Hydatid cyst of the pancreas About 12 cases



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Aymen Trigui, Haitham Rejab, Ahmed Guirat, Abdelkadeur Mizouni, Mohamed Ben Amar, Rfik Mzali, Mohamed Issam Beyrouti.

Department of general and digestive surgery. Habib Bourguiba Hospital, Sfax, Tunisia

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INTRODUCTION: Pancreatic localization of hydatid disease is atypical and extremely rare; it accounts for less than 1% of cases. Preoperative diagnosis may be difficult regarding the absence of clinical or radiological signs.

MATERIALS AND METHODS: We report a retrospective study of twelve cases of hydatid cyst of the pancreas over a period of 30 years (1980 to 2010). By means of our study we try to clarify clinical manifestation, radiological features and therapeutic modalities.

RESULTS: The twelve patients consisted on eight men and four women with an average age of 25.8 years. Abdominal pain was the most frequent clinical signs. Jaundice was noted in 4 cases and abdominal mass in 2 cases. Hydatid serology, practiced in 7 cases was positive in 6 cases. Abdominal ultrasound, practiced in 11 cases, completed in 7 cases by abdominal computed tomography (CT), showed cystic lesions in 10 cases, in 7 cases the cystic lesion was dependent of the pancreas. All patients were operated by median laparotomy. Partial cystectomy was performed in six cases, cystic punture in one case, pancreaticoduodenectomy one case, distal spleno pancreatectomy in 2cases, distal pancreatectomy in one case.

CONCLUSION: Hydatid cyst of the pancreas is extremely rare even in endemic countries, it should be considered in the differential diagnosis of cystic lesions of the pancreas. Ultrasound and CT coupled with hydatid serology could be help-ful for the diagnosis. Surgery remains the treatment of choice in pancreatic hydatid cysts.

KEY WORDS: Computed Tomography, Hydatid cyst, Pancreas, Treatment.

Introduction

The liver and lungs are the organs most frequently involved in human echinococcosis. Pancreatic localization of hydatid disease is atypical and extremely rare; it accounts for less than 1% of cases. The diagnosis may be difficult because of the clinical signs which are variable according to the size and anatomic location of the cyst and may be similar to other more commonly encountered cystic lesions of the pancreas ^{1, 9}. The diagnosis is facilitated by ultrasonography and computed tomography (CT) coupled with hydatid serology. Surgery remains the treatment of choice in pancreatichydatid cysts ².

Materials and Methods

We report a retrospective study of twelve cases of hydatid cyst of the pancreas over a period of 30 years: between 1980 to 2010. Trough our study we try to clarify clinical manifestation, radiological features and therapeutic modalities.

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Correspondence to: Dr Aymen Trigui, Department of general and digestive surgery. Habib Bourguiba's teaching hospital, 3029 Sfax, Tunisia. (E-mail: aymen.trigui@yahoo.fr)

Results

The twelve patients consisted on eight men and four women with an average age of 25,8 years ranging from 8 to 63 years. Previous history of lung hydatid cyst was noted in one case and hepatic, lung and peritoneal hydatidosis in another case. The median delay of diagnosis was about 7 months with extreme ranged between 7 days to 2 years. Abdominal pain was the most frequent clinical signs, located in the right upper abdominal quadrant in 7 cases. Jaundice was noted in 4 cases, abdominal mass in 2 cases and worsening of general status in 3 cases. Biological parameters revealed a disturbed hepatic parameters in 5 cases. Hydatid serology, practiced in 7 cases was positive in 6 cases. Abdominal ultrasound, practiced in 11 cases, completed in 7 cases by abdominal computed tomography (CT) (Figg. 1-3), showed a cystic lesions in 10 cases, in 7 cases the cystic lesion was dependent of the pancreas : in 4 cases in the head, in 2 cases in the body and in 1 case in the pancreatic tail. It suspected the hydatic nature in 6 cases. The ultrasound classification of the cyst according to Gharbi showed a type III cyst in five cases and type I in one case. The cysts were associated with hydatid cyst of the liver in four cases and of the spleen in one case. Radiological exam has also detected vascular complications : repression of inferior vena cava in one case and portal vein in another case and bile tract complications in 8 cases (Table I, II). All patients were operated by median laparotomy. Exploration per operatively showed a pancreatic hydatid cyst located in the the head in 7 cases, the body in 3 cases and the tail in 2 cases (Fig. 4). The size of the cyst was between 4 to 8 cm. compression of the bile duct was found in 3 cases, a biliary-cystic fistula in 4 cases and cystic-duodenal fistula in one case. Partial cystectomy was performed in six cases, cystic punture



