

CASE REPORTS

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Diagnosis and multidisciplinary management of a large primary retroperitoneal hydatid cyst: report of a sporadic case

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Abstract

Background Hydatid cysts, a parasite caused by infestation with *Echinococcus granulose*, are rarely found in isolation in the retroperitoneum. Diagnosis is based on clinical and paraclinical criteria, and the symptoms are often aspecific. In large, symptomatic forms, surgical excision is the mainstay of treatment. However, a multidisciplinary approach, including infectious diseases specialists, can improve results and reduce the risk of recurrence.

Case presentation We report the case of a 38-year-old woman presenting with a large primary retroperitoneal hydatid cyst. After 13 years of asymptomatic evolution, she developed lumbar pain and a sensation of heaviness. The diagnosis was confirmed by a battery of biological and radiological tests. Due to the size of the cyst, open surgery was performed. Follow-up revealed no clinical complaints or recurrences.

Conclusion Considered a rare condition, hydatid cyst requires special attention when evaluating lumbar masses or cystic masses, particularly in endemic areas. In addition to surgery, it is essential to take into account the risk of contamination of other sites during surgery. Collaboration with specialists in infectious diseases is therefore essential.

Keywords *Echinococcus granulosus*, Hydatid cyst, Retroperitoneum, Surgery

1 Background

Hydatid cyst, or hydatidosis, is a parasitosis resulting from infestation by *Echinococcus granulosus*. Although the liver and lungs are the organs most frequently affected, isolated retroperitoneal localizations remain rare, even in highly endemic areas. Retroperitoneal cysts are considered to be primary when they develop exclusively in the retroperitoneal space, without any other secondary location being associated [1]. Most often asymptomatic in its retroperitoneal location, this type of cyst only becomes symptomatic when it reaches a

significant size [2]. Diagnosis, based on a presumption in endemic regions, is confirmed by a combination of clinical, biological (particularly serology) and radiological findings [3]. In addition to the administration of antiparasitic agents, the standard treatment consists of excision of the cyst, which may be either complete or partial, taking into account measures to avoid intraoperative exposure and prevent recurrence [2]. In the present case, we report on a 38-year-old woman with a large primary retroperitoneal hydatid cyst who underwent surgical treatment as part of a multidisciplinary approach.

2 Case presentation

A 38-year-old patient with no specific pathological history reported discrete left lower back pain, which had been intermittent for 13 years. At the onset of symptomatology, she consulted a general practitioner who

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prescribed her painkillers and prescribed an ultrasound, which was not performed. The evolution of her symptoms, marked by constant pain associated with a sensation of heaviness and a lump in the abdomen, led her to consult a general practitioner again. The ultrasound scan performed during this consultation suspected a multicystic abdominal collection in the left flank. Further scans were requested and the patient was referred to us.

She presented for consultation with a CT scan (Fig. 1 left: CT scan) showing a roughly rounded left retroperitoneal mass with a fat-fluid level and multiple cystic lesions. It measured 110×145×201 mm. The mass was pulled back and came into intimate contact with the posterolateral border and the lower pole of the kidney. Moreover, it makes intimate contact with the spleen and remains separated from the stomach by a fatty border. Anteriorly, it is in intimate contact with the peritoneal sheet, which separates it from the peritoneal cavity and its colonic and cecal contents. When questioned, she did not report an episode of hydaturia or other urinary signs. Clinically, she was in good general condition with normal parameters. Physical examination revealed tenderness in the left lumbar region, with a mass palpated in the left sub-subcostal region. To further characterize the mass described on CT, an MRI scan (Fig. 1 right: MRI) was ordered. It revealed a voluminous retroperitoneal formation with the presence of multiple, fairly well-limited cystic formations with hyposignal shells T1 and T2.

Some cystic formations contain multiple vesicles; while, others have a remodeled unpartitioned liquid content, as evidenced by the intermediate T2 signal. Based on these findings, the decision was made to perform a cystectomy.

An infectious disease opinion was taken. Several tests were ordered to further support the diagnosis and search for another associated localization. Of all the tests requested, two particularities were observed: the presence of hypereosinophilia and positive hydatid serology. The patient was put on albendazole for 3 weeks and then admitted to the emergency room.

In the operating room, a lumbotomy incision was made, enlarged posteriorly. Once the cyst was identified, hydrogen peroxide was injected and the cyst was opened: The protruding dome was resected (Fig. 2).

Aspiration was performed, initially producing pus and then daughter vesicles (Fig. 3). After complete aspiration of the liquid, the vesicles were collected with a spoon.

The cyst cavity was thoroughly washed with hydrogen peroxide until a clear liquid was obtained. This included the entire retroperitoneal cavity, as well as the edges and surgical field. Two redon drains were placed at the end of the operation: in the cyst cavity and in the most sloping part of the retroperitoneum.

Postoperative care was simple and redons were removed on D4. The albendazole protocol was continued postoperatively. Follow-up consisted of clinical assessment (lobar pain, assessment of other symptoms, particularly pulmonary and hepatic). Hydatid serology was negative and abdominal ultrasound was normal.

