Clinical Image

Unusual Presentation of Multi-organ Hydatid Cysts in a Child

Cam et al. Unusual Presentation of Multi-Organ Hydatid Cysts

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A nine-year-old boy with headache, left-sided diplopia, impaired speech and nausea presented to the pediatric clinic. His leukocyte count was 14100/μL with eosinophilia of 21.7%. Cranial magnetic resonance imaging (MRI) demonstrated a 7x6 cm cyst in the left parietal region with some mass effect over the adjacent structures and minimal perilesional edema. The lesion was solitary, homogeneous and spherical, with well-defined borders and no contrast enhancement. (Figure 1a). The initial radiological diagnosis was hydatid disease (HD). Subsequent thoracic radiography showed multiple, well-delineated, round opacities (Figure 1b). Multiple cystic lesions were also detected in the liver on abdominal MRI and ultrasound (US) (Figure 1c). Echinococcal enzyme-linked immunosorbent assay, indirect hemagglutination and hydatid cyst antibody were positive, confirming the diagnosis of HD. Oral albendazole was started at 400 mg together with 4x3mg of intravenous decor for perilesional edema associated with the brain lesion. Seven days after presentation the brain cyst was surgically removed without complication. Pathology was consistent with cerebral hydatid cyst. Albendazole was continued at 10 mg/kg/day. After 56 months of treatment, follow-up images at the lesion sites were obtained. Brain MRI revealed encephalomalacic changes at the surgical site but no recurrence of hydatid cyst was detected (Figure 2a). Total regression in both the lungs (Figure 2b) and liver (Figure 2c) was seen with no recurrence of hydatid cyst. Informed consent for publication was obtained from the family.

This case describes a very rare presentation of HD. Only 1% of cases of HD involve the central nervous system, with the lesions usually being adjacent to the middle cerebral artery (1). HD accounts for only 1-2% of pediatric cerebral space-occupying lesions (2) and the most common symptoms associated with primary intracranial cysts include headache, papilledema, diplopia, nausea and vomiting, some of which were present at presentation in this case. Symptoms due to increased intracranial pressure may also manifest (2). HD usually involves the liver (50-70%), less commonly the lungs (20-30%) and cysts have been reported in other tissues including heart, genitourinary system, soft and skeletal tissues. HD typically demonstrates characteristic imaging findings (1,3). Additional diagnostic testing should include serological testing which is not diagnostic, having a variable sensitivity ranging from 50-98% (3,4). Thus negative serological tests do not exclude HD. Albendazole therapy was started, as it has been suggested that this can reduce recurrence of the disease (2,3).

In order to diagnose HD, abdominal US and chest X-ray should be performed to investigate liver and lung. Computed tomography and MRI are useful techniques for diagnosis of disseminated disease. Serological tests are helpful, but not diagnostic, and can not exclude HD. Management of disseminated HD is complex and requires a multidisciplinary approach. Albendazole therapy should be initiated because of its efficacy in preventing HD recurrence.
References


FIG. 1. a-c. Images of the case at presentation: Cranial MRI T2-weighted axial image demonstrated a large hydatid cyst with perilesional edema (a). Chest X-ray showing multiple hydatid cysts (b). T2-weighted axial image at the level of the liver showed multiple hydatid cystic lesions (c).

FIG. 2. a-c. Repeat images after 56 months of albendazole therapy: Encephalomalacic changes are seen at the site of surgery on postoperative T2-weighted axial image (a). Chest X-ray showing complete regression of hydatid cysts (b). T2-weighted axial image of the liver with total regression of hydatid cysts (c).