

peer reviewed **CASE REPORT****Case report: Hydatid cyst disease in a young adult female**

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Hydatid disease is a disease that produces cysts in the liver. Although it primarily affects the liver cysts may be seen in almost any location, such as lung, bone, spleen, kidney, or brain. A female patient referred to a public hospital by a general practitioner presented with signs and symptoms of abdominal pain and a large palpable mass in her left upper abdominal quadrant. A diagnosis of hydatid cyst disease was made. The aetiology, radiographic appearance and treatment options for hydatid disease are discussed.

Keywords

Echinococcus granulosus, computed tomography, tapeworm, palpable mass.

Case report

A young adult female was referred by a general practitioner to the out-patient surgical department of a public hospital for further management. She presented with a medical history of left abdominal pain for two weeks and loss of weight and appetite. On examination the clinician found a large palpable lump on her left upper abdominal quadrant just below the costal margin. Her abdomen was distended and her liver function tests were elevated. Based on her clinical signs and symptoms and liver function results a computed tomography (CT) scan of the lower chest and abdomen was ordered.

The CT images revealed numerous large cystic lesions in the right and left lobes of the liver with daughter cysts lying within these cysts and some of the cysts in the liver showed a calcification rim (Figure 1). The larger cyst in the chest measured 108 x 134 mm and showed daughter cysts (Figure 1). The large cyst in the spleen was pressing onto the left kidney (Figure 2). A cyst in the pelvis measured 51 x 44 mm (Figure 3).

She underwent a left thoracotomy to remove the chest cysts and excision of the hydatid cyst was undertaken. The surgery was uneventful and she did well post-operatively. She did not experience abdominal pain despite the remaining abdominal hydatid cysts. Since her lung had fully re-expanded it was decided that medical therapy could potentially benefit her. She commenced medical therapy (albendazole, 400mg 12 hourly, 15 mg/kg/daily) for two months to reduce the size of the inoperable multiple abdominal hydatid cysts and was discharged 7 days

post-op. She was scheduled for follow-up CT scans.

Discussion

Hydatid disease is an infection with echinococcus granulosus^[1-3] and is an example of an accidental human infection. Humans serve as the dead-end intermediate host in a life cycle naturally occurring in other animals^[2]. The *E. granulosus* adult tapeworms (about 5mm long) are found in the intestines of canines (dog, fox, wolves, and jackal)^[3]. The larval stage is present in the viscera of herbivores (sheep, cattle, swine, and deer)^[4]. An adult tapeworm in the canine intestine produces infective eggs that pass in the faeces^[5,6].

When these eggs are ingested by humans, a six-hooked larval stage, called an oncosphere, hatches and such infective eggs then penetrate the duodenal mucosa into the portal vein branches and lodge in the hepatic capillaries to grow into a cyst^[3,6]. Some will pass through these capillaries and end up in the liver, lungs or brain^[4-6].

In humans the larvae form a unilocular hydatid cyst; a slow growing tumour-like and space occupying structure enclosed by a laminated germinative membrane that has buds of brood capsules to form daughter cysts^[3,4]. Daughter cysts may develop in the mother cyst and these also produce brood capsules and protoscolices where the tapeworm heads develop^[4].



Figure 1: Abdominal axial CT image of the portal venous phase reveals massive cystic lesions in the liver and below the diaphragm with daughter cysts lying within it (arrows).

