CASE REPORT

Primary pancreatic hydatid cyst: an unexpected differential diagnosis

Bharati Hiremath, Narayana Subramaniam, Manobhram Boggavarapu

Department of General Surgery, M S Ramaiah Medical College and Hospital, Bangalore, Karnataka, India

Correspondence to

Dr Bharati Hiremath, drbharati_2000@yahoo.com

Accepted 18 August 2015

SUMMARY

Hydatid disease, caused by the cystic stage of *Echinococcus granulosus*, most commonly involves the liver (59–75%) and lung (27%), and rarely involves the kidney (3%), bone (1–4%) and brain (1–2%). Even rarer sites include the heart and spleen, and skeletal muscle, with virtually no site being immune. The pancreas is an exceedingly rare site for primary disease (without concomitant involvement of the liver or peritoneum), with less than 20 reported cases in the literature. This case report describes a 48-year-old woman presenting with a solitary cystic lesion arising from the neck of the pancreas, which was ultimately determined to be a hydatid cyst on histopathological examination. It also discusses the difficulties in preoperative and postoperative management and includes a review of the literature.

BACKGROUND

Although exceedingly rare, the possibility of hydatid cyst should be considered among other differentials for a pancreatic cyst to avoid contamination and spillage intraoperatively and to administer antiechinococcal therapy postoperatively to offer the patient an excellent chance of cure.¹ Preoperative diagnosis, additionally, may preclude radical or major pancreatic resections and their accompanying morbidity.

CASE PRESENTATION

A 48-year-old woman presented to the outpatient department with an epigastric mass that she had first noticed 5 months prior; it shifted on change of posture, causing mild discomfort. The patient had no history of abdominal pain, weight loss, jaundice, decreased appetite or bowel disturbances. She had no medical comorbidities or history of previous surgeries, alcohol consumption, trauma or pancreatitis. She also had no history of exposure to livestock or wild animals. On examination, she was anicteric and had an 8×6 cm non-tender, smooth cystic epigastric mass with horizontal mobility but no movement on respiration.

INVESTIGATIONS

All laboratory tests, including liver function tests, serum amylase and serum lipase were within normal range. Abdominal ultrasonography showed a 10×8 cm unilocular, hypoechoic, thick-walled cystic mass anterior to the abdominal aorta and inferior vena cava, however, the anatomical site of origin could not be determined. Contrast-enhanced CT of the abdomen showed an 8×10×8.2 cm well-circumscribed, cystic lesion with a volume of

330 mL, having a cyst wall thickness of 2 mm, arising from the neck of the pancreas, indenting the gall bladder medially and abutting but not encasing the superior mesenteric vessels posteriorly, the provisional diagnosis being a simple cyst arising from the neck of the pancreas (figure 1).

DIFFERENTIAL DIAGNOSIS

Simple cyst, pseudocyst or cystic neoplasm of the pancreas.

TREATMENT

The patient underwent an exploratory laparotomy. A rooftop incision was used for approach and a large dome-shaped cyst was seen adherent to the lesser curvature of the stomach laterally, the gall bladder medially and the pancreas posteriorly (figure 2). The wall was irregularly thickened with no degenerative changes and was carefully separated from the surrounding viscera, traced to its origin at the neck of the pancreas. On aspiration, the cyst yielded clear fluid, with amylase levels within normal range. After aspiration, the inner cyst collapsed, separating easily away from what was previously considered the cyst wall (figure 3). The cyst was removed in toto, avoiding spillage of fluid into the peritoneal cavity, the diagnosis being unclear. The remaining cyst covering was carefully separated without injury to the surrounding viscera, and excised almost completely, leaving behind only a small portion adherent to the neck of the pancreas and adjacent superior mesenteric vessels. This cuff of tissue was over-run with a continuous 3/0 polydioxanone suture to avoid pancreatic leak. The abdomen was closed after placing a drain in the lesser sac.

Postoperatively, the patient was kept nil per oral for 2 days, then restarted orally, with intravenous antibiotics given for 5 days. Drain amylase level was measured 48 h postoperatively and compared to serum amylase level to determine the presence of pancreatic fistula. Although marginally raised, the drain amylase level was not significant. Subcutaneous octreotide was administered for 5 days. The drain was removed on postoperative day 5, when amylase levels were comparable to serum levels. Histopathology confirmed a diagnosis of hydatid cyst, showing hydatid sand and daughter scolices. The patient was discharged on oral albendazole therapy.

OUTCOME AND FOLLOW-UP

The patient was doing well and comfortable on follow-up 2 months later.

CrossMark

To cite: Hiremath B, Subramaniam N, Boggavarapu M. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2015-211377

Figure 1 Contrast-enhanced CT of the abdomen showing an 8×10×8.2 cm well-circumscribed, cystic lesion with a volume of 330 mL, having a cyst wall thickness of 2 mm, arising from the neck of the pancreas, indenting the gall bladder medially and abutting but not encasing the superior mesenteric vessels posteriorly, the provisional diagnosis being a simple cyst arising from the neck of the pancreas.

