difficult clinically and radiologically. So before surgical excision or biopsy diagnosis of Echinococcosis should be excluded to avoid leakage of cyst contents.

Among the clinical signs to be considered in the differential diagnosis of neck hydatid cysts, , Differential diagnoses can be made by the combined evaluation of one or more options such as physical examination, history of disease, history of contact with animals, life history in endemic areas, travel history, ultrasonography, CT, MRI, serologic tests and histopathologic examination of biopsy material and permanent tissue, and the use of specific stains.9,13

Radiologically, there are no differences between the typical image of the neck hydatid cysts and the cysts at other locations.1,9 Although the diagnosis of hydatid cyst is often based on radiologic imaging, a definitive diagnosis should always be confirmed histopathologically.6,13

Latex agglutination test, IHA, indirect immunofluorescence test, enzyme-linked immunosorbent assay (ELISA), Western blotting, and polymerase chain reaction are among the most commonly used serologic tests. ELISA and IHA tests provide the best results for recurrence during the postoperative period. Although higher sensitivity, specificity, and efficacy can be obtained with ELISA, in practice, the most frequently used test is IHA because it is cheaper and easier to use.

Currently, the most effective treatment for hydatid disease located in soft tissue is still surgery. The main purpose of surgery is to prevent complications such as compression of surrounding structures, infection, or cyst ruptures. Soft tissue cysts can be easily ruptured. Therefore, rupture of the cyst must be avoided to prevent recurrence.6,113.

immunoelectrophoresis is the most specific method. USG is useful in diagnosis, showing the size, localization and type of the cyst. CT scan should be performed in suspicious cases or in order to determine the technique of surgery with demonstration of the relationship to adjacent organs. MRI is best for clear identification of involved structures and for surgical planning. In this case our experience was different because hydatid cyst of neck is very rare and in cases of soft tissue neck swelling we generally ordered investigations like FNAC.

On the basis of clinical and sonogrphy, we did not did FNAC and as rest neck structures were was within normal limit and due to superficial nature of swelling we took decision for surgical excision .

In endemic areas, any cystic enlargement of soft tissue should raise the suspicion of hydatid disease and Serologic tests and USG should be performed before any invasive procedure. Because inadvertent cyst rupture releases viableScoleces, which may enter the circulation, disseminate to distant organs. There is also increased chances of anaphylaxis because the fluid of cyst contains a highly antigenic protein.

III. CONCLUSION

- Though rare, hydatid cyst may present atypically in musculoskeletal system.
- It should be ruled out as possible diagnosis before proceeding to any invasive diagnostic or therapeutic intervention. So that risk of recurrence and dissemination can be minimized.