Cysticercosis masquerading as tuberculous lymphadenitis in supraclavicular region

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Abstract

Cysticercosis is a parasitic infestation caused by the larvae of the tapeworm *Taenia solium*. In humans, cysticercosis spreads through fecal–oral route by ingesting food contaminated with eggs of pork tapeworm. The most frequent sites affected are central nervous system, eye, subcutaneous tissue, and skeletal muscle. We report a case of cysticercosis presenting as left supraclavicular swelling which is a rare site, diagnosed on fine-needle aspiration cytology (FNAC).

Keywords: Cystic, cysticercosis, extraneural, neck swelling, parasite, supraclavicular

INTRODUCTION

Cysticercosis is a parasitic infestation caused by encysted larvae of *Taenia solium* with humans as dead-end hosts. It is one of the most common parasitic diseases worldwide and is endemic in developing countries such as India. It has two larval forms, *Cysticercus cellulosae* and *Cysticercus Racemosus* presenting as neural and extraneural forms, respectively. Eyes, skeletal muscles, and subcutaneous tissue are types of extraneural involvement presenting as single or multiple firm nodules. Rarely, involvement of the buccal mucosa, tongue, lips, submandibular region, and posterior triangle in the head-and-neck region has been reported. We report a case of subcutaneous cysticercosis presenting as left supraclavicular swelling which is a very rare extracranial site and was diagnosed by fine-needle aspiration cytology (FNAC).

CASE REPORT

A 32-year-old female patient presented with a history of left supraclavicular neck swelling for 6 months. The patient had no history of trauma, pain, fever, or any other constitutional symptoms. The patient was of low socioeconomic status and used to consume nonvegetarian diet. There was no history of consuming pork. Examination revealed a soft cystic nontender swelling in the left supraclavicular region of approximately 2 cm × 2 cm size [Figure 1]. There were no other palpable swellings in any other part of the body. Clinically, a diagnosis of tuberculous lymphadenitis was made with lymphangioma, lipoma, and neurofibroma as differential diagnoses. FNAC was performed with a 22-gauge needle attached to 10-ml syringe. It yielded 2 ml of clear fluid. The smears were air-dried and stained with May–Grunwald–Giemsa stain. Microscopic examination revealed fragments of the bladder wall of parasite in the form of fibrillary bluish material with interspersed small nuclei, and at places, they revealed a honeycomb appearance [Figures 2 and 3]. Background comprised mixed inflammatory cell infiltrate consisting of eosinophils, lymphocytes, and histiocytes [Figure 4]. A diagnosis of subcutaneous cysticercosis was made, and medication/excision of the swelling was advised.
DISCUSSION

Human cysticercosis is a parasitic disease caused by the larval form of *T. solium* which spreads in humans through fecal–oral route by consumption of undercooked pork, drinking contaminated water, or consumption of raw uncooked vegetables, for example, cabbage, radish, and carrots. This parasite commonly involves the central nervous system, eyes, skeletal muscles, and subcutaneous tissues where it presents as palpable nodules that are often clinically diagnosed as soft-tissue tumors such as lipoma and neurofibroma or as lymphadenopathy. Unusual sites include axilla, chest wall, abdominal wall, cheek, and lateral side of the neck as seen in an index case.

Cysticercosis is diagnosed by radiology, serology, and pathological examination, out of which pathological examination provides a definitive diagnosis and the former two giving supportive diagnosis. Serological tests can show false-positive results with the past parasitic infestation or can have cross-reactivity with other helminths. Computed tomography (CT) scan and magnetic resonance imaging are the most sensitive investigations but are very expensive. Neurocysticercosis shows a characteristic ring-enhancing lesion on CT scan. Ultrasonological examination shows elliptical or round well-defined cystic lesion with an eccentric hyperechoic area within. However, ultrasound examination was not done initially in the present case as the diagnosis was suspected to be tuberculous lymphadenitis owing to the prevalence of these cases in our society and the site of the lesion and later revealed a cystic lesion 18 cm × 13 cm in size posterior to the platysma in the left supraclavicular region.

FNAC is a widely accepted cost-effective tool providing a rapid and definitive diagnosis in these cases. The diagnostic
role of FNAC in cysticercosis was first emphasized by Kung et al. in 1989. Since then the spectrum of cytological details of cysticercosis covering the entire range, from viable cysts through necrotic and calcified lesions, has been described, demonstration of fragments of the larval bladder wall, hooklets, and calcareous corpuscles confirms the diagnosis of cysticercosis. The parasitic infestation should be strongly suspected if a palpable subcutaneous or intramuscular nodule aspirates clear fluid. Clear fluid aspiration and mixed inflammatory infiltrate of eosinophils, neutrophils, histiocytes, plasma cells, and giant cells on microscopic examination in a palpable subcutaneous or intramuscular nodule are a clue for parasitic infestation and demand a thorough search for parasite. In the present case, aspirated clear fluid showed fragments of the bladder wall of parasite with interspersed small nuclei at places showing a honeycomb appearance. No hooklets or scolices were seen in the smears. The background comprised mixed inflammatory cell infiltrate consisting of eosinophils, lymphocytes, and histiocytes which helped in arriving at a diagnosis of a parasitic cyst. The background can show granulomatous inflammation with or without necrosis. Rarely detached hooklets and/or calcareous corpuscles can be found. Other studies described the fluid aspirated as clear, brownish, whitish with or without granular material.

Cytomorphologically cysticercus mimics other parasites such as Echinococcus cyst and the larval form of Coenuri and Sparagna. Suckers and hooklets are present in cysticerci and Coenuri whereas they are absent in Sparagna. Cysticerci have a single scolex whereas coenures have multiple protoscolices which help in distinguishing the two. Cysticerci have thin and membranous bladder wall whereas hydatid cyst has thicker and lamellated one. Hydatid cyst aspirates contain multiple small scolices in contrast to the single large scolex of cysticerci.

**CONCLUSION**

Parasitic infestation must be included in the differential diagnosis of any subcutaneous or intramuscular palpable nodules even at unusual sites as seen in the current case. FNAC is a simple, rapid, and cost-effective diagnostic procedure that provides definitive in the diagnosis of superficial cysticercus lesions.

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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**Conflicts of interest**

There are no conflicts of interest.

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