Case report

Acute pancreatitis caused by impaction of hydatid membranes in the papilla of Vater: a case report

Panagiotis Katsinelos, Grigoris Chatzimavroudis*, Kostas Fasoulas, Eustathios Kamperis, Taxiarchis Katsinelos, Sotiris Terzoudis, George Kokonis and Ioannis Patsis

Address: Department of Endoscopy and Motility Unit, “G. Gennimatas” General Hospital, Thessaloniki, Greece

Email: PK - pk@yahoo.gr; GC* - gchatzimav@yahoo.gr; KF - kf@yahoo.gr; EK - ek@yahoo.gr; TK - tk@yahoo.gr; ST - st@yahoo.gr; GK - gk@yahoo.gr; IP - ip@yahoo.gr

* Corresponding author

Received: 20 April 2009 Accepted: 16 May 2009 Published: 7 July 2009

Cases Journal 2009, 2:7374 doi: 10.4076/1757-1626-2-7374

This article is available from: http://casesjournal.com/casesjournal/article/view/7374

© 2009 Katsinelos et al; licensee Cases Network Ltd.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/3.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Abstract

Acute pancreatitis is a rare complication of hydatidosis and the successful use of endoscopic sphincterotomy associated with extraction of hydatid membranes has been rarely reported. We describe a young man who developed acute pancreatitis after rupture of an echinococcus cyst, located at the left hepatic lobe, into the biliary tract. The cause of pancreatitis was confirmed by endoscopic retrograde cholangiopancreatography, which revealed the presence of a daughter cyst impacted in the major papilla. After sphincterotomy and removal of hydatid membranes from the biliary tract, the patient presented rapid resolution of pancreatitis and made an uneventful recovery.

Introduction

Hydatidosis is a zoonosis that is generally caused by infection with Echinococcus granulosus. The disease is endemic in many countries, including those around the Mediterranean Sea, Central Asia, Far East and Latin America [1]. Liver is the most common site of hydatid cysts and less frequently they can be found in the lungs and much more rarely in the spleen, kidneys, brain, muscles, bone and pancreas [1,2]. Rupture of a hydatid cyst into the biliary tract is rare and is manifested as obstructive jaundice or cholangitis [1,2]. A few cases of acute pancreatitis associated with the presence of hydatid membranes in the biliary tract have been described [3-13].

We herein describe the first case of hydatid acute pancreatitis by documentation of impaction of hydatid membranes in the papillary orifice.

Case presentation

A 31-year-old Greek farmer was admitted to the Department of Internal Medicine with pain in the epigastric area that had started 3 days earlier. The pain was intense and constant, radiating to the back and associated with nausea and vomiting. There was no history of drug or alcohol consumption.

Clinical examination revealed an acutely ill patient, mildly jaundiced and febrile (38°C) and was remarkable for
epigastric tenderness and a palpably enlarged left liver lobe 2 cm below the right costal margin. Laboratory data demonstrated a high leukocyte count of 14.5 × 10^9/L (normal 4.0-10.0 × 10^9/L), eosinophils 0.6 × 10^9/L (normal 0.0-0.5 × 10^9/L), total bilirubin 47 μmol/L (normal 2-17 μmol/L), alkaline phosphatase 238 IU/L (normal 40-120 IU/L), gamma glutamyl transferase 312 IU/L (normal 20-40 IU/L), aspartate aminotransferase 1 IU/L (normal 5-40 IU/L), alanine aminotransferase 178 IU/L (normal 5-40 IU/L), serum amylase 3254 IU/L (normal 30-120 IU/L), lipase 4234 IU/L (normal 20-280 IU/L), and C-reactive protein 38 mg/L (normal <0.5 mg/L).

