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RESEARCH ARTICLE

AN UNUSUAL CYSTIC PANCREATIC MASS

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Abstract

Hydatidosis is an endemic disease in Morocco. Localization in the pancreas is very rare especially when isolated. We report the case of a patient admitted in the emergency room for a suppurated pancreatic collection, about 15 cm in diameter, resembling a fistulized Pseudo-pancreatic cyst, or a cystic pancreatic tumor or a pancreatic hydatid cyst. In spite of an initial empirical antibiotic therapy, the unfavorable evolution led us to perform an exploratory laparotomy which confirmed the diagnosis of an isolated pancreatic hydatid cyst. The classic surgical treatment by subcutaneous laparotomy is still effective in this situation, and consists of cyst drainage and a cysto-jejunal bypass on a Y loop to compensate for the pancreatic cyst-channel fistula. Because of the emergency context, large volume, lack of diagnosis certainty and the slow evolution of this cyst, we preferred surgical treatment to per cutaneous or endoscopic drainage.

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Introduction:-

Hydatidosis is an endemic disease in Morocco. The isolated pancreatic location of hydatidosis is quite rare (1%), which explains why it is not well known. We report the case of a patient admitted in the emergency room for a suppurated pancreatic collection, about 15 cm in diameter, resembling a fistulized pseudo-pancreatic cyst, or a cystic pancreatic tumor or a pancreatic hydatid cyst. In spite of an initial empirical antibiotic therapy, the unfavorable evolution led us to perform an exploratory laparotomy which confirmed the diagnosis of an isolated pancreatic hydatid cyst.

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Based on this case report, we thought it would be interesting to review the various diagnostic and therapeutic aspects of this condition, which is still endemic in our country.

Case Description:

A 60-year-old woman, with a medical history of high blood pressure, was admitted to the emergency room for severe abdominal pain evolving for about 2 months, associated with a high fever (39°). She lost 15kg in that amount of time. Clinical examination revealed a healthy general condition. She was 160cms tall and weighing 60kg. She was conscious with normal vital signs, a normal abdominal examination, without any pain or palpable mass. Laboratory tests revealed elevated white cells (13 000/mm³), CRP (C-reactive protein) at 230mg/L, Hb= 11g/dl, and low blood platelet at 124 000/mm³. Her renal function was normal.

Tumor markers such as CA-19-9 were normal.

An abdominal CT scan and MRI, performed, showed a large cystic pancreatic mass in the body and tail of the pancreas, measuring 14cm, with low signal intensity on T1 weighted images and high signal intensity on T2 weighted images, containing a thin floating membrane, and some air inside, with no contrast enhancement of its walls.

