

PANCREATIC PSEUDOCYST

Definition:

- A pancreatic pseudocyst is a maturing collection of pancreatic juice encased by reactive granulation tissue, occurring in or around the pancreas as a consequence of inflammatory pancreatitis or ductal leakage
- may be single or multiple, varying in size, and can be located either within or outside of the pancreas
- Most contain high concentrations of digestive enzymes and communicate with the pancreatic ductal system
- The walls are formed by adjacent structures such as the stomach, transverse mesocolon, gastrocolic omentum, and pancreas
- The lining of pancreatic pseudocysts consists of fibrous and granulation tissue
- the lack of an epithelial lining distinguishes pseudocysts from true cystic lesions of the pancreas

Etiology: 3 main situations in which pseudocysts may form

- 10% of cases occur after an acute attack of pancreatitis. Necrosis of peripancreatic tissue can progress to liquefaction with subsequent organization and eventual evolution into a pseudocyst, which may communicate with the pancreatic duct
- pseudocyst formation in chronic alcoholic pancreatitis can be caused by an acute exacerbation of pancreatitis or by progressive ductal obstruction. Obstruction may be due to either stricture of the duct or intraductal stone formation as a consequence of protein plugs. The ensuing rise in intraductal pressure may then induce ductal leakage, with accumulation of a peripancreatic fluid collection
- Pseudocysts may form after disruption of the pancreatic duct from either blunt or penetrating trauma.

Clinical Manifestations:

- most are asymptomatic
- expansion may cause abdominal pain, duodenal or biliary obstruction, vascular occlusion, or fistula formation into adjacent viscera, the pleural space, or pericardium
- infection of pseudocyst with abscess formation
- erosion into an adjacent vessel can result in a pseudoaneurysm, which can produce a sudden expansion of the cyst or gastrointestinal bleeding due to bleeding into the pancreatic duct
- Pancreatic ascites and pleural effusion can result from disruption of the pancreatic duct, leading to fistula formation to the abdomen or chest, or rupture of a pseudocyst with tracking of pancreatic juice into the peritoneal cavity or pleural space

Diagnosis

- Usually made by ultrasound or CT scan
- Endoscopic ultrasonography (EUS) has become an increasingly popular technology in evaluating cystic lesions of the pancreas since it can delineate complex wall structures and internal cyst contents

Management

Issues to consider prior to deciding upon management options

- Important to be certain that cystic structure is not cystic neoplasm, and is in fact a pseudocyst. High level of amylase within cyst usually indicates pseudocyst
- Presence of pseudoaneurysm: may complicate up to 10% of pseudocysts. Severe hemorrhage may occur following endoscopic drainage in patients with an unsuspected pseudoaneurysm. Angiography remains the definitive diagnostic test, and has been used increasingly to manage pseudoaneurysms by embolization with radiologic coils or gel foam
 - 3 signs indicating possibility of pseudoaneurysm
 - Unexplained gastrointestinal bleeding
 - Sudden expansion of a pseudocyst
 - An unexplained drop in hematocrit
- Presence of pancreatic necrosis: the presence of pancreatic necrosis should limit the utilization of endoscopic drainage. The surgical drainage approach allows probing into the pseudocyst to retrieve necrotic debris and to achieve complete evacuation before completion of the anastomosis.
- Presence of pancreatic abscess: "infected pseudocyst", requires operative debridement and drainage

Conservative Management

- Traditional surgical teaching is that pseudocysts persisting beyond six weeks rarely resolve and have a complication rate of nearly 50 percent during continued observation.
- Operative intervention has been recommended following an observation period of six weeks to ensure that spontaneous resolution does not occur and to allow time for the pseudocyst wall to mature, permitting direct suturing of a cyst-enterostomy
- More recent studies, however, have favored a more conservative approach with expectant follow-up in patients who did not have a cystic neoplasm, pseudoaneurysm, or more than minimal symptoms.

Drainage options

- 1) Surgical internal drainage: if the pseudocyst is adherent to the stomach or the duodenum, then a cyst-gastrostomy or cyst-duodenostomy is performed. A pseudocyst in the tail of the pancreas can be removed by resection of the tail; splenectomy is often also required
 - Recurrence rate of 10%; may resect pseudocyst to minimize chance of recurrence
 - Complication: external pancreatic fistulas
- 2) Percutaneous catheter drainage: as effective as surgery in draining and closing pseudocysts. Catheter drainage is continued until the flow rate falls to 5 to 10 mL/day. The main complication of this procedure is drain track infection; occurring in approx 50% of cases
- 3) Endoscopic approach: endoscopic cyst-gastrostomy (ECG) or endoscopic cyst-duodenostomy (ECD). May also perform transpapillary stenting if pseudocyst communicates with pancreatic duct.
 - Resolution rates of 65-89%
 - ECD is favored approach due to increased safety, and technically easier procedure

- Complications are bleeding (which is severe enough to require surgical control in up to 5 percent of cases), retroperitoneal perforation, infection, and failure to achieve resolution
- Recurrence rate of 6-18%

References

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