International Journal of Contemporary Pediatrics
Chaudhari DG et al. Int J Contemp Pediatr. 2024 Nov;11(11):1678-1680
http://www.ijpediatrics.com
pISSN 2349-3283 | eISSN 2349-3291

DOI: https://dx.doi.org/10.18203/2349-3291.ijcp20243102

Case Report

A rare case of an isolated mayo cysticercosis in a 5-years old child

Dhruvika G. Chaudhari*, Neelam R. Shah, Asha S. Chaudhari

Department of Paediatrics, GMERS Medical College and Hospital, Navsari, Gujarat, India

Received: 19 September 2024
Accepted: 11 October 2024

***Correspondence:**
Dr. Dhruvika G. Chaudhari,
E-mail: dhruvika1818@gmail.com

ABSTRACT

Human cysticercosis is caused by Cysticercus cellulose, larvae of a tapeworm, *Taenia solium*. The most commonly affected site is central nervous system known as neurocysticercosis is well known; but involvement of other sites such as subcutaneous tissue, eye, muscles are very rare. Here we are reporting a case of isolated involvement of muscle by cysticercus cellulose. a five-year-old child presented with complaint of painless swelling over right side of neck for two months. No other complaint was there. On examination a single palpable swelling was there on right side of the neck along the upper margin of sternocleidomastoid muscle. Diagnosis of muscular cysticercosis was made by ultrasonography and later confirmed by plain CT scan of neck. As soon as diagnosis was made patient was treated with steroids and antiparasitic therapy. Two serials follow up were made on 1st and 3rd month following discharge. On 2nd follow up patient was recovered completely. Because of rarity of muscular cysticercosis especially in children along with variable presentation it produces a diagnostic dilemma but now with ease of non-invasive imaging modality it is detectable early and timely intervention can be done.

Keywords: Isolated, Muscular cysticercosis, Child, *Taenia solium*

INTRODUCTION

Human cysticercosis occurs worldwide. It is endemic to countries like Mexico, central and South America, Africa, India, China, Eastern Europe, and Indonesia, but due to increased travel and immigration of people it has now spread over worldwide.[1,2]

Muscular involvement is almost always associated with CNS involvement, but there are few reported cases of isolated myocysticercosis with variable presentation.

Here we are presenting similar case of mayo cysticercosis without any CNS or ophthalmic involvement.

CASE REPORT

A 5 years old girl child presented in paediatric outpatient department with complaint of progressive painless swelling over right side of neck for 2 months duration. There was no other complaint. No history of chronic cough, fever, Koch's contact, loss of appetite or trauma was there.

On examination approximately 1.5×1 cm sized swelling was palpable over right side of the neck along the upper 1/3 of sternocleidomastoid muscle margin, which was firm in consistency, non-tender, non-pulsatile, non-reducible with normal overlying skin. Figure 1 shows swelling over right side of the neck over the upper 1/3rd of sternocleidomastoid muscle.

Apart from insignificant anterior cervical lymphadenopathy over right side; no evidence for the same at other sites and no other swelling noted elsewhere in body. Systemic examination was normal.

Clinically differential diagnosis of lipoma, epidermoid cyst and lymphadenitis were made.

Figure 1: Swelling over right side of the neck over the upper 1/3rd of sternocleidomastoid muscle.

Management and outcome

Apart from swelling patient was asymptomatic so we went for non-invasive high-resolution USG of local part which showed the intramuscular cystic lesions with internal echoes measuring approximately 15×10 mm present in right sternocleidomastoid muscle along with multiple sub centimetre sized lymph nodes over anterior cervical region. These findings were suggestive of cysticercosis, which was confirmed by plain CT scan of neck. Ophthalmic evaluation was done to see any ocular involvement which was normal.

Following confirmation patient was treated with steroids and antiparasitic therapy.

Patient was put on oral prednisolone (1 mg/kg/day) initially before giving 1st dose of anti-parasitic to reduce swelling and inflammation provoked by dying cysticerci which was tapered over 15 days. Oral albendazole 400 mg was also given daily for 15 days. The treatment was completed without any notable complications. Praziquental (50 mg/kg/day) for 3 weeks can be alternative to albendazole.

Child showed gradual improvement over weeks and called for follow up at 1st month and at 3rd month post discharge which showed decreased size clinically and on 3rd month, follow up USG was done which showed complete resolution of cyst.

DISCUSSION

It is a significant public health concern in many parts of the world, particularly in regions where sanitation and hygiene practices are inadequate.[1]There is increased prevalence of cysticercosis in North India especially in Bihar, Uttar Pradesh, and Punjab.[3]

Taenia solium also known as the pork tapeworm is widely distributed wherever pigs are raised and have contact with human fecal material.