Fig. 2



Fig. 3









| Patient ID | Case 1 | Case 2 | Case 3 | Case 4 | Case 5 | Case 6 |
|--|------------------------------------|---|--|---|--------------------------------------|--|
| Age (years) a | 21 | 13 | 15 | 26 | 50 | 37 |
| Sex | F | М | М | М | F | F |
| Antecedents | - | Liver and peritoneal hydatid cyst | - | Pulmonary hydatid cyst | - | |
| Location | Tail | Tail and body | Head | Head | Head | Head |
| Other localizations of hydatid cysts | - | + hépatic | - | + Hepatic | - | |
| Clinical Symptoms | Epigastric mass Epigastric pain | epigastric pain | Jaundice Pain in Right upper quadrant | Pain in Right upper quadrant and epigastric | Epigastric pain | Jaundice Pain in Right upper quadrant |
| Physical Examination | Epigastric mass | Normal | Hepatomegaly tenderness in right upper quadrant | hepatomegaly | Normal | Hepatomegaly tenderness in right upper quadrant |
| ELISA | - | - | - | - | - | negative |
| Ultrasonography CT | - | Liver and splenic hydatid cyst | Liver hydatid cyst | Liver hydatid cyst | Pancreatic hydatid cyst (head) | Pancreatic cyst mass (head : 2.5 cm dilation of bile duct : 14 mm) |
| Preoperative Diagnosis | - | Splenic hydatid cyst | Liver hydatid cyst | Liver hydatid cyst | Pancreatic cyst | Pancreatic cyst mass |
| Surgical treatment | Distal | Partial cystectomy with drainage | Partial cystectomy with drainage | Partial cystectomy with drainage | | Duodenopancreatectomy |
| Postoperative complications | None | Hemorrhage | pancreatic fistula | Infection of the residual cavity | pancreatic fistula | hemorrhage |
| Follow-up (months) c | 24 | 36 | 24 | | 5 | 9 |

| Table | Ι |
|-------|---|
|-------|---|

in one case, pancreaticoduodenectomy one case, distal spleno pancreatectomy in 2 cases, distal pancreatectomy in one case and trans duodenal puncture of the cyst in 2 cases with pancreatico-duodenal anastomosis in one case. In addition, partial cystectomy of associated hepatic cysts was performed in 4 cases and cholecystectomy was also performed in 5 cases. The immediate post operative courses were uncomplicated in seven cases and complicated by external pancreatic fistula in 2 cases and suppuration of the residual cavity in 2 other cases. These four patients were treated medically through aspiration and irrigation. hemorrhagic complications were noted in 3 cases and were re operated. (Table I).

Patients were free of symptoms and were followed up for 19 months (extreme between 5 months to 3 years) without any recurrence at abdominal ultrasonography and CT.

| TABLE | Π |
|-------|---|
|-------|---|

| Patient ID | Case 7 | Case 8 | Case 9 | Case 10 | Case 11 | Case 12 |
|-----------------------------|---|---|--|---|--|---|
| Age (years) a | 8 ans | 26 ans | 61 ans | 11 ans | 16 ans | 11 ans |
| Sex | М | F | F | F | F | F |
| Location | Head | Tail and body | Tail | Head | Body | Head |
| Other localizations of | - | + Hepatic | - | + Hepatic | - | - |
| Clinical Symptoms | Jaundice + Pain in Right upper quadrant | Recruited acute pancreatitis + epigastric pain | Epigastric pain | Jaundice + Pain in Right upper quadrant | Epigastric pain | Jaundice + Pain in Right upper quadrant |
| Physical Examination | Hepatomegaly tenderness in right upper quadrant | tenderness in right upper quadrant and epigastric | Normal | tenderness in right upper quadrant | Normal | Hepatomegaly + Epigastric mass |
| ELISA | positive | positive | Positive | Negative | Positive | - |
| Ultrasonography CT | Pancreatic cyst mass (head : 83mm x 76mm dilation of bile duct: 10mm) | Liver hydatid cyst + Pancreatic cyst mass (4 cm) | Pancreatic cyst mass | dilation of bile duct | Pancreatic hydatid cyst + portal hypertension | Pancreatic cyst mass (head : 5 cm) |
| Preoperative Diagnosis | Pancreatic hydatic cyst | Pancreatic hydatic cyst or pancreatic pseudo cysts | Pancreatic hydatic cyst or pancreatic cysts | Choledochal cyst | Pancreatic hydatid cyst | Pancreatic cyst mass |
| Surgical treatment | Partial cystectomy with drainage + duodenal fistula treatment | Distal pancreatectomy with splenectomy | Distal pancreatectomy with splenectomy | cysto duodenal anastomosis | Partial cystectomy with drainage | cysto duodenal anastomosis |
| Postoperative complications | None | None | None | None | None | None |
| Follow-up (months) c | 24 | 36 | 36 | - | 24 | - |

