

A Case Report: A Pancreatic Cyst Mask as a Renal Cyst: A Diagnostic Challenge

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Introduction. Pancreatic cysts are increasingly detected and can mimic renal cystic lesions on imaging, particularly on the left side where the pancreatic tail abuts the upper pole of the kidney. Distinguishing between these entities is a diagnostic challenge, as clinical symptoms and standard imaging can be nonspecific.

Case. A 55-year-old woman presented with left flank pain, abdominal fullness, nausea, and heartburn. An abdominal CT scan identified a cystic lesion superior to the left kidney, leading to an initial diagnosis of a perirenal cyst. After unsuccessful treatment for GERD, diagnostic retroperitoneoscopy was performed. The intraoperative finding revealed the cyst was not renal but pancreatic origin, necessitating a subsequent open distal pancreatectomy.

Conclusion. This case highlights that large pararenal cysts, especially on the left, require pancreatic cysts to be considered in the differential diagnosis. When CT findings are inconclusive, advanced modalities like MRI with tissue-specific contrast or fine-needle aspiration of cyst fluid can be crucial for an accurate preoperative diagnosis and to avoid unnecessary surgical interventions.

Keywords: differential diagnosis, pancreatic cyst, renal cyst

Introduction

Digestive tract abnormalities often mimic urinary tract disorders. One less commonly found case includes a pancreatic cyst that looks like kidney cystic lesion in radiologic examinations. The incidence of pancreatic cysts is unexpectedly high, around 49,1% in the general world population, and their number and size grow with age [1]. Malignancy conversion from benign cystic lesions of pancreas is low. Nevertheless, prospective follow-up imaging revealed minimal progression in over 50% of patients. Approximately 6% of pancreatic cysts manifested larger than 1 centimeter and often presented with clinical symptoms such as nausea, vomiting, bloating, and pain in the abdomen. After comprehensive anamnesis and physical examination, laboratory analysis alone is insufficient to establish the correct diagnosis. The advance of computed tomography (CT) and magnetic resonance imaging (MRI) has enhanced the diagnostic accuracy of retroperitoneal imaging. Even with these modern radiologic instruments, it may be difficult to distinguish between pancreatic and renal lesions, particularly on the left retroperitoneal side, where the pancreas

tail is in close proximity to the left upper pole of the kidney [2].

We present a case of a 55-year-old woman with a large symptomatic cyst leading to diagnostic retroperitoneoscopic. During the procedure, a large pancreatic cyst was identified and open pancreas tail resection performed [3].

Case Report

A 55-year-old woman presented with left flank pain and sensation of fullness in the abdomen for 2 months before being administered to the hospital. The symptoms were accompanied by nausea and burning sensation in the chest. The patient was initially examined by an internist with epigastric pain on palpation and was prescribed medication for Gastro Esophageal Reflux Disease (GERD) such as Proton Pump inhibitor (PPI), sucralfate, and anti-emetic. However, the symptoms did not subside and then she underwent abdominal CT scan examination that found cystic lesions sized 80 x 50 x 25 mm located on the superior aspect of the left kidney and therefore diagnosis of perirenal cyst were determined by the radiologist. By that evidence, the patient has been referred to the

urologist by the internist. In urology examination, costovertebral angle pain was found at the left side by the urologist. Considering all of the findings, diagnostic retroperitoneoscopy was performed with a digestive surgeon on stand by. Intraoperatively, it was found that the cyst was not located inside retroperitoneal space. Thus, the digestive surgery required treatment was done afterwards. Histopathology findings of simple pseudocyst of pancreas was stated 2 months after operation.

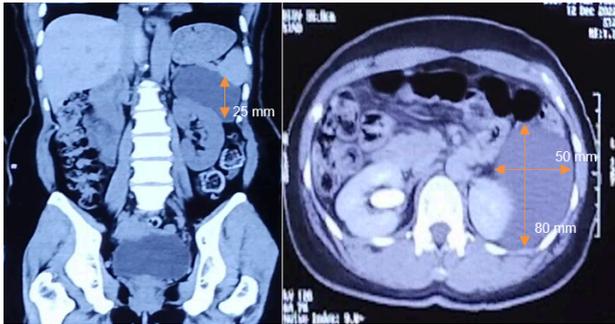


Figure 1. CT scan showed upper pole cystic lesion of the left kidney

Discussion

Pancreatic cyst can be detected by CT or MRI. A histopathological examination can be conducted to determine the type of pancreatic cyst to establish the diagnosis. The various types of pancreatic cysts are shown in Table 1.

The pancreatic pseudocyst is the most predominant form of cystic pancreatic lesion. It occurs as a complication of alcoholic, biliary, or traumatic acute pancreatitis, particularly in adult men. Occurs in younger patients due to biliary disease or trauma and has a similar predisposition for men and women. Pseudocyst is usually higher in male proportion due to alcohol intake, smoking and other cases of inflammation in the pancreas with 80% compared to women with 20%. But considering any other kind of inflammation in the pancreas can make this type of cyst happen, hidden or chronic pancreatitis may be a hidden risk factor in elderly women. The lesion develops when necrotic peripancreatic fat spots are absorbed, resulting in a debris-filled space surrounded by granulation tissue and subsequently enclosed by a fibrous capsule.

