Case report

Pancreatic Pseudocyst masquerading as a Serous Cyst Adenoma: A case report.

Abstract:

A pancreatic pseudocyst (PP) is a post-inflammatory collection of pancreatic enzymes and inflammatory exudates surrounded by a fibrous tissue wall. PPs are mainly formed in the pancreatic bed. It is seen more commonly after an episode of chronic pancreatitis and less commonly after acute pancreatitis. The main differential diagnoses in such cases include pancreatic cystic neoplasms such as mucinous cyst adenoma of the pancreas, serous cyst adenoma of the pancreas, pancreatic retention cyst, and other benign congenital lesions such as gastric duplication cysts. The incidence PPs is 0.5 to 1 in 100,000 hospital admission due to pancreatitis. Complications may include bleeding, rupture, infection, gastric outlet or biliary obstruction, and thrombus formation. These lesions are typically unilocular but can be thinly septated.
Here we report a case of PP mimicking a benign cystic neoplasm, which is not typically confused with a PP. PP's can be misdiagnosed on radiological imaging but correct diagnosis can be made through aspiration and microscopic examination of the fluid via EUS.

Keywords:

Endoscopic ultrasound (EUS), pancreatic pseudo cyst, cystic neoplasm

Introduction:

Associated with inflammatory disorders of the pancreas, pancreatic pseudocysts are localised fluid collections. Conservative treatment or a drainage technique is used to manage them. It's possible for them to occasionally resemble pancreatic cystic neoplasms (PCN) on radiological examination. A variety of neoplasms with a wide range of malignant potential are included in PCN. The clinical course of serous cystic adenomas (SCA), which are made up of several tiny compartments bordered with a cuboidal epithelium that contains glycogen, is almost usually benign. They predominantly occur in the pancreatic body and tail of elderly females. The majority of these tumors have a microcystic appearance. Macrocystic and solid variants have also been described. Several more aggressive cystic pancreatic lesions are included in the differential diagnosis. Distinction from such lesions is important for optimal management. Serous cystadenomas run a benign, indolent clinical course and have an excellent prognosis. In this case report, we present a diagnosis of a pancreatic pseudocyst made by endoscopic ultrasound (EUS) and cystic fluid aspiration. The correct diagnosis was confirmed by microscopic examination

Case Summary:

A 17-year-old male patient presented with complaints of epigastric pain for the past 6 months associated with nausea, vomiting, and diarrhea. He was admitted multiple times to the hospital and managed conservatively for pancreatitis. His symptoms were noted to be progressively worsening over 4 months with associated anorexia and undocumented weight loss. The patient's previous surgical and family history was insignificant. There was no history of alcohol or drug abuse. The physical examination of the patient was unremarkable. His blood workup showed serum amylase 60 U/L (10-140 U/L), Alkaline phosphatase 316 IU/L (30-120 IU/L) with total bilirubin 0.6 mg/dl (0.1 -1.2 mg/dl). CA 19-9 and CEA levels were 30U/ml (0-37U/ml) and 2ng/ml (0-2.5ng/ml) respectively. Ultrasound abdomen was done which showed a multi-cystic lesion in the head of the pancreas and multiple calculi in the gall bladder.
Computed tomography showed a large multi-cystic lesion arising from the head of the pancreas measuring 7.5 x 5.7 cm in size, encasing the right hepatic artery, abutting the superior mesenteric vein and main portal vein. The pancreatic duct was normal. Endoscopic ultrasound (EUS) with a curvilinear scope revealed a multi-loculated cystic lesion in the head of the pancreas, with apparent honeycombing raising the suspicion of a serous cyst adenoma. EUS-guided aspiration was performed with a 22G core needle and serous looking fluid was drained from loculi, which was clear and non-viscous. The string test was negative. The fluid was sent for analysis, which revealed Amylase >75000 U/L (Cut off 250U/L), CEA 1.4ng/ml (cut off 192ng/ml), and glucose 25mg/dl (cut off <50mg/dl). The above findings were consistent with a multiloculated pancreatic pseudocyst.
The case was discussed at a Multidisciplinary meeting. Wait and watch approach was advised. The patient was then reviewed at 3, 6, and 12 months follow-ups. He remained clinically stable, with interval resolution in symptoms. Later, he was referred for cholecystectomy.