Abdominal computed tomography (CT) showed a large multilocular cyst in the left hepatic lobe with rupture into the biliary tract, dilated main biliary ducts (common bile duct diameter 22 mm) and a diffusely swollen pancreas with indurations around it (Figure 1). Positive ELISA for IgM echinococcal antibodies at 1/1280 dilution and positive echinococcal immunoelectrophoresis confirmed the diagnosis of intrabiliary rupture of the hydatid cyst. An emergent endoscopic retrograde cholangiopancreatography (ERCP) demonstrated the presence of hydatid membranes impacted in the ampulla of Vater and protruded through the papillary orifice (Figure 2) and a dilated common bile duct with multiple filling defects (Figure 3). Endoscopic sphincterotomy was performed and all hydatid membranes were removed via a Dormia basket and balloon (Figure 4). The patient had a rapid resolution of pancreatitis with an uneventful recovery and was referred for elective surgery for the liver hydatid cyst.

Figure 1. CT of the abdomen revealing a polychorous cyst in the left hepatic lobe with rupture in the biliary tract (arrow).

Figure 2. Endoscopic view of hydatid membranes protruding from major papilla before extraction with a Dormia basket.

Figure 3. ERCP showing a dilated common bile duct, containing multiple filling defects with irregular morphology.
Discussion

A hydatid cyst is normally well tolerated in humans until its development results in pressure on adjacent structures [1]. The cyst may also burst into the peritoneal or thoracic cavity, which may cause anaphylactic shock or give rise to many new cysts [1,2]. Spontaneous rupture of a hepatic hydatid cyst into the biliary tract occurs in 5-17% of cases and can be associated with abdominal pain, jaundice, fever, and cholangitis [1,2]. Serology is useful in confirming the diagnosis of hydatidosis; however, a negative serological result does not exclude the diagnosis [14]. About 50% of cases have negative serology, while false-positive results can be caused by cysticercosis [14].

Despite the mechanism of hydatid, pancreatitis is generally considered to be unknown; we believe that it could be explained by the mechanical obstruction of the papillary orifice by daughter cysts resulting in reflux of a mixture of bile and hydatid material into the pancreatic duct and increase of intrapancreatic pressure, which triggers the inflammatory cascade of acute pancreatitis.

Our case is very intriguing because for the first time an endoscopic image depicted hydatid membranes impacted in the papillary orifice, thus confirming our hypothesis of acute pancreatitis development. The rapid resolution of pancreatitis after endoscopic sphincterotomy and removal of hydatid membranes further strengthens our hypothesis.

The efficacy and safety of endoscopic sphincterotomy for the treatment of hydatid cysts with rupture into the biliary tract is well established [15,16]. However, the successful use of this technique in the treatment of pancreatitis associated with hepatic hydatidosis has been described previously in few cases [5,6,11,12].

We referred our patient for surgical extirpation of hepatic hydatid cyst because surgery remains the treatment of choice [1,2], despite long-term (3 months or more) treatment with benzimidazoles (mebendazole, albendazole) has also shown efficacy against the cystic stage [17-19]. Recent literature suggests that cautious percutaneous drainage with concurrent administration of antihelminthic therapy may be an effective alternative to surgical intervention in selected cases [20].

Conclusion

Our case demonstrates that the cause of acute pancreatitis, after rupture of a hepatic echinococcus cyst into the biliary tract, is the impaction of hydatid membranes in the papillary orifice. Endoscopic sphincterotomy and removal of membranes is an effective and safe treatment.

List of abbreviations

CT, Computed Tomography; ERCP, Endoscopic Retrograde Cholangiopancreatography.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

Competing interests

The authors declare that they have no competing interests.

Authors’ contributions

PK performed the endoscopy and was major contributor in revising the manuscript critically for important intellectual content. GC was major contributor in writing the manuscript. KF, EK and TK analyzed and interpreted the patient data and were contributors in writing the manuscript. ST, GK, and IP reviewed the relative literature. All authors read and approved the final manuscript.

