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Cysticercosis of the neck: a case report

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ABSTRACT

The neck is a rare site for cysticercosis. Very few cases of cysticercosis presenting in the neck have been reported. We report one such case creating diagnostic dilemma.

1. Introduction

An otolaryngologist encountering a neck mass would have several differential diagnosis depending upon the clinical course and characteristics. However, age of patient, duration of symptom and location of mass plays an important role for the diagnosis[1]. A midline neck mass in a child might be diagnosed as differential diseases like thyroid nodule, thyroglssal cyst, dermoid, branchial cyst, lymphangioma, tuberculous lymphadenitis and rare chronic infective diseases.

Cysticercosis is an uncommon disease caused by cysticercus cellulosae, the larval form of the tape worm *Taenia solium (T. solium)*. Tissues commonly affected by cyst formation are brain, meninges and eyes which count for 86 % of the cases. The reminders are located in the muscles, heart, lungs and the peritoneum[2].

In literature very few cases of neck manifestation of cysticercosis are reported. Here we report a case of cysticercosis in the neck (midline) and discuss the available literature.

2. Case report

A 12 year old Hindu male child presented to ENT OPD with a swelling in the neck, midline, more towards the right side, for last 8 months. The swelling was around 2 cm ×cm in size, oval in shape, non tender, firm, moving with deglutition and not causing any pressure symptoms.

The high resolution ultrasonography (USG) revealed well defined, cystic lesion in strap muscle of the neck on the right side with normal thyroid tissue. ultrasonography guided Fine Needle Aspiration Cytology showed parasite of cysticercosis with lymphocytic infiltration. A thorough examination was done to rule out cystic lesion at other sites. Stool examination for ova and cyst and other blood examinations were normal.

Patient was conservatively treated by with albendazole (15 mg/kg.d) in three doses for 8 days and the dose was repeated after one month for three months, which led to complete resolution of the swelling.

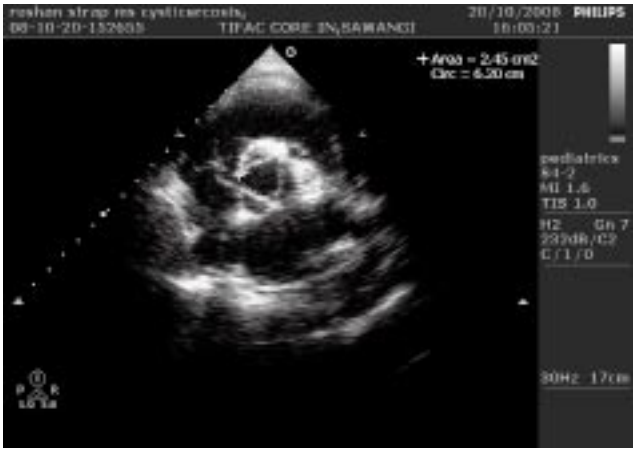

Figure 1. USG showing a well defined cystic lesion in the strap muscles.

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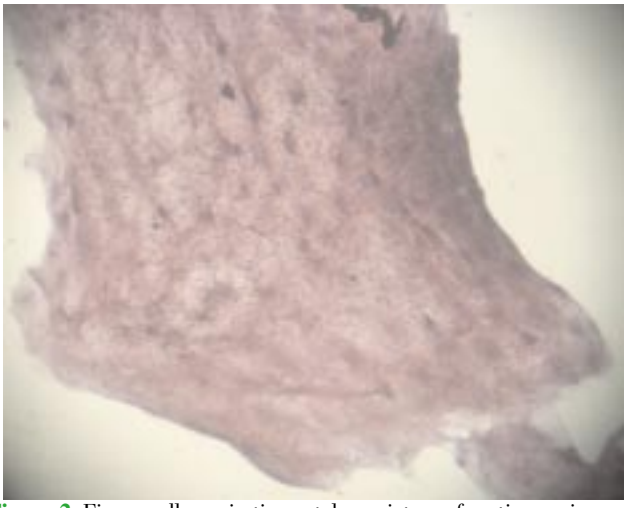

Figure 2. Fine needle aspiration cytology picture of cysticercosis.

3. Discussion

Soft tissue cysticsrcosis is caused by encysted larvae of tapeworm *T. solium* which is endemic in many countries of Latin America, Africa, Asia and as well as in some parts of Europe and USSR[3].

Tapeworm infection is common in developing countries where the combination of rural society, crowding and poor sanitation allows greater contact between humans and pigs and thus more opportunities for fecal contamination of food and water[4].

The pork tapeworm can cause two distinct forms of infection. The form that develops depends on whether humans are infected with adult tapeworms in the intestine or with larval forms in the tissues, so called cysticercosis.

Humans are the only definitive hosts for *T. Solium*, while pigs are the usual intermediate hosts, although dogs, cats and sheep may harbor the larval forms. The adult tapeworm generally resides in the upper jejunum. Its globular scolex attaches by both sucking disks and two rows of hooklets. The tape worm, usually about 3 meters in length, may have as many as 1 000 proglottids each of which produces upto 50 000 eggs. Groups of 3 to 5 proglottids generally are released and excreted into the feces and the eggs in these proglottids are infective for both human and animals. The eggs survive in the environment for several months.

After ingestion by the intermediate host (pig), eggs embryonate, penetrate the intestinal wall and are carried to many tissues via systemic circulation with a predilection for striated muscle of the neck, tongue and trunk. Within 60 to 90 days, the encysted larval stage develops. These cysticerci can survive for long periods. Humans acquire infections that lead to intestinal tapeworms by ingesting undercooked pork containing cysticerci. Infection that cause human cysticercosis follow the ingestion of the parasitic eggs, especially from fecally contaminated food.

Autoinfection may occur if an individual with an egg-producing tapeworm ingests eggs derived from his or her own feces or if eggs pass by reflux from the intestine into the stomach. The growing larva in cysticercosis may provoke a series of inflammatory reactions including infiltration of neutrophils and eosinophils, lymphosites, plasma cells and at times giant cells followed by fibrosis and necrosis of capsule with eventual caseation or calcification of the larva[5].

Soft tissue cysticercosis is seen in the form of a painless swelling of long term duration. Because of its wide availability ultrasound should be the preferred initial modality for evaluation of superficial masses[6].

Cysticercosis presenting as subcutaneous nodules is diagnosed by microscopic examination of subcutaneous nodules in which *T. solium* larvae are found. Over a long period of time, cysticercosis lesions may calcify in which cases the calcified cyst reveals the presence of cystcercus[7].

Definitive diagnosis is by fine needle aspiration cytology, by the identification of detached hooklets, scolex and fragments of spiral wall of cysticercosis cellulosae. In some cases aspiration smears show no larval parts but contain inflammatory reaction consisting of large number of eosinophils and pallisading histiocytes which is suggestive of a parasitic cyst[8].

Management of cysticercosis can involve chemotherapy, surgery and supportive medical treatment. In case of cervical lymphadenopathy wide excision of the involved soft tissue should be the mainstay of treatment[1].

We are reporting this case because of its rarity of presentation as a midline neck swelling, having diagnostic dialema due to its site. Another unusual fact being the patient's normal eosinophil count as 15% of patients with cysticercosis show eosinophilia[10]. Moreover, the patient was vegetarian.

Cysticercosis should always be kept as differential diagnosis in all kinds of subcutaneous swellings in an endemic region like India for early diagnosis and its removal from vital organs before irreversible damage occurs.

Conflict of interest statement

We declare that we have no conflict of interest.

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