Giant primary peritoneal hydatidosis : a case report

Authors

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ABSTRACT

Hydatid disease is a parasitic infestation caused by the tapeworm Echinococcus granulosus. Echinococcosis occurs worldwide and can affect multiple organs. The liver (75%) and the lungs (15%) are the most common sites of occurrence followed by the spleen, kidney, bones and brain. Peritoneal hydatidosis commonly occurs secondary to a ruptured hydatid cyst of the liver or the spleen. Primary peritoneal hydatidosis is an extremely rare entity accounting for just 2% of all intra-abdominal hydatid disease. Most patients remain asymptomatic for years before presenting with vague abdominal symptoms such as non specific pain, abdominal fullness, dyspepsia, anorexia and vomiting. We successfully treated a 61-year-old man with giant primary peritoneal hydatidosis. The role of imaging and immunological tests in the diagnosis is highlighted. The patient was managed by a combination of preoperative and postoperative antihelminthic therapy along with laparotomy, cyst deroofing, toileting and omentoplasty. The patient is asymptomatic at 1-year follow-up.

Keywords: *Peritoneal hydatidosis, cyst, surgery*

Introduction :

Hydatid disease is a zoonotic disease, which is endemic to most parts of the developing world and livestock rearing areas in the Mediterranean region, Australia, the Middle East, Turkey, Africa and South America [1]. The increase in world travel and migration of people across continents has made it imperative for all clinicians to know about this disease. Human echinococcosis is caused by the larval form of the genus Echinococcus, predominantly by Echinococcus granulosus. The most commonly affected organs are the liver (75%) and lungs (15%)2 with spleen, kidney, bones and brain, kidney, etc usually being secondarily involved. Peritoneal hydatid disease is normally secondary to liver or splenic involvement following spontaneous rupture or accidental spillage during surgery. Primary peritoneal hydatidosis is seen in less than 2% of cases with intra-abdominal hydatidosis [2].

We report a rare case of disseminated primary peritoneal hydatidosis, which was diagnosed using rdiological and serological modalities. The primary site of the disease was confirmed at surgery.

Case report :

A 61-year-old man, without any particular pathological history, presented to the surgical « C » department of Ibn Sina hospital (Rabat, Morocco) with pain at the right hypochondrium and hypogastrium since 6 months. The pain was dull, non-radiating, initially continuous but later on intermittent with no aggravating or relieving factors. He does not report any other associated symptoms.

Per abdominal examination revealed a mass in the right hypochondrium measuring 17×10 cm, which was non-tender, non-mobile and soft in consistency. IgG antibody test for echinococcosis by ELISA showed positive. All others blood investigations were normal.

The contrast-enhanced CT of the abdomen and pelvis showed a large lobulated cystic lesion in the right hypochondrium under the liver (figure 1), measuring 15×12×15 cm. The lesion had multiple rounded hypodense areas within suggestive of daughter cysts. The liver hilus was compressed by the lesion with bile duct dilation. Another multicystic lesion was seen in the Pouch of Douglas (figure 2) as well, measuring 12×8 cm.

The patient was preoperatively prescribed albendazole 400 mg twice a day for 3 months, followed by surgery. A laparotomy was done : two large intra-abdominal cysts, containing multiple daughter cysts were showed. The first (figure 3) was under the liver, compressed the liver hilus without cysto-biliary fistula and the second (figure 4) at the left of bladder. The cysts were deroofed, toileting was performed using 3% saline as the scolicidal agent, followed by omentoplasty. Care was taken to prevent any spillage and the bowel and other viscera were isolated using towels soaked in 3% saline.

The postoperative period was uneventful and the patient was discharged on the 4th postoperative day. Histopathological examination of the specimen was consistent with a hydatid cyst. Postoperatively the patient was prescribed albendazole tablets, 400 mg, twice a day for 3 months to prevent recurrence. After every month of postoperative albendazole therapy, a 2-week interval was given during which the patient's liver enzymes and blood counts were monitored. Serial ultrasound abdomen and pelvis with clinical examinations were performed to follow-up the patient for 1 year. She has remained asymptomatic during this period.

