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A Primary Hydatid Cyst in the Abdominal Wall – Case Report

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Rezumat

Un chist hidatic solitar primitiv al peretelui abdominal – prezentare de caz

Introducere: Chistul hidatic localizat primar în structura peretelui abdominal este o entitate morfopatologică extrem de rară, chiar şi în ţările unde infecţia cu Echinococcus este extrem de ridicată, fiind considerată boală endemică.
Prezentarea cazului: Raportăm cazul unui pacient de 70 de ani, care s-a prezentat în clinica noastră acuzând apariţia unei formaţiuni la nivelul flancului drept, cu simptomatologie nespecifică. Acuzele au fost minimale: formaţiune parietală abdominală nedureroasă cu creştere lentă, progresivă. Diagnosticul de formaţiune chistică a fost stabilit ecografic. Nu au existat criterii imagistice care să sugereze că formaţiunea ar putea fi un chist hidatic. Abordul chirurgical a decelat lichid cu aspect de "apă de stâncă" la puncţionare; datorită riscului de injurie majoră a peretelui abdominal s-a preferat rezecţia parţială a peretelui exterior, îndepărtarea membranei proligere, drenaj, cu evoluţie postoperatorie simplă. Examenul histopatologic a confirmat diagnosticul de hidatidoză intraparietală.
Concluzii: Chistul hidatic trebuie luat în considerare în diagnosticul diferenţial al fiecărei formaţiuni intraparietale abdominale cu aspect chistic, mai ales dacă pacientul provine dintr-o regiune endemică. Tratamentul optim este excizia totală a chistului păstrând integritatea peretelui abdominal. În caz contrar, evacuarea membranei proligere, excizia parţială a perichistului şi drenajul pot fi luate în considerare ca soluţie terapeutică.

Cuvinte cheie: chist hidatic, hidatidoza intraparietala, chistectomie, perichistectomie

Abstract
Introduction: A solitary primary hydatid cyst in the abdominal wall is an exceptional entity, even in countries where the Echinococcus infection has a high rate, being considered an endemic disease.
Case presentation: We report a case of a 70-year-old Caucasian man who presented to our clinic with a slow-growing painless parietal mass in the abdominal wall, right flank area. The diagnosis of cystic mass was established at the ultrasound exam. There were no findings that could describe a hydatic cyst. The punction at the surgical intervention revealed a "clear, stone liquid like"; due to the high risk of major injury of the abdominal wall, we performed partial resection of the outer cystic wall, proligerous membrane removal and drainage. The patient had an uneventful post-operative recovery. The histopathology confirmed the suspected diagnosis.
Conclusion: Hydatid cyst should be considered in the differential diagnosis of every abdominal intraparietal cystic mass, especially in regions where the disease is endemic. The best treatment is the total excision of the cyst preserving an intact wall (complete cystectomy). Otherwise, removing the proligerous membrane with partial pericyst's resection (partial pericystectomy) and drainage should be considered.

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Key words: hydatid cysts, intraparietal hydatidosis, cystectomy, pericystectomy

Introduction

Hydatid disease is a parasitic infection caused by Echinococcus granulosus, the life cycle of which is well known (1,2). Endemic areas are countries where the common hosts (sheep, goats, cattle, dogs) are raised, such as Central Europe, North Africa, the Middle East, Australia, New Zealand and South America (1,2,3). The liver is the most frequently involved organ (75%), followed by the lung (15%) (1,3,4). The solitary primary localization in the abdominal wall is extremely rare, and its incidence is unknown (3). In our patient, the hydatid cyst was located in the anterior abdomen wall without the involvement of any other anatomical structures, making this an interesting case.

Case report

A 70-year-old caucasian man presented to our hospital with a subcutaneous cystic mass in the right flank of the abdominal wall with a six months evolution. His physical examination revealed an abdominal parietal mass, 7 cm in diameter, palpated 5 cm to the right of the umbilicus. It was elastic, mobile, and painless. The overlying skin was normal. An abdominal ultrasound showed a rounded cystic mass that was limited within the right abdominal wall (right flank) and measured 72 mm. There were no findings that could describe the cystic mass as a hydatic cyst. No other abdominal cystic mass was found. The pre-operative examinations (chest xray, full blood count, urine analysis, and blood biochemistry) revealed no abnormalities. The hydatid serology was negative. The surgical exploration revealed a mass developed in the abdominal wall without the involvement of any abdominal visceral structure (Fig. 1).

