Isolated Solitary Intramuscular Cysticercosis involving lateral chest wall: An uncommon presentation

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Abstract

Cysticercosis is a Parasitic disease caused by the larval form of the pork tapeworm *Taenia solium*. This disease is a major health concern especially in developing world including India but its incidence is underestimated. Not too many cases of isolated intramuscular cysticercosis have been reported in pediatric population. Here we report a case of 4 years old female child presented with swelling over left lower chest over 3-4 months, diagnosed with intramuscular cysticercosis by ultrasonography.

Key words: Cysticercosis, Parasitic disease, Intramuscular cysticercosis

Introduction

Human cysticercosis is an infection by the larval (cysticercus) stage of the tapeworm *Taenia solium*. The larvae form cysts commonly in the brain, meninges, and eyes, that constitute majority of the cases. The other locations are skeletal muscles, heart, lungs, and peritoneum causing varied clinical manifestations[1]. Human cysticercosis is highly prevalent in developing world especially South-East Asian, South American, Eastern European and African regions[2,3]. Intramuscular and subcutaneous cysticercosis is a relatively uncommon form of cysticercosis but should always be kept in mind during the evaluation as It can be confused with other swellings like a lipoma, sebaceous cyst, dermoid, abscess, pyomyositis or tuberculous lymphadenitis[4]. Here, we describe a case of intramuscular cysticercosis in a 4 year-old girl who presented with the painless swelling at left lower chest, without any associated symptoms or other sites involvement.

Case Report

A 4-years-old girl presented to the outpatient department with history of painless swelling over left lower chest noticed for 3-4 months. On examination the swelling was non-tender, non-fluctuant, non-reducible and deep to muscle plane measuring 3×2.5×2cms. The overlying skin appeared normal. No swelling was found in any other areas of body. Rest of systemic examination was normal. Mother didn't give history of cough, respiratory problem or any history of tuberculosis in a child or contact. Child was totally vegetarian. Haematological parameters showed normal complete blood count. Ultrasound of the swelling shows well defined anechoic oblong shaped lesion measuring 2.2x2x1cms, noted in intra-muscular plane in the region of left lower chest. The lesion shows eccentric hyperechoic nodule measuring 4.8x2.3mm showing no obvious internal vascularity suggestive of Myocysticercosis. Surrounding hypo-echogenicity noted in involved muscle with extension in to underlying intercostal space. No communication with pleura was seen. [Figure.1A] Ultrasound of abdomen was normal. Chest radiograph was normal except mild soft tissue elevation in the area of swelling in left lower chest. [Figure.1B]

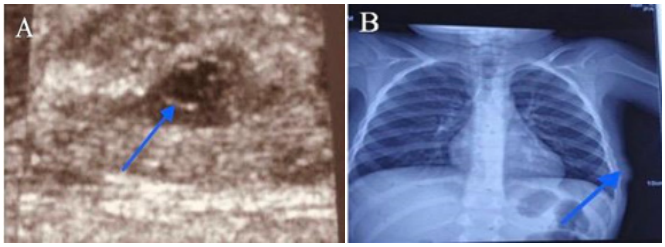

Figure 1 A: Ultrasound showing well defined lesion measuring 2.2x2x1cms, noted in intra-muscular plane and lesion shows eccentric hyperechoic nodule measuring 4.8x2.3mm (Scolex); B. Chest radiograph was normal except mild soft tissue elevation in the

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area of swelling in left lower chest.

Although the child had no CNS symptoms but CT scan brain was done as CNS is the most common site of involvement. CT brain was normal with no calcification or any lesion. The patient was managed conservatively with short course of albendazole 15mg/kg body weight/day for 21 days. After three weeks of conservative treatment, there was no change in size of swelling. Child was later planned for excision. Swelling was found in deep intramuscular plane beneath the serratus muscle with surrounding muscle necrosis. Partly cystic phlegmon with devitalised tissues was removed in toto. On opening, off-white granular material came out with three pearly white cysts measuring ~1cm. [Figure.2]

