

Hydatid disease of neck: Diagnostic challenges and review of literature

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Short Review

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ABSTRACT :

Hydatid cyst or Echinococcosis is a zoonotic parasitic disease caused by tapeworm that occurs primarily in sheep grazing areas, but it is common worldwide because dog is a definitive host. It has serious impact on health and economy in the endemic countries. Hydatid disease is most frequently caused by *E. granulosus* and commonly affected organs are liver and lung. It is a chronic disease and cyst can be localized in different organs. A high index of suspicion is required to diagnose it in the neck region where other cystic benign lesions also exist. Treatment protocol for this disease is entirely different. Here we discuss a case and review different diagnostic tools as well as treatment options.

KEYWORDS: Hydatid Cyst, Neck Mass, Echinococcus.

INTRODUCTION:

Hydatid cyst is most frequently caused by *E. granulosus*.¹ The disease is endemic in many Mediterranean countries, the Middle East and Far East, South America, South and East Africa. Liver and lungs are most commonly involved organs, liver being involved in two third of the patients. The involvement of all the other organs including brain, heart, kidney, bone, skeletal muscle, breast, thyroid gland comprise only about 10 % and are listed under unusual localization classification.^{2,3} Involvement of head and neck region by hydatid cyst is very rare, and only few cases have been reported till date in literature⁴

Case Report

A 17- years old male presented in ENT OPD with complaints of swelling at left side of neck for 2 years. It was insidious in onset, slowly progressive and not associated with fever or history of trauma. No history suggestive of hypothyroidism or hyperthyroidism. No significant past history and family history. On local examination of the neck, a swelling of size 6x5 cm presented in anterior triangle of neck, soft in consistency, non-tender, with no lo-

cal inflammatory response or spasm of cervical muscles. (Fig. 1). Routine blood counts were within normal limit. USG neck showing a cystic swelling medial to left thyroid lobe. On FNAC of swelling, 10 ml clear fluid aspirated and swelling decreased in size which contains protenacious material. No inflammatory cells were present. No AFB on ZN staining. Since it was considered to be a benign cystic neck disease patient was subjected to excision of swelling under general anesthesia. (Fig. 2). Intra operatively there was a 6x5 cm cyst present below the strap muscles which was closely abutting the left lobe of thyroid. Whole cystic bag like mass was removed by blunt dissection. When outer covering was sectioned, multiple variable sized daughter cysts present consistent with finding of hydatid disease. (Fig 3). There was no spillage of cyst fluid into the surrounding areas and his post-operative course was uneventful. Histopathological examination demonstrated a germinal layer, lamellated ectocyst with fibrous outer layer confirming the diagnosis of hydatid cyst (Fig. 4). On 10th post-operative day, a screening USG abdomen was done to see liver and

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a cystic lesion of 7x6 cm was detected. Scanning of rest of the body was normal. Patient was discharged with 1month course of Albendazole 400 mg twice daily along with tab praziquantal 1500 mg twice daily keeping an interval of 15 days between two cycles. Patient was followed up with USG abdomen and liver function test. After 3 months lesion in liver was completely regressed. Patient is in regular follow up and there is no recurrence.



Fig. no.1 showing neck swelling



Fig. no.2 showing intraoperative cystic mass in the neck.



Fig. no.3 Showing contents of cystic mass- daughter cysts



Fig. no.4 Upper half of figure shows cellular germinal layer and lower half demonstrates acellular cuticle (Hematoxylin and Eosin x 10).

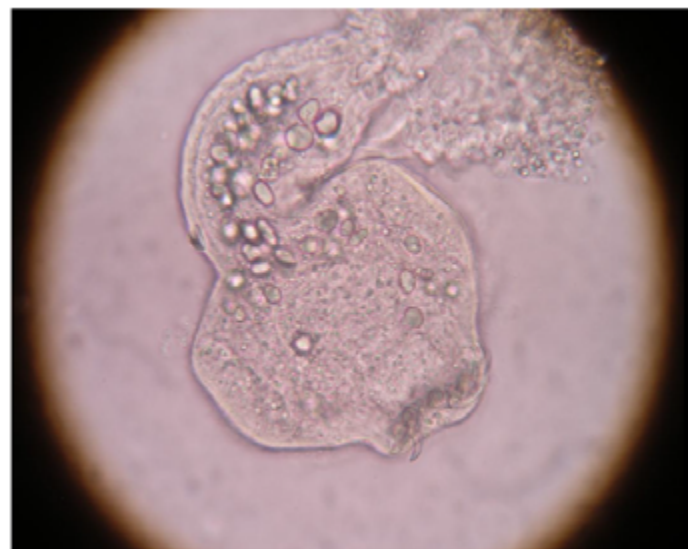


Fig. no. 5 showing scolex (40x)

