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CEREBRAL HYDATID CYST IN A YOUNG MALE: A CASE REPORT.

Neurosurgery

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ABSTRACT

Hydatid disease is a rare parasitic disease caused by the larval stage of Echinococcus granulosus. It is endemic in many areas including the Middle-East and the Mediterranean countries. It mainly affects the liver and the lungs but can rarely affect other organs including the brain (Neurohydatidosis). Intracranial hydatid cysts account for 0.5-3% of all the cases of hydatid disease and contribute to 1-2% of all the intracranial space occupying lesions. We report a case of an 18 year old male who came with a complaints of headache and seizure and was found to have intracranial hydatid cyst arising in right parieto-occipital lobe.

KEYWORDS

Cerebral hydatid cyst, neurohydatidosis, hydatid disease.

***Introduction*:**

Hydatid disease is caused by the infestation of the larvae of taenia echinococcus. The definite hosts of echinococcus are various carnivores, the common being the dog. All mammals (more often being sheep and cattle) are intermittent hosts. Humans are accidental host and get infected through the faeco-oral route by ingestion of food or milk contaminated by dog faeces containing ova of the parasite or by direct contact with dogs. The eggs lose their enveloping layer in the stomach, releasing the hexacanth embryos. The embryos pass through the wall of the gut into the portal system and are carried to the liver where most larvae get entrapped and encysted. Some may reach the lungs and occasionally, some may pass through the capillary filter of the liver and lungs and get entry into the systemic circulation and thus reach the central nervous system. In India, hydatid disease is more commonly seen in the Kurnool district of Andhra Pradesh, Madurai district of Tamil Nadu and in Punjab [1]. Various series of intracranial hydatid from India have reported its incidence as 0.2% of all intracranial space occupying lesions.[1,2]

Case report: 18 year old male came with a chief complaints of generalised headache since 15 days with one episode of generalised tonic clonic convulsion and no significant past history. Neurological assessment was normal. CT Brain was suggestive of cystic space occupying lesion in right parieto-occipital lobe. MRI Brain with contrast showed well defined non enhancing large unilocular cystic lesion in right parieto-occipital lobe measuring (8.5× 8cm) causing moderate mass effect and midline shift (figure 1a and b). There was no perilesional edema, no enhancement after Gadolinium injection nor hemorrhage or calcification.

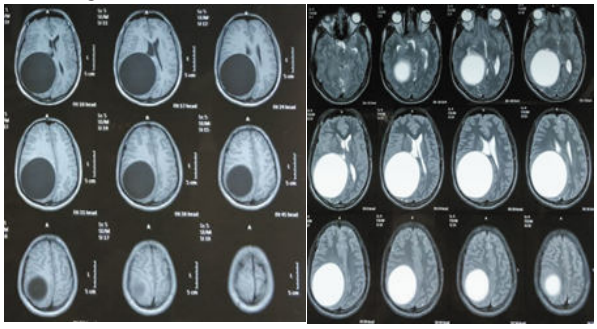

Figure 1(a and b) T1, T2 images of MRI Brain showing intra axial cystic lesion in right parieto-occipital lobe.

Ultrasound of abdomen and pelvis, chest x-ray and routine laboratory investigations were normal. Later patient gave history of rearing cows and drinking cow's milk.

Patient underwent right parieto-occipital craniotomy with excision of the cyst and utmost care to avoid its rupture using Dowling-Orlando technique (insufflation of saline between cyst wall and brain parenchyma causing spontaneous expulsion of cyst) (figure 2a and b). Patient had no post-operative complication. The histopathology of the excised cyst revealed hydatid cyst. Albendazole 400mg twice a day was initiated for one month period in addition to antiepileptic drugs (Tab. Levetiracetam 500mg twice a day).

Patient was followed up at 3, 6 and 12 month and was asymptomatic.

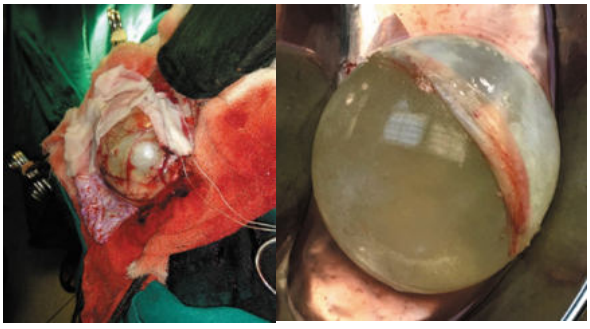

Figure 2 (a and b): Intra operative images on opening of dura and excision of Cyst using Dowling technique

***DISCUSSION*:**

Intracranial hydatid disease is rare, with reported incidence of 1-2% of all cases with hydatid disease [3]. Cerebral hydatid disease is more common in paediatric population and this high incidence in children is probably related to patent ductus arteriosus [1, 4, 5]. History of direct contact with dogs is not available in all the cases, as infection can be acquired by eating contaminated food and milk. Intracranial hydatid cysts are more frequently located in the supratentorial compartment. The parietal lobe is the commonest site and was seen in our case [6,7]. The other less common sites reported are skull, cavernous sinus, eye ball, pons, skull, extradural, cerebellum and ventricles [5, 7, 8]. The cerebral hydatid cysts are slow growing and present late when they increase in size and become large. There is no consensus on the growth rate of the hydatid cysts of the brain and has been variably reported between 1.5-10 cm/year [1,9].

Intracranial hydatid cysts are commonly solitary. Multiple intracranial cysts are rare [4] Intracranial hydatid cyst may also be classified as primary or secondary. The primary cysts are formed as a result of direct infestation of the larvae in the brain without demonstrable involvement of other organs. The primary cysts are fertile as they contain scolices and brood capsules, hence rupture of primary cyst can result in recurrence. The secondary multiple cysts results from spontaneous, traumatic or surgical rupture of the primary intracranial hydatid cyst and they lack brood capsule and scolices. The secondary intracranial hydatid cysts are therefore, infertile and the resultant risk of recurrence after their rupture is negligible. Primary multiple cysts are uncommon .[10] Patients with intracranial hydatid cysts usually present with focal neurological deficit and features of raised

intracranial pressure. MRI and CT scans characteristically show hydatid cyst as a spherical, well defined, non-enhancing cystic lesion without peripheral edema [8]. The fluid density is generally equal to that of CSF on both CT and MR scan. A fine rim of peripheral enhancement with perilesional edema may be seen in the presence of active inflammation. The treatment of hydatid cyst is surgical and the aim of surgery is to excise the cyst in total without rupture to prevent recurrence and anaphylactic reaction. Various surgical options as summarized by Arana-Iniquez [13] include, puncture and aspiration of the cyst fluid through a small hole in the cyst wall, cortical incision over cyst and expulsion of hydatid cyst by insufflation of air in the contra lateral ventricle and the most commonly done procedure designed to give birth to the intact cyst by irrigating saline between cyst wall-brain interface (Dowling technique). This is possible because of minimal adhesions around the cyst wall. Isolated case reports showed complete disappearance of multiple intracranial hydatid cysts with Albendazole therapy in a daily dose of 10 mg/kg, taken three times a day for four months. There is better effectiveness of the drug therapy in recurrent cases and in cases with rupture at the surgery.[13]

CONCLUSION:

Neurohydatidosis is a rare entity and should be considered in the differential diagnosis of intracranial cysts. Although it is more common in children it can also affect adults. MRI is superior in diagnosis and in pre-operative assessment. Serological tests are supportive in diagnosis and could be normal. Surgical excision with utmost care followed by medical treatment with Albendazole seems to be the most effective regimen.

DECLARATION:

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