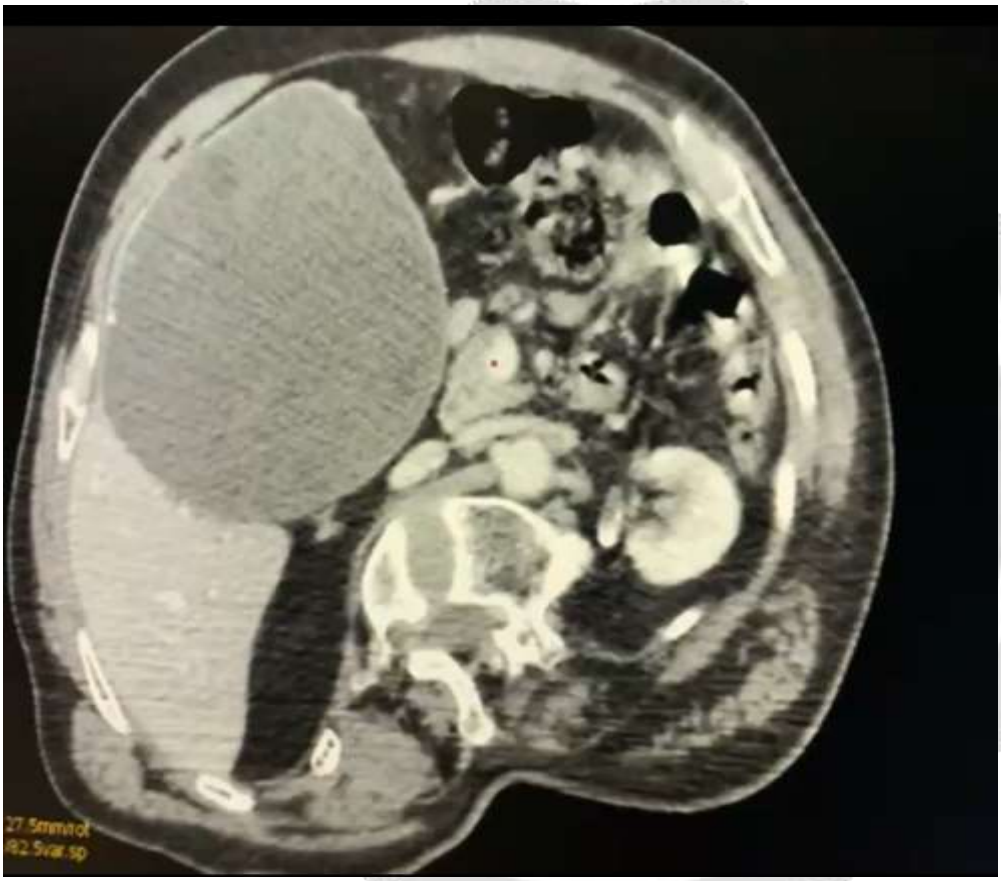

Figure-1 : Contrast-enhanced CT abdomen and pelvis (axial view) showing a large hydatid cyst under the liver

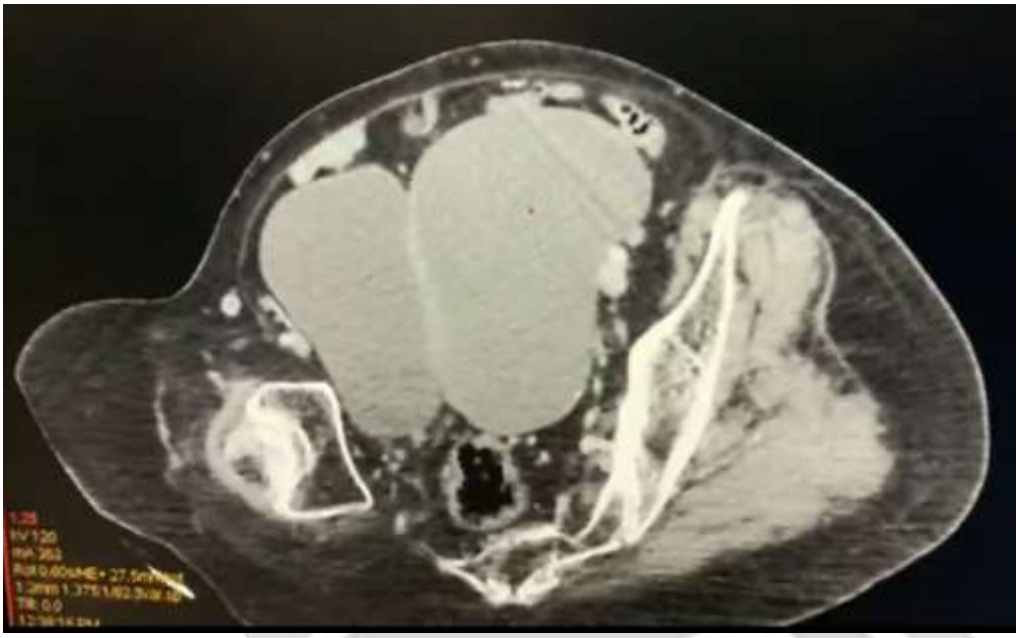

Figure-2 : Contrast-enhanced CT abdomen and pelvis (axial view) showing a large hydatid cyst at the left of bladder