Table 1. Various types of pancreatic cysts

Category	Type of Cystic Lesions	Estimated Relative Frequency
Injury-related and inflammation-related cysts	Pseudocyst, Paraduodenal wall cyst, Infection-related cysts	30%
Neoplastic cysts	Ductal lineage Mucinous type <ul style="list-style-type: none"> - Intraductal papillary mucinous neoplasm - Mucinous cystic neoplasm - Intraductal oncocytic papillary neoplasm - “Retention cyst,” “mucocele,” and “mucinous nonneoplastic cyst” - Cystic change in ordinary ductal adenocarcinoma and other invasive carcinomas Serous (clear-cell) type <ul style="list-style-type: none"> - Serous cystadenoma - Oligocystic (macrocytic) variant of serous cystadenoma - von Hippel-Lindau syndrome-associated pancreatic cysts - Serous cystadenocarcinoma Endocrine lineage <ul style="list-style-type: none"> - Cystic pancreatic endocrine neoplasm Acinar lineage <ul style="list-style-type: none"> - Acinar cell cystadenoma (cystic acinar transformation) - Acinar cell cystadenocarcinoma - Cystic/Intraductal acinar cell carcinoma 	60% 30% 20% <5% <1%

Category	Type of Cystic Lesions	Estimated Relative Frequency
	Endothelial lineage - Lymphangioma	<1%
	Mesenchymal lineage	<1%
	Undetermined lineage - Solid-pseudopapillary neoplasm	5%
	Other - Mature cystic teratoma	
Congenital cysts	Duplications (enterogenous) cysts, Duodenal diverticula, Others	<1%
Miscellaneous cysts	Lymphoepithelial cyst, Squamous cyst of pancreatic ducts, Epidermoid cysts within intrapancreatic accessory spleen, Cystic hamartoma, Endometriotic cysts, Secondary tumors	<5%

Generally, it was difficult to distinguish pancreatic cysts from renal cysts. Cystic lesions on the left retroperitoneal side could cause misinterpretation due to the proximity of the pancreas tail to the left kidney. The origin of a cystic lesion in the retroperitoneal space may be determined by laboratory or radiologic studies, as well as by invasive diagnostic procedures. CT and MRI have enhanced the diagnostic accuracy of retroperitoneal cysts in recent years. With the development of faster MRI systems with enhanced contrast and temporal resolution, as well as tissue-specific contrast agents, the utility of MRI has been greatly expanded. It is especially beneficial as a "problem-solving" auxiliary to CT and ultrasound for imaging pancreatic neoplasms [4]. In cases of uncertainty, aspiration of the cyst fluid with a fine catheter can assist in the diagnosis [5].

On a regular basis, cystic pancreatic lesions are detected in imaging studies of symptomatic patients or as unanticipated abnormalities in patients undergoing examination for other reasons. Patients with pancreatic cysts typically experience abdominal pain, weight loss, and back discomfort [6]. There are numerous types of cystic lesions of the pancreas, but pseudocysts are by far the most prevalent, with an estimated relative frequency of 75% [7-8]. The same type of cyst that was found in this case.

Cystadenoma of the pancreas (microcystic adenoma, serous adenoma, glycogen-rich adenoma) are benign neoplasms that account for 1% to 2% of all pancreatic neoplasms. Most prevalent among women in their seventh decade. Single or multiple cysts can affect any portion of the pancreas. Cysts with a diameter greater than 2 cm are uncommon but can happen [6]. If the cysts are very small, the

lesions may appear cystic, solid, or even hyperechogenic on ultrasonography. On CT, cystadenomas may exhibit water, soft-tissue, or mixed density, as well as a margin spanning from poorly defined to thin, well-defined. Enhancement of cyst wall thickness ranges from moderate to significant. A minority of lesions, with or without calcification, will have a central stellate scar. This calcified central stellate lesion has been considered diagnostic when present [8].

A simple renal cyst can occur within or on the surface of the kidney. It is typically ovoid to round in shape and contains a transparent or straw-colored fluid [9]. Simple cysts range in size from less than 1 centimeter to more than 10 centimeters. Among adults, the prevalence increases with age, from 20% at age 40 to 33% after age 60. [9] On ultrasonography and CT, renal cysts can exhibit the same morphological characteristics as pancreatic serous cystadenoma. (Thin wall, well-defined, homogenous content). Clinically, cysts of the kidney can exhibit the same symptoms as cysts of the pancreas. (e.g. palpable abdominal mass or abdominal pain) [10-11].

In our case, ultrasonography and computed tomography failed to establish a connection to a pancreatic disease. Due to the patient's history of examination, no additional diagnostic tests were conducted. In this condition, it is likely that MRI with tissue-specific contrast agents might be necessary. The limitation of this report is that the patient history of risk factors have not fully been understood. We believe that there is a reason why pancreatic cyst happened for this patient.

It would have been helpful to demonstrate a clearer connection to pancreatic tissue. Furthermore, fine needle aspiration of the cyst fluid revealing a glycogen content, typical of pancreatic

cystadenoma, would have demonstrated the cyst's pancreatic origin. Thus, retroperitoneoscopic intervention may have been avoided.

Conclusion

In the case of large pararenal cysts, especially on the left side, the differential diagnosis of pancreatic cysts must be considered. On CT, special attention must be given to the lower portion of the cyst, where a connection to the pancreas can be seen in some cases of pancreatic origin. In cases where CT findings are ambiguous, MRI with tissue-specific contrast agents and fine needle aspiration of the cyst fluid may assist in making an accurate diagnosis.

Informed Consent

Written informed consent was obtained from the patient for publication of this case report.

Ethical Approval

Ethical approval for this study was issued by the Ethics Committee of the Faculty of Medicine, Universitas Indonesia with ethical clearance letter number KET-1127/UN2.F1/ETIK/PPM.00.02/2025.

Conflict of Interest

The authors define no conflict of interest.

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