Case report

Pancreatic Pseudocyst Masquerading as a Serous Cyst Adenoma, A case report.

Abstract

Pancreatic pseudo cyst (PP) is a post-inflammatory collection of pancreatic enzymes and inflammatory exudates surrounded by a fibrous tissue wall (1) (6). PPs are mainly formed in the pancreatic bed and appear **several days to weeks** after an episode of acute pancreatitis. The main differential diagnoses in such cases include **pancreatic cystic neoplasm** such as branched duct intra-ductal pancreatic mucinous neoplasm, choledochal cysts, and other benign congenital lesions such as gastric duplication cysts (2). The incidence of PPs is 0.5 to 1 in 100,000 hospital admission due to pancreatitis (1). Complications may include bleeding, rupture, infection, gastric outlet or biliary obstruction, and thrombus formation (1). 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. PPs can be misdiagnosed on radiological imaging but correct diagnosis can be made through aspiration and microscopic examination of the fluid via EUS.

Comment [H1]: Correct the definition

Comment [H2]: Only in parenchymal cysts the D/D is cystic neoplasm. Correct the sentemce

Key words

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

Introduction

Serous cystadenomas of pancreas are rare benign epithelial neoplasms, which predominantly occur in the pancreatic body and tail of elderly females. Majority of these tumors have microcystic appearance. Macrocystic and solid variants have also been described. A number of 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 [11,12]. They are slow growing, malignant progression is rare, and disease mortality is almost nil. Surgical excision is curative but is required only in minority of cases when tumors are large or causing significant (or related) symptoms or when preoperative diagnosis was uncertain in spite of extensive workup including computed tomography (CT) scan, magnetic resonance imaging (MRI), and endoscopic ultrasonography [12].

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. His symptoms were noted to be progressively worsening over 4 months with associated anorexia and undocumented weight loss. Patient's previous medical, surgical and family history were insignificant. There was no history of alcohol or drug abuse. 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 2 ng/ml (0-2.5ng/ml) respectively.

Computed tomography showed a large multi-cystic lesion arising from the head of pancreas measuring 7.5 x 5.7 cm in size, encasing the right hepatic artery, abutting superior mesenteric vein and main portal vein.Endoscopic ultrasound (EUS)with a curvilinear scope revealed a multi-loculated cystic lesion in the head of pancreas, with apparent honey-combing 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. 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).Above findings were consistent with multiloculated pancreatic pseudocyst.

Case was discussed at Multidisciplinary meeting and wait and watch approach was advised. Patient was then reviewed at follow up after 3 months and remained stable, with interval resolution in symptoms.

Discussion:

Pancreatic cystic lesions are rare; often found incidentally, and account for less than 10% of pancreatic neoplasms (3)(5). PPs typically arise as a complication of acute or chronic pancreatitis. They are inflammatory fluid collections that are bordered by the serosa of the neighboring organs, such as the colon, stomach, liver, and so on, rather than epithelium. Mature cysts typically have a thick wall while early PPs have a thin wall(4). The accurate diagnosis of pancreatic cystic lesionis challenging because traditional cross-sectional imaging cannot differentiate between various cystic lesions. Up to 40% of mucinous cystadenoma and 33% of serous cystic adenoma can be misclassified as PPs and treated inappropriately (4)(10). In one study 44% of the PPs cases were mislabeled as a cystic neoplasm and 8% incidental non neoplastic cyst were resected based on clinical suspicion (3)(7).

Although EUS imaging is a very useful tool in evaluating pancreatic cystic lesions especially due to 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 macrocystic and associated with honey-combing. Typically 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 PPtypically 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 upto 30 percent had associated lymphadenopathy. Clinical suspicion of a PP further goes down if there is no associated history of chronic alcohol use or that of recurrent pancreatitis (4)(8)(9).

In our case, clinical and radiological features were highly suggestive of a serous cystic neoplasm. However the vascular relationship with the lesion raised the concern for malignancy. In our case, EUS guided analysis helped establish a diagnosis and avert a potential surgery in lieu of an indeterminate cystic lesion of pancreas, which gave the appearance of a serous cyst adenoma but with vascular abutment.

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.

References:

1)Habashi S, Draganov PV. Pancreatic pseudocyst. World journal of gastroenterology: WJG. 2009 Jan 7;15(1):38.

2)Gaillard, F., Hartung, M. Pancreatic pseudocyst. Reference article, Radiopaedia.org. (accessed on 03 Mar 2022)

3)Choudhury SR, Mohanty S, Mohapatra D, Sahoo N, Panda A. An Atypical Presentation of Pancreatic Pseudocyst Masquerading as Solid Pseudopapillary Neoplasm of Pancreas. Cureus. 2020 Aug 19;12(8).

4)Park JH, Jung MK, Cho CM, Kim GC, Ryeom HK, Kim SG, Yoon YK, Bae HI. A case of pancreatic pseudocyst with an atypical multilocular appearance on endoscopic ultrasound. Gut and Liver. 2010 Jun;4(2):270.

5)Warshaw AL, Rutledge PL. Cystic tumors mistaken for pancreatic pseudocysts. Annals of surgery. 1987 Apr;205(4):393.

6)Bradley EL. A clinically based classification system for acute pancreatitis: summary of the International Symposium on Acute Pancreatitis, Atlanta, Ga, September 11 through 13, 1992. Archives of surgery. 1993 May 1;128(5):586-90.

7)Fernández-del Castillo C, Targarona J, Thayer SP, Rattner DW, Brugge WR, Warshaw AL. Incidental pancreatic cysts: clinicopathologic characteristics and comparison with symptomatic patients. Archives of Surgery. 2003 Apr 1;138(4):427-34.

