Introduction

Most cases of pancreatic pseudocyst are a delayed complication of acute pancreatitis. Following a recent case treated with open surgery, we decided to perform a literature review to establish the principles currently adopted for the diagnosis and treatment of this condition.

Case report

A 63-year-old woman was admitted to our department for acute necrotizing pancreatitis, associated with gallstones, brought under control with medical treatment. Diagnostic procedures revealed the subsequent formation of a large pancreatic pseudocyst, whose evolution was monitored over six weeks with ultrasound and CT (Fig. 1). By this time the cyst appeared to have stabilized with formation of a thick fibrous wall. It was around 12 cm in size, displaced the stomach and slowed emptying. The patient complained of digestive troubles and epigastric bloating, but was not in pain and had no other related conditions.

Post-operative course was regular and the patient was discharged after eight days. Follow-up CT on day 30 demonstrated the almost total regression of the cyst and a complete disappearance of digestive disorders.

Discussion

Pancreatic pseudocysts are fluid collections secondary to inflammation with a fibrous wall (no epithelial lining) containing pancreatic tissue degradation products, i.e.
necrotic debris, blood degradation products and pancreatic juice. They are a delayed complication of acute or chronic pancreatitis or, rarely, pancreatic trauma.

Epidemiology
The overall incidence of pancreatic pseudocyst is low, at between 0.5 and 1 per 100,000 inhabitants. The incidence varies with the etiology, from 5 to 16% after acute pancreatitis and 20 to 40% in chronic pancreatitis (1-7). The highest incidence is seen in chronic alcoholic pancreatitis, with reported values of up to 78% of cases in areas with high levels of alcohol misuse. In cases of acute pancreatitis, pseudocysts are reported in 6-36% of cases secondary to gallstones, 3-8% of post-operative or post-traumatic cases and 6-20% of idiopathic pancreatitis and, rarely, after pancreatitis secondary to hyperlipidaemia (5,8-11).

Classification
The classification of pancreatic pseudocysts is currently based on pathogenetic criteria such as the Atlanta classification that subdivides pseudocysts into four types:

A) Acute fluid collection, occurring early in the course of acute pancreatitis and lacking a wall of granulomatous or fibrous tissue;
B) Acute pseudocyst, surrounded by fibrous or granulomatous tissue secondary to acute pancreatitis or trauma;
C) Chronic pseudocyst, arising in chronic pancreatitis and without a preceding episode of acute pancreatitis;
D) Pancreatic abscess: an intra-abdominal collection of pus in the proximity of the pancreas with little or no necrosis resulting from acute or chronic pancreatitis or trauma.

Another classification, proposed in 1991 by D’Egi-
Pancreatic pseudocyst: case report and short literature review

Percutaneous drainage
This is the least invasive method. However, it is associated with a high failure rate (>30%), as it can lead to infection of the cyst, given that the drainage catheter has to be left in situ for several weeks. If the latter takes place in the higher part (stomach, duodenum, jejunum), it is likely to resolve spontaneously. However, a fistula with the colon, due to the septic content of the latter, will lead to a suppurative, ruptured, or fistulizing pseudocyst. When there is no previous history of pancreatic disease (19-21), a cystic tumor is very probable.

Diagnostic procedures should include medical history, laboratory tests, CEA testing, cytological, chemical and microbiological examination of the cyst contents and modern imaging techniques, which provide useful information on the size, location and walls of the cyst and its contents. However, it is not uncommon for it to be impossible to establish the features distinguishing pseudocysts from cystic tumors. The most commonly used imaging procedures are transabdominal ultrasound, endoscopic ultrasound, CT, endoscopic cholangiopancreatography, and cholangio-MRI.

Diagnostic protocol
Diagnostic procedures should include medical history, laboratory tests, CEA testing, cytological, chemical and microbiological examination of the cyst contents and modern imaging techniques, which provide useful information on the size, location and walls of the cyst and its contents. However, it is not uncommon for it to be impossible to establish the features distinguishing pseudocysts from cystic tumors. The most commonly used imaging procedures are transabdominal ultrasound, endoscopic ultrasound, CT, endoscopic cholangiopancreatography, and cholangio-MRI.

Treatment of pseudocysts
The first approach to treating pseudocysts is conservative, involving waiting, given that they clear up spontaneously with time in over half of cases. Traditional guidelines recommend monitoring them for at least six weeks. If the cyst tends to diminish, or at least not become larger, in this period, its evolution should be monitored over time. However, if it increases in size, its content changes and/or it becomes symptomatic, it should be treated to avoid the need for emergency abdominal surgery due to infection, suppuration, rupture, hemorrhage, etc.

Drainage - Surgeons unanimously agree on the need to treat pseudocysts larger than 6-7 cm, even if there are no complications. However, there is no unanimous agreement on how to treat them, and various methods are proposed. Percutaneous drainage - This is the least invasive method. However, it is associated with a high failure rate (>30%), as it can lead to infection of the cyst, given that the drainage catheter has to be left in situ for several weeks. If the latter takes place in the higher part (stomach, duodenum, jejunum), it is likely to resolve spontaneously. However, a fistula with the colon, due to the septic content of the latter, will lead to a suppurative, ruptured, or fistulizing pseudocyst. When there is no previous history of pancreatic disease (19-21), a cystic tumor is very probable.

Endoscopic drainage - Enables the creation of a communication between the cyst and the stomach. This technique also has a high failure rate, due to recurrence, sepsis, bleeding, etc. (2,20,23,34-36). Transpapillary endoscopic drainage is particularly indicated where the pseudocyst communicates with the pancreatic duct. Following sphincterotomy, the cannula is introduced by guide wire through the pancreatic duct. Following sphincterotomy, the cannula is introduced by guide wire through the pancreatic duct. Following sphincterotomy, the cannula is introduced by guide wire through the pancreatic duct.
passage between the cyst and the digestive tract (stomach, duodenum or jejunal loop).

The most common method, and our preferred technique, is cystogastrostomy. This involves connection of the pseudocyst to the posterior wall of the stomach by the antrum. Before beginning, it should be established that the cyst wall consists of fibrotic tissue, as this provides a good anchor for the sutures and enables a connection to be created between the wall of the pseudocyst and the posterior wall of the stomach, to ensure good drainage. Absorbable sutures are used and bleeding should be controlled. After thorough cleaning of the cyst cavity, insertion of a nasogastric tube is recommended.

Pseudocysts complicated by suppuration or rupture, especially in cases of “immature” cysts or where the wall is still thin and fragile, are more complex. In such cases, external drainage with suitable positioned large tubes is good practice. If the flow of pancreatic juices does not dry up, a fistula will develop. This may resolve spontaneously or require surgery in due course involving internal derivation.

Conclusions

Modern diagnostic techniques have significantly improved the diagnosis and monitoring of pancreatic pseudocysts. Open surgery is the traditional treatment, associated with a high success rate and low mortality and morbidity. Encouraging results have been reported for laparoscopy, but long-term follow-up has confirmed the superior results achieved with open surgery. Endoscopy is another valid alternative, especially in patients where open surgery is contraindicated. Transpapillary drainage is a good option in cases where the pseudocyst communicates with the pancreatic duct. However, open surgery is still considered the gold standard for the treatment of most cases of pancreatic pseudocyst.

References


Pancreatic pseudocyst: case report and short literature review