

# Our Behavior Against Primary Hydatidic Cyst of the Pancreas

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## Abstract

**Background:** Pancreatic primary hydatidic cysts are rare not to say exceptional, with their incidence in large series being only 0.2% to 0.3%. Setting: General Surgery Service “Pablo Luis Mirizzi” of the National Hospital of Clinics, Allende Sanatorium and Caraffa Clinic of Córdoba.

**Design:** Retrospective and cooperative.

**Methods:** Between December 2000 and December 2019, 9 patients with primary pancreatic hydatidic have been treated surgically, with 5 of the male sex and the remaining four of the female sex, with an average age of 39.4 years. In relation to the clinic, all patients had abdominal pain, accompanied by vomiting, bloating and fever. In three they had a palpable abdominal mass. All were asked for laboratory and hydatidic tests, highlighting in 6 of the 9 patients tested positive.

**Results:** All patients with abdominal ultrasound, abdominal CT and a patient were studied for CPRMN plus MRI of the abdomen. Abendazole was previously treated prior to surgical treatment in all cases. In relation to surgical treatment, the traditional unroofing and drainage of the cyst was carried out with the Mabit-Lagrot technique in 6 opportunities and in 3 with the Goinard Technique.

**Conclusions:** The location of hydatidic cysts in the pancreas is rare. Diagnosis is based primarily on imaging studies, in addition if they correlate with epidemiology and positive hydatidic serology. Treatment of the pancreas hydatidic cyst is surgical.

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## Introduction

Hydatidosis is a zoonosis produced by a parasite that in our environment is the *Echinococcus Granulosos*, which evolves to form cysts in its larval stage, which develop in intermediate or accidental hosts, among which is man, and that in the state adult lives in the intestine of canids (definitive hosts), constituting a great public health problem [1].

The liver and lung are the most frequent places involved in this pathology, but there are other visceral locations, to which the embryo reaches via the arterial route after bypassing the hepatic and pulmonary filters, they are generally the kidney, spleen, thyroid, etc. [2-4].

The pancreatic location is extremely rare if not exceptional, in large series cases of primary hydatidosis barely reach 0.2% to 0.3%, with a small number of cases published in the literature [5,6].

## Material and Methods

Between December 2000 and December 2019, in a cooperative work integrated by the General Surgery Service “Pablo Luis Mirizzi” of the

Hospital Nacional de Clínicas, Sanatorio Allende and Clínica Privada Caraffa in Córdoba, 9 patients with primary pancreatic hydatidosis have been surgically treated, 5 being male (55.5%) and the remaining four female (44.4%), with an average age of 39.4 years (range between 18 to 71 years) (Table 1).

In relation to the symptoms, all patients had abdominal pain as the main symptom (100%), accompanied by vomiting (44.4%), abdominal distention (33.3%) and fever (22.2%). On physical examination, only three had a palpable abdominal mass (33.3%). Laboratory and hydatidosis tests were requested from all of them, highlighting that in this last test 6 (66.6%) of the 9 patients were positive for the diagnosis of hydatidosis (Table 1). On the other hand, the patients came from endemic areas.

## Results

All patients were studied with an abdominal ultrasound and abdominal CT (100%) and in one patient a MRNC plus abdominal MRI (11.1%). The abdominal ultrasound showed that on 4 occasions the cyst was located in the body and tail region (44.4%), another 4



located in the head of the pancreas (44.4%), finally one in the head region and pancreas body (11.1%).

The abdominal CT confirmed the ultrasound diagnoses, with the cysts of the corporo-caudal region of an average size of 126 mm x 87 mm (range: 97 mm x 70 mm to 180 mm x 120 mm), being unilocular or multilocular. On the other hand, in pancreatic head cysts whose average size was 93 mm x 72 mm (range: 60 mm x 40 mm to 120 mm x 80 mm). Likewise, they were also unilocular or multilocular. Finally, a unilocular cyst that occupied the head and body measuring 120 mm x 130 mm (Figure 1 and Figure 2). In the patient who underwent an MRI of the abdomen and MRCP, a cystic image was evidenced in which the scolexes are well marked inside and, in addition, the MRNC demonstrates a normal bile duct without negative images (Figure 3).

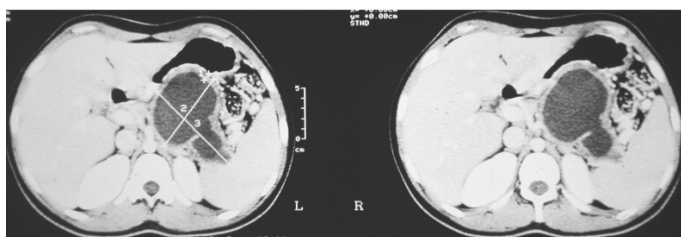


Figure 1: Abdomen CT of cyst in the Body and Tail region of the pancreas.



Figure 2: CT scan of the abdomen showing a cyst in the head of the pancreas.

