SAS Journal of Surgery
Abbreviated Key Title: SAS J Surg
ISSN 2454-5104
Journal homepage: https://www.saspublishers.com

OPEN ACCESS

Pediatric Surgery

Primary Mesenteric Hydatid Cyst in Pediatric Patients: Case Report and Literature Review

C. Sebahiga[1*], S. Touré[1], N. Aballa[1], K. El Ouafi[1], K. Fouraiji[1], M. Oulad Saiad[1]

[1]Pediatric Surgery Department, Mother-Child Hospital, Mohammed VI University Hospital Center in Marrakech, Morocco

DOI: 10.36347/sasjs.2024.v10i05.012 | **Received:** 23.03.2024 | **Accepted:** 01.05.2024 | **Published:** 16.05.2024

***Corresponding author:** C. Sebahiga
Pediatric Surgery Department, Mother-Child Hospital, Mohammed VI University Hospital Center in Marrakech, Morocco

Abstract **Case Report**

Mesenteric hydatid cyst in children is not common, even in endemic areas. The primary or secondary origin of this site, especially in children, remains controversial. Secondary peritoneal hydatid cyst mainly results from spontaneous or traumatic rupture of concurrent liver cysts or leakage of cystic contents during surgery. The aim of our study is to present a mesenteric hydatid cyst in children. Our study focuses on a single case of a child with peritoneal hydatid cyst, who underwent surgery in 2021 in the pediatric surgery department of the Mohammed VI hospital in Marrakech. The diagnosis is based on abdominal ultrasound, computed tomography and hydatidosis serology. The treatment is surgical by open or laparoscopic excision, which can be associated with medical treatment.

Keywords: Leakage of cystic contents, traumatic rupture, peritoneal hydatid cyst, surgical treatment, abdominal ultrasound, computed tomography, hydatidosis serology.

INTRODUCTION

Hydatid cyst disease poses a significant public health concern in regions where it is endemic [1]. This parasitic infection primarily targets the liver and lungs [2]. The condition arises from the larval stage of the parasite *Echinococcus granulosus* [1]. While dogs serve as the primary hosts, intermediate hosts typically include sheep, and sporadically, humans [3].

Although the liver and lungs are commonly affected, hydatid cysts can develop in various organs and soft tissues, exhibiting a range of symptoms [4]. Notably, primary intra-abdominal hydatid disease without liver and lung involvement is infrequent, particularly in endemic regions [2]. While intra-abdominal hydatidosis has been reported in medical literature, mesenteric involvement remains a rare occurrence.

Information on the patient

A 14year-old boy who presented with an abdominal mass in 2021 evolving for 6 months before his admission, without vomiting or associated transit disorder in a context of apyrexia and conservation of general condition.

The medical and surgical history was negative. No family history was reported.

Clinical Findings

On examination, there was a hard, mobile, nontender subumbilical mass measuring 3 cm × 4 cm.

Diagnostic Evaluation

All laboratory tests were normal with a white blood cell count (WBC) of 6300, hemoglobin (Hb) level of 13.1 g/dL, and total protein (TP) level of 78%. Abdominal CT revealed an unenhanced periumbilical cystic formation after injection of the contrast product, which was well limited and measured 3.5cm x 5cm x 5cm (AP x T x CC). Forward: coming into contact with the rectus abdominis muscles. Outside: in contact with the iliac vessels with conservation of the fatty border. Top: comes into contact with the intestinal loops.

Figure 1: CT scan of a primary mesenteric hydatid cyst in a 14-year-old child

As an echographic complement: this formation is well limited, oval in shape, anechoic without septum or endocystic vegetation and not vascularized on color Doppler. Homogeneous liver increased in size (FH=13.5cm), with regular contours, without detectable nodular lesions.

Therapeutic intervention

The patient was not medically treated before the operation. The decision to operate was made, and the patient was prepared for the operation.

During the operation, performed under general anesthesia with the patient in the supine position, the mass was excised through a midline supra-umbilical incision. Upon exploration, a mesenteric cystic mass measuring 4 x 5 x 5 cm was identified, adherent to the intestinal wall and located 100 cm from the ileocecal junction. Dissection of the mass necessitated the removal of 10 cm of the ileum, followed by a termino-terminal ileo-ileal anastomosis using vicryl 4/0. The tightness of the anastomosis was verified, followed by peritonization. No other associated lesions were found, and the incision was closed meticulously, shot by shot.

Subsequently, the excised sample was sent for pathological documentation, revealing a hydatid cyst with no signs of malignancy or specificity.

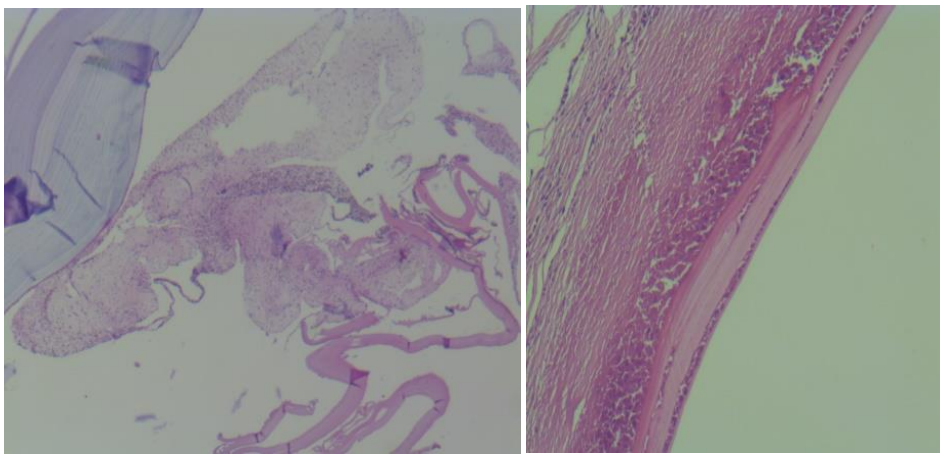

Figure 2: Pathological anatomy of a primary mesenteric hydatid cystic a 14 years old child

Follow-up and results

The postoperative period was uneventful, and a chest X-ray performed postoperatively showed no abnormalities. After 9 days of hospitalization, the patient was discharged without any complications.

