



Laparoscopic Treatment of Anaphylaxis after Intravascular Rupture of Hydatid Cyst following Abdominal Trauma (A Case Report and Brief Literature Review)

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Abstract

Accidental traumatic intraperitoneal rupture resulting by anaphylactic shock is the well-known complication, unlike to the anaphylactic shock caused by the intravascular spread of cyst contents which is a rare.

This article reports an unusual case description about 13 years old boy, following a trauma admitted to the public hospital with few signs. Ultrasonography demonstrated a hydatid cyst in the liver with the drainage of the cyst contents into the right hepatic vein without free peritoneal fluid. A shortly afterwards anaphylactic shock developed and the patient transferred to our emergency.

An abdominal laparoscopic examination, after stabilization of patient confirmed rupture of the cyst, which was treated laparoscopically. Additionally, the patient received albendazole.

We think that laparoscopic surgery can be recommended in this kind of clinical presentation of echinococcosis which is safe, feasible and effective?

Keywords: Hydatid cyst; Rupture; Anaphylactic shock; Vessels; Laparoscopic

Introduction

Echinococcosis is common term currently used according to an International consensus on terminology, it designates the disease (s) related to infection with parasites of the Echinococcus (E) genus [1]. The disease continues to be a major public health issue in many regions of the world especially in the Maghreb countries mostly Algeria which are highly endemic [2].

Hydatid cyst may develop in any body organ, it may remain clinically silent for many years and are often an incidental finding on ultrasonography performed for unrelated reasons [3]. One of the common complications of hydatid disease is cyst rupture after trauma or spontaneous rupture [4]. It may rupture into the peritoneal cavity, rupture to the gastrointestinal tract, rupture of a cyst directly into a blood vessel, caused most probably by constant pressure of the cyst's wall on the blood vessel [5].

Accidental traumatic intraperitoneal rupture resulting by anaphylactic shock is the well-known complication, unlike to the anaphylactic shock caused by the intravascular spread of cyst contents which is a rare and a review of the literature shows few case reports.

Case Presentation

A 13-year-old boy assaulted by kick in the abdomen by his young brother and admitted to the public hospital with less abdominal pain. Ultrasonography demonstrated a cyst in the liver without free peritoneal fluid.

After a few hours, the general condition of the patient progressively worsened with vomiting, tachycardia, oliguria, hypotension, and respiration was rapid and superficial leading to dyspnea.

The patient was oriented in our emergency: Clinical examination showed generalized tenderness without any palpable mass and increasingly severe abdominal pain.

Laboratory examination revealed severe leukocytosis.

A second ultrasonography showed the drainage of the cyst contents into the right hepatic vein

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Figure 1: Extracapsular free fluid.



Figure 2: Hematic aspect of fluid.

(Figure 1), but there was no free fluid in the abdomen.

After resuscitation measures without resorting to intubation, the patient became stable. Albendazole was immediately started.

After stabilization of the patient (48 h), abdominal laparoscopic examinations are realized and confirm the absence of free intra-abdominal fluid.

On the seven-liver segment, there was an intact wall cyst 5 cm to 6 cm.

The approach consisted to the puncture which confirmed the rupture to the blood vessel by containing bloody fluid (Figure 2), aspiration, injection of hypertonic saline solution into the cyst.

After 15 min to 20 min respiration of all the fluid.

The cyst was totally evacuated; the residual cavity was explored carefully by optics for the presence of cysto-biliary communications. A partial cystectomy is done completed by drainage.

A parasitological study found that the liquid contained protoscolices.

Postoperatively there were no complications and the boy was discharged 5 days later. Albendazole was continued for two months. The final cosmetic aspect is showed into (Figure 3).

There was no recurrence after 36 months of follow-up either in liver or in other organ.

Discussion

Rupture of hepatic hydatid cyst is very rare complication (1% to



Figure 3: Final cosmetic aspect.

8%) and can occur spontaneously owing to increasing pressure of cystic fluid or iatrogenically [6], following serious injuries or even minor trauma as in our case.

Young age is a risk factor of rupture because of the greater frequency of traumatic events and higher prevalence of hydatid disease in children and adolescents than in adults [7].

Two similar cases were described as rupture in the into the right hepatic vein and bile ducts, in which one of them was caused by trauma requiring conventionnel surgery [5,8].

The spillage of hydatid fluid as a result of cyst perforation has been shown to trigger serious anaphylactic reaction, the bloody contents of the cysts, most probably due to a partial drainage of its contents into the systemic circulation through the injured blood vessel.

One case report of a 13-year-old girl with an intact hydatid cyst was described as sudden anaphylactic shock after a blunt abdominal trauma. The cause of leakage of cystic fluid into the bloodstream was confirmed by absence of peritoneal fluid and existence of protoscolices in the hepatic venules ruptured what led to the death [3].

Elmali et al. [9] in his case report of a 15-year-old boy showed that emergency surgery in this case should be minimized, and he recommend initial albendazole treatment and delayed surgical intervention.

Another revue of literature reports a rare case of anaphylaxis to cystic hydatid disease initiated by leakage into the vasculature following trauma was reported and treated with laparotomy by Marriott [10].

According to the Lewell's classification, our patient cannot be included via the communicating rupture and we join Buyuk who suggest that the classification should be extended to include rupture in the vessels [11,12].

Radiologists can play a primary role in reaching diagnosis by their imaging techniques. The presence of a cyst in the liver of a patient who developed anaphylactic reaction, with detection of membrane like structures inside the cyst and discontinuity of the wall are considered diagnostic for ruptured hydatid cyst [9].

Management of rupture hydatid disease of the liver involves both medical and surgical treatment. Surgery is the gold standard for complicated cysts, already realized by laparotomy, the role of laparoscopic surgery in the treatment of intraperitoneal rupture of a hydatid cyst has not been proven but only Feleppa et al. [6] contended that, if the general condition of the patient is not severe, laparoscopy

can be very useful and even more effective than traditional surgery.

Controversy in the time of surgery between different team over the world about anaphylaxis shock following rupture cyst [9,13-15].

Increasing experience of laparoscopic therapy in combination with albendazole therapy has been shown to be safe and efficient and can offer many of the advantages of minimal access surgery, including low morbidity, short hospital stay, resumption to school and the good cosmetic result, and also reduce recurrence [16].

There was no case reported in the management of intravascular rupture of hydatid cyst trigger to anaphylaxis following trauma using laparoscopy, which can be a challenge in our experience.

Conclusion

The traumatic rupture of cyst in the blood vessels is very rare entity, but should be kept in mind in a context of anaphylaxis shock especially in endemic areas.

Laparoscopic surgery can be recommended in this kind of clinical presentation of echinococcosis which is safe, feasible and effective combined to anti-parasitic treatment.

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