HYDATED CYST IN AN ADOLESCENT BOY

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Although sheep are common intermediate host of *Echinococcus granulosa,* human beings accidentaly become host as a result of ingestion of eggs in the contaminated food or by allowing the pet animals to lick their hands and face. Larvae which develop in the intestine penetrate it to reach the kidney, lungs or brain via the blood stream and form cysts. On CT, it appears as a large rounded non-enhancing lesion. Recently, we came across a case with a small patch of thickened wall which enhanced on contrast administration mimicking a small nodule of glioma, because of this rare manifestation, it is being reported.

Case Report

An adolescent boy was admitted with complaints of headache, weakness of right side of body, impaired vision and difficulty in speaking of one year duration. Onset was slow and course gradually progressive. Fifteen days prior to admission, he had vomiting lasting for 7 days.

The patient was of average build and nutrition. He was conscious and dysphasic. Fundus revealed gross bilateral papilliedema. There was right 6th and 7th nerve paresis. Tone was increased on the right side and right hemiparesis was present. There was no sensory deficit.

Investigations revealed a hemoglobin of 12 g/dl, TLC 9400/cu mm, DLC P50, L42, M1 and E7. CT scan showed a large rounded cystic mass in the left frontoparietal region with enhancement of the portion of the wall (*Fig. 1*).

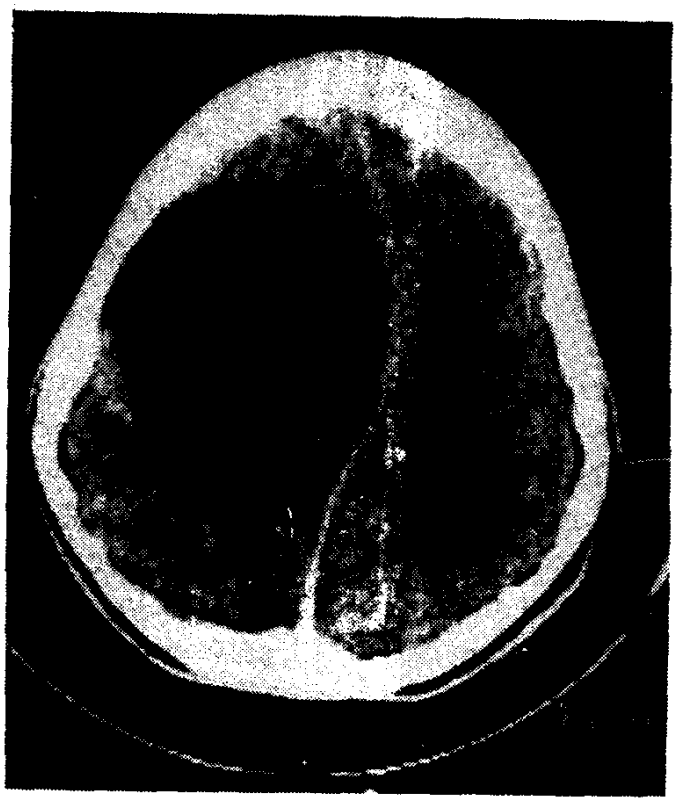

Fig. 1. Computerized tomography showing a large spherical frontoparietal cystic mass with a small area of enhancement (Arrow). Falx is deviated towards right.

Left frontoparietal craniotomy revealed a large cyst reaching the surface (*Fig. 2*). It contained clear fluid and while

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Fig. 2. Peroperative photograph showing a large cyst at the surface with a thickened patch in the lower left corner.

delivering it intact by hydraulic dissection it ruptured at the last stage of delivery. Cyst fluid was sucked away and the wall was removed *in toto*. A thickened patch was seen in the wall at an area corresponding to enhancement of CT. Specific gravity of cystic fluid was 1.010, protein content 1.089 g/dl and it was acellular.

Histopathology examination revealed an outer laminated layer with lining of germinal epithelium. There were numerous broad capsules with scolices.

Post-operative, he has been relieved of symptoms. Post-operative CT done after 12 weeks revealed thin layer of subdural effusion and expansion of brain.

Discussion

About 2% of the cases of hydatid disease involve the central nervous system(1,2). This is the only pediatric case seen by us during the last 11 years, although disease is more commonly seen in children than adults in endemic areas(2). Few cases have been reported from India(3-9). Cysts are usually seen in the distribution of middle cerebral artery territory and contain infective scolices.

