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Management of Pancreatic Pseudocyst in Spectrum of Varied Presentations at Cmch (A Tertiary Care Hospital)

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Abstract: *Introduction : Pancreatic pesudocyst is one of the common complication arising from pancreatitis. It forms walled off collection of sterile pancreatic fluid in the pancreatic parenchyma. The sac matures over a period of 6 weeks and becomes amenable to various surgical modalities. The size of the cyst plays an important role in deciding the appropriate management. Starting from conservative line to Whipples procedure, the surgical option varies. The distribution of cyst through the parenchyma calls for the proper intervention.*
Aims and objectives : The aim of this study is to analyze the different outcome in the management of pseudocyst of pancreas
Materials and methods : Hereby reporting the case series of 6 patients of pseudocyst of pancreas with varied presentations. They were taken for complete evaluation and managed accordingly depending on the severity of the illness ranging from conservative line to surgical management
Results : In our study, we found out of 6 cases, two was managed conservatively, one underwent external drainage for pancreatic abscess, two underwent cystogastrostom, One underwent cystojejunostomy
Key words: *pancreatitis, pancreatic pesudocyst, pancreatic abscess.*

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I. Introduction

Pancreatic pseudocysts are fluid collections in the pancreatic tissue or the adjacent pancreatic space. Pancreatic pseudocyst is surrounded by a well-defined wall and contains essentially no solid material. Most pancreatic pseudocysts occur as a consequence of acute pancreatitis. However, they can also occur in the setting of chronic pancreatitis, postoperatively, or after pancreatic trauma. Pseudocysts may be asymptomatic or present with a variety of symptoms such as pain, satiety, upper gastrointestinal bleeding, nausea, and vomiting. The maturation period is reported to be approximately 2 to 6 weeks, and during this time, 33% of cysts are expected to spontaneously resolve. However, a substantial number of persistent cysts require treatment, owing to potential complications such as infection, haemorrhage, and cyst rupture. Pancreatic pseudocysts have been treated surgically for over 40 years, and this approach is still frequently used currently. With the advancements in surgical techniques, newer techniques such as internal drainage via cystogastrostomy and cystojejunostomy have been well established, and the permanent resolution of pseudocysts has been reported in 91% to 97% of patients. In addition, although the efficacy of operative treatment for pancreatic pseudocysts is high, complication rates range from 4% to 30%. Accordingly, some researchers have suggested that a non operative approach such as endoscopic drainage is preferable.

II. Case Reports

Case 1

A 45-year-old male, a chronic alcoholic was referred to our hospital with the complaints of abdominal pain and breathlessness for the past 20 days. He also had cough with expectoration - copious and watery expectoration which was rarely blood stained. On general examination, he was tachypneic, (respiratory rate was 26/min) and breath sounds were diminished on the left hemithorax. He also had minimal free fluid in the abdomen. There was no significant organomegaly. The patient was apparently normal 6 months back when he was admitted to a local hospital for alcoholic acute pancreatitis. He was managed conservatively and discharged. After 4 weeks, he was rehospitalized for severe abdominal pain with similar complaints. CECT abdomen showed resolving acute necrotizing pancreatitis with pseudocyst. He was pale with haemoglobin of 8.5 g% and