Discussion:

Serous cystadenomas of the pancreas are often benign tumors. Recent advances in imaging technology have led to an increase in their incidence. They are typically asymptomatic and discovered by accident. These serous cysts have an unknown etiology. They can be macrocytic or microcytic, and how they are managed often relies on the two (1). The body and tail of the pancreas are more frequently affected by serous cystic neoplasm (SCN), which primarily affects females in their sixth or seventh decade of life (2). Characteristic findings in the main duct IPMN include the dilated main pancreatic duct, punctate or coarse calcifications, and mural nodules. (3)
Clinically and radiographically, pancreatic pseudocysts might resemble other cystic pancreatic neoplasms. (5) Acute pancreatitis, chronic pancreatitis, or pancreatic trauma are the most common causes of pancreatic pseudocyst. (4). A pancreatic pseudocyst is typically a complication of pancreatitis, which has a variety of aetiologies including alcoholism, biliary stones, trauma, and idiopathic causes (8). When there is no obvious history of pancreatitis, a pancreatic pseudocyst at the uncinate process and the head of the pancreas may mimic IPMN (5).
The three types of pancreatic cysts include non-neoplastic pancreatic cysts, inflammatory fluid collections, and pancreatic cystic neoplasms. The inflammatory fluid collections are made up of pseudocysts, acute necrotic collections, walled-off necrosis, and acute peripancreatic fluid collections. True cysts, retention cysts, mucinous non-neoplastic cysts, and lymphoepithelial cysts are all examples of non-neoplastic pancreatic cysts. The subcategories of pancreatic cystic neoplasms include serous cystic neoplasms, mucinous cystic neoplasms, intrapapillary mucinous neoplasms, and solid pseudopapillary neoplasms (7).

A pancreatic pseudocyst is a fluid collection that is more than 6 to 8 weeks old and enclosed by a wall, according to the Atlanta Symposium [6]. Histopathologically, pancreatic pseudocysts are pancreatic cavities filled with fluid and surrounded by a wall of fibrous or inflammatory tissue without an epithelial lining [9]. Pancreatic pseudocysts are further divided by the Atlanta classification system into four different entities: acute fluid collection (AFC), acute pseudocysts (APC), chronic pseudocysts (CPC), and pancreatic abscess (PA). The medical literature has documented a sizable number of reports of gigantic pseudocysts over time. The largest known pancreatic pseudocyst, weighing 10 kg, was reported from Bozeman in 1882. (6)

On EUS, the IPMN appears like a "bunch of grapes" due to the pleomorphic arrangement of the mucin-filled dilated branching channels. IPMN and MCN can be distinguished from one another by the communication between the cyst and the major pancreatic duct (5). Concerning our patient, no duct dilations were noted on imaging, and due to the clear nature of the fluid drained, we excluded retention cysts and mucinous cysts. Apart from the imaging reports of our patient showing septations, the rest of the features, such as homogeneity and well-defined wall, all point toward the diagnosis of pancreatic pseudocyst.

The majority of patients with chronic pancreatitis due to alcohol consumption are likely to experience pancreatic pseudocysts. In a study of 97 patients with pseudocysts, alcohol use contributed to the development of 26% of acute pancreatitis and 64% of chronic pancreatitis (9). At the time of diagnosis, more than 70% of pancreatic cysts are asymptomatic. They exhibit symptoms such as back or abdominal pain, unexplained weight loss, jaundice, steatorrhea, or a palpable lump [3]. The most typical symptoms include pseudo-aneurysms, duodenal or biliary obstruction, vascular occlusion, fistula development, or digesting of an adjacent arterial. The primary methods of evaluation for pancreatic cysts are cross-sectional imaging using CT scan and MRI [1]. Pancreatic cystic neoplasms can be ruled out as the source based on the results of the CT imaging because the cyst is clearly defined, homogenous, and devoid of calcifications and mural nodules (10)

Patients who exhibit symptoms like nausea, vomiting, early satiety, discomfort, and upper gastrointestinal hemorrhage require intervention for pancreatic pseudocyst. Intervention is also necessary when there are complicated pancreatic pseudocysts (one criterion is sufficient), such as those with gastric or duodenal obstruction, compression of large vessels, stenosis of the common bile duct as a result of compression, infected pseudocysts, hemorrhage into the pseudocyst, or pancreaticopleural fistula. Additionally, intervention is advised for individuals who may be asymptomatic but have pseudocysts larger than 5 cm, with the size and shape remaining stable for at least six weeks (6) (11).

