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CLINICAL PROFILES AND DIFFERENT MANAGEMENT STRATEGIES OF GIANT PSEUDOCYST OF PANCREAS

Pseudocyst of pancreas is common in chronic pancreatitis patients. In recent times there are newer techniques for the pseudocyst of pancreas like endoscopic management. According to the resources available in the hospital, open surgeries are as good as endoscopic management in recent times.

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ABSTRACT

Background

Chronic collection of amylase rich fluid enclosed in a non-epithelialized wall of collagen or granulation tissue, following after, episode of acute pancreatitis (5-15%), chronic pancreatitis (20 to 40%), trauma. Pancreatic cysts are being diagnosed more frequently because of the increasing usage of imaging techniques. Asymptomatic pseudocysts up to 4cms in diameter can be safely observed and monitored without intervention, but larger and symptomatic pseudocysts require intervention.

Method

The materials for this case series was collected from the patients admitted and diagnosed as pseudocyst of pancreas in our surgical units. All 5 cases have been analyzed for this study during period of 6 months from January 2022 to June 2022.

Results

Out of 5 cases, for 3 cases open surgery was performed, other 1case was ultrasonography assisted drainage was done and other 1 was conservatively managed according to the clinical presentation and investigations. All the cases are kept for regular follow ups with radiological imaging.

Conclusion

Due to progress in sensitivity and more widespread availability of diagnostic imaging techniques, the incidence of pancreatic pseudocysts seems to be increasing steadily. In the above series the different presentations of pseudocyst of pancreas and different techniques of management was elaborated.

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Keywords

Pseudocyst of pancreas, Ultrasonography assisted drainage, chronic pancreatitis, acute pancreatitis.

Introduction

Pancreatic pseudocysts occur in 5% to 15% of patients who have peri pancreatic fluid collections. Pseudocyst of pancreas generally resolve spontaneously but in some cases, the fluid accumulation persists, and inflammatory process in tissue form a fibrous wall around the fluid. The fibrotic reaction typically requires at least four to eight weeks to develop. The incidence of pancreatic pseudocysts is 1.6 to 4.5 per 100000 adults per year [1]. In patients with acute pancreatitis, it is estimated that the incidence of pancreatic pseudocyst varies from 5% to 16%, while in cases of chronic pancreatitis mostly due to alcohol abuse, it is higher, between 20% and 40% [2]. A very high incidence of pancreatic pseudocysts has been reported in patients with chronic pancreatitis from alcohol abuse.

The aim was to review this condition in our centre and highlight the fact that pseudocyst of pancreas are not rare as they were thought earlier.

Case presentation – 1

A 40 years male patient was admitted in our department with chief complaints of pain in upper abdomen since 6 months. Pain increased on intake of food and radiating to back. Patient has history of 2-3 episodes of vomitings (non bilious). History of fever present. Patient was chronic alcoholic since 15 years. Last binge drinking 1 month ago. Per abdomen – soft, tenderness present in the epigastric region and left hypochondrium.

USG abdomen and pelvis was done suggestive of huge 14x14x11cms (thickness-3mm) walled Pseudocyst seen in the left upper quadrant and having shaggy inner wall and turbid fluid content seen with in, with a volume of 1100cc. CECT abdomen and pelvis suggestive of multiple well defined hypodense fluid density lesions are noted, 13.2x10.5x15.1 cms arising from body and tail of pancreas, extending to inner sac causing marked extrinsic compression on posterior wall of stomach and displaced anteriorly. Coeliac trunk is compressed and displaced towards right. [Fig. 1]

OGDscopy was done – external compression over lesser curvature.

After obtaining anaesthetic fitness, patient posted for cystogastrostomy [Fig. 2a and 2b]. Around 1200cc fluid was drained. Procedure uneventful. Kept on regular followup.

Case presentation – 2

A 48 years male patient admitted in our department with complaints of pain in abdomen since 1 month. Patient developed dull aching pain in upper abdomen radiating to the back. History of loss of appetite and vomiting. Known case of pancreatitis 2 years ago managed conservatively. Known chronic alcoholic since 20 years. Abstinence since 2 months.

Per abdomen – soft, tenderness present in epigastric region. Evidence of non tender lump palpable measuring about 5x6cms in epigastric and left hypochondrium.