3 Discussion

3.1 General aspects and clinical presentation

The retroperitoneal hydatid cyst was first described in 1958 by Lockhart and Sapinza [4]. It may be due to the dissemination of protozoa from the gastrointestinal tract to the lymphatic system, or to hematogenous

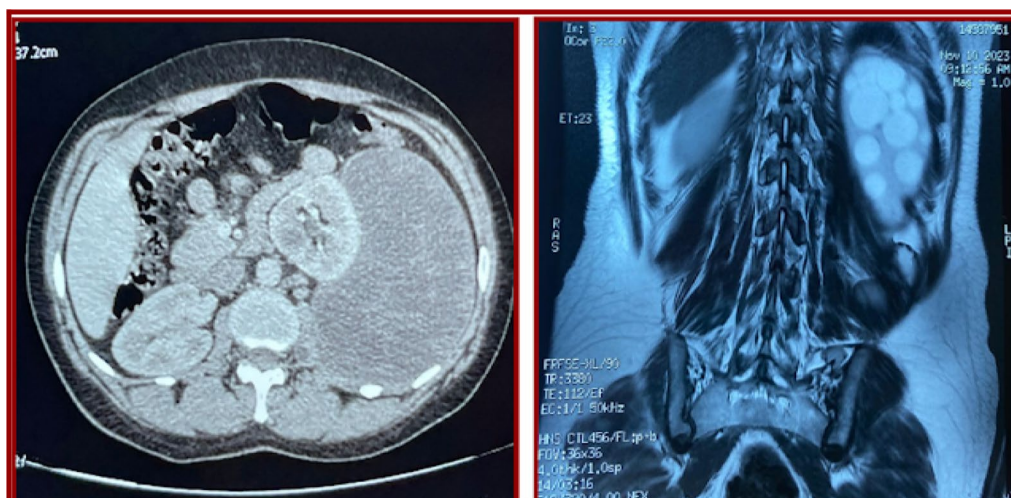


Fig. 1 Images showing the left retroperitoneal mass, roughly round, with a fat-fluid level and multiple cystic lesions on CT and retroperitoneal formation with multiple cystic formations with multiple vesicles, fairly limited, whose shell is in hyposignal T1 and T2 (MRI)

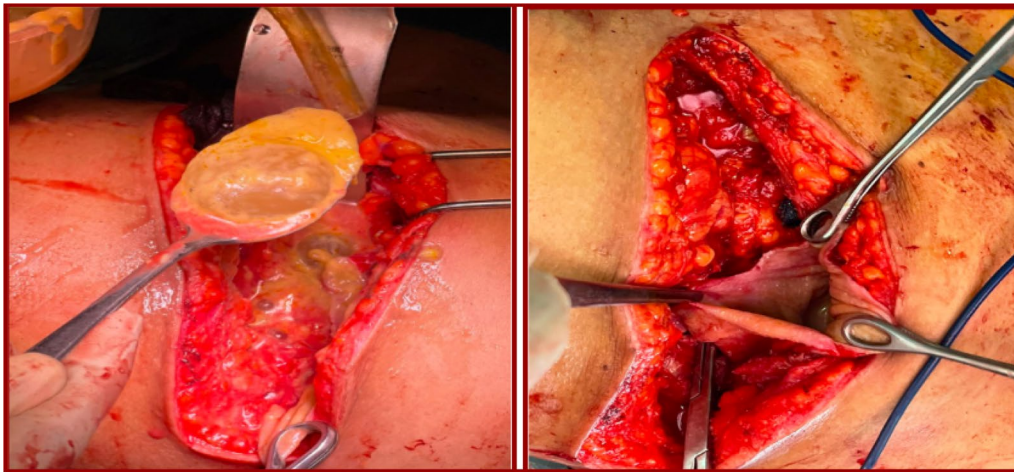


Fig. 2 Intraoperative images showing aspiration of the cyst, collecting vesicles, and the appearance of the cyst with resection of the protruding dome