DISCUSSION

Echinococcus granulosus is a parasite of dogs, wolves, foxes and jackals. Human are accidentally affected by contamination of food by the eggs found in faeces excreted by the animals. After the development of the embryo, various organs are infested by its migration through intestinal mucosa. Hydatid cysts located in the head and neck region are extremely rare. Patients with echinococcus infestation must undergo thorough systemic investigations because 20-30% has multiorgan involvement. Hydatid cysts in neck, in the absence of disease in lung and liver, may be due to systemic dissemination through lymphatic route, is a strong possibility in case of unusual presentation sites. The majority of hydatid cysts are asymptomatic and symptom depend on location, size and pressure caused by enlarging cyst. The diagnosis of *Echinococcus* infection mainly depends on the clinical history of the patient, diagnostic radiological findings and serologic tests. Clinical examination may sometimes be inconclusive as benign conditions like branchial cyst and sebaceous cyst also co-exist in neck which may influence the workup of the patient. If the preoperative diagnosis is hydatid cyst the surgeon has the option of starting

medical treatment preoperatively to reduce the recurrence. Preoperative can be done with help of FNAC but there can be accidental puncture of cyst leading to anaphylactic reaction or dissemination of disease so at present its role is although controversial but it is being used as first line investigation. Sometimes FNAC may be nonspecific aspirate as it happened in our case but it may also cause allergic reaction as reported by Knoch *et al* (1999). Usually fluid aspirated from hydatid cyst may contain mixed inflammatory cells, proteinaceous material or sometimes lamellar membrane as well as scolex which helps in building diagnosis otherwise rest of the findings may also be present in other cystic lesions of neck. ELISA, Casoni skin tests, latex agglutination, immune electrophoresis and direct hemagglutination are serological methods, which can be used for the diagnosis of hydatid disease.

Presence of IgG antibody confirms the diagnosis. An increase in titer indicates recurrence of disease and a decrease in titer indicates resolution⁵. Imaging modalities like Ultrasound, CT Scan and MRI remain more sensitive than serodiagnosis, especially with unusual cyst locations, and a characteristic scan demonstrating germinative membrane and daughter vesicles in the presence of negative serologic results should still suggest the diagnosis of echinococcosis. Treatment options for the uncomplicated hydatid cyst depends upon the site and size of cyst. If the site is inoperable or patient is not fit for surgery medical management in form of Albendazole is given according to WHO guidelines. Therapy with nontoxic scolocidal agents or combination chemotherapy with mebendazole is of therapeutic value in the treatment of patients with recurrence or a high risk of contamination⁶.

Patient can be monitored with serial ultrasonography and liver function test. Direct surgical intervention can be taken and cyst carefully removed. Care should be taken to avoid intraoperative rupture of cyst. Albendazole is suggested to be given post operatively for 1 month according to WHO guideline. There have been reports of treatment of hydatid cyst in the literature using the PAIR (Puncture-Aspiration of cyst contents-Injection of hypertonic saline solution-Reaspiration) technique. Serhat Avcu, Özkan Ünal, Çetin Kotan *et al* treated hydatid cysts of submandib-

ular and thyroid gland by this technique^{7, 8} and concluded that PAIR technique seems to be a safe and effective procedure as a possible alternative to surgery.

CONCLUSION

Hydatid cyst should be kept as differential diagnosis of cervical masses especially in countries where Echinococcus infestation is endemic. Fine needle aspiration cytology is a good tool for diagnosis but risk of anaphylaxis is a major concern. During surgical removal of cysts great care must be taken to avoid spilling of the cystic contents. Histopathological examination of surgical specimen and patient follow up seems critical in all cases in order to offer accurate diagnosis. Definitive treatment can be done in different forms and patient should be properly followed up to prevent recurrence.

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