was transfused with packed red cells. A large hematoma was seen in the peripancreatic region extending into the lesser sac, and another large hematoma was seen tracking into the right intrahepatic region. The patient responded well with conservative line of management and was discharged. Two weeks later, he developed abdominal pain and severe breathlessness. He had cough and copious watery expectoration which was at times blood stained. Of the imaging contrast enhanced computed tomography (CECT), chest revealed massive right sided pleural effusion and CECT abdomen showed walled off necrosis and multiple fluid collections in the abdomen. A pigtail catheter was placed under ultrasonograph guidance and the abdominal collection was drained. Along with that an intercostal drain was placed in the right side chest and pleural fluid was drained. He improved clinically and was discharged but the same symptoms persisted and he was referred to our institution. We did a complete blood analysis. His serum amylase and lipase were elevated (557 IU/L and 715 IU/L, respectively). The total count was found normal (9,800/cumm). Renal function tests and liver function tests were within normal limits. The pleural fluid analysis showed a high protein (4.7 g/dl) and pleural fluid amylase level of 9654 IU/L. CECT chest and abdomen showed massive right-sided pleural effusion with atelectasis lung parenchyma, diffuse edema and thickening of the pancreatic parenchyma with necrosis in the neck region, and pseudocyst formation involving lesser sac and communicating into the posterior mediastinum with rupture into the pleural cavity with pancreatico-pleural fistula. Magnetic resonance cholangiopancreatography (MRCP) also demonstrated the ductal leak. The patient was instituted enteral nutrition as early as possible. He was started on antibiotics and injection octreotide. Following which the patient underwent endoscopic retrograde cholangiopancreatography (ERCP) and duct cannulation was down which revealed ductal leak. The fistulous tract could be demonstrated in the ERCP and was tracking upward to the right pleural space. Pancreatic sphincterotomy alone was done and the pancreatic juice was found draining freely. Following the procedure, the patient gradually improved. His respiratory symptoms settled. The breath sounds in the right hemithorax became audible and was bronchial in quality suggesting associated consolidation. The abdominal pain was reduced. The patient's general condition improved. He was initially started on liquid feeds and later tolerated solid diet too. A repeat CT revealed resolution of the right sided effusion with the right lower lobe consolidation and resolution of the collections in the abdomen.

Case 2

A 50-year-old male was admitted to our hospital with abdominal pain radiating to back and vomiting following. He was chronic alcoholic and smoker. On examination, he had minimal free fluid in the abdomen with epigastric tenderness and fullness. The serum amylase and lipase were elevated. A CECT abdomen revealed well-defined fluid collection measuring 10 cm × 3.2 cm × 2.8 cm in the region of the tail of pancreas with hypoechoic lesion with peripheral enhancement, internal air bubbles with relatively thick walled sac suggestive of infected pseudocyst. The patient was started on higher IV antibiotics, injection octreotide and other supportive managements. Patient was evaluated and underwent ultrasonogram guided external drainage of pancreatic abscess using pigtail. Around 400ml of clear pus drained and the epigastric fullness subsided. The catheter was retained for a week with slowly decreasing outputs from the cyst. It was then removed and patient was discharged. After 4 weeks, in the first follow up repeat ultrasonogram was taken and the size of the cyst found to be 3 cm with clear fluid inside. Patient was advised to continue the conservative line of management and lifestyle modifications and followed up at regular intervals.

Case 3

A 32-year-old male was referred to our institute with complaints of severe abdominal pain for the past 2 weeks. The pain was pulling type in the epigastric region radiating to back, increased on food intake, and relieved on stooping forward. There was epigastric fullness. There was no swelling of legs or decreased urine output. There was loss of weight and loss of appetite. He had similar episodes of abdominal pain in the past, for which he was treated conservatively. He was admitted for acute pancreatitis in a local hospital 6 weeks back and was managed conservatively and discharged. He was a smoker and an alcoholic for the past 15 years. On examination, the patient was clinically stable with moderate built and nourishment. Abdomen examination revealed epigastric tenderness without any organomegaly or significant free fluid in the abdomen. Blood investigations revealed a normal renal function tests and liver function tests. The serum amylase and lipase were normal. Chest X-ray was normal. A CECT abdomen showed fluid filled collection with relatively thick wall in the body of pancreas with low attenuation. The cyst contains no non-liquefied areas. The fluid collection of size 9 x 7 cm is noted abutting the posterior wall of stomach without any connection into pancreatic duct. Patient was evaluated and planned for surgical management. Cystogastrostomy was planned. Following anaesthetic fitness, under GA, with midline laparotomy incision the posterior wall of stomach is surgically anastomosed with anterior wall of cyst to enhance the dependent drainage. The immediate post operative period was uneventful. Patient was started on early enteral nutrition. The patient was discharged and reviewed after 2

weeks. Follow up ultrasonogram revealed reduction in the size of the cyst to 4 cm and no other abnormalities. Patient was advised on regular follow up and lifestyle modifications.

