DOI: 10.7860/NJLM/2016/22647:2176

Case Report

Pediatrics Section

Unusual Presentations of Soft Tissue Cysticercosis in Children Causing Diagnostic Dilemma: Report of Two Cases of Soft Tissue Cysticercosis

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ABSTRACT

Cysticercosis is a common disease in tropical countries, caused by encysted larvae of the tapeworm *Taenia solium*. Cysticerci can affect any tissue of the body, most common being the brain, cerebrospinal fluid (CSF), skeletal muscle, subcutaneous tissue, or eye. The clinical features of cysticercosis depend on organ involved, number and site of lesions within the organ of involvement and associated inflammation or scarring. Cysticerci have tropism for nervous system. Isolated cysticercosis without involving CNS is thought to be rare. Isolated muscular cysticercosis, can present either with myalgia, pseudo-tumor or abscess and rarely pseudohypertrophy. Patients with muscular cysticercosis are usually asymptomatic. We describe two children with extra CNS cysticercosis who were misdiagnosed initially due to their atypical presentation.

Keywords: Anti-helminthic, Extra-CNS cysticercosis, Isolated muscular cysticercosis

CASE REPORT

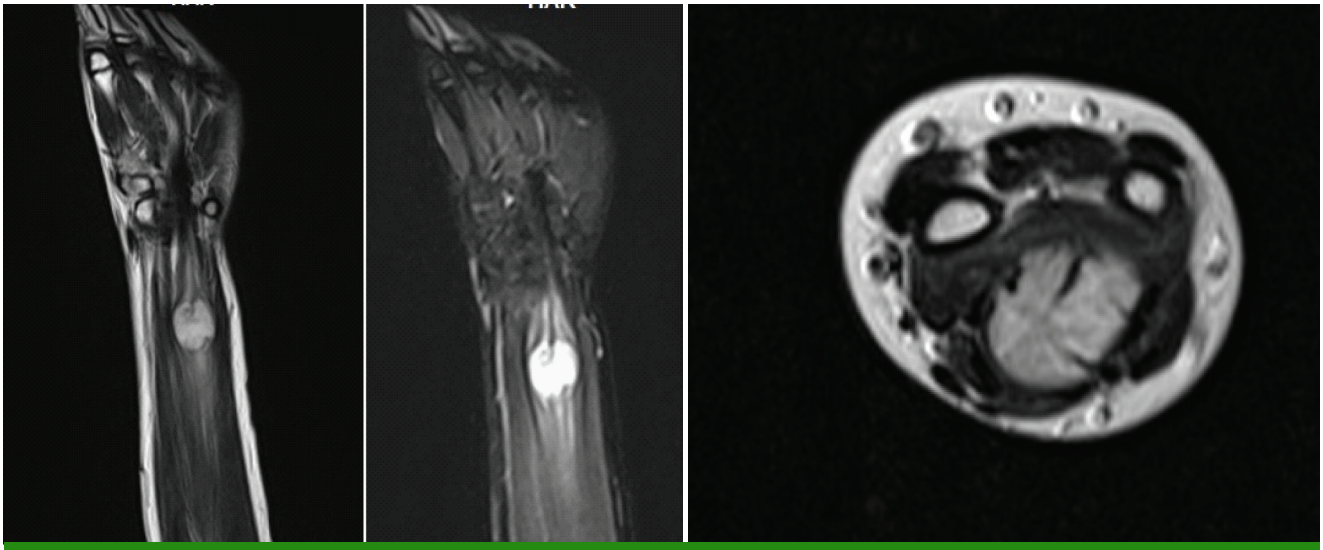
Case 1: A 9-year-old female child was brought to Pediatric out patient with history of pain in the right arm since three days. Parents also noticed that the child was keeping her right arm in peculiar position, and was not using hand for her daily activities. On enquiring the child, she complained of pain in the affected limb, which was constantly present, dull aching, diffuse, used to increase with movement of limb and partially relieved by pain killers. She had been treated by primary care physician with NSAID's, but was not relieved. There was no history of fever, pain in neck or spine, tinnitus, vertigo, diplopia, nasal regurgitation, slurring of speech, history of fall, abnormal deviation of face, weakness of any other limb or bowel bladder complaints.

