INTRAVENTRICULAR AND INTRAPARENCHYMAL HYDATID CYSTS: AN UNUSUAL SITE OF ECHINOCOCCOSIS AND A RARE CAUSE OF CHILDHOOD SEIZURE

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ABSTRACT

11 years old vitally stable boy presented with the history of seizure 1 week back; underwent MRI examination to look for any possible cause of seizure; however, MRI revealed a large left lateral and 3rd ventricular and smaller left posterior parietal hydatid cysts. Subsequently, the patient underwent surgery and hydatid cysts were successfully removed.

Introduction

CNS hydatid disease is an uncommon site of echinococcus involvement, it usually affects the paediatric population. The most common site of CNS involvement is parietal lobes in the territory of middle cerebral artery; involvement of cranial vault, posterior fossa, brain stem and rarely ventricles can also be seen. The CNS involvement of hydatid disease can be primary or secondary depending upon the structure, origin and fertility of cyst.[1,2] Primary cysts are more common and arise as a result of direct CNS invasion by larvae; whereas, secondary cysts are infertile and arise as a result of dissemination from rupture of primary cyst in any other organ.

Case Report

We present here a case of an 11-year-old boy who presented with history of seizure 1 week back. On examination, he was vitally stable, afebrile and his GCS was 15/15. He underwent routine Chest X-ray which was normal, and MRI to look for the cause of seizure. MRI revealed multiple well defined rounded cysts of varying sizes in left lateral and 3rd ventricles without any solid component or post contrast enhancement within the cyst, internal septation was seen in some of the cysts. There was associated moderate obstructive hydrocephalus and periventricular seepage. A small well defined rounded cyst was also seen in the left posterior parietal region. These findings were consistent with intraventricular and intraparenchymal hydatid cysts. The patient was later subjected to ultrasound examination to look for any other common site of involvement which turned out to be normal. So on the basis of these findings, surgery was planned and patient underwent left frontoparietal craniotomy with successful excision of hydatid cysts and duroplasty.

Discussion

Echinococcosis or hydatidosis most commonly occurs due to infection caused by larva[1] of Echinococcus granulosus (a tapeworm), and less commonly by Echinococcus alveolaris or multilocularis. The infection

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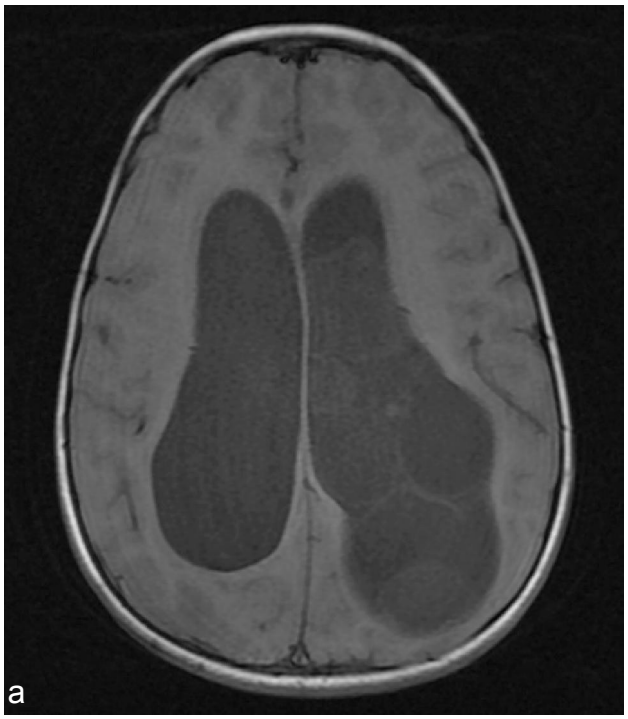

Figure 1a: Axial T1WI showing multiple well defined rounded cysts of varying sizes in left lateral ventricle without any solid component within the cyst and associated moderate hydrocephalus

Figure 1b: Axial T2WI showing multiple well defined rounded cysts of varying sizes in left lateral ventricle without any solid component within the cyst, internal septations can be seen in some of the cysts. There is associated moderate hydrocephalus.