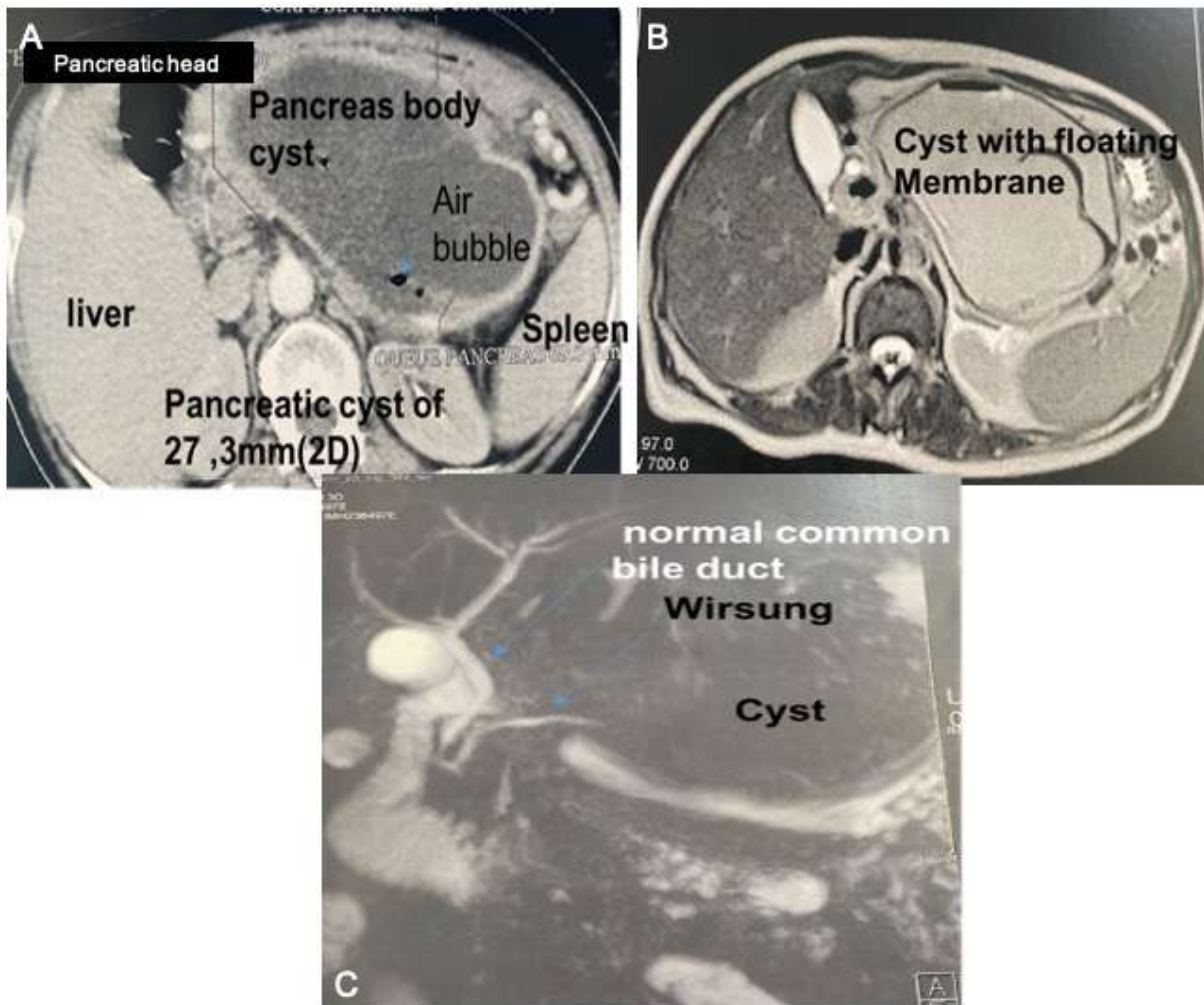


Figure 1:- Axial image of apost contrast abdominal CT scan (A) showing a large cystic pancreatic mass of the body and tail of the pancreas containing some air bubbles with a thickened non enhanced wall. Image B: Axial MRI image in T2 weighted sequence showing a large cystic pancreatic mass with a floating membrane. Image C: Biliary-MRI showing a normal common bile duct and Wirsung non communicating with the large cyst.

