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Ultrasonography for Masseter Muscle Cysticercosis

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Solitary cheek swellings can present a diagnostic dilemma. We managed two children 10 y and 8 y presenting with pain and swelling on one side of cheek for over 15 d and no constitutional symptoms. Sonography showed cysticercosis in both of them. We treated both with steroids and albendazole, with good response.

Key words: *Cysticercosis, Masseter muscle, Ultrasonography.*

Cysticercosis, the infestation with the encysted larval stage of the parasite *T. Solium* commonly infests the brain, but muscles are also often affected [1-6]. Intramuscular cysticercosis has non-specific manifestations and diagnosis can be difficult. High resolution sonography (USG) can demonstrate the classical cyst with scolex within, and is a convenient test for diagnosis [1-3]. We present two patients with solitary cheek swellings where USG helped diagnose masseter muscle cysticercosis.

CASE REPORTS

Case 1: A 10 year old girl, resident of Mumbai, was brought with a painful swelling over the right cheek for 2 months. There was no fever or other symptoms. The whole right cheek looked swollen and on palpation the swelling was tender, globular, 3 cm in diameter and felt firm in the center. We suspected a hematoma or soft tissue tumor. Blood counts were normal. High resolution ultrasonography of the swelling (***Fig.* 1**) revealed a well defined cystic mass with an eccentric echogenic nidus, the scolex, (arrow) within the masseter muscle fibers. There was surrounding edema fluid collection. An MRI of the swelling showed similar findings. We treated her with oral prednisolone 2mg/kg for 4 days and albendazole 15mg/kg for 28 days. The swelling disappeared after treatment.

Case 2: An 8 year old girl, resident of Nepal, presented with a similar, painless swelling over the left cheek for 15 days. There were no constitutional

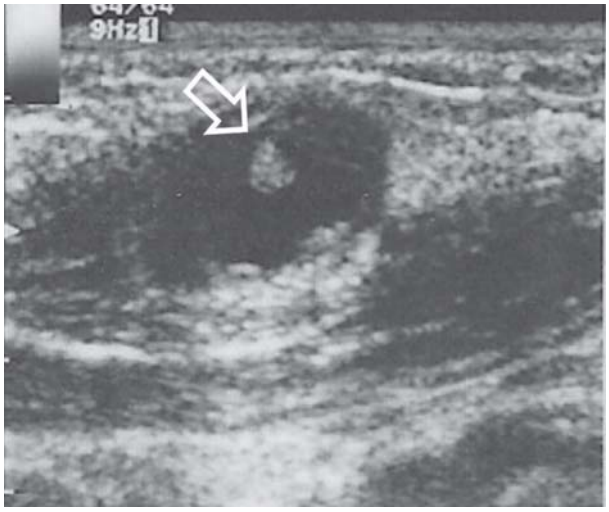

FIG.1 *Ultrasonography of masseter showing a cystic mass and an eccentric echogenic nidus (arrow) suggestive of scolex.*

symptoms and blood counts were normal. Clinically, the swelling was 2 cm in diameter, firm, tender and mobile. High resolution ultrasonography revealed a 1.1 cm cystic mass with an eccentric scolex. There was no perilesional edema. We did not do a MRI. We treated her with steroids and albendazole. The swelling reduced after treatment and repeat sonography showed reduced size of cyst and absence of the scolex.

DISCUSSION

Diagnosis of intramuscular cysticercosis is difficult solely on a clinical basis as the manifestations are not specific and lesions may be confused with lipoma, fibroma, neurofibroma or intramuscular abscess [4]. Serological diagnosis using ELISA has >90% sensitivity and specificity and is positive in persons with many parenchymal cysts. However cases with solitary lesions (like both our patients) or old calcified disease may not have detectable antibodies [7]. Fine needle aspiration cytology has been extensively used for diagnosis of intramuscular cysticercosis. However, it is a invasive test and a blind procedure and in some cases the aspirated smears are non-specific [8]. This test has low sensitivity, is invasive, expensive and time consuming.

Plain radiography rarely shows cysticerci in the active phase, but show calcified lesions in chronic cases [2]. Calcified intramuscular cysticerci appear as millet shaped elliptical lesions in the soft tissue parallel to muscle fibres [4]. Plain *X*-ray in a patient with a solitary cyst has a poor yield. MRI is extensively used for diagnosing neurocysticercosis where it can clearly show the cyst with the scolex within [7].

High resolution sonography provides all information available with MRI, and more with regards to muscle pathology [9]. The diagnostic feature of a cysticercus granuloma is the presence of an oval or rounded well defined hypoechoic cystic lesion with smooth walls and an eccentric hyperechoic nidus representing the scolex within [1]. The cyst, particularly the scolex, may be better visualized by USG than MRI, in muscular lesions [4]. The radiological appearances and clinical features correlate with the stage of maturation of the disease. When the parasite is alive, in the initial stage of the disease, the cyst is small, without perimeter enhancement, as seen in our second patient. The patient may or may not be symptomatic [4]. In later stages, a homogenous hypoechoeic soft tissue lesion around the characteristic cyst corresponds to leakage of fluid on death of the parasite [1]. This elicits an intense inflammatory response in the tissues. This may at times be mistaken for an intramuscular abscess, but the characteristic cyst with scolex clinches the diagnosis. The patient is symptomatic at this stage and may have waxing and waning swelling [4]. Our first patient had similar clinical and USG findings.

At times the scolex within the cyst may not be seen and the cyst may appear irregular with minimal fluid on one side indicating a leakage of fluid. It may be due to escape of the scolex to outside the cyst [1]. A careful search in the inflammatory fluid for the scolex, will be fruitful. An elliptical calcified lesion in the muscle along the muscle fiber is the final stage. The patient is usually asymptomatic at this stage [4].

USG done in both patients had clearly shown the cyst with its characteristic scolex. MRI done in the first patient did not add new information, so we did not do this expensive test in the second child. Both of them responded well to conservative treatment.

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Cyclical Vomiting Syndrome with Bilateral Epileptiform Discharges

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Cyclical vomiting syndrome is a paroxysmal, condition characterized by recurrent severe episodes of vomiting lasting for hours to days, with variable intervals of normal health in between with no apparent cause of the vomiting. We hereby report a 10yr old girl with cyclical vomiting syndrome with multiple, bisynchronous occipitally predominant, bilateral epileptiform discharges representing a diagnostic confusion.

Key words: *Cyclical vomiting, Occipital spike, Panayiotopoulos syndrome.*

We report a girl with cyclical vomiting syndrome with multiple, occipitally predominant, bilateral epileptiform discharges representing a diagnostic dilemma. Although there are multiple reports of epileptiform discharges with migraine, we believe that cyclical vomiting syndrome with epiletiform discharges represents an unusual clinical situation.

CASE REPORT

A 10-year old girl born of a non-consanguineous marriage presented with complaints first noticed since 5 years of age. She had paroxysmal stereotyped episodes starting with feeling of uneasiness, nausea and abdominal pain, followed by repeated episodes of non-bilious, non-projectile vomiting about 40-50/day. The episodes usually continued for few hours to 3-4 days (ranging from only transient feeling of nausea relieved by anti-emetics to vomiting episodes lasting for 10-15 days). She had multiple episodes of dehydration due to vomiting warranting parenteral fluid resuscitations. Occasional mild non-specific headache occurred after prolonged episodes of vomiting. These paroxysms were precipitated by