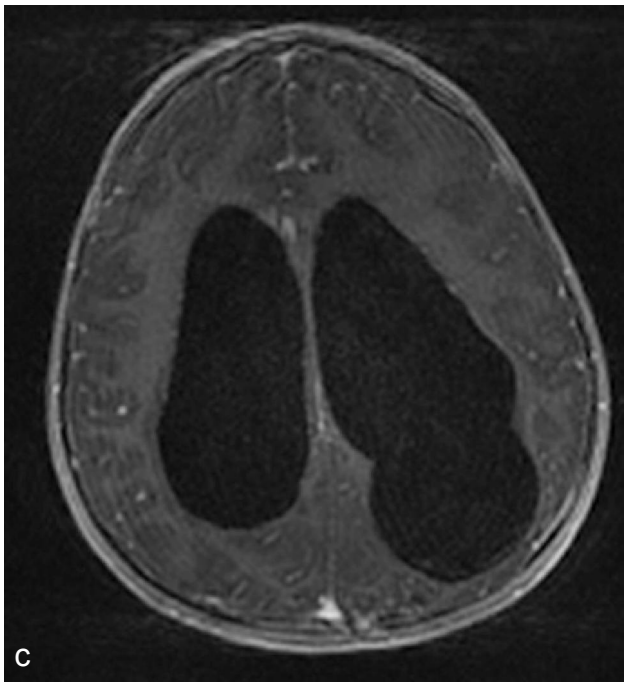

Figure 1c: Axial T1 post contrast, showing multiple well defined rounded cysts of varying sizes in left lateral and 3rd ventricles without any solid component or post contrast enhancement within the cyst, internal septations. There is associated moderate hydrocephalus.

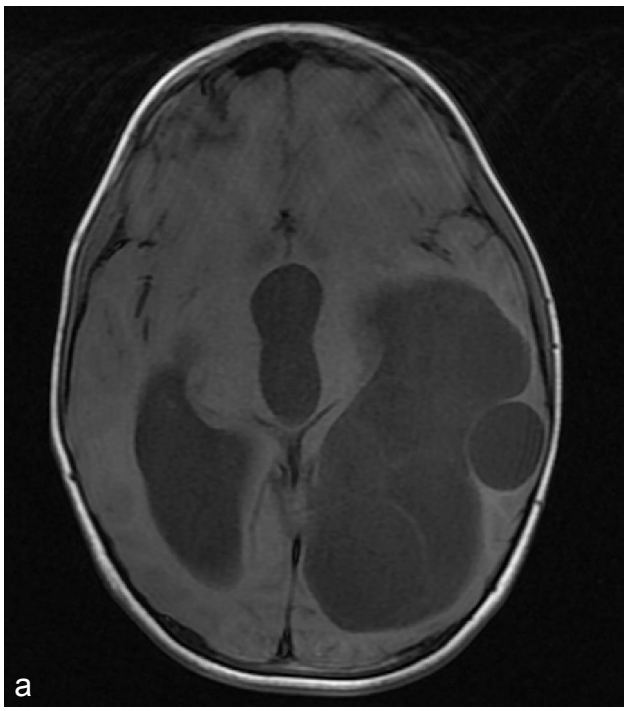

Figure 2a: Axial T1WI showing multiple well defined rounded cysts of varying sizes in left lateral and 3rd ventricles without any solid component with associated moderate hydrocephalus and a small well defined rounded cyst was also seen in the left posterior parietal region.

Figure 2b: Axial T2WI showing showing multiple well defined rounded cysts of varying sizes in left lateral and 3rd ventricles without any solid component with associated moderate hydrocephalus and a small well defined rounded cyst was also seen in the left posterior parietal region.