Although EUS imaging is a very useful tool in evaluating pancreatic cystic lesions especially due to its high resolution, very few lesions have a characteristic appearance on EUS which does not always require fluid analysis. One such lesion is a serous cyst adenoma, which is typically macrocytic and associated with honeycombing. Normally this does not require EUS-guided fluid analysis or cytology. In other cases, microscopic fluid examination and cytology are needed to confirm the diagnosis. On the contrary, a PP typically manifests as a unilocular cavity with parenchymal alterations such as atrophy or calcification of pancreatic parenchyma, especially when seen in the setting of chronic pancreatitis. However, there can be other associated findings on EUS that can complicate the clinical picture; For instance, up to 60 percent of PPs were noted to have an apparent solid component, while up to 30 percent had associated lymphadenopathy. A pancreatic pseudocyst with such dimensions, as seen in this patient's case, is extremely rare. In addition, the recurrence of the pseudocyst, along with vague abdominal pain as the only

presenting complaint despite the large size of the pseudocyst, makes this a unique case. In our case, clinical and radiological features were highly suggestive of a serous cystic neoplasm. However, the vascular relationship with the lesion raised concern for malignancy. In our case, EUS-guided analysis helped establish a diagnosis and avert a potential surgery instead of an indeterminate cystic lesion of the pancreas, which gave the appearance of a serous cyst adenoma but with a vascular abutment.

Conclusion:

PPs can be misdiagnosed on radiological imaging but correct diagnosis can be made through aspiration and microscopic examination of the fluid via EUS. This intervention can prevent a potential of surgery in lieu of an indeterminate cystic lesion of pancreas.

Consent:

Verbal and written consent was taken with the patient.

Ethical approval:

Ethical approval for this case report was taken from the IRB, Shifa International Hospital Islamabad, Pakistan.

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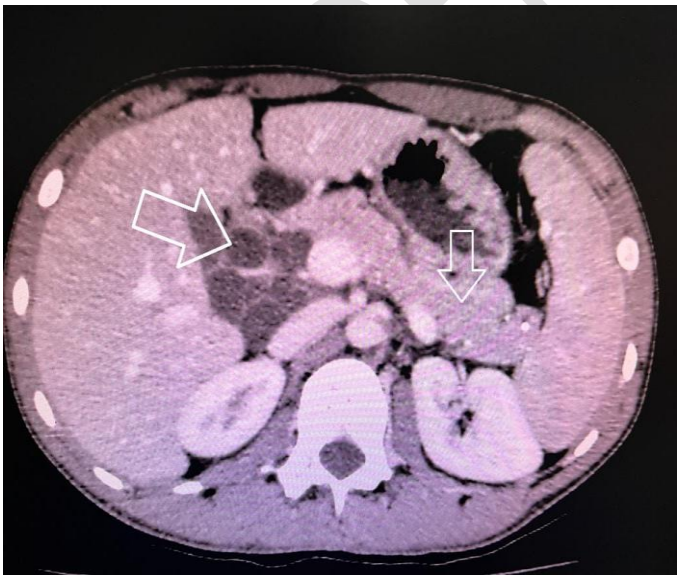

FIGURE 1- CT scan reveal cystic lesions (white arrow) arising from the head of the pancreas in venous phase