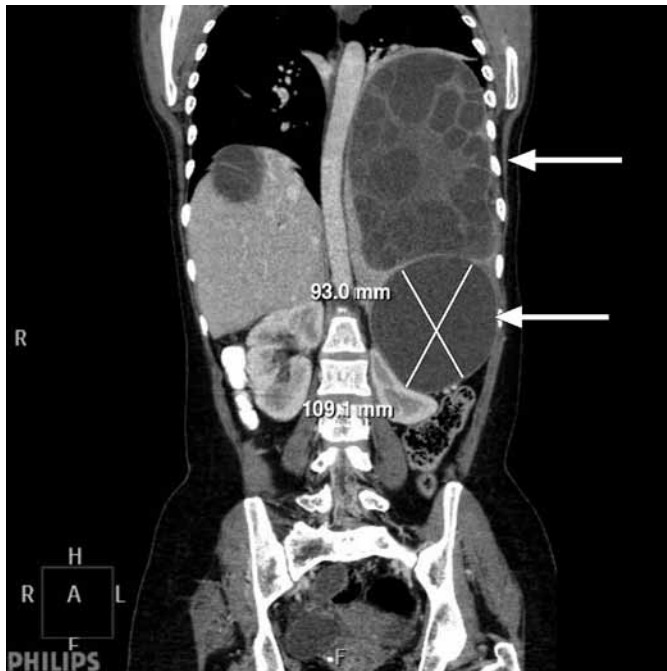


Figure 2: Abdominal coronal CT image reveals cystic lesions in the chest and below the diaphragm and a large cyst in the spleen (measuring 93mm x 109mm) pressing the left kidney (arrow).



Figure 3: Abdominal coronal CT image reveals multiple cystic lesions in the liver, chest, spleen including the pelvis (arrows).

Both types of cysts accumulate fluid as they grow^[3]. The fluid is potentially toxic. If spilled into body cavities anaphylactic shock and death can occur^[1,4]. Spillage of this toxic fluid leads to the development of cysts in other locations and the spills form new cysts^[4].

Hydatid disease is prevalent in areas where dogs are used in the control of livestock, especially sheep in developing countries. It is common in Australia, the Middle East, South America, China and Africa^[1,3,4]. Predisposing factors include allowing dogs to roam and have access to raw sheep meat as well humans being in regular close contact with dogs. Poor handwashing-hygiene plays a role as too do fruit and vegetables that are not washed thoroughly before consumption^[4,6].

Hydatid cysts are slow growing and can remain unapparent for a long time^[3,4]. These cysts can cause pressure on adjacent structures; symptoms are related to complications of the cyst. Physical findings are abdominal pain, palpable mass or swelling is the most common complaints^[5,6]. The symptoms depend mainly on the site of the cyst. The liver is the most common organ affected (70%), kidneys (30%), brain (1%), bone marrow (1%)^[4]. The disease is not gender specific.

The diagnosis rests on a combination of serology and radiological imaging^[2]. Serology ranges between 80-100% sensitive and 88-96% specific for liver cyst infec-

tion but are less sensitive for lung cysts, ranging between 50-56% and other organ involvement of between 25-56%^[4,5]. The laboratory investigations of hydatids show peripheral eosinophilia in 30% of cases and a positive hydatid complement fixation test or haemagglutination (85%)^[1,4]. Liver involvement may be reflected in an elevated bilirubin or alkaline phosphatase level^[4]. According to the attending clinician of this patient her laboratory findings were consistent with those of hydatid disease. Obstruction of liver vessels could lead to abnormal liver function enzymes. Ultrasound scans of this patient revealed cysts in the lung, liver, and the spleen. However, the CT scan best demonstrated the extensiveness of the hydatid disease and the cysts wall defects in the liver, spleen including the cyst in the pelvis.

The optimal treatment of symptomatic cysts is surgical removal provided there is no risk of spreading infection if the cyst ruptures^[1-5]. Prolonged medical therapy is highly recommended for inoperable cysts which proved very beneficial for this patient^[2]. The use of anthelmintics not only reduces the risk of cyst dissemination but has provided improvement in most (55-79%) patients and cure in a minority (29%)^[1-4]. Interventional procedures, such as puncture, aspiration, injection, respiration (PAIR) technique, are effective and safe treatments when cysts are not suitable for conventional surgery^[1-4]. Gener-

ally, prognosis without any complications is good, although there is always a risk of rupture of the cysts to the biliary tree or other organs intraperitoneally with spread of infection^[4,6]. The enzyme-linked immunosorbent assays (ELISAs) are useful in follow-up to detect recurrence.

Conclusion

CT scanning has proved useful for surgeons because urgent surgical intervention to remove cysts in the chest would be advantageous. Such intervention was required for the patient in this case report considering that if the lesions in her lung were to increase in size she might develop shortness of breath. A study done in South Africa underscores that in cases of multiple organ involvement where surgical intervention may be hazardous, a prolonged course of medical therapy is appropriate and has proved beneficial to patients with multiple hydatid cysts in the brain and liver^[2].

