



Primary Ruptured Omental Hydatid Cyst

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Abstract:

Hydatid cyst disease is caused by *Echinococcus granulosus*, a common parasitic infection of the liver. Most common sites are liver (70%), lungs (25%), spleen, kidney etc. i.e. can be found in any region of the body, from brain to inguinal canal. Intra-peritoneal hydatid cyst is found only in 13%, usually secondary to rupture of primary hepatic cyst. Primary intra-peritoneal hydatid cysts are rare (2%). Primary hydatid cyst of omentum with rupture is a rare presentation in emergency department and not reported in literature.

Key words: Echinococcus granulosus, Liver, Spleen, Cysts, Omentum, Albendazole.

Introduction

Hydatid disease is most commonly caused by *Echinococcus granulosus*, in which humans are an immediate host. The disease occurs in liver (70%), lungs (25%), spleen, kidney, pancreas and brain [1]. An anaphylactic shock, cyst infection of biliary tree and the rupture into peritoneum are the most severe complications [2]. In our case, ruptured primary omentum hydatid cyst in a 20 years old patient, presented in emergency department. Peritoneal hydatid cyst, either primary or secondary, represents an uncommon disease [3].

Case Report

A 20 year old male patient presented in emergency surgery with abdominal pain associated with abdominal distension for 12 hours. On examination, patient had tachycardia (heart rate 120/minute),

hypotension (BP: 100/60 mm Hg), tender abdomen, with diffuse lump in epigastric and umbilical region (details could not be elicited due to pain). Patient had previous episodes of epigastric fullness and discomfort in last one year for which he used to take local medications.

Patient was resuscitated by ringer lactate and sent for X-ray abdomen and chest which were inconclusive. Ultrasound whole abdomen commented gross peritoneal collection (heterogenous hyperechoic shadow). Rest of the investigations like hemogram, electrolytes, renal and hepatic function tests were within normal limits, only leukocyte count was mildly raised. As signs of acute abdomen were present, laparotomy was performed. Per-operatively a large ruptured omental hydatid cyst of 12x10 cm with extravasated hydatid fluid in peritoneal cavity

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was seen [Fig.1]. Peritoneal cavity was irrigated with 3% hypertonic saline for 15 minutes, cavity of cyst was evacuated [Fig. 2,3]. This was followed by excision of omental hydatid cyst and unhealthy part of greater omentum [Fig.4]. The specimen was sent for histopathology which confirmed a hydatid cyst in specimen.

The patient was discharged on the 8th postoperative day and oral albendazole continued for 3 months.



Fig.1: Large ruptured omental hydatid cyst.



Fig.3: Evacuated contents of cyst.

He subsequently had a stable post-operative course and remained disease free at 4 months follow up.

Discussion

Hydatid disease or Echinococcus is a parasitic disease carried by infection with larva (metacercariae) of *Echinococcus granulosus*. The definitive host is usually a dog, while sheep are most commonly the intermediate host. Human may become accidental intermediate host through contact with an infected host, or ingestion of contaminated water or vegetable. Hydatid cysts has

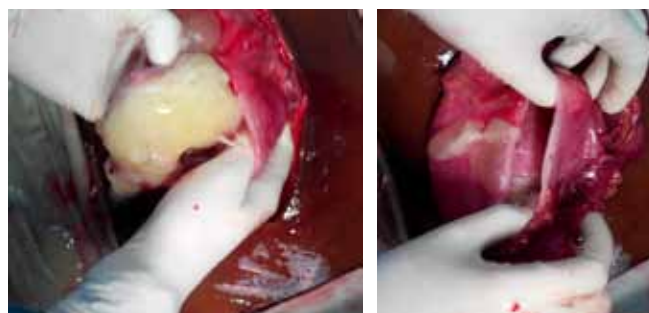


Fig.2: Peroperative evacuation of cyst.



