



ORIGINAL ARTICLE

# Hydatid disease in children: Our experience



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## KEYWORDS

cattle rearing;  
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hydatid cyst;  
pediatric;  
unusual sites

**Summary** *Background/Introduction:* Hydatid disease is relatively uncommon in children. The liver and lungs are most commonly involved, while involvement of other sites in the body is unusual.

*Purpose(s)/Aim(s):* To study the presentation of hydatid disease in children, evaluate the risk factors, and derive appropriate management recommendations for prevention of recurrence and disease control.

*Methods:* This was a retrospective study performed from April 2006 to April 2014 in three pediatric institutes.

*Results:* There were 18 cases of hydatid disease in children; their age ranged from 7 to 16 years, and the male to female ratio was 8:1. All 18 patients were from a rural background or a farming community and of low socioeconomic status. Cattle rearing was common to the households of all patients. Nine (50%) patients had isolated liver hydatid cyst and three (16.7%) had isolated primary lung hydatid cyst. Two (11.1%) patients had multiple cysts with lung and liver involvement, while four (22.2%) had unusual presentation, i.e., primary hydatid cyst of the spleen in three (16.7%) and primary hydatid cyst of the brain in one (5.5%). All cases were managed surgically and there was no recurrence in any of our patients.

*Conclusion:* Hydatid disease is not rare in the pediatric age group. The liver and lung are commonly involved, but it may also present as primary disease in unusual sites like the spleen and brain. Proposed risk factors are rural background, farming community, low socioeconomic status, cattle rearing, lack of supply of potable water, and male sex. Intrinsic defects in the filter mechanism of the liver and lungs, dissemination through enteric lymphatic channels, and patency of the ductus arteriosus in early infancy are the proposed causes of unusual presentation of hydatid disease in children. During cyst removal, spillage of the contents must be

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avoided to prevent recurrence. Community-based measures are recommended for prevention and disease control.

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## 1. Introduction

Hydatid disease usually presents in adults (19–64 years) and is relatively uncommon in children. It is characterized by cystic lesions occurring in different parts of the body, most commonly the liver (70%) and lungs (20%). Unusual sites of involvement include muscle (5%), bones (3%), kidneys (2%), heart (1%), pancreas (1%), central nervous system (1%), and spleen (1%). The peritoneal cavity, thyroid, breast, gallbladder, thigh, supraclavicular region, soft tissue of the face, pericardium, diaphragm, mediastinum and pleural cavity are rarely involved.<sup>1–9</sup> In about 5–13% of cases, two organs are affected simultaneously.<sup>10</sup> No site in the body is completely immune from it, except for the hair, nails, and teeth. Although hydatid cyst is uncommon in the pediatric age group, there have been isolated cases of unusual or atypical presentations reported in the literature, particularly from the Mediterranean region and North Africa.<sup>1–13</sup> Here, we present a series of pediatric cases with usual and unusual presentations from India in an effort to raise awareness among surgeons of this entity in children.

Our aims were to study the presentation of hydatid disease in children, evaluate the risk factors, and derive appropriate management recommendations for prevention of recurrence and disease control.

## 2. Methods

The records of patients admitted to three pediatric institutes between April 2006 and April 2014 were retrospectively reviewed. The inclusion criteria were age less than 17 years and a diagnosis of hydatid disease.

The clinical and operative records of included patients were analyzed. Charts were reviewed according to: age, sex, chief complaints and duration of illness, background and socioeconomic status of the patient, presence of cattle and availability of potable water supply in the household. All possible radiologic investigations, including chest X-ray, ultrasonography (USG) scans and computed tomography

(CT) scans were carefully reviewed. Operative intervention was carried out in all patients. Operative records with establishment of preoperative diagnosis, site and number of cysts, intraoperative findings, operative procedures and complications including spillage of contents, postoperative fate and recurrence were studied.

## 3. Results

The results of the study are shown in [Tables 1 and 2](#). There were 18 cases of hydatid disease in children, whose mean age was 11.2 years (range, 7–16 years). The male to female ratio was 8:1 (16 boys, 2 girls). All patients were from a rural background or a farming community and of low socioeconomic status. Cattle rearing was common to the household of all the patients. Nine (50%) patients had isolated involvement of the liver: seven (38.9%) had cyst(s) smaller than 10 cm in diameter and two (11.1%) had isolated giant hydatid cyst (>10 cm in diameter) of the liver. Three (16.7%) patients had isolated primary involvement of the lung. Two (11.1%) patients had multiple cysts with involvement of the lungs and liver ([Figs. 1–5](#)). Four (22.2%) patients had hydatid disease with unusual presentation: primary hydatid cyst of the spleen ([Fig. 6](#)) in three (16.7%) and primary hydatid cyst of the brain ([Fig. 7](#)) in one (5.6%).

The duration of illness in our series ranged from 3 months to 2.5 years. The most common presentation in hydatid cyst of the liver was abdominal pain, while it was productive cough in patients with hydatid lung disease and those with both liver and lung involvement. Children with primary hydatid cyst of the spleen presented with a dragging sensation and/or pain in the left hypochondrium. Primary hydatid cyst of the brain presented with the features of raised intracranial pressure. In two patients with hydatid cyst of the liver, although the site was common, its presentation was not. One child who had a history of jaundice and who presented with fever had a giant tense cyst mimicking choledochal cyst; abdominal CT confirmed the diagnosis. The other patient presented with fever and

**Table 1** Presentation, sex distribution and risk factors in our cases.

Site	Patients, <i>n</i>	Male:female, <i>n</i>	Background	SES status	Cattle rearing	PWS
Isolated primary liver	9 (2 had giant cyst >10 cm; 7 had cyst <10 cm)	8:1	Farming	Low	Yes	No
Isolated primary lung	3	2:1	Farming	Low	Yes	No
Both liver and lung	2	2:0	Farming	Low	Yes	No
Isolated primary spleen	3	3:0	Farming	Low	Yes	No
Isolated primary brain	1	1:0	Farming	Low	Yes	No

SES = socioeconomic; PWS = potable water supply.

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