The macroscopic appearance did not suggest a hydatid cyst. The first step was to punction the cyst. The liquid within has the "clear stone liquid like" appearance. The spread of the hydatic liquid was avoided using several meshes. Due to the large volume of the cyst, we decided to perform a partial removal of the outer wall, to extract the proligerous membrane - the living part of the cyst (Fig. 2, 3).

Then we proceeded to wash the cavity (Fig. 4) with parasiticide compounds – NaCl 33% and to drain the cavity.

In this manner we have avoided the injuries of the abdominal wall. The parasitologic analysis of the inner liquid and the histopathology examination of the specimen confirmed a hydatid cyst. Starting from postoperative day 2, the patient was started on oral treatment with albendazole for 6 months. The patient has been followed for 18 months, and no recurrence of hydatidosis has been detected.

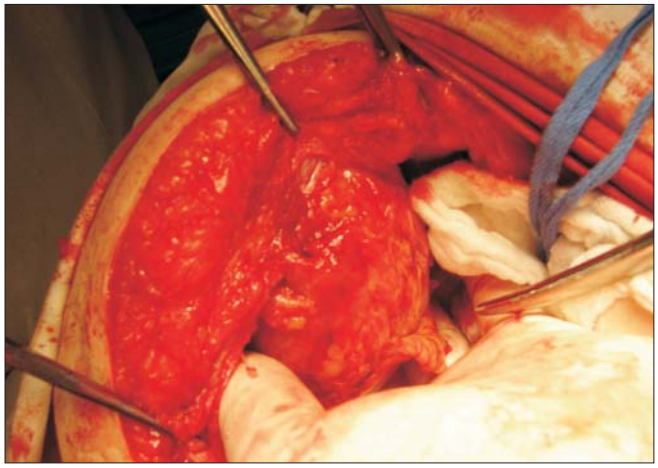

Figure 1. *The intraparietal cystic mass*

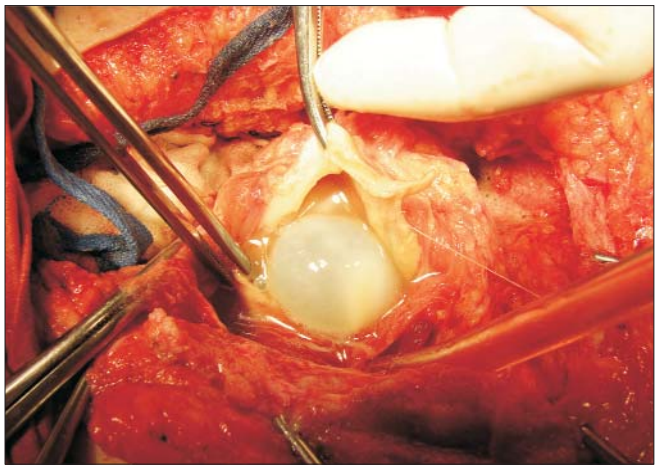

Figure 2. *The hydatic cystic content – proligerous vesicular*

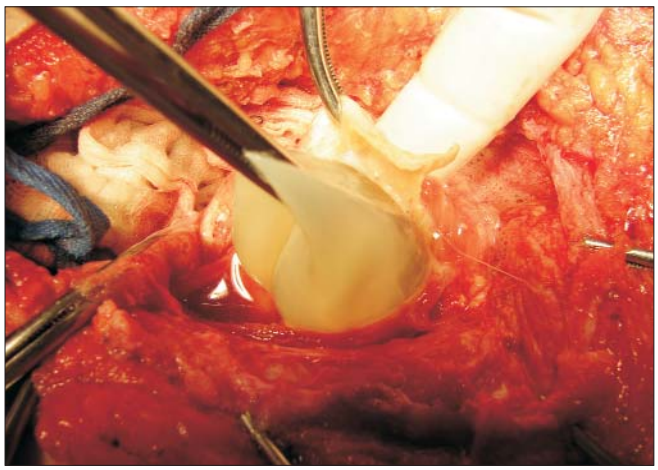

Figure 3. *Removing the proligerous vesicula – the living part of the hydatic cyst*

Discussion

The mechanism of the primary abdominal intraparietal localization is unclear (3,5). The ingested parasite's eggs