DISCUSSION

Primary hydatid disease of the pancreas is an exceedingly rare entity—the largest single study of hydatid disease in 357 cases occurring over 20 years had only 1 case.² A majority of abdominal hydatid cysts are asymptomatic and are discovered incidentally. Primary symptoms include pain, discomfort and vomiting, along with compressive symptoms, depending on the location.³

Preoperative diagnosis is often difficult. Ultrasonography is the most sensitive for detection of cyst membranes, septa and hydatid sand. Additionally, they may detect floating endocyst membranes within the cavity, which are considered highly specific for the disease. The WHO classification for hydatid disease on imaging is based on ultrasound criteria. Endoscopic ultrasound may also be of value in imaging as well as for aspiration of fluid. MRI shows the characteristic low-intensity rim of the cyst wall on T2-weighted images, and is superior in

demonstrating irregularities of the cyst rim, representing incipient membrane detachment.⁴ Preoperative computerised tomography and MRI may or may not show these characteristic features in hydatid disease of the pancreas, depending on the stage and the presence of degenerative changes—delineation of retroperitoneum with ultrasound is often poor and unsuitable for surgical planning.

Serological assays for hydatid disease have a high specificity but low sensitivity and are often unavailable, especially in low-resource settings; however, sensitivity increases when combined with imaging modalities.⁵ The gold standard for diagnosis of hydatid disease is histopathological examination, showing characteristic hydatid sand and presence of daughter scolices, confirmed postoperatively.⁶

Treatment of hydatid disease can be achieved by various puncture, aspiration and catheterisation techniques, however, in the pancreas, given the proximity to major vascular structures such as the superior mesenteric vessels and portal vein, these

Figure 2 Intraoperative picture showing a smooth, opalescent cyst arising from the neck of the pancreas.

Figure 3 The collapsed ectocyst ex vivo after puncture and evacuation of cyst contents.

techniques, though performed successfully in particular instances,⁷ may not be suitable for all cases. Difficulties in surgical management, in addition to those common to pancreatic surgeries in general, include avoiding cyst spillage and complete resection of cyst wall remnants. The role of major surgical resections in hydatid disease, as in the liver, is unknown.⁸ In our patient, we performed a complete cystectomy with almost complete pericyst excision, in order to avoid injury to the superior mesenteric vessels.

Learning points

- ▶ Hydatid disease, although rare, should be considered as the cause for an isolated pancreatic cyst, especially in endemic areas, and, if required, additional investigative modalities such as serology should be considered.
- ▶ Preoperative diagnosis allows intraoperative prevention of spillage of cyst fluid and use of scolicalid agents, which reduce the chance of recurrence or spread.
- ▶ Preoperative diagnosis, by differentiating it from other diagnoses such as malignancy, will also preclude major or radical resections and their accompanying morbidity, prompting the surgeon to consider a more conservative approach.
- ▶ Postoperative administration of antihelminthics is imperative for a cure, and may be missed if a diagnosis is missed, especially in degenerated cysts.

Contributors BH admitted, operated and treated the patient, in addition to supervising the work on the case report. NS assisted the clinical management and was responsible for writing the article. MB was responsible for the literature review.

Competing interests None declared.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

REFERENCES

- 1 Bedioui H, Chebbi F, Ayadi S, *et al.* Primary hydatid cyst of the pancreas: diagnosis and surgical procedures. Report of three cases. *Gastroenterol Clin Biol* 2008;32:102–6.
- 2 Dahniya MH, Hanna RM, Ashebu S, *et al.* The imaging appearances of hydatid disease at some unusual sites. *Br J Radiol* 2001;74:283–9.
- 3 Moosavi SR, Kermany HK. Epigastric mass due to a hydatid cyst of the pancreas. A case report and review of the literature. *JOP* 2007;8:232–4.
- 4 Ilica AT, Kocaoglu M, Zeybek N, *et al.* Extrahepatic abdominal hydatid disease caused by *Echinococcus granulosus*: imaging findings. *AJR Am J Roentgenol* 2007;189:337–43.
- 5 Babba H, Messedi A, Masmoudi S, *et al.* Diagnosis of human hydatidosis: comparison between imagery and six serologic techniques. *Am J Trop Med Hyg* 1994;50:64–8.
- 6 Jai SR, El Hattabi K, Bensardi F, *et al.* Primary hydatid cyst of the pancreas causing obstructive jaundice. *Saudi J Gastroenterol* 2007;13:191–3.
- 7 Karaman B, Battal B, Ustunsoz B, *et al.* Percutaneous treatment of a primary pancreatic hydatid cyst using a catheterization technique. *Korean J Radiol* 2012;13:232–6.
- 8 Safioleas MC, Moulakakis KG, Manti C, *et al.* Clinical considerations of primary hydatid disease of the pancreas. *Pancreatol* 2005;5:457–61.

Copyright 2015 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit

<http://group.bmj.com/group/rights-licensing/permissions>.

BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Become a Fellow of BMJ Case Reports today and you can:

- ▶ Submit as many cases as you like
- ▶ Enjoy fast sympathetic peer review and rapid publication of accepted articles
- ▶ Access all the published articles
- ▶ Re-use any of the published material for personal use and teaching without further permission

For information on Institutional Fellowships contact consortiasales@bmjgroup.com

Visit casereports.bmj.com for more articles like this and to become a Fellow