On examination, there was inability to extend right wrist joint and fingers (meta carpophalangeal joint). Higher mental functions and cranial nerves were normal. There was no wasting/fasciculations/abnormal movements, sensations of fine touch, temperature were normal. Biceps and triceps jerk of both limb were normal and symmetrical. There was no lymphadenopathy or organomegaly. Ocular examination was unremarkable.

The child had past history of febrile seizures but, she was seizure free since five years and not on any medications at present. On hemogram, Hb was 12.8 gm%, with microcytic hypochromic picture, TLC of 11,800/mm^3 and platelet count of 3.15 lac. With this, provisional diagnosis of peripheral neuropathy was made and NCV (Nerve Conduction Velocity) was ordered. To our surprise, NCV turned out to be normal. Search for the cause of deformity was started and examination was again reviewed. A small swelling of size approximately 3X2 cm was found on ventral aspect of right forearm. The swelling was firm in consistency, smooth surface, non mobile, non-fluctuant, non-compressible, smooth border, tender to touch. There was no overlying erythema and local temperature was normal. This small swelling was altogether missed on first look, as parents had not noticed that swelling, and the child was unable to localize the site of pain. FNAC from the swelling was suggestive of cysticercosis. MRI brain and spine was normal. MRI of affected arm [Table/Fig-1] showed a well defined intramuscular partially calcified lesion on ventral aspect of distal forearm abutting flexor tendon with surrounding edema. What was supposed to be radial neuropathy, turned out to be spasm of flexor muscles of anterior compartment due to pseudo tumor.

Child was started on Albendazole for 21 days, steroids and NSAID's. Over next few days, spasm of flexor muscles reduced and swelling started regressing in size. On follow-up after three weeks, there was no residual deficit and the swelling had disappeared.

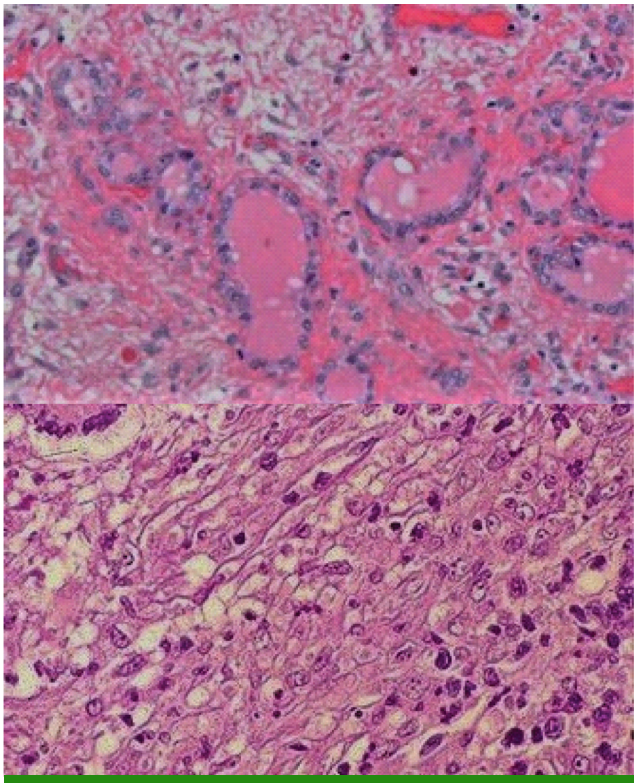
Case 2: A-10-year-old boy presented in Pediatric OPD with midline neck swelling. The swelling had been noticed for last six months. It was initially painless but from last few days, the child started complaining of pain. On examination, swelling



[Table/Fig-1]: MRI images showing well defined hyperintense lesion of cysticercosis involving flexor muscles of forearm.

was approximately 1 X 1 cm in size located just above hyoid, which was tender, firm, non fluctuant in nature. The swelling moved with deglutition and hence diagnosis of thyroglossal cyst was made. FNAC was also suggestive of throglossal cyst [Table/Fig-2]. There was no swelling in any other part of body. The child was referred to ENT specialist for excision.