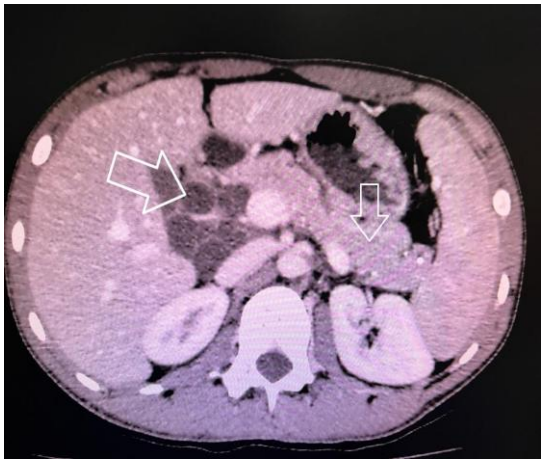
8)Ahmad NA, Kochman ML, Lewis JD, Ginsberg GG. Can EUS alone differentiate between malignant and benign cystic lesions of the pancreas?. The American journal of gastroenterology. 2001 Dec 1;96(12):3295-300.

9)Hsieh YY, Hsueh S, Chen RJ, Hsueh C. Macrocystic Serous Cystadenoma of the Pancreas in a Young Patient Resembling a Pseudocyst: A Case Report and Literature Review. Chang Gung Medical Journal. 2003 Aug 1;26(8):602-6.

10)Barthet M, Napoléon B, Palazzo L, Chemali M, Letard JC, Laugier R, Arpurt JP, Boyer J, Boustière C, Canard JM, Cassigneul J. Management of cystic pancreatic lesions found incidentally. Endoscopy. 2007 Oct;39(10):926-8.

11)Le Borgne J, de Calan L, Partensky C, French Surgical Association. Cystadenomas and cystadenocarcinomas of the pancreas: a multiinstitutional retrospective study of 398 cases. Annals of surgery. 1999 Aug;230(2):152.

12)**Tariq MU, Ahmad Z, Abdul-Ghafar J, Din NU. Serous cystadenoma of pancreas: a clinicopathologic experience of 23 cases from a major tertiary care center. Rare Tumors. 2018 Nov;10:2036361318809183.**



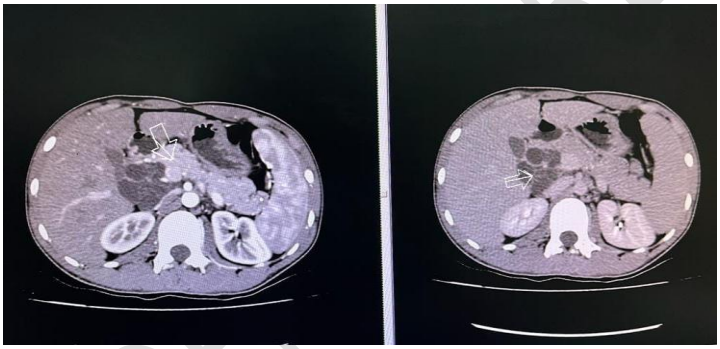


FIGURE 1- CT scan in **venous phase** reveal cystic lesions (white arrow) arising from the head of the pancreas.

UNDER PEER REVIEW

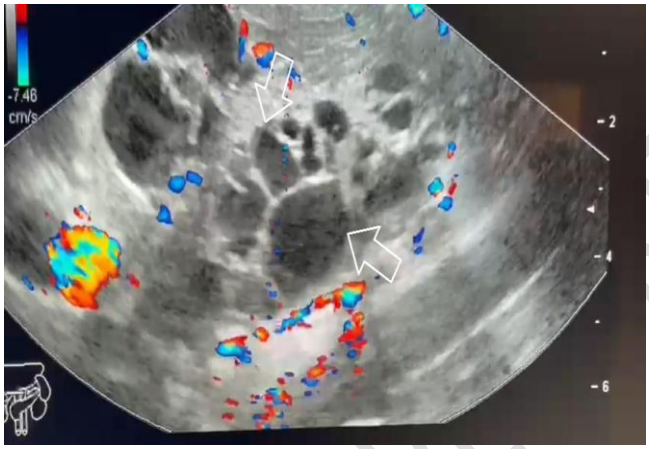


FIGURE 2 – EUS showing multiloculated cystic lesion in continuation of the head of pancreas

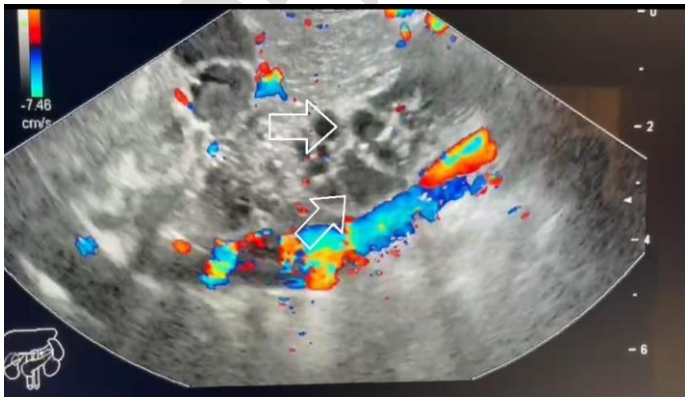


FIGURE 3- EUS with Doppler flow in vessels and multiloculated cystic lesion with apparent honey-combing

PEER REVIEW