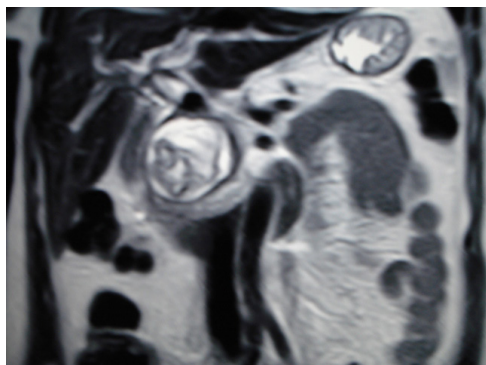


Figure 3: CPRMN revealed a cystic image in which the scolexes and VBP are well marked without lithiasis.

Abendazole treatment was previously performed before surgical treatment in all cases. In relation to the surgical treatment, an evacuating puncture, sterilization of the content, unroofing and drainage of the cyst were carried out with the Mabit-Lagrot technique on 6 occasions (66.6%) and in 3 with filling of the residual cavity with omentum, which is the Goinard Technique (33.3%) (Table 1). In operated cases, there was no operative mortality and morbidity was practically no greater than that inherent in any surgical act that requires a laparotomy under general anesthesia. Only two of the operated patients (22.2%) located in the head of the pancreas, drained a small amount of clear fluid rich in amylase, in one for 5 days with the Goinard Technique and in another for 7 days with the Mabit Technique -Lagrot, who gave in spontaneously with medical treatment.

The resolution of the disease was satisfactory, the patients remaining free of pathology in the follow-up, being controlled in the outpatient clinic with a hydatidosis test, ultrasound follow-up and abdominal CT. No recurrence of the disease was observed.

## Discussion

The human contagion of hydatidosis occurs by the ingestion of the parasite's eggs and the release of the hexacan embryo, which constitutes its infecting form, which after passing through the intestinal mucosa is transported by the portal circulation to reach the liver and the lung that constitute the two most frequently affected organs (1). The pancreatic location is extremely rare if not exceptional, in large series cases of primary hydatidosis barely reach 0.2% to 0.3% [5,6].

Some authors maintain that the average surgical incidence of this zoonosis ranges from 15 to 12.6 / 100,000 inhabitants per year, being a great public health problem, considering that the incidence in the liver is from 60% to 70% But when it spreads to other Viscera such as the pancreas occurs through the hematogenous route [7]. For a hydatid cyst to be considered primary of the pancreas, it must have an adventitia developed at the expense of the gland's own tissue, they are generally unique, characteristics that differentiate them from hydatid cysts secondary to multiple hydatidosis or a pancreatic settlement by contiguity from any other intraperitoneal location [8].

According to Chinya A, et al. (2015) [9], hydatid lesions are located in 50% to 58% in the head of the pancreas, those of the body between 24% to 34% and finally that of the tail of the pancreas is around 19% [9]. In our incidence, we do not agree with the literature, where injuries to the body and tail were located 4 times (44.4%), another 4 in the head of the pancreas (44.4%), finally one in head and body region of the pancreas (11.1%).

The symptoms can vary from the acute abdomen, to being completely asymptomatic and appear as a chance finding by imaging

Table 1: Clinical cases.

Age	Sex	Clinic	Images	Surgical	Location
21	F	Abdominal pain. Palpable mass,	Ultrasound-T.A.C. (103 x 70 mm)	Body and tail of pancreas.	Mabit-Lagrot- Good evolution
26	M	Abdominal pain, fever, bloating		Head of pancreas.	
60	M				
46	M	Dyspepsia, abdominal pain,	Ultrasound-T.A.C. (120 x 80 mm)	Body and tail of pancreas.	Mabit-Lagrot. Good evolution.
18	F	Abdominal pain. Vomiting		Body and tail of pancreas.	
38	F			Body and Head of Pancreas	
57	M	Abdominal pain. Palpable mass in epigastrium.	Ultrasound-T.A.C. (97 x 70 mm)		Mabit-Lagrot. Good evolution.
71	M	Abdominal pain. Abdominal distension. Vomiting		Head of pancreas.	
57	F		Ultrasound-T.A.C.		Goinard.



studies that are currently used, such as ultrasound and computed tomography. In general, these cysts give a very late symptomatology whose axis is the tumor syndrome [1]. Abdominal pain is the most frequent reason for consultation. There may be complications during its evolution, whether it appears jaundice, suppuration of the cyst, chronic pancreatitis, some symptoms of intra or retro peritoneal rupture, fistula towards neighboring organs, segmental portal hypertension, acute pancreatitis due to communication with the Wirsung duct [6,10, and 11]. In our experience with these injuries, abdominal pain was present in all patients. For cysts located in the head of the pancreas, we observe a greater amount of vomiting and epigastric or abdominal distention. When the lesion was located in the body and tail, we could observe a palpable mass with abdominal distention and vomiting.