DISCUSSION

Primary peritoneal infection with *E. granulosus* accounts for approximately 2% of reported cases [5]. It can be assumed that the low prevalence of primary peritoneal infection is due to physical barriers to

hematogenous dissemination of cysts created by the lungs and liver, which are the main primary sites of disease in adults [6]. Various pathways have been proposed in the pathogenesis of peritoneal localization of cysts. Up to 15% of parasites escape filtration in the lungs and liver and enter the systemic circulation to establish themselves in various sites [7]. The clinical course of peritoneal localization can usually be nonspecific and depends on 1) the size of the cyst, 2) site of involvement, and 3) the effect of enlarged cysts on adjacent organs. It is therefore often to encounter the presence of an inert mass without any symptoms or deterioration of the patient's condition [8]. Similarly following this scenario, a painless mass was detected in our patient with no major complaints other than painless abdominal swelling that was gradually increasing in size. As in other reported cases, imaging evaluation, including ultrasound and computed tomography, has been very helpful for diagnosis and treatment follow-up. Some reports have documented that serology is not always helpful in diagnosing primary and non-traditional (other than liver and lung) hydatidosis [6]; this was the case in our report. Serology was not done for positive diagnosis of the lesion. In the literature, the medical treatment varies from percutaneous aspiration, injection and reaspiration of certain types of hydatid cysts to surgery, which remains the treatment of choice [7].

Medical treatment with mebendazole and albendazole has been used since 1977 as preoperative or postoperative chemotherapy. Many authors have reported that these agents can lead to increased life expectancy, clinical improvement of patients and shrinkage of cysts [9]. Preoperative prophylaxis is very important to prevent intraoperative dissemination of cysts. In patients with symptomatic giant, multiorgan hydatid cysts, surgical removal of all cysts at the same time is recommended [10].

CONCLUSION

The diagnosis of mesenteric hydatidosis should be considered in cases of abdominal mass without a history of trauma, particularly in patients from endemic areas. Early treatment is essential to prevent the potential consequences of cystic contents spillage into the intraperitoneal cavity. Imaging modalities such as ultrasound and computed tomography play a crucial role in diagnosis and treatment follow-up. While serology may not always be definitive, medical treatment with mebendazole and albendazole can offer clinical improvement and cyst shrinkage. Surgical intervention remains the treatment of choice, with preoperative prophylaxis recommended to prevent intraoperative dissemination of cysts, especially in cases of symptomatic giant, multiorgan hydatid cysts.

BIBLIOGRAPHY

1. Amin, M. U., Mahmood, R., Manzoor, S., & Ahmad, S. (2009). Hydatid cysts in abdominal wall and ovary in a case of diffuse abdominal hydatidosis: Imaging and pathological correlation. *Journal of Radiology Case Reports*, *3*(5), 25-31.
2. Abhishek, V., Patil, V. S., Mohan, U., & Shivswamy, B. S. (2012). Abdominal wall hydatid cyst: case report and review of literature. *Case reports in surgery*, *2012*, 1-6.
3. Srivastava, P., Gangopadhyay, A. N., Upadhyaya, V. D., Sharma, S. P., & Jaiman, R. (2008). An unusual presentation of hydatid cyst in anterior abdominal wall. *Kathmandu University Medical Journal (KUMJ)*, *6*(24), 511-513.
4. Baram, A., Kakamad, F. H., & Alwan, A. A. (2014). Primary posterior mediastinal hydatid cyst mimicking malignant mediastinal neurogenic tumor. *Int. J. Case Rep. Images*, *5*(1), 54-57.
5. Hegde, N., & Hiremath, B. (2013). Primary peritoneal hydatidosis. *Case Reports*, *2013*, bcr2013200435.
6. Erikci, V., Hoşgör, M., & Aksoy, N. (2014). Primary abdominal wall hydatid cyst: a case report. *Turk J Pediatr*, *56*(02), 183-185.
7. Almasri, B., & Albitar, L. (2017). Rare isolated primary peritoneal hydatid cysts: A case report from Syria. *Qatar Medical Journal*, *2016*(2), 13.
8. Pandya, J. S., Bhambare, M. R., Waghmare, S. B., & Patel, A. R. (2015). Primary hydatid cyst of peritoneum presented as abdominal lump: a rare presentation. *Clinical Case Reports*, *3*(5), 331-332.
9. Velioglu, M., Diktas, H., Kabalak, B., Tüfekçi, H., Cermik, H., Akar, I., ... & Cosar, A. (2014). Giant isolated mesenteric hydatid cyst case report without organ involvement. *Türkiye Parazitolojii Dergisi*, *38*(3), 194-196.
10. Sabouni, F., Ferdosian, F., Mamishi, S., Nejat, F., Monnajemzadeh, M., & Rezaei, N. (2010). Multiple organ involvement with hydatid cysts. *Iranian Journal of Parasitology*, *5*(2), 65-70.