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Diagnosis and treatment of cystic lesions of the pancreas – still might be a mystery

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Summary

Background: Postinflammatory or posttraumatic pseudocysts of pancreas are common findings while cystic tumours belongs to rarity. But underestimating of this problem leads to misdiagnoses.

Case Report: A case of 69-years-old women with cystic lesion of the pancreas is being reported. The lesion was first diagnosed as pseudocyst (1994) and medical treatment was introduced. The cyst has enlarged and patient underwent endoscopic transpapillary drainage. As the endoscopic and transcutaneal drainage brought no recovery cystojejunostomy was performed (2002). In January 2004 patient presented acute upper GI bleeding. .

Upper GI endoscopy as well as colonoscopy did not reveal the bleeding source. She was qualified to emergency surgery and distal pancreatectomy and splenectomy was performed. In the histopatological examination pancreatic papillary partial cystic adenocarcinoma has been diagnosed (2004).

Conclusions: Presented case show the problem of pancreatic cyst management despite of progress in diagnostic and visualizing techniques.

Key words: **Pancreatic cyst • cystic tumor • surgical treatment**

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Background

Cystic tumors of the pancreas are pretty rare. They account 5-10 % of all cystic lesions within the gland [1-3]. Also tumors developing inside nonneoplastic cyst are not found often. Especially lesions existing for many years in patient gives little physicians attention. They are most often thought to be pseudocysts with inflammatory origin even if there is no evident pancreatitis history. Sometimes even intensive examination and specialist diagnostic procedures may not give doubtless answer. There is no specific history or symptoms for cystic tumors of pancreas. Most patients are asymptomatic. Clinical features if present may include epigastric discomfort or epigastric pain, diarrhea, nausea, vomiting and weigh loss eventually palpable mass if the history is long. Acute complications are obstructive jaundice, recurrent pancreatitis or acute GI hemorrhage [1-4]. All imaging techniques ale used in diagnosis. Abdominal ultrasonography is the best to differentiate between solid and cystic lesions. Computer tomography and Magnetic Resonance provides information about the structure, localization and extension. Also mucin content might be visualized in MRI. ERCP shows if there is the connection between Wirsung duct and the cyst and the structure of the duct.[1-4]. Also Endoscopic ultrasonography provides useful information about the content and walls of the lesion that may help in diagnostic [2-5] Biopsy and cytological examination is not recommended because of it's low diagnostic value and the risk of complications. [1, 3, 4] Biochemical analysis of cystic fluid sometimes may give a solution when low enzyme content correlates with high tumor markers levels (CEA, CA 72-4, CA 15-3) or the cyst contains mucin. But there is no reliable serum tumor marker [1, 3, 4] Only histopathological examination provides certain diagnosis [1-3, 6]. The only effective treatment of cystic tumors is surgery. In case of cystadenocarcinoma, early diagnosis and sudden surgical treatment is of the highest importance [1, 3-7]. Preoperative diagnosis is possible but difficult so microscopic intraoperative examination should be performed in every case.

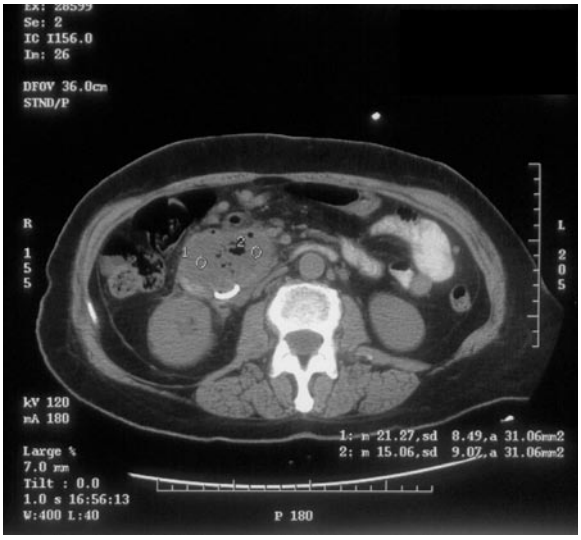

Figure 1. Abdominal computed tomography showing cystadenocarcinoma in pancreatic head. The lesion was misdiagnosed as pancreatic pseudocyst and anastomosed with small bowel.

Case Report

69-years-old woman during the hospitalization at cardiology department in 1994 was routinely examined and pancreatic cyst has been first observed. It was small (2-3 cm) than so it was thought to be pseudocyst with inflammatory origin and watchful waiting was undertaken. In September 2000 papillary thyroid cancer has been diagnosed in the patient. She underwent total thyroidectomy followed by four sessions of 131-J therapies because lungs and sacral bone metastases, with good result. On November 2001 great enlargement of pancreatic cyst was observed in routine abdominal ultrasonography (127x121 mm). It was confirmed in Computed Tomography (Fig. 1). Patient did not suffer any abdominal or digestive complains.

On ERCP large cyst in the pancreatic tail connected with Wirsung duct was found. Pancreatic sphincterotomy was performed and the cyst has been drained by 7 F pigtail prosthesis.