CECT abdomen and pelvis – changes of chronic pancreatitis present. A well defined hypodense cystic lesion of size measuring 12x11x11cms with wall thickness of 6mm is noted in the tail and distal body of pancreas. This lesion is causing compression and displacement of the stomach superio-medically with dilatation of 1st part of duodenum. [Fig. 3]

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OGDscopy was done – external gastric compression over posterior surface of stomach 5cm distal to GE junction upto body and pylorus of stomach.
After obtaining anaesthetic fitness, patient posted for cystogastrostomy [Fig. 4a, 4b, 4c]. Around 1000ml fluid was drained. Procedure uneventful. Kept for regular followup.

Case presentation – 3
A 36 years male patient admitted in our department with complaints of pain in abdomen since 2 years (on and off). Patient developed dull aching pain in upper abdomen radiating to the back and aggravated since 1 month. Patient has history of fever and vomiting. Known chronic alcoholic since 15 years. Abstinence since 6 months.
On examination, vitally stable. Per abdomen – soft, non tender, no palpable lump.
USG abdomen and pelvis – suggestive of pancreatic pseudocyst in the head region.
CECT abdomen and pelvis – multiple well defined hypodense fluid density lesions are noted. 1)57x51x52mm arising from ventral and superior surface of body and tail of pancreas, extending to lesser sac, causing external compression on posterior wall of stomach which is compressed and displaced anteriorly. 2) 50x258x57mm in the caudate lobe. It appears with continuity with the pseudocyst of lesser sac. 3) 34x24x19mm in the head and uncinate process. 4) 19x13x15mm at splenic hilum which is in continuity with the pseudocyst of lesser sac. Wall thickness of all the pseudocyst is 1-2mm. [Fig. 5].

Patient managed symptomatically and kept for followup. After 3 months patient came for followup. USG abdomen and pelvis are done, which is suggestive of minimal peri pancreatic fluid. No evidence of pseudocyst at present scan.

Case presentation – 4
A 38 years old male came with chief complaints of pain in abdomen since 4-5 months. History of nausea, increase in pain after intake of food and burning micturition present. Patient was chronic alcoholic for 10 years and abstinence since 3 months.
On examination, patient was vitally stable. Per abdomen – soft, tenderness present at the epigastrium.
CECT abdomen and pelvis are done – well defined hypodense fluid density lesion approximately 28x22x39mm is noted in distal body and tail of pancreas extending to adjoining left anterior pararenal space-pseudocyst. It is extending inferiorly in subcapsular space of left kidney where it measures approximately 9.1x8.5x9.1cms along posterolateral surface of left kidney with resultant compression and anteromedial displace of left kidney. Left psoas appears bulky due to well defined hypodense fluid density lesion approximately 4.4x4.1x6.9cms extending inferiorly up to pelvic inlet in left ilia psoas. A hypodense fluid density lesion showing enhancement of margins measuring approximately 5.4x3.5x8.9cms is noted in left posterior pararenal space involving adjoining left quadratus lumborum.
These are pancreatic pseudocysts in atypical locations. Thickness of wall measures 2mm. [Fig. 6, 7].

Percutaneous drainage of the pseudocyst was performed. Fluid was sent for amylase and lipase levels, which were 8100 u/L and >20000 u/L respectively. 12F pigtail was inserted. Patient was discharged with the pigtail insitu after 5 days of procedure and kept for followup. After 20 days patient came for followup and size of the pseudocyst was reduced compared to previous.

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Case presentation – 5

A 38 year old male patient came with chief complaints of pain in abdomen since 1 year. Post prandial pain and loss of appetite are present. No history of fever, nausea, vomiting, loss of weight, melena, itching. Patient was chronic alcoholic since 15 years and abstinence since 2 months.

On examination, patient was vitally stable. Icterus present. Per abdomen – soft, tenderness in epigastric and left hypochondrium.

Liver function tests of the patient are raised (total bilirubin – 7.4)

USG abdomen and pelvis are done – a large well defined lesion (5.2x5.4 cms) with smooth margins is seen in the head and proximal portion of the body of pancreas.

CECT abdomen and pelvis was done – pancreas appears atrophic with multiple intraparenchymal calcification foci within the body and tail. Irregular dilatation of the main pancreatic duct (MPD) is seen measuring 6-7mm. A week defined thick walled smoothly marinated round to oval shaped cystic lesion of size 54x52x58mm noted arising in the head and uncinate process of pancreas. Wall thickness measuring about 5-7mm. It is causing significant mass effect in the form of widening of normal C loop, compression of lower end of CBD with upper CBD dilatation measuring 9mm. Mild intrahepatic biliary dilatation noted. [Fig. 8].