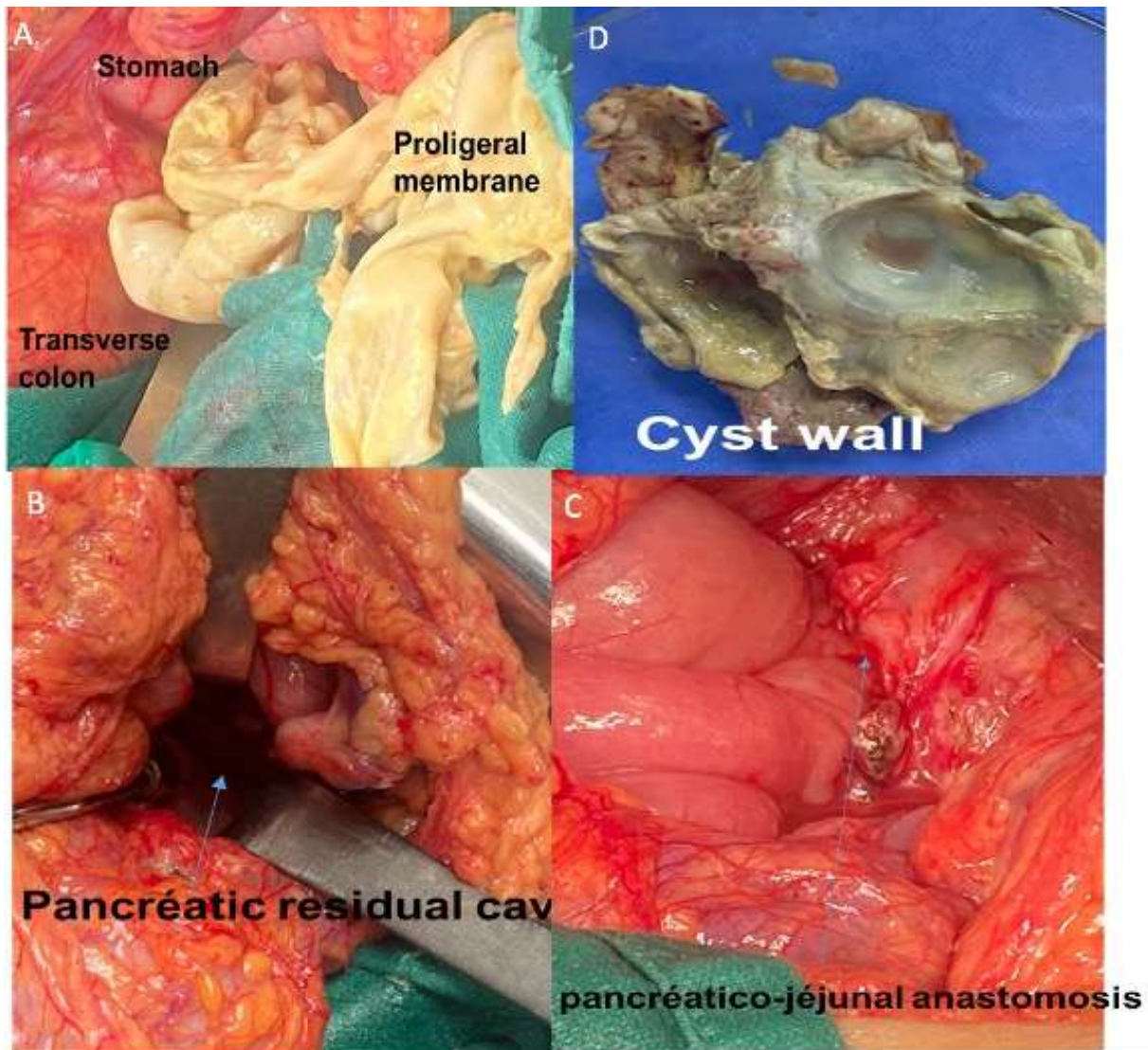


Figure 2:- Intra operative images showing the hydatid cyst content (A), the pancreatic residual cavity (B), the pancreatico-jejunal anastomosis (C) and post operative aspect of the cystic wall (D).

The patient was admitted to the surgery department, surgery was done through a sub costal laparotomy that showed a large infected pancreatic cystic mass, with a fistula forming to the posterior side of the stomach. We performed a surgical drainage of its content, cleaning of residual cavity with peroxide and created a Y loop pancreatico-jejunal anastomosis, in order to avoid any further risk of fistula formation.

Parasitological examination of the fluid showed the presence of numerous scolex and histology findings revealed a fibrous cyst wall in the process of calcification, without signs of malignancy, confirming diagnosis of an infected pancreatic hydatid cyst.

The patient was discharged 3 days later, and admitted for sural phlebitis 15 days after surgery, treated with anticoagulants with a good follow up.

Discussion:-

The most studied cystic pathologies in the pancreas are represented by cystic tumors and pseudocysts secondary to acute pancreatitis. The localization of hydatidosis in the pancreas is exceptional, representing less than 1% of all localizations.[1]

Hydatidosis is considered an immigrant disease in both the United States of America and in Europe, however, in Morocco its prevalence is considered 8/100,000 cases per year. [2]

In our Unite surgery A ward at the Ibn Sina Hospital of Rabat, we operated about 760 cases of liver hydatid cysts, between the period of 1990 and 2010, and 5 cases of pancreatic hydatid cysts that were associated with liver or peritoneal cavity localizations. But only 2 cases of isolated pancreatic hydatid cyst, representing only 0.9% of cases in our hospital.

