

Hydatid Cyst of Brain: A Case Report

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ABSTRACT

Hydatid disease is caused by the infestation of the larvae of *Taenia echinococcus*. Intracranial hydatid cyst is a rare disease, with reported incidence of 1-2% of all cases with hydatid disease. We report a 26 years old female patient presented to us with various typical neurological signs and symptoms. Magnetic resonance (MR) imaging of the brain with contrast study was suggestive of a large multi-cystic lesion in left parieto-occipital region most likely hydatid cyst.

Hydatid cyst can occur in any organ or tissue of the body including brain and orbit, the bone and brain are the fourth common site of involvement after liver, lungs and peritoneum. The treatment of hydatid cyst is surgical, and the aim of surgery is to excise the cyst in toto without rupture to prevent recurrence and anaphylactic reaction.

A high index of suspicion with early diagnosis and proper management can prevent life threatening consequences of

Hydatid cyst even in adult patients.

Keywords: Hydatid Disease, Brain, Excision, Diagnosis.

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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 get infected through the feco-oral route by ingestion of food contaminated by dog feces containing ova of the parasite or by direct contact with dogs.

Intracranial hydatid cyst is a rare disease, with reported incidence of 1-2% of all cases with hydatid disease. Cerebral hydatid disease is more common in pediatric population but we report an adult female patient with the said disease.

CASE PRESENTATION

A 26 years old female patient presented to us with complaints of headache for last 6 months, after which patient started tingling & numbness over right side of body associated with slurring of speech. On physical examination, she was having right sided sensory disturbances. Magnetic resonance (MR) imaging of the brain with contrast study [Figure 1 and 2] were suggestive of a large multi-cystic lesion in left parieto-occipital region. Lesion was removed by a large left parieto-occipital craniotomy. Due to large size, in toto removal was not possible. Cyst wall was punctured;

multiple daughter cysts removed one by one [Figure 3]. After intra cystic decompression, laminated membrane was removed by irrigating warm saline between cyst wall and brain interface. Histo-Pathological examination confirmed it as hydatid cysts. X-ray chest and USG of abdomen failed to show any lung or liver lesions. Post-operative course was uneventful and patient discharged without any neurological deficit.

DISCUSSION

Hydatid cyst can occur in any organ or tissue of the body including brain and orbit, the bone and brain are the fourth common site of involvement after liver, lungs and peritoneum. It is caused by the larval stages of *echinococcus granulosus*. Paediatric age group of 7–14 years is the common age period. 80% of reported cases were children of 8–10 years. Cerebral hydatid cyst commonly occurs in children and young adults Brain involvement with hydatid disease occurs in 1–2% of all *Echinococcus granulosus* infections.

Cerebral hydatid cysts are usually supratentorial, whereas infratentorial lesions are quite rare.¹⁻³

Intracranial hydatid disease is rare, with reported incidence of 1-2% of all cases with hydatid disease. Hydatid disease is endemic

in the middle east, Mediterranean countries, South America, North Africa and Australia. 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.⁴⁻⁶ Intracranial hydatid cyst may be classified as primary or secondary. Primary cysts are formed as a result of direct infestation of the larvae in the brain without demonstrable involvement of other organs. Lack of effective immune system in the brain, special architecture of brain tissue, patent ducts arteriosus and patent foramen ovale have been the proposed factors for isolated cerebral hydatid disease. In our case, echocardiography revealed no abnormality. The patients with intracranial hydatid cysts usually present with focal neurological deficit and features of raised intracranial pressure; the latter may be due to large size or interference with pathway of CSF flow.

Magnetic resonance scans characteristically show a spherical, well defined, non-enhancing cystic lesion without peripheral edema. The fluid density is generally equal to that of cerebro spinal fluid on both CT and MR scan.

The treatment of hydatid cyst is surgical, and the aim of surgery is to excise the cyst in toto without rupture to prevent recurrence and anaphylactic reaction.

Dowling-Orlando technique remains the preferred method, in which the cyst can be delivered by lowering the head of the operating table and instilling warm saline between the cyst and the surrounding brain parenchyma. This is possible because of minimal adhesions around the cyst wall.⁷

Only a few reports are available mentioning the efficacy of drug therapy. Isolated case reports⁸, 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.⁹