It causes 2 different infections in children. In its normal lifecycle, children can acquire the tapeworm form by ingestion of undercooked pork containing the larvae cysts. In the intestines, the cyst converts into the tapeworm form.[4]

Children are also susceptible to infection by the eggs shed by tapeworm carriers. After the eggs are ingested, the larvae are released from the eggs, invade through the intestines, and migrate through the bloodstream to the muscles (and other organs), where they form tissue cysts (0.2-2.0 cm fluid-filled bladders containing a single invaginated scolex). Infection with the cystic form is termed cysticercosis.[4]

Thus, the tapeworm form only develops after ingestion of undercooked pork. Ingestion of pork is not necessary to develop cysticercosis, but individuals harboring an adult worm may infect themselves with the eggs by the fecal-oral route.[4]

Cysticercosis in the muscle may present three types of manifestation such as myalgia, pseudotumor, and abscess or rarely the pseudohypertrophic type. In the myalgia subtype, the patient complains of severe muscle pain due to acute inflammation caused by dead larva and leakage of cyst fluid. In pseudotumor or abscess subtype, a circumscribed mass develops due to chronic inflammation with a collection of fluid around the cyst, following intermittent leakage of cyst fluid. The third and rare pseudohypertrophic type develops due to calcification of scolex, thickening of capsule wall, and retraction of the cyst.[5]

Since the involvement of isolated skeletal muscle is rare, it can present a diagnostic dilemma to clinicians as the only symptomatology is a painless swelling in most cases. Even though FNAC was earlier considered a very reliable confirmatory diagnostic tool for soft tissue cysticercosis, it is not favoured by many these days due to two main reasons, that is; first of all, there is an inherent risk (not very high) of initiating the host immune response against cysticerci and secondly, there are advancements in diagnostic accuracy of non-invasive tools like USG.[6]

Four different sonographic patterns of muscular cysticercosis have been described.[7]The first type is cysticercus cyst with an inflammatory mass around it, as a result of death of the larva. The second type is an irregular cyst with very minimal fluid on one side, indicating leakage of fluid. The eccentric echogenic protrusion from the wall due to the scolex is not seen within this cyst. This type of appearance may be due to escape of scolex outside the cyst or due to partial collapse of the cyst.

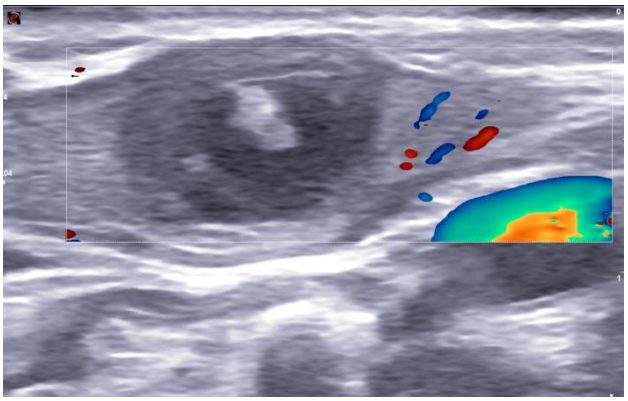

Figure 2: The intramuscular cystic lesions with internal echoes measuring approximately 15×10 mm present in right sternocleidomastoid muscle.

In the third type there is a large irregular collection of exudative fluid within the muscle with the typical cysticercus cyst containing the scolex, situated eccentrically within the collection. This type was seen in our case. Figure 2 shows the intramuscular cystic lesions with internal echoes measuring approximately 15×10 mm present in right sternocleidomastoid muscle.

This may be due to chronic inflammatory reaction around the cyst. This appearance is similar to an intramuscular abscess.

In all these three types of appearances, the diagnostic feature is that of the cysticercus itself, which appears as an oval/round well-defined cystic lesion with an eccentric echogenic scolex in it. Fourth is calcified cyst appearing as multiple elliptical calcifications in soft tissue.

Magnetic resonance imaging (MRI) is a gold standard technique for diagnosis of intramuscular cysticercosis. MRI can show live scolex and cysts and degenerating cysts as well.[8]

The isolated muscular cysticercosis can be treated by pharmacotherapy or by surgical excision. The surgery being reserved for cases where USG shows abscess formation in and around the cyst. Most of the asymptomatic muscular cysticercosis swellings can be treated with anthelminthic drugs (i.e., albendazole and praziquantel) given for longer durations, like 4 weeks.[9]

CONCLUSION

Rarity of myocysticercosis and its variable presentation should be kept in mind whenever there is isolated or multiple subcutaneous or intra muscular swellings are noted. With good accuracy of non-invasive modality such as high-resolution USG we can easily avoid other procedures like FNAC or biopsy. Early detection and timely intervention will have favourable outcome.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Chaudhari DG, Shah NR, Chaudhari AS. A rare case of an isolated mayo cysticercosis in a 5-years old child. Int J Contemp Pediatr 2024;11:1678-80.