Discussion

Human hydatidosis involves liver or lung in 85-95% of the cases, and extra hepatic involvement is encountered in only 5e15% of the cases ³.

The pancreas is an organ rarely infected by hydatid cysts, and the figures taken from the literature give an incidence ranging less than 1% of the various sites of hydatid disease and about 0.2 % of abdominal locations ^{4,9,15}. Pancreatic hydatid cyst is isolated in 91% of the cases ^{5,9}.

Even inside the pancreas, the location of the hydatid cyst is not uniform; its distribution pattern being 57% in the head, 24% in the body and 19% in the tail. The relatively higher frequency in the pancreatic head can be explained by the fact that the head region is the most vascularized. In our study, the head and the body were the most frequent localizations of the disease (58% and 25%) ⁶⁻⁹.

The entity of primary retroperitoneal hydatid was first reported by Lockhart and Sapinja in 1958 ⁹. Various modes of spread have been suggested to explain the escape of liver and lung involvement, it spread most frequently through veno-venous shunts within the liver and the space of Retzius, however it spread very rarely by retroperitoneal mode, even local spread via the pancreatic or bile ducts through lymphatic ^{11,12}.

The clinical presentation of pancreatic cysts, often insidious after a long evolution, depends on their size and anatomic locations.

- For hydatid cysts located in the pancreatic head, they are usually discovered during a complication essentially an obstructive jaundice due to either compression or fistulization of the common bile duct and less frequently with features of Cholangitis, duodenal stenosis or fistula, acute and chronic pancreatitis, pancreatic abscess and pancreatic ducts compression. But they may still symptomless and be detected only by the presence of an epigastric mass ^{3,13-15}.

- For hydatid cysts located in the pancreatic body and tail, they have a long preclinical latency period during which clinical manifestations of the disease are sparse and may be presented as an asymptomatic abdominal mass detected on physical examination, until the size of the cyst results in clinical symptoms due to compression of adjacent organs, including abdominal pain, discomfort, vomiting, fullness and occasionally early satiety because of compression of the Stomach. Rarely they are discovered during a complication essentially, mesenteric vein thrombosis and segmental portal hypertension due to splenic vein thrombosis .Most rarely, they could be discovered by features of abscess formation, spontaneous rupture of the hydatid cyst into the peritoneal cavity, or gastrointestinal tract. Exceedingly rare a thrombosis of the superior mesenteric artery or a communication with the Wirsung duct leading to acute pancreatitis or wirsungorragia could be happened 9, 15-17.

The diagnosis of pancreatic cystic lesion can be performed by ultrasonography, CT, magnetic resonance imaging (MRI) and endoscopic ultrasound but the difficulty is to link these lesions to the possibility of hydatid disease. In endemic areas, the radiological imaging features, that are useful for distinguishing hydatid cyst from other cystic lesions, are the presence of curvilinear calcification in the wall of the cyst, the presence of daughter cysts, the presence of debris known as hydatid sand, septations, or membrane detachment, or association with another abdominal localization. Even with these fairly specific characteristics, hydatid cysts of the pancreas may

present true diagnostic challenges. In fact, it is often difficult to differentiate these from pancreatic pseudo cysts or cystic tumors. In such difficult situations, the enzymelinked immune adsorbent assay (ELIZA) test for echinococcal antigens, which is positive in over 85% of infected patients, could be helpful in establishing the diagnosis of cystic lesion of the pancreas when positive, however, with a negative serology the hydatid disease cannot be excluded ^{1,9}.