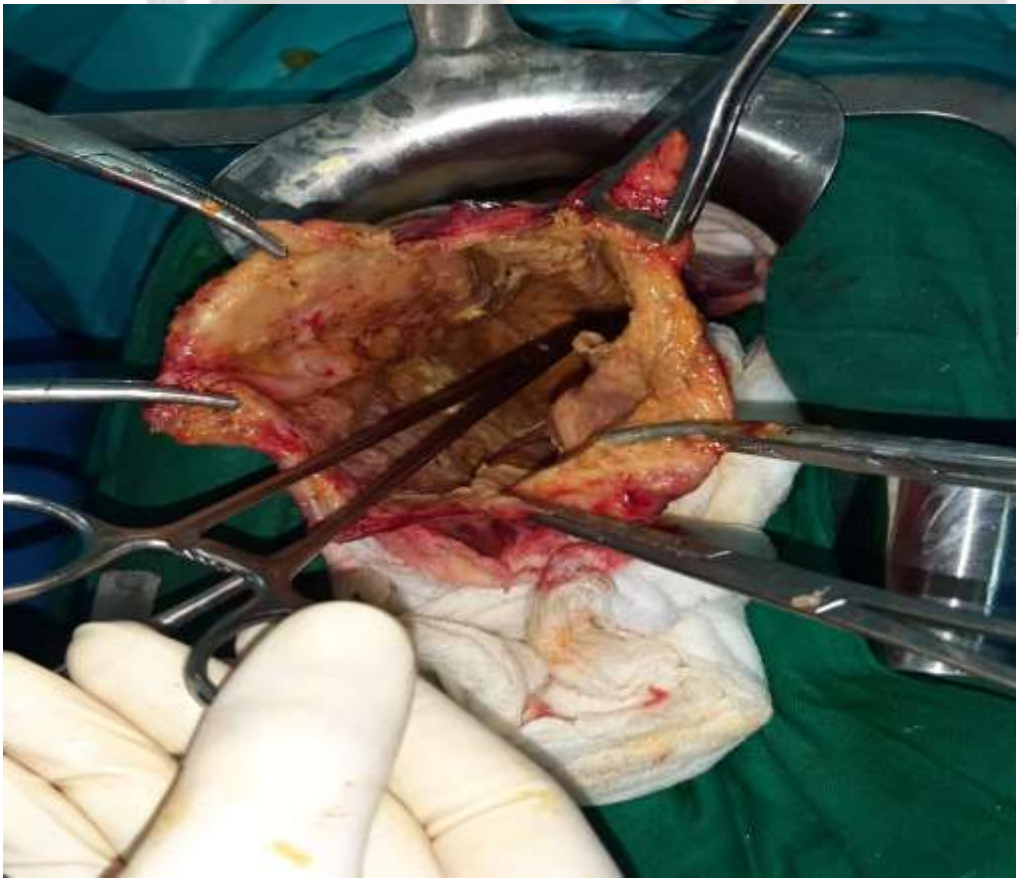

Figure-3 : Intraoperative image showing the under liver cyst

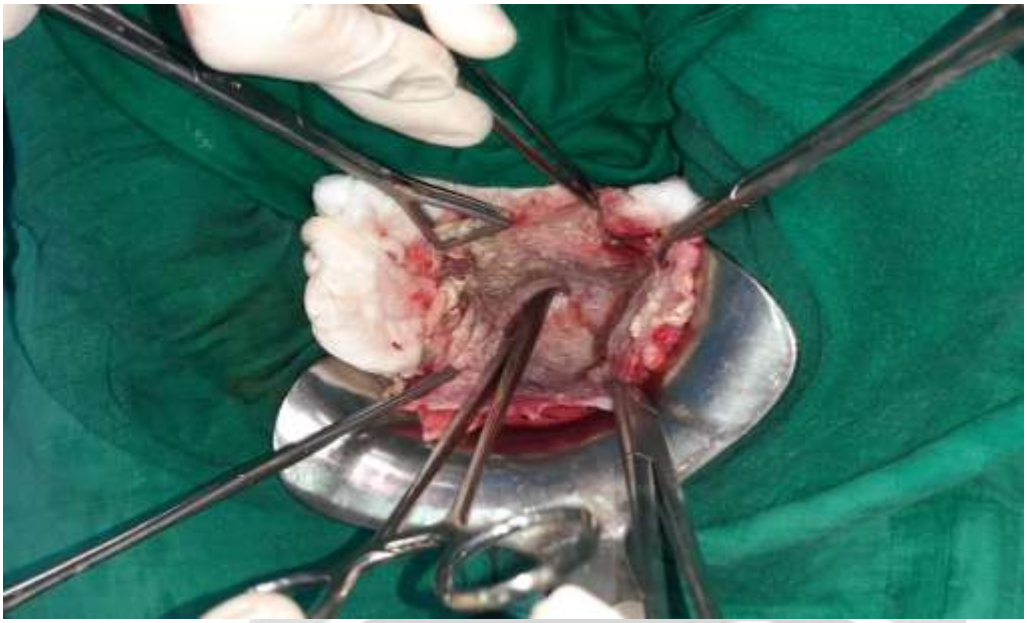

Figure-4 : Intraoperative image showing the pelvic cyst

Discussion :

Peritoneal hydatidosis comprises 10–16% of intra-abdominal hydatid disease [3]. It mainly occurs secondary to rupture of a hepatic or splenic cyst either spontaneously or accidentally during surgery [4]. Primary peritoneal hydatidosis accounts for less than 2% of intra-abdominal hydatidosis [5]. The most common sites are the liver and lungs followed by the spleen, kidney, bones and brain. Dissemination occurs either by lymphatics or systemic circulation [6]. Patients are usually asymptomatic for years. In pelvic hydatidosis, symptoms arise late and are generally due to the pressure effects of the cyst on adjacent organs such as the rectum and urinary bladder [7]. They can rarely cause obstructed labour, obstructive uropathy and renal failure apart from symptoms due to allergic reactions and secondary infections. The diagnosis of hydatid cyst must be considered especially in endemic regions with a history of rearing livestock or owning pets, whenever a cystic mass is felt in the abdominal cavity. The differential diagnosis of such cystic intra-abdominal masses includes pancreatic cyst, mesenteric cyst, gastrointestinal duplication cyst, ovarian cyst, lymphangioma, intra-abdominal abscess, loculated ascites, haematoma [8].

Ultrasonography and contrast-enhanced CT of the abdomen are diagnostic for hydatid cysts. Ultrasonography of the abdomen is the most common first-line radiological investigation performed to determine the organ of origin and to characterise the hydatid cyst [8]. It has a sensitivity of approximately 90–95%. Most often, a solitary unilocular lesion or multiple anechoic, well-defined cystic lesions with or without daughter cysts can be seen. The latter are made out by characteristic internal septations. Hydatid sand may be visible when shifting the patient's position during imaging and predominantly consists of hooklets and scolices. When the fluid pressure in the cyst rises, it may lead to detachment of the inner membrane or endocyst. The detached undulating membrane is pathognomonic and is known as Snake sign [9]. Collapse of the endocyst into the fluid in the dependent part