Up until 2014, only 206 cases of isolated pancreatic hydatidosis were reported in literature.[3]

Hydatid cysts are most often hepatic or pulmonary. Abdominal and peritoneal localization is most often secondary to hepatic rupture and is seen in almost 9% of the cases. [2]

Pancreatic hydatid cysts are very uncommon, when isolated, 50% are localized in the cephalic region due to its rich vascularization. 24% are corporeal and 19% are caudal.[4]

The patient we report has a large cystic mass of the pancreas body and tail with exophytic development.

The rarity of the pancreatic location of hydatidosis is explained by the life cycle of parasite: the hexacanth embryo, after crossing the intestinal wall, follows the portal circulation to find the first hepatic filter (sinusoid) and the second filter, which is pulmonary. This double obstacle explains the frequency of hepatic and pulmonary hydatid cysts. As soon as it is crossed, the hexacanth embryo via the systemic circulation, in particular the superior mesenteric artery, can graft to the pancreas.[2]

Clinical symptoms of the hydatid cyst of the pancreas aren't specific. They can range from chronic epigastric pain, epigastric or left hypochondrial swelling, or jaundice (for cephalic localizations). It can be asymptomatic and discovered fortuitously, during a radiological examination.

The symptoms are often insidious after a long evolution, which explains the long latency. Most cysts are acquired in childhood and are not diagnosed until the third or fourth decade of life. Only about 10-25% of cases are revealed in childhood.[4]

Sometimes, the cyst may be revealed by a complication, such as an infection of its content resulting in an abscess formation. It is formed either by a fissuring of the hydatid membranes allowing the entry of bile or pancreatic fluid, that's more or less septic, or by a hematogenous contribution of the bacteria. [5]The bacterial proliferation leads to suppuration and sometimes the transformation of the cyst into a pyogenic accumulation in which the parasitic membranes float and are destructed[6], which is the case of our patient.

Other complications include: rupture in the peritoneal or retroperitoneal cavity, or in the duodenum with hemorrhagic complications or a fistula forming between the cyst and the Wirsung canal causing acute pancreatitis.[7]

A cysto-biliary fistula leading to an angiocholitis or cysto-digestive fistula can also be seen in 0.5% of cases[2]. Portal hypertension is encountered in 14% of cases, and is often asymptomatic[4], [5].Our patient has a splenomegaly of 18 cm and collateral circulations due to the segmental portal hypertension caused by compression of the cyst.

Intravascular rupture is life threatening with risk of anaphylactic shock. It can also cause a severe and immediate fatal pulmonary embolism. Hydatid compression can sometimes lead to thrombosis of the upper mesenteric vessels[8].

Biological evaluation consists of serological examinations using various immunological techniques; however, a negative serology does not exclude the diagnosis of hydatidosis. The presence of a hyperleukocytosis in the CBC (blood count) indicates an infectious complication. CRP and Pro-Calcitonin are also elevated in case of an infectious complication.

Imaging has a main role through ultrasound and CT scans, providing an essential radiological assessment before surgery.

Radiological aspects that may lead to diagnosis are the presence of:

1. Another location of the hydatid cyst.
2. Cystic membranes detached.
3. Parietal arched calcifications.
4. Daughter vesicles.

Diagnosis of hydatidosis is often retained in case of: floating membranes perceived in the cyst according to the WHO classification type II, daughter vesicles in type III and presence of calcifications in type V.

Our case report shows a membrane detachment on MRI with the presence of calcifications on the pathological examination.

Biliary-MRI may detect communication between the cystic lesion, the bile and pancreatic ducts. Echo-endoscopy can accurately show the relationship between the cyst and the pancreatic duct, and allow a biochemical and cytological study using "Ultrasound Guided Fine Needle Aspiration (EUS-FNA)". This technique can distinguish between hydatid cysts of the pancreas and false cysts or cystic tumors.[9]

In the absence of leading radiological aspects, differential diagnosis includes: pancreatic pseudo-cyst, serous or mucinous cystadenoma, cystadenocarcinoma, which may be distinguished by parietal enhancement in post contrast imaging.[1], [4], [5], [6], [10].