The diagnosis is fundamentally based on imaging studies such as ultrasound and especially CT with contrast, which offers very significant images. Above all, if they correlate with the epidemiology that is fundamental for its suspicion, as well as positive hydatid serology [12]. On the other hand, the negativity of this latest study does not eliminate the nature of hydatidosis, of a pancreatic cystic mass. In the images, without a doubt, that the presence of calcifications in the cyst wall and the presence of daughter vesicles are strong arguments in favor of the hydatid nature [12]. In the absence of these signs, other cystic tumors of the pancreas could be considered, such as serous or mucinous cystadenoma and cystadenocarcinoma, and it may be necessary to resort to the pathologist during the surgical procedure to confirm the diagnosis. CT can also allow to see the relationship between the cyst and the great vessels, the bile ducts and the calcification of the wall [13].

Some authors place great value on the study of MRCP when it comes to the suspicion to detect a biliary-cystic fistula. Although it is easier to detect this lesion in the pancreas [13,14]. This method has a limited value of sensitivity for diagnosis. Zalaquett E, et al. (2017) [15], observed in T2 a very active cyst and the ring sign, as well as the daughter vesicles inside it, which is usually a very pathognomonic sign. If, despite these studies, the diagnostic doubt persists, the use of the endoscopic echo examination is a great contribution and allows the content of the cyst to be studied and investigated to differentiate them from other cystic lesions of the pancreas [12]. In our experience, abdominal ultrasound was very useful because it demonstrated the thickening of the wall, the membrane and the deferent daughter vesicles, pathognomonic signs of hydatid cyst that could correspond to Garbi type III or WHO-IWGE CE2 as it happened. In 4 the cyst was located in the body and tail region, another 4 located in the head of the pancreas, and finally one in the head and body region of the pancreas [16,17]. Abdominal CT confirmed the ultrasound diagnoses, with the cysts in the corporo-caudal region of an average size of 126 mm x 87 mm, some unilocular or multilocar. On the other hand, in pancreatic head cysts whose average size was 93 mm x 72 mm. Likewise, they were also unilocular or multilocular. Finally, a unilocular cyst occupying the head and body measuring 120 mm x 130 mm. In the MRI of the abdomen and CPRMN I know that it was carried out, it revealed a cystic image that in its interior the scolexes are well marked and in addition the MRCP shows a normal bile duct without negative images.

The treatment of the hydatid cyst of the pancreas is surgical. Undoubtedly, this treatment will depend on the location of the pathology and the possible existence of a pancreatic fistula. In those located in the body and tail, we performed the unroofing of the cyst and drainage in the 4 patients (Mabit-Lagrot technique) with or without filling of the residual cavity with omentum (as described by Goinard) has proven to be effective and safe in cysts of primary location, in

agreement with the literature [14,18]. On the other hand, some authors agree that the behavior is resection [19]. In relation to those with the head of the pancreas, we also performed conservative behavior in 5 patients such as unroofing the cyst and drainage, in 3 with the Mabit-Lagrot technique and 2 with the omentum according to the Goinard technique.

The surgical tactic, we carry out an evacuating puncture through the cyst in the intra-surgical procedure, sterilization of the content with hyperchloride solution, and we also perform intra-operative biopsy of the cyst wall to check the presence or not of epithelium of the wall of the cyst. cyst, which this act can determine what type of tumor, if it is hydatid it does not have epithelium or a cystic tumor of the pancreas that could change our surgical tactics [1,18, and 20]. For some authors, cysts located in the head of the pancreas tend to be conservative treatment (level of evidence 5, recommendation D), when it is adhered to neighboring organs and the aorta, or if the dissection it can be dangerous, being the procedure of unroofing with drainage or with introduction of the omentum to the interior (Mabit-Lagrot or Goinard) of choice [14,18]. DPC should be performed in very selective cases [21].

In lesions of the body and tail of the pancreas, some authors maintain that the trend is radical surgery (level of evidence 5-recommendation D) [19,21]. If there is a fistula between the main duct and the cyst, a resective procedure or an anastomosis of the cyst with the gastrointestinal tract may be performed. On the contrary, in the absence of a fistula, the unroofing procedures with drainage or with omentoplasty are suggested (Mabit-Lagrot-Goinard).

Treatment with PAIR would only be indicated in those patients who do not accept surgery or who have a high anesthetic risk, also with the consequent risk of anaphylaxis and peritoneal dissemination, with 10% of its effectiveness being reported [22]. On the other hand, for some authors they recommend medical treatment (Albendazole) 1 week before surgery and continue for 2 months during the postoperative period (Level II of evidence and grade C of recommendation) [23]. Sensitivity to Albendazole therapy for 4–6 months has been reported in the literature with a 60–90% success rate [24].

## Conclusions

The location of hydatid cysts of the pancreas is rare. These lesions are located in 50% to 58% in the head of the pancreas, those of the body between 24% to 34% and finally that of the tail of the pancreas is around 19%. Diagnosis is fundamentally based on imaging studies such as ultrasound and especially CT and MRI, as well as whether they correlate with epidemiology and positive hydatid serology. The treatment of the hydatid cyst of the pancreas is surgical. Without a doubt, this treatment will depend on the location of the pathology.

## Statements

The authors declare that they have no conflicts of interest of any kind, that the work has been approved by the ethics committee responsible for the workplace and do not declare means of financing the work carried out.

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