of the cyst gives the appearance of debris floating on a layer of fluid within the cyst. This is called the Water Lily sign. In accordance with the World Health Organization Informal Working Group Classification on Echinococcosis (WHO-IWGE) which is a more recent and standardised classification based on ultrasound images (compared with the older Gharbi classification13) [10].

CT of the hydatid cysts has a high sensitivity of around 95–100%. Contrast-enhanced CT show these cysts to be well circumscribed, rounded lesions with low attenuation and no contrast enhancement. Subtle calcification of the cyst wall is best seen on unenhanced CT [10].

In conjunction with the above, serological tests such as ELISA, Indirect Hemagglutination and Immunoelectrophoresis are fairly reliable initial screening tools. Immunoelectrophoresis is a more sensitive test

for antihydatid antibodies, but ELISA is more specific. ELISA can also be used postoperatively to monitor the patient for recurrences [11].

Medical management with albendazole/praziquantel either alone or as an adjuvant to surgery is used depending on the size, location and dissemination of cysts. Surgery remains the treatment of choice especially in larger cysts and hydatidosis. The type of surgical intervention used has to be individualised for every patient. While complete cyst excision with no spillage or cyst rupture is ideal, it is not always feasible. In such cases, partial excision (if the cyst is in proximity to vital structures), with deroofing and omentoplasty is performed. However, these patients need to be followed up in the long term to rule out recurrence. Nearly a year after her surgery for intraperitoneal hydatidosis, our patient showed no signs of recurrence clinically and on monitoring with serial abdominal ultrasonography [8].

Conclusion :

Hydatid disease is a zoonotic disease, which is endemic to most parts of the developing world. Peritoneal hydatidosis commonly occurs secondary to a ruptured hydatid cyst of the liver or the spleen. Primary peritoneal hydatidosis is an extremely rare entity accounting for just 2% of all intra-abdominal hydatid disease. Surgery remains the treatment of choice especially in larger cysts and hydatidosis and patients need to be followed up in the long term.

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