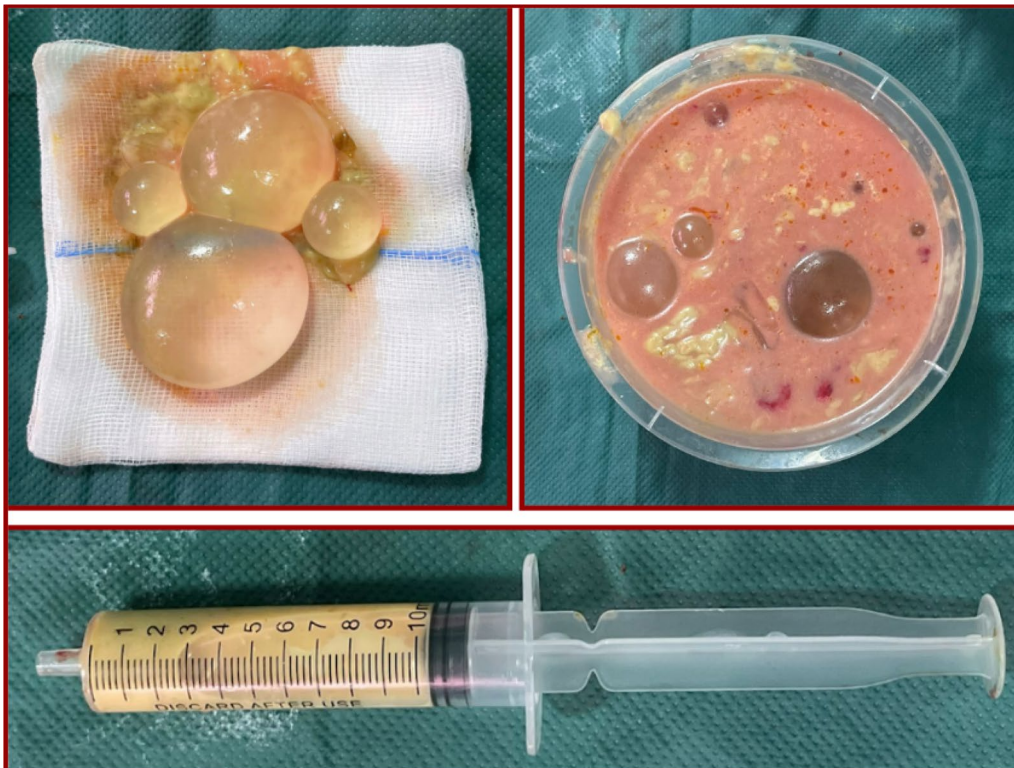


Fig. 3 Images showing the material extracted from the cyst: pure vesicles, vesicles mixed with pus and pure pus

dissemination following liver or lung bypass surgery. Echinococcal cysts grow slowly over a period of 5–20 years [5]. Given their slow evolution and clinical latency, cysts may be discovered incidentally or as a result of complications such as rupture in the peritoneal cavity, secondary infection, or allergic reaction

[6]. In the present case, the patient manifested a number of symptoms: low back pain, a feeling of heaviness, and a lump. This symptomatology may be explained by the large volume of the cyst. The duration of the symptomatology (13 years) is well correlated with the literature.

3.2 Diagnosis

Imaging has a high specificity in the diagnosis of hydatid cysts, especially when typical radiological signs are present [1]. In our patient, the ultrasound of the general practitioner was the first examination to reveal a multicystic collection. CT scan. Finally, magnetic resonance imaging. Biologically, hypereosinophilia was observed and hydatid serology was positive. These elements can contribute to the diagnosis of certainty.

3.3 Treatment

In the case of extrahepatic disease, cyst management must take into account certain considerations: size, location, symptomatology, and the patient's general state of health. Small asymptomatic cysts can be treated with antihelminthic drugs according to a well-defined protocol [7]. For large cysts, in addition to antiparasitic treatment, surgical resection of the cyst is associated [1]. Some authors [8] have reported successful cyst management using a retroperitoneal (laparoscopic) approach. The advantages of minimally invasive surgery have been reported: small incisions, less perioperative morbidity, shorter hospital stay, and faster return to work. Goel et al. [9] have reported successful case management by percutaneous aspiration of the cyst after puncture injection of a scolicidal agent. In our case, given the size of the cyst, we opted for open surgery. This will enable the mass, which is considered to be large, to be approached more effectively, and will allow better control of the operating field during the operation, with complete removal of the cyst as the initial option.

3.4 Preventive measures and follow-up

Whatever the type of surgery, there is a fundamental principle to prevent perforation in the abdominal cavity and to avoid swarming. To achieve this, a scolicidal product can be used [1]. For this reason, our lumbotomy incision was widened posteriorly, to avoid damaging the peritoneum. Additionally, the cyst was injected with hydrogen peroxide prior to any manipulation: aspiration and extraction of the vesicles. At the end of the procedure, the cyst was washed abundantly with hydrogen peroxide, as were the surgical margins and field. Postoperatively, regular monitoring is recommended, based on clinical, immunological, and imaging (ultrasound or CT scan) data (10). This monitoring enables recurrence or secondary involvement to be detected as early as possible.

4 Conclusions

In endemic areas, it is essential to consider retroperitoneal hydatid cysts when assessing cystic masses, and to mention them regularly in cases of chronic low back pain. Although ultrasound can be used as an initial assessment, CT and MRI scans are essential to confirm the diagnosis and detect any complications. Surgery (whether total or partial, in the form of cystectomy) remains the main treatment, especially for large cysts. Prevention of recurrence requires perioperative chemotherapy and inactivation of parasites prior to excision. Management should be multidisciplinary and involve a specialist in infectious diseases.

Abbreviations

Mm	Millimeter
CT scan	Computed tomography scanner
MRI	Magnetic resonance imaging

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Not applicable.

Author contributions

SAN had the idea, reviewed the literature, prepared the manuscript and is also the corresponding author. YB, YD reviewed the literature. AN, AT, MB participated in the redaction. AM, MD, AD participated in editing and supervision. RA validated the paper version and submission.

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Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

According to our center's policy, ethical approval is not required if the patient's anonymity is respected. The patient has given written consent to participate in this research.

Consent for publication

The authors have obtained consent for publication from the patient involved in this report.

Competing interests

All authors declare no competing interests.

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