Fig.4: Unhealthy part of omentum after cyst removal.

three layers: the pericyst, the laminated membrane and the endocyst (germinal layer). The cyst fluid is a transudate of serum that contains proteins which is antigenic [4]. The most common site involved is liver (59-75%), lung (27%), spleen, kidney, bone, brain and rarely in pancreas. Peritoneal hydatid cyst either primary or secondary represents an uncommon but significant manifestation of disease (approx. 13%) [5,6]. Intra-peritoneal hydatid cyst are usually secondary to the rupture (spontaneous, traumatic, iatrogenic) of primary hepatic or splenic cyst. Significant risk factors for hydatid cyst rupture are younger age, cyst diameter > 10 cm, superficial cyst location [7,8]. Intra-peritoneal rupture of a hydatid cyst is considered an urgent clinical event, and dissemination of cyst content poses a 1-2.5% risk of severe, life threatening anaphylactic shock [9].

Chemotherapy is effective in small cyst with diameter less than 4 cm, those with thin walls and in younger patients. It is also indicated in patients who are at high risk for surgery, in patients with multiple peritoneal cysts, cysts in multiple organs, bone cyst, cyst in brain, to prevent secondary echinococcosis after spillage during surgery and as a concomitant therapy with percutaneous drainage. Albendazole (10 mg/kg/day) is the most common drug used in medical treatment of hydatid cyst. Used before and after surgery, or only after surgery seems to be efficient, as the appearance of the recurrences is absent [10].

In our case, possible mechanism of rupture is increase intra-cystic pressure by burden of disease due to inadequate medication. Signs and symptoms of ruptured cyst are non-specific. Our patient presented as acute abdomen for 12 hours. Ultrasound abdomen is the investigation of choice, and diagnostic in 95% of cases. However contrast CT gives more precise information regarding morphology (size and location) with 100% sensitivity. The diagnosis is made by a

set of diagnostic methods including ultrasound whole abdomen, CT scan and serology. Surgery remains the main treatment modality and in case of ruptured cyst patient is managed like a case of acute abdomen. Combination of pre-operative albendazole therapy, surgery and post-operative albendazole therapy is useful regime.

Conclusion

Ruptured hydatid cyst should be kept as one of the differential diagnosis for any patient presenting with acute abdomen with previous history of a cystic lump in the abdomen especially from endemic areas. Primary omental hydatid cyst can occur without affecting other viscera and surgery is modality of treatment in ruptured cases.

References

1. Hamamci EO, Besim H, Korkmaz A. Unusual locations of hydatid disease and surgical approach. *ANZ J Surg* 2004;74:356-360.
2. Hayrullah D, Tugrul T, Enver R, Ali Dogan B, Okay N. Acute intraperitoneal rupture of hydatid cysts. *World J Surg*. 2006;30:1879-1883.
3. Dhungel K, Ahmad K, Sah PL, Gupta MK, Rauniyar RK, Ansari A. Primary Intrapelvic Hydatid Cyst Presenting with Urinary Retention. *Journal of Case Reports*. 2012;2(2):100-103.
4. Col C, Col M, Lafci H. Unusual localizations of hydatid disease. *Acta Med Austriaca* 2003;30:61-64.
5. T. Sekmenli, M. Koplay, A. Sezgin. Isolated omental hydatid cyst: clinical, radiologic, and pathologic findings. *Journal of Pediatric Surgery*. 2009;44(5):1041-1043.
6. Sethi SK, Patnaik S, Narayan, Nayak SN. Isolated omental hydatid cyst—a case report. *Journal of the Indian Medical Association*. 2004;102; 644-646.
7. Gulalp B, Koseoglu Z, Toprak N, Satar S, Sebe A, Gokel Y, et al. Ruptured hydatid cyst following

- minimal trauma and few signs on presentation. Neth J Med 2007;65:117-118.
8. Akcan A, Akyildiz H, Artis T, Ozturk A, Deneme MA, Ok E, *et al.* Peritoneal perforation of liver hydatid cysts: clinical presentation, predisposing factors, and surgical outcome. World J Surg 2007;31:1284-1291.
9. Khan PS, Hayat H, Mushtaque M, Dar LA. Simultaneous primary hydatid cysts of liver and spleen with spontaneous intraperitoneal rupture of both cysts. Eastern Journal of Medicine. 2012;17:130-132.
10. Gedam BS, Wilkinson TRV, Akulwar VV. Pancreatic Hydatid Cyst Managed Successfully by Internal Drainage. Journal of Case Reports. 2013;3(2):358-361.