Case 4

A 49-year-old male was referred to our institute with complaints of severe abdominal pain, upper abdominal distension for the past 4 weeks. The pain was chronic dull aching in the epigastric region radiating to back, increased on food intake. There was epigastric fullness. There was loss of weight and loss of appetite. He had similar episodes of abdominal pain in the past, for which he was treated conservatively. He was admitted for acute pancreatitis in a local hospital 2 months back and managed conservatively and discharged. Patient was a chronic smoker and an alcoholic for the past 20 years. On examination, the patient was clinically stable. Abdomen examination revealed epigastric tenderness and fullness. Blood investigations revealed a normal renal function tests and liver function tests. The serum amylase and lipase were normal. Chest X-ray was normal. A CECT abdomen showed fluid filled collection with relatively thick wall in the body of pancreas with low attenuation. The cyst contains no non-liquefied areas. The fluid collection of size 10 x 7 cm is noted abutting the posterior wall of stomach without any connection into pancreatic duct. Patient was evaluated and planned for surgical management. Cystogastrostomy was planned. Following anaesthetic fitness, under GA, with midline laparotomy incision the posterior wall of stomach is surgically anastomosed with anterior wall of cyst to enhance the dependent drainage. The immediate post operative period was uneventful. Patient was started on early enteral nutrition. The patient was discharged and reviewed after 2 weeks. Follow up ultrasonogram revealed reduction in the size of the cyst to 45 cm and no other abnormalities. Patient was advised on regular follow up and lifestyle modifications.

Case 5

A 37-year-old male who was a chronic alcoholic and smoker presented to us with acute abdominal pain 3 days. On examination, he was febrile, tachypneic. Abdomen examination revealed epigastric tenderness with guarding and rigidity. Blood investigations revealed a normal renal function tests and liver function tests. The serum amylase and lipase were 4 fold elevated. Chest X-ray was normal. A CECT abdomen showed fluid filled collection with relatively thin wall in the body of pancreas with low attenuation. The fluid collection of size 4 x 3 cm is noted without any connection into pancreatic duct with wall thickness of 3mm. The patient was treated conservatively with higher antibiotics, analgesics and somatostatin analogues, followed which the patient symptomatically improved with resolution of symptoms. The patient was discharged and reviewed after 1 week. Follow up ultrasonogram revealed reduction in the size of the cyst to 2 cm and no other abnormalities. Patient was advised on regular follow up and lifestyle modifications.

Case 6

A 39-year-old male presented with complaints of abdominal pain and loss of apetite for the past 1 month. The pain was in the epigastric region and left hypochondriac region radiating to back. Pain increased on food intake. There was epigastric and left hypochondriac fullness. There was loss of weight and loss of appetite. History of similar episodes of abdominal pain in the past for which he was admitted in a local hospital 6 weeks back and was managed conservatively and discharged. He was a smoker and an alcoholic for the past 10 years. On examination, the patient was afebrile with moderate built and nourishment. Abdomen examination revealed epigastric and left hypochondriac tenderness without any organomegaly or significant free fluid in the abdomen. Blood investigations revealed a normal renal function tests and liver function tests. The serum amylase and lipase were normal. Chest X-ray was normal. A CECT abdomen showed fluid filled collection with relatively thick wall in the tail of pancreas with low attenuation. The cyst contains no non-liquefied areas. The fluid collection of size 8 x 5 cm is noted abutting the posterior wall of stomach without any connection into pancreatic duct. Splenic vessels are normal. Patient was evaluated and planned for surgical management. Cystojejunostomy was planned. Following anaesthetic fitness, under GA, midline laparotomy incision made. Cyst found to be in the tail of pancreas with no relation to any of the stomach wall. Since stomach could not be brought in closer to cyst, jejunum is mobilised for appropriate length from DJ flexure and brought through the rent created in transverse mesocolon to approach the retroperitoneal area where anastamosi between cyst and the jejunum is done to enhance the dependent drainage. The immediate post operative period was uneventful. Patient was stared on early enteral nutrition. The patient was discharged and reviewed after 2 weeks. Follow up ultrasonogram revealed reduction in the size of the cyst to 3 cm and no other abnormalities. Patient was advised on regular follow up and lifestyle modifications.