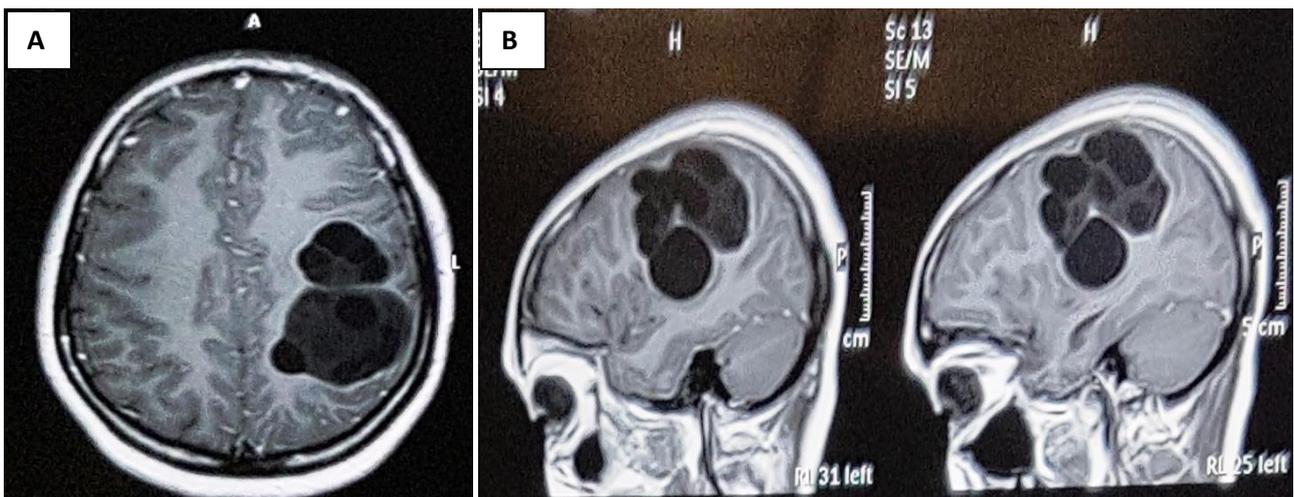


Fig 1(A) & (B): [Both Axial & sagittal T1 images showing multicystic with peripheral ring like enhancement.]



Fig 2: Cyst with hypointense rim.



Figure 3(A): Intraoperative photograph

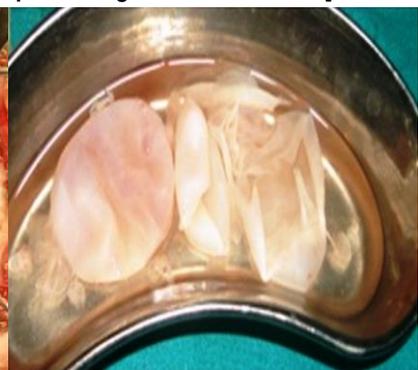


Fig 3(b): Multiple cysts removed

CONCLUSION

Incidence of primary hydatid cyst of brain is very rare in adults. Patent ductus arteriosus and patent foramen ovale have been the proposed factors. In our cases, larvae might have passed through the capillary filter of the liver and lungs, entered into the systemic circulation and reached the brain. Aim should be in toto removal of the cyst. Sometimes because of large size, it is not possible, in that case intracystic decompression followed by removal of cyst wall by gentle traction and saline irrigation between cyst wall brain interfaces is a better option. A high index of suspicion with early diagnosis and proper management can prevent life threatening consequences of Hydatid cyst even in adult patients.

REFERENCES

1. Akdemir G, Dağlıoğlu E, Seçer M, Ergüngör F. Hydatid cysts of the internal acoustic canal and jugular foramen. *Journal of Clinical Neuroscience* 2007; 14(4):394–6.
2. Ciurea AV, Fountas KN, Coman TC, Machinis TG, Kapsalaki EZ, Fezoulidis NI, et al. Long-term surgical outcome in patients with intracranial hydatid cyst. *Acta Neurochir (Wien)* 2006;148:421–6.
3. Onal C, Erguvan-Onal R, Yakinci C, Karayol A, Atambay M, Daldal N. Can the requirement of a diversion procedure be predicted after an uncomplicated intracranial hydatid cyst surgery? *Pediatr Neurosurg* 2006; 42(6):383–6.

4. Dharker SR: Hydatid disease. In: Text Book of Neurosurgery, Second edition. Eds. Ramamurthi B, Tandon PN. Churchill Livingstone, New Delhi 1996; 535-544.
5. Erashin Y, Mutluer S, Guzelbag E: Intracranial hydatid cysts in children. Neurosurgery 1993; 33: 219-224.
6. Onal C, Orhan B, Metis O et al. Three unusual cases of intracranial hydatid cysts in paediatric age group. Pediatr Neurosurg 1997; 26 : 208-213.
7. Satya Bhusan Senapati, Deepak Kumar Parida et al. Primary hydatid cyst of brain: Two cases report; Asian J Neurosurg. 2015 Apr-Jun; 10(2): 175-76.
8. Singounas EG, Laventis AS, Sakas DS et al. Successful treatment of intracerebral hydatid cysts with albendazole: Case report and review of literature. Neurosurgery 1992; 31: 571-74.
9. Todorov T, Vutova K, Petkov D: Albendazole treatment of multiple cerebral hydatid cysts: a case report. Trans R Soc Trop Med Hyg 1988; 82: 150-52.

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