Aspiration of cyst fluid for analysis or biopsy of the cyst wall, performed percutaneously or using endoscopic ultrasound, was suggested as methods of distinguishing hydatid cysts of the pancreas from pseudo cysts or cystic tumors. However, percutaneous CT or ultrasound-guided needle aspiration carries the potential risk of needle tract or peritoneal dissemination of viable parasitic or neoplastic cells. In addition, it can lead to complications such as pancreatitis, hemorrhage, cyst infection and peritoneal rupture of the hydatid cyst. So that, we think that these techniques should be avoided if the diagnosis of hydatid cyst is suspected ^{9, 18}.

The indication of invasive investigations such as the ERCP and the retrograde wirsungography is limited to complicated cases where these investigations could be used as therapy.

Surgery remains the treatment of choice in hydatid disease. Many surgical procedures are available to remove the cyst. The choice of the surgical procedure will depend on the localization of the cyst and the existence of complication such as communication with the pancreatic and biliary ducts.

- For cysts located in the head of pancreas have been treated by various methods. Partial cystectomy with drainage of the residual cavity is the technique of choice, otherwise, total pericystectomy is preferable if possible. When the cyst is communicating with the main pancreatic duct, a cysto-digestive anastomosis (cysto-enteric, cysto-duodenal anastomosis or cysto-gastrostomy) can be performed to prevent a postoperative pancreatic fistula. However, this procedure should be avoided with friable pancreatic parenchyma. In this case, some other procedures can be used such as suturing of the fistula using a drain. Duodeno pancreatectomy seems to be not justifiable for this benign parasitic affection.

- For hydatid cyst located in the body or the tail of the pancreas, the treatment of choice is a distal pancreatectomy with splenic conservation if possible. Conservative treatment with treatement of a pancreatic fistula if present will be considered that for big cysts that adhere to adjacent organs and whose dissection may be difficult and dangerous ^{9,15,19}.

Percutaneous drainage of the cyst is a good alternative to surgery in patients with high surgical risk, and in such cases, it must be combined with medical chemoprophylaxis using albendazole. the laparoscopic resection of the cyst have also been reported. However, because of the delicate nature of the laparoscopic procedure and the importance of avoiding spillage of the cyst's contents, laparotomic resection has been the procedure of choice for the safety in the treatment of pancreatic echinococcosis ²⁰.

Conclusion

hydatid cyst of the pancreas is extremely rare even in endemic countries, it should be considered in the differential diagnosis of cystic lesions of the pancreas. Ultrasound and CT coupled with hydatid serology could be helpful for the diagnosis. MRI and endoscopic ultrasound are shown in doubt diagnostic. Surgery remains the treatment of choice in pancreatic hydatid cysts.

Riassunto

La localizzazione pancreatica delle cisti idatidee è una condizione atipica ed estremamente rara, e fa riferimento a meno di 1% della casistica. La diagnosi preopeartoria può essere difficoltosa in assenza di segni clinici o radiologici. Si riferisce qui di uno studio retrospettivo su 12 casi di cisti idatidee del pancreas osservate in un periodo di 30 anni (dal 1980 al 2010). Con questo studio cerchiamo di descrivere le manifestazioni cliniche, le caratteristiche radiologiche ed i mezzi della terapia. La casistica di dodici pazienti comprende otto uomini e quattro donne dell'età media di 25,8 anni. Il segno clinico più frequente è rappresentato dal dolore addominale. In quattro casi si è osservato un ittero ed in 2 casi la presenza di una massa addominale. Le indagini sierologiche per l'idatidosi sono risultate positive in 6 casi sui sette indagati. L'ecografia addominale è stata eseguita in 11 casi, e completata con la CT dell'addome in 7 casi, con la dimostrazione di lesioni cistiche in 10 casi, con localizzazione in sette di essi in rapporto con il pancreas. Tutti i pazienti sono strati operati per laparotomia mediana, con l'esecuzione di una cistectomia parziale in 6 casi, con la puntura evacuativa della cisti in un caso, con una DCP in un caso, con una spleno-pancreasectomia distale in 2 casi e in un caso, una pancreasectomia distale in un caso e con la puntura trans-duodenale della cisti in due casi seguita dall'anastomosi pancreatico-duodenale in un caso. In conclusion l'idatidosi del pancreas è estremamente rara anche in territory endemic, e deve essere consideratra per una diagnosi differenziale con le lesioni cistiche del pancreas. L'ecografia e la CT associate alla sierologia per l'idatidosi possono risultare efficaci per la diagnosi. Il trattamento chirurgico resta quello di scelta per l'idatidosi cistica del pancreas.

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