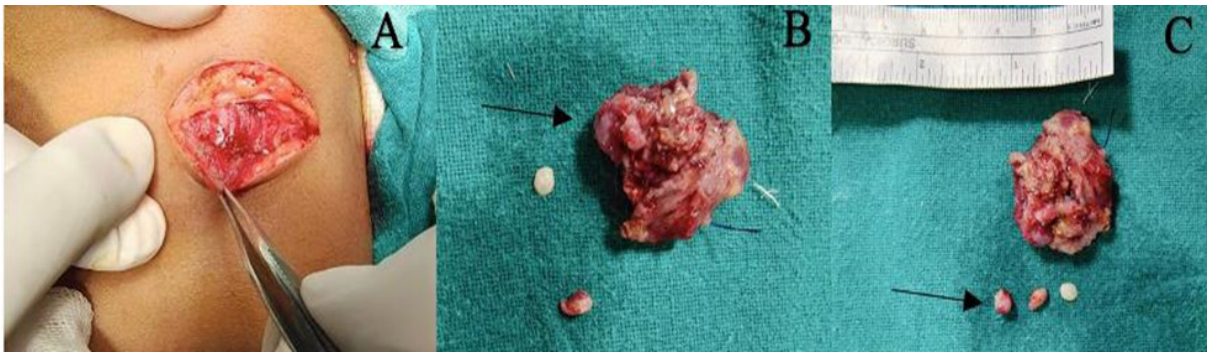

Figure 2: Sowing Partly cystic phlegmon with devitalised tissues was removed in toto with three pearly white cysts measuring ~1cm.

Whole specimen was sent for histopathological examination. Raw area was then irrigated with distilled water and betadine solution. Histopathological examination showed fibrous pseudo capsule along with infiltration of lymphocytes, plasma cells and histiocytes. The parasitic larva showed thick integument with projections. Scolex with sucker was also identified and the inner stroma was myxomatous, thus confirming the diagnosis. [Figure.3]

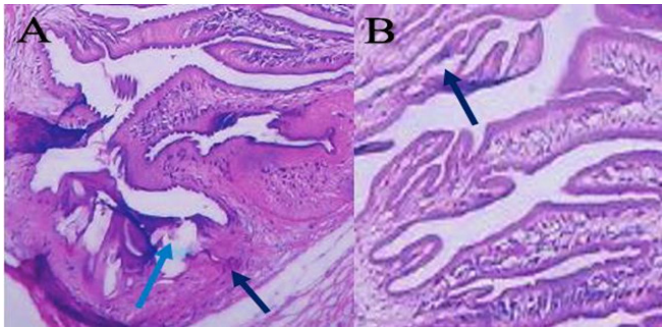

Figure 3: A. Histopathological examination showed parasitic larva with thick integument and projections. Scolex with sucker (black arrow) and hooklets were identified (blue arrow) along with infiltration of lymphocytes, plasma cells and histiocytes. B. Hooklets are seen (black arrow)

Child was discharged on the next day and started on Albendazole for two further weeks. On follow up sonography, there was no evidence of phlegmon or cysticercosis. On follow up, there were no complaints.

Discussion

Human cysticercosis is caused by encysted larvae of the tapeworm Taenia solium that resulted from either ingestion of food or water contaminated with eggs of T. solium or regurgitation of proglottids of an adult worm from the intestine into the stomach during the episodes of vomiting[5]. After ingestion, eggs are then reached in small intestine where they hatch and release oncospheres. These oncospheres penetrate the bowel mucosa and enter the bloodstream to reach various tissues. At the target sites these oncospheres develop to form cysticercus cellulosae, which is the encysted larval form of T. solium. Symptoms are produced in response to intense granulomatous inflammatory reaction after this larval form dies[2]. The clinical symptoms depend on the location of cysticerci and the associated inflammation. The larvae form cysts commonly in the brain, meninges, and eyes, that constitute majority of the cases. The other locations are skeletal muscles, heart, lungs, and peritoneum causing varied clinical manifestations[1]. The intramuscular cysts are usually asymptomatic and may finally disappear. Calcification may occur long standing cysts. Rarely, they become inflamed and manifest with signs of inflammation such as redness, oedema and pain. Inflammation of the tissue suggests cellular response of the body and it occurs when the larval form degenerates. Ultrasound of localised swelling helps in diagnosis. Ultrasound features are described as[2] **a).** An inflammatory mass or phlegmon around cysticercus cysts; **b).** a large irregular collection of exudative fluid within the muscle, with the typical cysticercus cyst containing the scolex; **c).** a cyst without echogenic scolex because

it might escape outside the cyst; **d).** a calcified cyst. In our case, asymptomatic patient presented to us with a painless swelling in left lower chest. On excision phlegmonous swelling was found in deep intramuscular plane beneath the serratus muscle with surrounding muscle necrosis. Partly cystic phlegmon with devitalised tissues was removed containing pearly white cysts. Albendazole and praziquantel are the two commonly used drugs in cysticercosis and should be added to the treatment. Localised solitary intramuscular swellings are challenging to diagnose as they can mimic lipoma, sebaceous cyst, dermoid, abscess, pyomyositis or tuberculous lymphadenitis[4]. So during the asymptomatic presentations as in our case especially in endemic areas, this entity should be kept in mind because of close similarities with other differentials.

Conclusion

We can conclude that though intramuscular cysticercosis is an uncommon presentation but this entity should be kept in mind especially in endemic areas when patient presents with swelling over the body mimicking other common differentials. Ultrasound should be done to rule out intramuscular cysticercosis and FNAC to be considered in doubtful cases.

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