ERCP with stenting was done for the patient as the total bilirubin levels are high and cyst is compressing the distal CBD. After 1 week of ERCP, patients total bilirubin was 1.3.

As patient complaining of pain, CECT abdomen and pelvis was done – showed atrophic pancreas with calcifications. Main pancreatic duct is dilated measuring about 9mm. Size of the cyst is increased (9.1x7.8x8.2 cms) compared to previous scan, displacing the pylorus, 1st and 2nd part of duodenum. CBD dilated measuring 9mm. [Fig.9].

After anaesthetic fitnesss, patient was prepared for surgery and cystojejunostomy performed [Fig. 10]. Procedure uneventful and patient got discharged at post operative day 10. Patient kept for regular followups.

Discussion

Clinically, pancreatic pseudocysts presents in varying ways. Some could be completely asymptomatic while others may present with features of pancreatic and common bile duct obstruction. The most common clinical manifestations are abdominal swelling, pain, nausea and vomiting. Others include early satiety and weight loss. All the patients presented with more or less the same symptoms. Obstructive jaundice may also occur (occurred in case-5).

Diagnostic modalities are mainly imaging (Ultrasound, CT scan and magnetic resonance imaging), these were done in our first and second cases, only ultrasound scan was done in the third case. Confirmation is by finding cystic wall devoid of epithelial lining on pathologic specimen. [3, 4].

Most surgeons adhere to the 'Rule of 6' for the management of pancreatic pseudocysts (that is cysts >6 cm or duration >6 weeks). This was based on the expectations that 6 weeks is sufficient time for (1) the pseudocyst to resolve spontaneously and (2) the pseudocyst wall to mature to be tough enough to hold sutures. [5, 6].

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Surgical treatment can be of two approaches closed (percutaneous drainage or laparoscopic approach); and open with internal or external drainage. Internal drainage by open surgery can be done through surgical decompression (into the stomach or small intestine such as jejunum or duodenum). An endoscopic ultrasound guided transmural drainage is the gold standard modality of treatment [7]. The cost of endoscopic equipment and non-availability of needed endoscopy accessories for this service mitigated against this option. Surgery was the preferred choice in the limited resource setting of the study centre. A retrospective study comparing national outcomes from 1997 to 2001 for surgical versus Percutaneous drainage of pancreatic pseudocysts revealed that surgical drainage was superior to percutaneous drainage. Even after correction for confounders such as disease severity and comorbidities, surgical approaches were associated with decreased mortality, shorter length of stay and fewer complications [8, 9]. In patients with infected pancreatic pseudocysts or patients who are major operative risks, percutaneous drainage remains a better option.

Surgical drainage is achieved via one of the following three options: cystoduodenostomy, cystojejunostomy or cystogastrostomy. The main consideration driving the surgical approach are the location and nature of the pseudocyst and the surgeon's preference [9]. Out of five reported cases two had open with Cysto-gastrostomy and one had cystojejunostomy based on proximity of the pseudocyst to the posterior wall of stomach and surgeon's preference
.
Cysto-gastrostomy is chosen when the pseudocyst is located in the epigastric region and adheres to the stomach. This was the case with our three patients. Cysto-gastrostomy is beneficial since it allows for postoperative drainage using a nasogastric tube; although, an increased risk of infection exists due to the tendency for gastric and pancreatic secretions to pool in the dependent part of the pseudocyst, leading to abscess formation and/or a higher likelihood of sepsis [10]. Cystogastrostomy is also associated with a higher risk of postoperative hemorrhage compared with cystojejunostomy. Only one patient has postoperative fever and managed conservatively. The cyst wall was biopsied and the histopathology confirmed pancreatic pseudocyst. There was no evidence of malignancy.

Cystojejunostomy is the option of choice when the pseudocyst is very large and extends beyond the epigastric region to the umbilical, hypochondriac and lumbar region. This procedure allows for dependent drainage, and is the anastomosis of choice for giant pseudocysts [10]. We however found cysto-gastrostomy better in two cases and cystojejunostomy in one case especially for easy anastomosis, post-operative residual drainage via nasogastric tube and a follow-up gastroscopy which can easily be done for monitoring. All our patients did very well, having followed them up for more than one year.