The cyst reduce size very slowly so transcutaneal drainage has been placed. The reduction of the cyst to 5 cm diameter has been obtained. Endoscopic retrograde cholangiopancreatography showed normal Wirsung duct (Fig. 2) In February 2002 patient had sudden fever (39^{o} C) and abdominal pain attack. USG showed enlargement of the cyst to 7 cm. The examination of the fluid aspirated from the cyst showed puss. Antibiotic therapy was introduced and transcutaneal drainage placed for 2 weeks with good effect. Eight months later the problem appeared again with the same symptom sequel. The decision about cystojejunostomy has been made and the elective operation have been performed in Municipal Hospital. Postoperative period was without complications. In October 2003 control abdominal CT showed the lesion became partly solid.

In December 2003 the patient underwent the routine biopsy of the lesion in the pancreas and histopatological examination has been performed. It gaves no solution because the material was very fine. Only superficial fragments of glandular epithelium with focal papillary hypertrophy has been found. No signs of malignant neoplastic process has occurred.

In January 2004 the patient has emergency digestive tract hemorrhage and abdominal pain. Gastroduodenoscopy and colonoscopy showed no source of bleeding. The bleeding from digestive tract led to anaemia and hemorrhagic shock requiring blood supplementation. So the cyst was thought to be the origin of bleeding. The patient underwent an emergency operation. The intraoperative histopatological examination showed malignant process. Distal pancreatectomy and splenectomy with partial excision of jejunum formerly sutured to the lesion and local lymphadenectomy has been performed. Pancreatic stump was closed with two layer continuous suture. Patient's recovery was uneventful. Final histological examination showed: Papillary adenocarcinoma partially cystic of the pancreas Grade 2. Sections lines and lymph nodes were free from neoplasm (Fig. 3).

Now the patient is under oncological control and stays asymptomatic and there is no detectable recurrence.

Discussion

Cystic lesion of the pancreas is a pretty common finding [1, 6]. Mostly it is postinflammatory or posttraumatic pseudocyst or other benign lesion in origin.

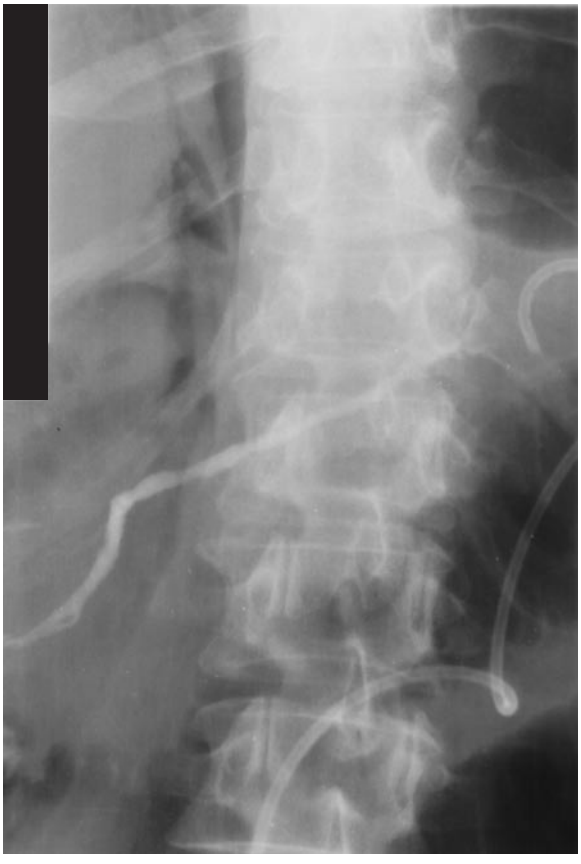

Figure 2. Patient with pancreatic head cystic tumor, retrograde cholangiopancreatography showed normal Wirsung duct.

But especially when it occur in middle-aged or older woman without trauma or pancreatitis history intensive diagnostic should be introduced to rule out cancer [2-4]. If the lesion formerly diagnosed as a pseudocyst do not regress spontaneously or after drainage it should be an alert to think about cystic tumour [3, 4]. Diagnostic should follow three stages: 1) confirming the origin of the lesion, 2) excluding the diagnosis of the pseudocyst, 3) recognizing resectable tumors (according to Le Bourne) [3]. There is a wide range of diagnostic methods which can help us to manage with the problem of course. But there is no doubt that even specialist procedures are not infallible. In the matter of fact only the first stage seems to be easy to execute.

Ultrasonography is usually first method used in diagnostic when there is a suspicion of any pathological changes in organs of abdominal cavity. It is quite available and no side effects were ever observed. It gives certainty about cystic character of the lesion and it answers if it is uni- or multilocular. And it brings information about shape and thickness of its walls and septum. But USG do not exclude either pseudocyst or cystic tumour [1-4].