Post-operative biopsy of the excised sample suggested areas of degenerated parasitic cyst and thyroglossal cyst [Table/Fig-2a,2b]. The child was referred back to Pediatric Department. IgG for cysticercosis was positive. Opthalmological examination was done which ruled out ocular cysticercosis. MRI brain, spine and neck did not reveal any additional cyst. A diagnosis of racemose cysticercosis on thyroglossal cyst was made, and anti-helmithic medications were started. On follow-up after one month, there was no residual swelling and he was completely asymptomatic.



[Table/Fig-2]: (a) Initial FNAC (above) showed thyroglossal cyst. (b) Subsequent post operative biopsy (below) showed areas of eosinophilic infiltrates.

DISCUSSION

Cysticercosis is a common disease in tropical countries, caused by encysted larvae of the tapeworm *Taenia solium*. Eating undercooked pork infected with cysticerci or vegetables contaminated by eggs of *T.solium* are cause of human cysticercosis. Cysticerci can affect any tissue of the body, most common being the brain, cerebrospinal fluid (CSF), skeletal muscle, subcutaneous tissue, or eye [1]. The clinical features of cysticercosis depend on organ involved, number and site of lesions within the organ of involvement and associated inflammation or scarring. Cysticerci have tropism for nervous system. Isolated cysticercosis without involving CNS is thought to be rare. Very few cases of isolated intramuscular cysticercosis have been reported [2-7]. Isolated muscular cysticercosis, can present as either myalgia, pseudo-tumor or abscess and rarely pseudo hypertrophy [3,7,8]. Patients with muscular cysticercosis are usually asymptomatic.

Diagnosis of soft tissue cysticerci requires Fine-needle aspiration cytology (FNAC) or biopsy. In non-invasive methods for diagnosis, USG can be done, where cysticercosis usually appears as a cyst with an eccentric echogenic scolex. On MRI, cysticercosis lesions appear hyperintense with well-defined edges and a hypointense eccentric nodule within the cyst which represents scolex. Lesions may be single or

multiple and often there is considerable perilesional edema [9]. Treatment of cysticercosis involves Albendazole with or without praziquantel. In calcified lesions, observation alone is sufficient. Steroids are started 2 to 3 days before starting anti-helminthic medications in neurocysticercosis to avoid an untoward anaphylactic reaction due to the massive release of larval antigen.

This patient presented with pseudo-tumor causing painful flexion deformity of hand. A similar adult patient previously reported with flexion deformity of ring and middle finger resembling Volkmann's contracture has been described, who was treated with excision to restore full range of movements [10]. Forearm cysticercosis leading to flexion deformity in pediatric age group has not been described in literature. The child did not require any operative procedure to restore full range of movements. The second case was a child with sudden onset enlargement of thyroglossal cyst, which was incidentally found to be due to cysticerci. This is first case report where cysticercosis involved pre-existing thyroglossal cyst.

CONSENT

Parents consent was obtained in both the cases prior to the treatment and publication.

CONCLUSION

Though solitary extra CNS cysticercosis is rare, it may involve any tissue in the body including pre-existing cysts and impose diagnostic difficulties. Only definite histopathological test can determine their etiology. Any cyst in a child residing in endemic area may turn out to be cysticercosis, and this diagnosis should always be kept in differentials for tender swelling located anywhere in body.

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FINANCIAL OR OTHER COMPETING INTERESTS: None.

Date of Publishing: **Oct 01, 2016**