The usual symptoms are headache, visual deterioration and focal seizures. Cerebral hydatid cysts often attain a large size in children before manifesting clinically because of slow evolution and expansile nature of the skull.

Usually the hydatid is single and rarely multiple; multiplicity may follow rupture of the primary cyst in the heart or head injury(9-10). In many of the cases, associated cyst may be seen elsewhere in the body(11).

Plain *X*-ray skull usually reveal nonspecific signs of raised intracranial pressure. Casoni's test and other serological tests that are frequently positive with the involvement of other organs of the body are usually negative and of no help in the diagnosis of isolated infestation of the central nervous system(2). CT findings include a large intraparenchymal low attenuating mass, spherical in shape with a well defined border having fluid with an absorption value equal to that of cerebrospinal fluid. There is always a significant ventricular displacement. Cyst wall does not enhance. Rim enhancement has been reported in some cases due to meningeal adhesions(5,12). In our case also, there was rim enhancement at one place and corresponding to the area of enhancement, there was thick patch in the wall which on histopathology revealed mere thickening of the wall without any evidence of infection.

Hydatid cyst can be differentiated from brain abscess by the absence of perifocal edema and ring enhancement(13,14) and from tumor by the absence of perifocal edema and usual solid component. Arachnoid cyst is differentiated by irregularity of its border(15).

Therapy consists of total extirpation of the cyst by no touch technique which deliv-

ers the cyst intact(2). Surgery should be followed by antihelmintic therapy with mebendazole in order to avoid systemic infection.

Hydatid cysts grow at a rate of one cm per year in adults but they appear to grow faster in children(1,16).

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REFERENCES

1. Arana-Iniguez R Echinococcus : Infections of the Nervous System, Part III. *In:* Handbook of Clinical Neurology, Vol. 35. Eds. Vinken PJ, Bruyn GW Amsterdam, North Holland, 1978, pp 175-208.
2. Cerrea R, Dowling E Jr, Guevara JA. Surgical treatment of hydatid cysts of the central nervous system in pediatric age (Dowling's technique). Child's Brain 1975, 1: 4-21.
3. Balasubramanian V, Ramanujam PB, Ramamurthi B. Hydatid disease of the nervous system. Neurol India 1970, 18 (Suppl I): 92-95.
4. Dharker SR, Dharker RS, Vaishya ND, Sharma ML, Chaurasia BD. Celebral hydatid cysts in central India. Surg Neurol, 8: 31-34.
5. Mani A, Manoharan S, Srinivasan K. Hydatid cyst simulating cystic astrocytoma on CT. Neurol India 1989, 37: 287-289.
6. Mathuriya SN, Khosla VK, Kak VK, Sharma BS. Multiple intracranial hydatid cysts. Neurol India 1987, 35: 163-168.
7. Reddy DR, Murthy JMK< Rao BS, Chandrasekar M, Vivekananda T, Anandavalli TE. Computerized Tomography in cerebral hydatid disease. Neurol India 1984, 32: 39-41.
8. Sharma A, Abraham J. Multiple gaint hydatid cysts of the brain. J Neurosurg 1982, 57: 413-415.
9. Virani MJ, Wagh SS, Palande DA. Secondary hydatidosis with primary cyst in the heart.. Neurol India 1982, 30: 163-165.
10. Griponissiotis B. Hydatid cyst of the brain and its treatment. Neurology 1957, 7: 789-792.
11. Arana-Iniguez R, Lopez-Fernandez JR. Parasitosis of the nervous system with special reference to echinococcosis. Clin Neurosurg 1967, 14: 123-144.
12. Abbassioun K, Rahmat H, Ameli NO, Tafazoli M. Computerized tomography in hydatid cyst of the brain. J Neurosurg 1978, 49: 408-411.
13. Lott T, Gammal T, Dasilva R, Hanks D, Reynolds T. Evaluation of brain and epidural abscess by computed tomography. Radiology 1977, 122: 371-376.
14. New PRJ, Davis KR, Ballantine HT Jr. Computed tomography in cerebral abscess. Radiology 1976, 121: 641-646.
15. Banna M. Arachnoid cysts on computed tomography. Am J Roentgenol 1976, 127: 979-982.
16. Vaqureo J, Jimenez C, Matinez R. Growth of hydatid cysts evaluated by CT scanning after presumed cerebral hydatid embolism. J Neurosurg 1982, 57: 837-838.