Antibiotic therapy seems to be ineffective against intra cystic infection and may delay surgical treatment [10]. Medical treatment by Mebendazole or Albendazole on the other hand shows interesting results ranging from size reduction of the cyst to cleaning their content before surgery or percutaneous drainage. Our patient didn't receive any medical treatment because initial diagnosis was unclear. She was put on antibiotics with no effect on cyst suppuration or volume.

Due to the delicate nature of the laparoscopic procedure, the large volume of the cyst, the presence of infection and the importance of spillage avoidance of cyst content, open resection was the option of choice for pancreatic echinococcosis treatment.

In the OR, surgical examination revealed a voluminous hydatid cyst of the body and tail of the pancreas, measuring almost 15cm in diameter, with mass effect on the stomach, and the transverse colon.

The most commonly used parasiticide in our country is the hydrogen peroxide. Given its safety, availability, low cost and reliability of use. It is also well tolerated and clinically efficient.

There is a theoretical risk of gas embolism and sometimes fatal shock, which seems to be linked to the injection of hydrogen peroxide into a solid cyst under pressure.

The other two parasiticides used are: 2% formalin and hypertonic saline, but these are rarely used in our department.

During surgical procedure, the initial puncture of the cyst yielded frank pus. Bacteriological sampling later proved to be negative. A trocar connected to the suction system punctures the collection to empty it completely. The cyst removal and enlargement of the trocar orifice allowed us to observe hydatid material, and make a total evacuation of its contents, cleaning and rinsing of the residual cavity with hydrogen peroxide. No pancreatic fistula was seen, and cholangio-pancreatography was not necessary as the lesion was far from the head of the pancreas. The endemic context of hydatidosis in our country required a complete abdominal revision in search of other sites.

The treatment is surgical and should be conservative (resection of the protruding dome) otherwise simple surgical drainage in the absence of ductal fistula confirmed by cholangio-pancreatography can be done.

In case of a fistula with the Wirsung, the treatment of choice is more acysto-jejunal or gastric bypass than a left resection such as distal pancreatectomy with or without enbloc splenectomy, or a Whipple procedure for the cervical location. We perform pancreatic resection for true cystic tumors and for malignant tumors but not for hydatid cysts.

Percutaneous interventional radiology techniques such as puncture, aspiration, injection and re-aspiration (PAIR) and percutaneous drainage, have shown during the past years a promising future in the treatment of hydatid cysts of the pancreas.

We believe that cytopuncture of the hydatid cyst should be considered with great care since it may be at cause of various complications, such as: pancreatitis, hemorrhage, peritoneal dissemination in addition to risks of intra cystic infection, fissuring and rupture. [11]

Hydatidosis is a serious public health problem that threatens the economy of endemic countries such is the case in our country (Morocco). Prophylaxis is a real treatment that must act at all levels of the epidemiological chain and the parasite cycle. Albendazole must be prescribed 24 hours before PAIR and 30 days after the procedure. [12]

There is a 30% morbidity of pancreatic surgery for hydatidosis dominated by suppurations of the residual cavity and pancreatic ductal fistula which may go unnoticed or be secondary to an inappropriate surgical procedure. Melena hemorrhage is reported in 12% of the cases after cysto-gastric bypass [13].

Mortality is negligible and caused by various complications such as anaphylactic shock, pulmonary embolism or peritonitis.

Conclusion:-

In endemic countries such as Morocco, the diagnosis of isolated pancreatic hydatidosis may be confused with other cystic pancreatic tumors despite radiological investigations. If there is any doubt about the diagnosis, surgery is the first option, and the residual pancreatic cavity is treated by simple drainage in the absence of a pancreatic fistula, or by a cysto-gastrointestinal bypass in the presence of a fistula.

Percutaneous drainage and PAIR are alternative treatments indicated in inoperable patients and should be combined with chemoprophylaxis with Albendazole. Eradication of the hydatid disease depends on well conducted and organized prophylaxis.

Abbreviations:

1. CBC: Complete Blood Count
2. CRP: C Reactive Protein
3. CT: Computed Tomography
4. Kg: kilogram
5. MRI: Magnetic Resonance Imaging
6. OR: Operating Room
7. PAIR: Puncture, Aspiration, Injection and Re-aspiration.
8. WHO: World Health Organization

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