The best radiological investigation in such case is Computed Tomography. Sometimes it makes the distinction between pseudocyst and cystic tumour possible. Multilocularity, calcifications of the wall and evidence of local invasion gives a clue to identify cystic tumour [2-4]. But absence of mentioned above do not allow to rule neoplasm out. And the distinction between malignant and benign tumours is very difficult [2-4].

Magnetic Resonance Imaging may help in differentiation in some cases because of its superior to CT

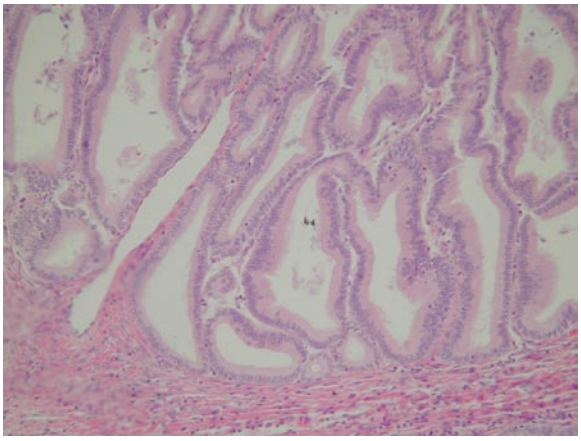

Figure 3. Pancreatic cystadenocarcinoma anastomosed with small bowel as pancreatic pseudocyst. Microscopic examination after standard hematoxyline/eosine staining under 200x magnification.

ability to show margins of cysts and internal structures. And also mucin produced by mucinous tumours is quite well visible. But MRI is expensive and still gives no warranty of diagnosis [2-4].

Endoscopic retrograde cholangiopancreatography may help to distinguish pseudocyst from malignant or benign tumours. Connection between pancreatic duct and lesion suggests pseudocyst (observed in over 60% of patients with pseudocyst) [2-4]. Duct dilatation or constriction and invasion of the duct with intraluminal defects are features of malignancy. Unfortunately they are found rarely [2, 3].

Endoscopic ultrasonography is thought to be a useful technique. It provides information about morphology of walls and septa of the cyst as well as about internal structure [1-4, 6].

Fine needle biopsy is not the procedure of high usefulness. That is because of the fact that in the same lesion can coexist both benign and malignant neoplasm and normal epithelium. And so cytological examination may show only one type of cells and if they have no traits of malignancy it brings no information cause cancer can not be excluded. Besides there is theoretical risk of needle track seeding [1, 3, 4].

Biochemical examination of the fluid aspirated from the cyst may give some clues. High levels of pancreatic enzymes in it are mostly met in pseudocysts. Low levels of enzymes connected with high levels of tumour markers or mucin strongly suggests cancer [1, 3, 4].

Only one procedure can give certain diagnosis – microscopic examination. That's why intraoperative histopatological examination during surgery is strongly recommended. It gives both certainty of identification and opportunity to adequate treatment [1, 3, 4, 6, 7]. Cystic tumors of pancreas are rare but treatable [3, 4]. That is why the problem shouldn't be underestimated. Especially lesions diagnosed as pseudocysts which do not resolve spontaneously or after drainage are under suspicion. What's important in such cases often cystojejunostomy is being performed. It should be the routine to perform intraoperative histopatological examination in similar cases. We have to take into consideration the fact that although pancreatic cystic tumors grow slowly they may be treated successfully only by surgical excision when limited to the organ. And the progression from cystadenoma to cystadenocarcinoma is well documented [1, 3, 4]. So early and proper diagnosis is of the highest importance.

Conclusions

Differentiation between pancreatic pseudocyst and cystic tumor might be difficult but is of importance. Presented case illustrate the necessity of careful, individual approach in pancreatic lesions. Microscopic examination, biopsy or tissue fragment, should be mandatory for treatment planning.

References:

1. Artioukh DY, Zeiderman MR. Diagnostic difficulties in the differentiation of pancreatic pseudocyst and cystic pancreatic neoplasm. Ann Coll Surg HK 2002; 6: 121-122.
2. Balci NC, Semelka RC. Radiologic features of cystic, endocrine and other pancreatic neoplasms. Eur J Radiol 2001; 38(2): 113-119.
3. McKay D, Marron C, Mathew S, Diamond T. Management of cystic tumours of the pancreas. ANZ J Surg 2004; 74(8): 627-630.
4. Alsaad K, Chetty R. Serous cystic neoplasms of the pancreas. Current Diagnostic Pathology 2005; 11: 102-109.
5. Hernandez LV, Bhutani MS. Endoscopic Ultrasound and Pancreatic Cysts: A Sticky Situation. Am J Gastroenerol 2001; 96(12): 3229-3230.
6. Tyler D. Adenocarcinoma of the pancreas: is surgery making a difference? Am J Gastroenterol 2001; 96(9): 2532-2534.
7. Christein JD, Kendrick ML, Iqbal CW, Nagorney DM, Farnell MB. Distal Pancreatectomy for resectable adenocarcinoma of the body and tail of the pancreas. J Gastroint Surg 2005; 9: 922-927.