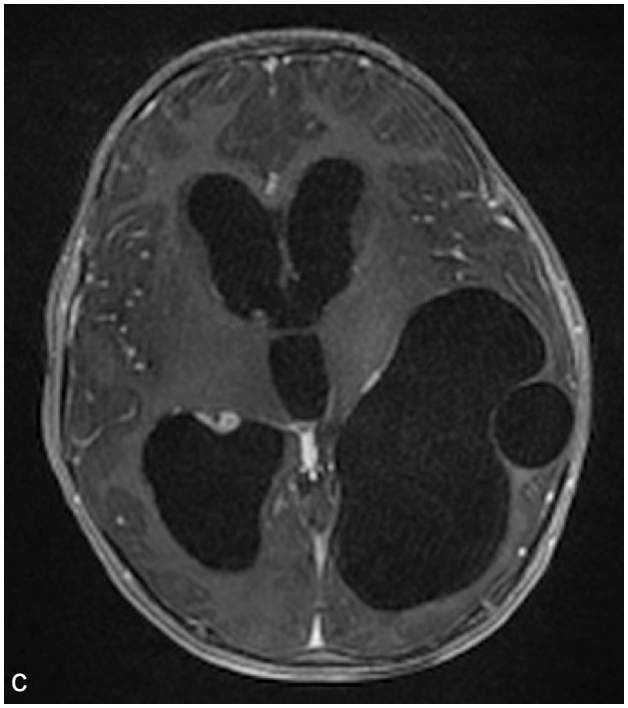

Figure 2c: Axial T1 post contrast showing multiple well defined rounded cysts of varying sizes in left lateral and 3rd ventricles without any solid component or enhancement and associated moderate hydrocephalus and a small well defined rounded cyst was also seen in the left posterior parietal region.

Figure 3: sagittal T2WI showing multiple well defined rounded cysts of varying sizes in left lateral and 3rd ventricles without any solid component with associated moderate hydrocephalus.

is transmitted by consumption of contaminated milk and food with eggs of Echinococcus, or sometimes by direct contact with dogs which is a definite host of this parasite. Once into the gut, the eggs hatch to release oncospheres which then enter the portal circulation from the intestine after hepatic filtration. The most common organ to be affected by these parasites is Liver followed by lungs. The other abdominal viscera, intestines, subcutaneous tissues, muscles, bones, spine, retroperitoneum and CNS can also be affected.

The CNS hydatid disease also called neuro hydatidosis also called neuro echinococcosis is very rare with an incidence of only 0.5-3% of human hydatid disease[3] and accounts for only 1-2% of space occupying intracranial lesions.[4] The most common site of intracranial involvement is the parietal lobes in middle cerebral artery territory.[5] Other lesser frequent sites within the CNS are skull, cavernous sinus, brainstem, cerebellum, eye globes and very rarely ventricles.[1] Neurohydatidosis usually affects paediatric population with late presentation due to slow growth of the cyst ranging approximately from 15 mm to 100 mm per year,[1,5] open sutures and elastic skull bones.6 Patients usually present with headache, focal neurological deficits, hydrocephalus, raised intracranial pressure, papilloedema, vision

loss, altered mental status and rarely seizures.[3,7] MRI is considered imaging modality of choice which shows well defined cystic lesion isointense to CSF on all pulse sequences without calcification or solid enhancing component usually in the territory of middle cerebral artery. Definitive management of cerebral hydatid cyst is to completely remove the cyst by Dowling-Orlando technique like in our case. Sometimes patients with neuro hydatidosis who are ineligible for surgery or in recurrent cases are treated with albendazole alone or in combination with praziquantel.[1,3,4]

Conclusion

CNS hydatid disease though uncommon but can present with seizures and should be kept in differentials specially in patients belonging to endemic areas as timely diagnosis and appropriate management will reduce the associated complications leading to increased morbidity/mortality associated with this entity.

Conflict of Interest: None

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