References

1. Ammann RW, Eckert J: Cestodes. Echinococcus. Gastroenterol Clin North Am 1996, 25:655-689.
2. Miguet JP, Bresson-Hadni S, Vuitton D: Echinococcosis of the liver. In Oxford Textbook of Clinical Hepatology. Volume I. 2nd edition. Edited by Rodes J, Benhamou JP, Bircher J, McIntyre N, Rizzetto M. Barcelona: Ediciones Cientificas y Tecnicas; 1993:839-849.
3. Mentes A, Batur Y, Ahmet E: Pancreatitis as a complication of hydatid liver cyst. Jpn J Surg 1990, 20:356-358.
4. Aydin A, Eroğlu G, Tekesin O, Mentes A: Hydatid acute pancreatitis: a rare complication of hydatid liver disease. Report of two cases. Eur J Gastroenterol Hepatol 1997, 9:211-214.
5. Wong LS, Braghirolli-Neto O, Xu M, Buckels JA, Mirza DF: Hydatid liver disease as a cause of recurrent pancreatitis. J R Coll Surg Edinb 2000, 45:203-204.

6. Saez-Royuela F, Yaguerro L, Lopez-Morante A, Perez-Alvarez JC, Martin-Lorente JL, Ojeda C: Acute pancreatitis caused by hydatid membranes in the biliary tract: treatment with endoscopic sphincterotomy. Gastrointest Endosc 1999, 49: 793-796.

7. El-Idrissi HD, Ridai M, Zerouali NO: Pancreatitis of hydatid origin. Presse Med 1996, 25:2022-2024.

8. Salgarello G, Bruzzone P, Salgarello T, Giannatempo GM, Alcaro G, De Vivo G, La Vecchia G: Rupture of hydatid cyst with invasion of the bile duct and acute pancreatitis. G Chir 1989, 10:259-261.

9. Fodha M, Bel Hadj Bestaieb N, Morjane A, Hamza H, Jegham H, Letaief A: Acute pancreatitis and hydatid cysts of the liver opening into the bile ducts. Apropos of a new case. Tunis Med 1989, 67:201-205.

10. Veyrac M, Machayekhi JP, Kirschke B, Costalat G, Barneon G, Ciurana AJ: Acute pancreatitis disclosing rupture of a hydatid cyst of the liver into the bile ducts. Value of associated eosinophilic cholecystitis. Gastroenterol Clin Biol 1985, 9:271-272.

11. Zeytunlu M, Coker A, Yuzer Y, Esoz G, Aydin A, Telkesin O, Oztemeniz O, Batur Y: Hydatid acute pancreatitis. Turk J Gastroenterol 2004, 15:229-232.

12. Ozmen MM, Moran M, Karakaya M, Coskun F: Recurrent acute pancreatitis due to hydatid cyst of the pancreatic head. A case report and review of the literature. JOP 2005, 65:354-358.

13. Al-Toma AA, Vermeijden RJ, Van De Wiel A: Acute pancreatitis complicating intrahepatic rupture of liver hydatid cyst. Eur J Inter Med 2004, 15:65-67.

14. Parija SC: A review of some simple immunoassays in the serodiagnosis of cystic hydatid disease. Acta Trop 1998, 70:17-24.

15. Ozaslan E, Bayraktar Y: Endoscopic therapy in the management of hepatobiliary hydatid disease. J Clin Gastroenterol 2002, 35: 160-174.

16. Dumas R, Le Gall P, Hastier P, Buckley MJ, Conio M, Demont JP: The role of endoscopic retrograde cholangiopancreatography in the management of hepatic hydatid disease. Endoscopy 1999, 31:242-247.

17. Morris DL: Pre-operative albendazole therapy for hydatid cyst. Br J Surg 197, 74:805-806.

18. Gil-Grande LA, Rodriguez-Caabeiro F, Prieto JG, Sanchez-Ruano JJ, Brasa C, Aguilar L, Garcia-Hoz F, Casado N, Barcena R, Alvarez AI: Randomised controlled trial of efficacy of albendazole in inter-abdominal hydatid disease. Lancet 1993, 342:1269-1272.

19. Aminar FF, Omari AK: Surgery and postoperative mebendazole in the treatment of hydatid disease. Saudi Med J 2002, 23:568-571.

20. Ormeci N, Soykan I, Bekas A, Sanoglu M, Palabiyikoglu M, Hadi Yasa M, Dokmeci A, Uzunalmoghlu O: A new percutaneous approach for the treatment of hydatid cysts of the liver. Am J Gastroenterol 2001, 96:2225-2230.