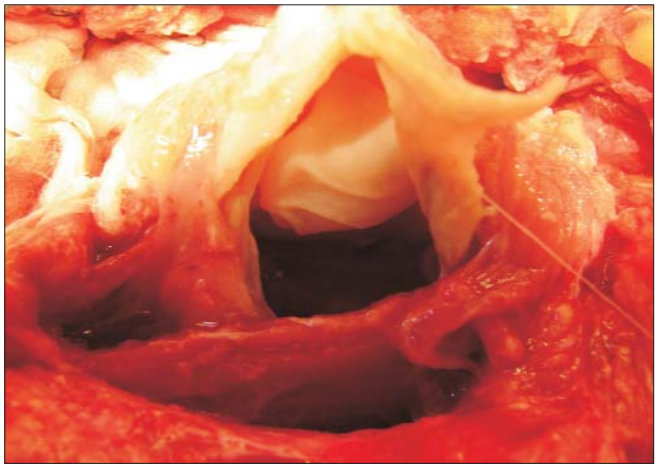

Figure 4. *The restant cavity*

penetrate the intestinal wall, join the portal system, and reach the liver, where most of them are caught in the hepatic sinusoids (1,3). A few eggs may pass through the liver (first filter) and reach the lung (second filter) and the systemic circulation, causing hydatid disease in other organs (1,2,3). A possible dissemination through lymphatic channels has also been reported. This may explain the cases with solitary cysts in uncommon sites (1,4-8). The direct spread from adjacent sites may be another mechanism of infection (9). In this particular case, the hydatid cyst was located within the abdominal wall. The patient had not undergone previous surgery for any hydatid cysts, which were never found in other organs. Therefore, our patient was diagnosed as having a primary abdominal intraparietal hydatid cyst.

In a large series of patients from Greece, the frequency of extra-hepatic and extra-pulmonary hydatidosis was 9% (8). However, in different series, the frequency of subcutaneous tissue involvement, which is usually associated with involvement of other solid organs, has been reported to be approximately 2% (2,10,11). In our study on 137 cases of hydatic disease between 2006 and 2010, the prevalence of intra-abdominal extrahepatic hydatic cysts was 16% (22 cases)(12). Primary isolated hydatid cysts located in the abdominal wall are extremely rare, even in geographic areas in which echinococcal infestation is frequent (4,5). There is only one report of a solitary primary subcutaneous hydatid cyst in the abdominal wall, published by Ousadden Abdelmalek and colab. in 2011 (13).

The clinical course is non-specific and depends on the site of involvement, the size of the cyst, and the pressure caused by the enlarged cyst (1,2). Usually, it presents as an inert, painless, non-inflammatory mass without any deterioration of the patient's general condition (5-7,14). However, if super-infected or cracked, the cyst can simulate an abscess or lead to an anaphylactic shock (1,11,14). Ultrasonography, computed tomography or MRI are useful in rendering the diagnosis, showing the size, localization, relationship to adjacent organs, and type of the cyst. It can also be used to search for another hydatid location (2,5,10,14). The radiological findings of a thick cyst wall, calcifications, daughter cysts, and a germinative membrane separated from the cyst wall are all specific to hydatid cysts (2-5). Serology is a useful to confirm the diagnosis, although it is rarely positive for cysts in extra-hepatic and extra-pulmonary locations (25%) (1,2,5,11). The risk of false-negative or false-positive results should be taken into consideration. The best treatment option is complete surgical excision of the intact cyst, which avoids leakage of cyst content with further anaphylaxis and local recurrence (2,3,11). If the ideal surgery is impossible, the cyst content (fluid, membrane, and daughter cysts) has to be removed intra-operatively and the cyst's cavity has to be irrigated with scolicidal solutions (2,3). Other options include percutaneous treatment under ultrasound guidance with needle aspiration irrigation of scolicidal solutions, as well as medical treatment with the use of albendazole (1,3,11).

Conclusions

1. Hydatid cyst should be taken into consideration in the differential diagnosis of every subcutaneous cystic mass, especially in regions where the disease is endemic; furthermore, a whole-body check-up for other hydatic cysts must be performed.
2. The best treatment is the total excision of the cyst with an intact wall.
3. If the total excision may cause harm to the abdominal wall, partial removal of the outer cystic wall, with proligerous membrane extraction, lavage and drainage of the remaining cavity should be considered.
4. Postoperatively, the parasiticide treatment with albendazole should be initiated.

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