The patient's response to drug therapy will be best monitored by CT scanning according to her clinician. Disappearance or shrinkage of cysts together with increasing cyst density will indicate a positive response^[3]. A repeat abdominal scan was advised on completion of her treatment after two months. The patient will be monitored over a number of years since CT scans will demonstrate complications of infections.

References

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peer reviewed CASE REPORT

Case report: Intramural hematoma of the duodenum as a complication of an ERCP

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Abstract

An intramural hematoma is a hematoma in the wall of a structure, such as bowel or bladder, usually resulting from trauma. The most common complications of an endoscopic retrograde cholangiopancreatography (ERCP) are acute pancreatitis, bowel perforation and bleeding. The patient's clinical history, radiological findings, the epidemiology and treatment options for an intramural hematoma of the duodenum are discussed in this case report.

Keywords

Gastric obstruction, pancreatitis, pseudo cyst of pancreas, common bile duct, stent, computed tomography.

Case report

A middle age male was admitted to the casualty department of a private hospital with right sided pain and a history of nausea and vomiting for a week. Clinical examination revealed tenderness over the right upper quadrant. An ultrasound scan demonstrated a dilated common bile duct (CBD) and a cystic lesion in the head of the pancreas. This examination was followed by an abdominal computed tomography (CT) scan. The findings were a 4.5cm pancreatic pseudo cyst that caused extraneous compression of both the pancreatic and common bile ducts which resulted in the dilatation of the pancreatic and common bile ducts proximally as well as the intrahepatic ducts.

An endoscopic retrograde cholangiopancreatography (ERCP) was performed eight days later. The results demonstrated a tight stricture proximal of the ampulla of Vater which resulted in dilation of the CBD. A 1cm papillectomy was performed and a 7cm 10 French stent was inserted across the biliary stricture. Cytology was obtained of the common bile duct as well as the ampulla. Cytology from the ERCP revealed no malignant cells.

Two days later the patient presented

with signs of recurrent pancreatitis. He was hyperamylasemic with an amylase level of 560 about 24 hours later. According to literature, serum amylase levels are raised in at least 75% of patients with pancreatitis^[1]. Based on his clinical signs of pancreatitis a second CT scan of the abdomen was undertaken. This demonstrated the stomach filled with oral contrast and fluid (Figure 1). There was an outflow obstruction. The duodenum was large and sausage shaped (Figure 2). No oral contrast was noted in the small bowel. This was in keeping with hematoma of the wall of the duodenum with compression of the lumen of the duodenum. Air lucencies were noted in relation to the biliary tract and there was a stent in situ in relation to the common bile duct (Figure 3). There was a pseudo cyst of the head of the pancreas measuring 5.5cm in diameter and accompanying dilation of the pancreatic duct.

After the CT scan he was admitted to ICU and the next day he underwent a gastroscopy which demonstrated a large swelling in the duodenum (Figure 4). The surgeon was able to manipulate the scope past the hematoma but failed to place a nasogastric tube. The patient was kept nil

per mouth (NPO) and treated conservatively. Ten days later a further gastroscopy was performed. The pylorus was still very swollen. Although the duodenum was still severely swollen, it was less haemorrhagic. A nasogastric tube was then inserted in order to feed the patient and was removed nine days later since he was able to eat without nausea and vomiting. He was discharged two days later and was scheduled to return for follow up examinations within four weeks^[4]. An ultrasound four weeks later revealed a resolving pseudo cyst with no evidence of the intramural duodenal hematoma.

Discussion

An intramural hematoma is a hematoma in the wall of a structure, such as bowel or bladder, usually resulting from trauma or excessive anticoagulation^[2]. The most common complications of an endoscopic retrograde cholangiopancreatography (ERCP) are acute pancreatitis, bowel perforation and bleeding^[3]. The complication rate is very low, about 5.6% but the rate almost doubles to 9.8% if the patient had a sphincterotomy. Patients undergoing sphincterotomy also tend to present with duodenal haemorrhage. The bleeding is usually intraluminal, but a few intramural