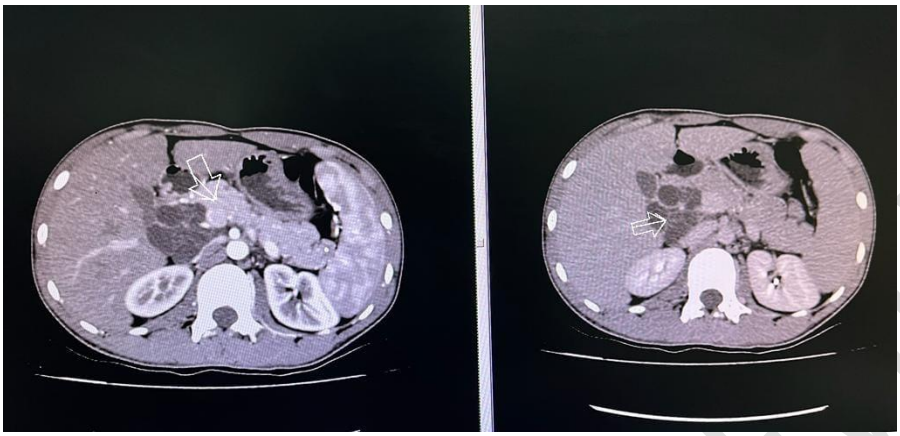

FIGURE 2- CT scan showing cystic appearance of the pseudo-cyst (arrow) in arterial phase and in delayed phase (arrow).

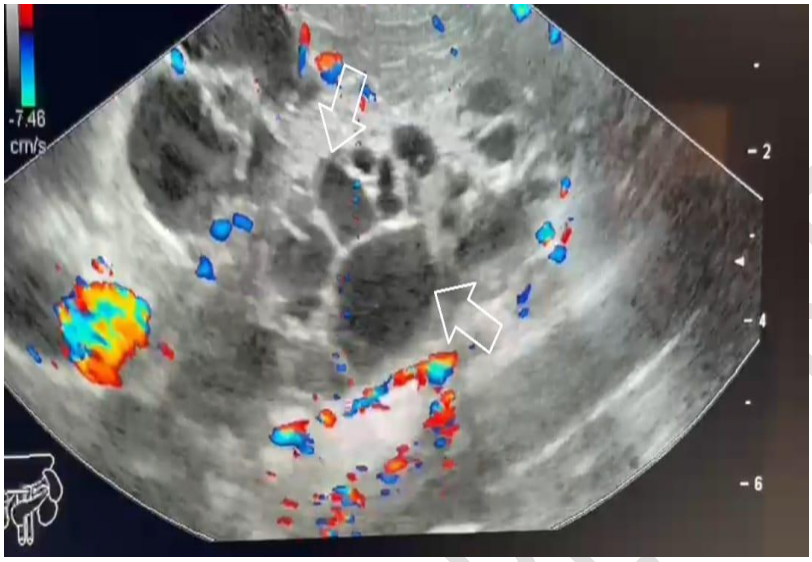

FIGURE 3 – EUS showing multiloculated cystic lesion in continuation of the head of pancreas

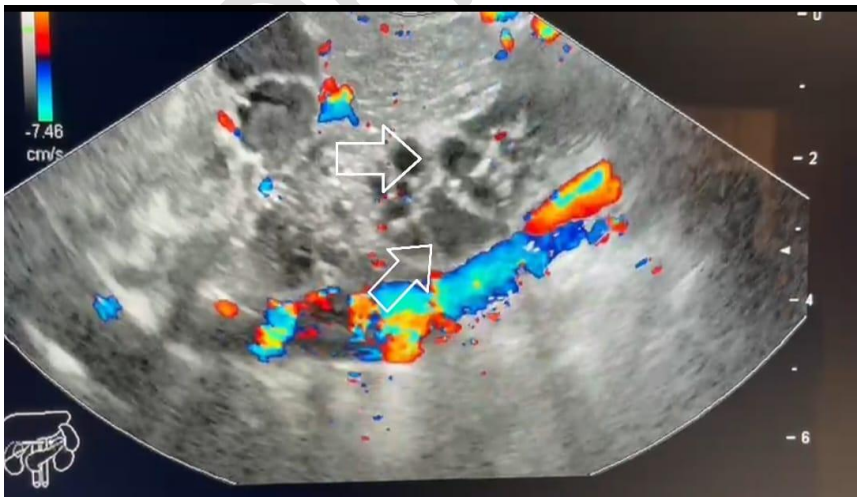

FIGURE 4- EUS with Doppler flow in vessels and multiloculated cystic lesion with apparent honey-combing