III. Discussion

We have demonstrated that surgical and endoscopic treatments are efficacious and safe in the management of pancreatic pseudocysts. There is significantly no obvious differences in pseudocyst resolution

and complication rates between the surgical and endoscopic approaches. If clinically applicable, endoscopic drainage should be considered the first-line therapy for most of the pancreatic pseudocysts. The reported success rate of endoscopic drainage for pancreatic pseudocysts ranges from 60% to 90%, whereas the success rate of surgical drainage is 94% to 99% suggesting still the superiority of surgical technique with less invasive approach. But being a minimally invasive technique, endoscopic drainage could be an appropriate alternative to surgery in the management of pancreatic pseudocysts as there is not much of difference between the outcomes. Indeed, it should be the first choice in appropriate clinical settings. In the present study, patients with ruptured cysts into the pleural cavity is also addressed ,citing it to be one of the complications that arises from the long standing complication of the psuedocyst for which conservative line of approach along with the use of endoscopic retrograde pancreaticocholangiography was done. Infected mature cysts but who could not tolerate operation because of weak body situation were treated with percutaneous drainage. However, this procedure was associated with a high rate of complications (30.8%) and a frequent need for open surgery (38.5%). Therefore, we advise that percutaneous drainage is not an ideal modality at all standards with prior studies reporting a complication rate of 18% and a failure rate of 16% with external drainage one has to be very careful in undertaking it when it is the only need that can be called for. For pancreatic pseudocysts with complications, symptoms, and increasing size, a classification system based on the individual characteristics of the cyst would offer surgeons some guidance on therapeutic decision making.21–24 When the pancreatic pseudocyst is likely to be found in the uncinate process of the pancreas, the relationship between the pseudocyst and the pancreatic duct is the first thing that has to be looked for. If a communication exists between them, endoscopic drainage via a transpapillary approach can be achieved.25 If not, because of the unusual location, surgical internal drainage should be performed. Of these patients, who underwent surgical modality of the treatment the connection between the main pancreatic duct and psuedocyst is not established making it more amenable to surgery. The other patient underwent endoscopic drainage via the trans papillary approach.. When the pseudocyst is located in the head, body, or neck of the pancreas, the relationship between the pseudocyst and the pancreatic duct needs to be initially evaluated at all times before planning the mode of surgery. If a communication between them is detected on imaging studies, endoscopic drainage via the transpapillary approach can be performed. The conservative approach for managing pancreatic psuedocyst relied on the fact that nearly 40% of the cyst of size 6cm has increased propensity to undergo spontaneous resolutions. The line of this management has to be applied for selective patients who undergo the proper criteria for treatment.

IV. Conclusion

Pancreatic pseudocysts are a known complication of acute and chronic pancreatitis. Chronic pseudocysts over 8 weeks are less likely to resolve spontaneously and, as the risk of complications increases with time, treatment of large pseudocysts (>5 cm) should not be postponed. Introduction of new and sensitive imaging techniques permits the detection of more pancreatic cystic lesions with better evaluation of adjacent structures. Surgery is the traditional modality for treating pancreatic pseudocysts, with high success rates and low morbidity and mortality, and it still plays an important role in therapy. Laparoscopic management has been reported with very encouraging results. Cystojejunostomy is found to be more standard than Cystogastrostomy for open drainage of pseudocysts requiring surgical management. Endoscopic therapy is a reasonable alternative to surgery, particularly for chronic pseudocysts, displaying an even lower morbidity and mortality rate. Failure of transpapillary or transmural drainage may make subsequent surgery necessary. Nonetheless, initial endoscopic drainage should be considered as a valuable tool and the method of choice in patients with chronic pancreatitis-associated large pseudocysts. The choice between surgical and endoscopic therapy should be made on the basis of the individual characteristics of the pancreatic pseudocyst.

Conflicts Of Interest

There are no conflicts of interest

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