Recent modalities of treatment such as EUS-guided drainage of pancreatic pseudocysts with viscous solid debris-laden fluid via a nasocystic drain alongside transmural stents (high cost) were said to have resulted in a lower stent occlusion rate and better clinical outcomes when compared with drainage via transmural stents alone. [11, 12, 13]

Conclusion

As the endoscopic drainage is the treatment of choice but the patients financial status and resources available in particular place are also taken into consideration. However, for giant pseudocyst of pancreas open surgery is preferred. Now a days pseudocyst are not rare as we thought.

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Acknowledgement
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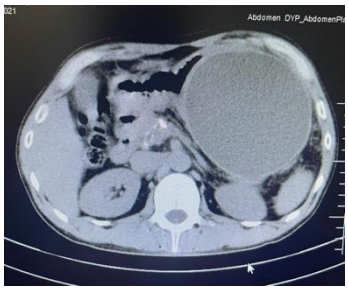

Figure 1- showing 13.2x10.5x15.1 cms arising from body and tail of pancreas

Figure 2a

Figure 2b

Figure 2a and 2b are the intraoperative images. 2a – pseudocyst, 2b-cystogastrotomy

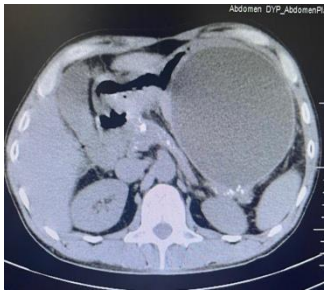

Figure 3- 12x11x11 cms arising from the tail and distal body of the pancreas

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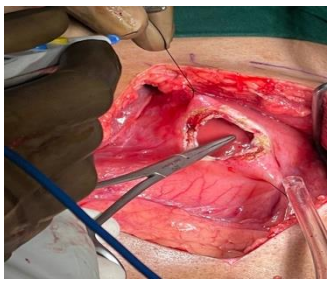

Figure 4a

Figure 4b

Figure 4c

4a-posterior wall of the stomach
4b-wall of the cyst
4c-anterior wall of the stomach

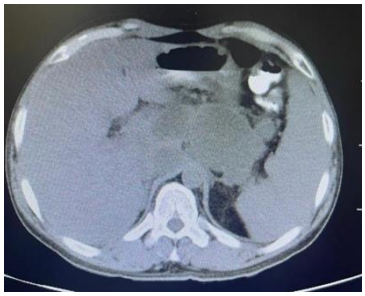

Figure 5 – showing 3 different pseudocyst of pancreas arising from different places

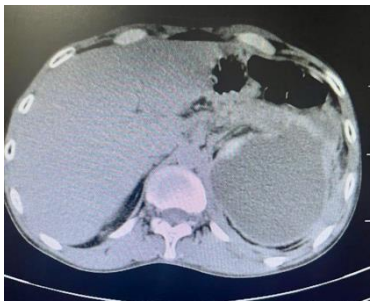

Figure 6- pseudocyst extending inferiorly in subcapsular space of the left kidney – 9.1x8.5x9.1 cms

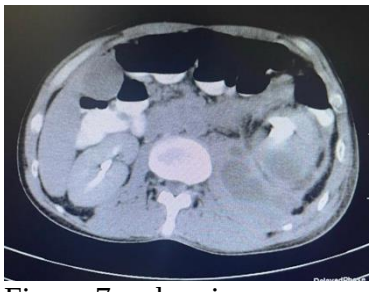

Figure 7 – showing

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extension of pseudocyst into the left psoas – 4.4x4.1x6.9 cms

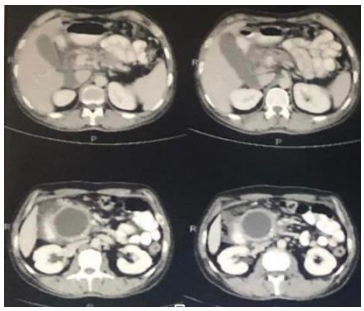

Figure 8 – showing 54x52x58mm noted arising in the head and uncinate process of pancreas and significant mass effect .

Figure 9 – showing 9.1x7.8x8.2 cms cyst increased compared to previous scan

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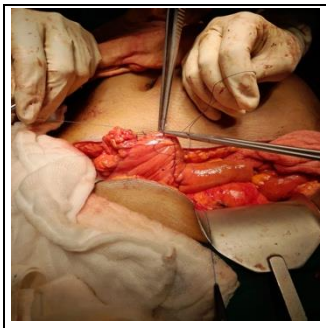

Figure 10 – intraoperative photo of cystojejunostomy