

Acute Pancreatitis Post Duodeno-Pancreatectomy

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Abstract

Acute pancreatitis post duodeno pancreatectomy of the residual pancreas is one of the most underestimated postoperative complications.

It is a serious complication, which has a potential to trigger additional postoperative surgical morbidity, including pancreatic fistula.

Keywords: Pancreatic; Duodenopancreatectomy; Complication of Duodenopancreatectomy

Case Presentation

A 55-year-old patient, followed for a tumor of the head of the pancreas who had undergone cephalic duodeno-pancreatectomy. After 3 weeks, the patient presented to the emergency department with transfixing epigastric pain. An injected abdominal CT scan was performed (Figure 1) showed edematous infiltration of the rest of the pancreas opposite the surgical clips, with loss of the pancreatic lobules without necrosis, associated with infiltration of peri-pancreatic fat. These signs were in favour of pancreatitis, and given the patient's history, we concluded that she had post-duodeno pancreatectomy pancreatitis.



Figure 1

Discussion

Cephalic duodenopancreatectomy is a major procedure in visceral surgery, and the most common pancreatic resection. It is indicated for tumors of the head of the pancreas, of the bilio-duodeno-pancreatic crossroads (lower bile duct, papilla or duodenum), in cases of duodenal cystic dystrophy (aberrant pancreas) and for certain complications of chronic pancreatitis that are inaccessible to bypass surgery.

This surgical technique consists of a right pancreatectomy with sectioning of the pancreatic isthmus in front of the mesenteric-portal axis, and resection of the distal gastric, pyloric, duodenal and duodeno-jejunal angles, as well as the lower part of the main bile duct, with restoration of continuity, generally according to Child, which ensures restoration of pancreatic, biliary and digestive continuity, involving the creation of three anastomoses: pancreaticojejunal (or gastric), biliojejunal and gastrojejunal.

The morbidity of this surgery remains high, with a complication rate of between 20% and 50%. The most frequent post-operative surgical complications are gastroparesis, infections, fistulas (mainly pancreatic), haemorrhage, pancreatitis, cholangitis and post-operative ileus.

Acute pancreatitis post duodeno-pancreatectomy is one of these complications, recently defined by the International Study Group for Pancreatic Surgery (ISGPS) as the manifestation of an acute inflammatory process in the remaining pancreas, possibly due to local hypoperfusion or ischemia, considered the main risk factor.

As we know, the neck of the pancreas is irrigated by the dorsal pancreatic artery and its anastomoses with the branches of the pancreaticoduodenal arch. So, when the neck of the pancreas is severed, irrigation of the dorsal pancreatic artery and its anastomoses is interrupted, and ischemia of the entire rest of the pancreas can occur. Ischemia may also be caused by transection of the veins draining into the portal trunk. Transient ischemia is sufficient to induce the cascade of changes associated with acute pancreatitis.

Acute post-CPD pancreatitis may also be the result of pancreatic microtrauma during surgery, or of failed anastomosis, leading to postoperative pancreatic fistula, haemorrhage, intra- abdominal abscess or even sepsis.

According to the literature, it is prevalent in 55% of cases, and should be suspected in the presence of postoperative pain.

Diagnosis is based on biochemical, radiological and clinical criteria, with postoperative serum hyperamylasemia for at least the first 48 hours after surgery, radiological signs compatible with acute pancreatitis and clinically associated manifestations.

The radiological findings on CT of postoperative acute pancreatitis are the same as those of acute medical pancreatitis: visualization of pancreatic gland edema, peripancreatic fat infiltration, glandular ischemia, necrotic flow, air bubbles within necrotic flows.

On the other hand, classification is more complex due to the usual aspecific peripancreatic infiltration following locoregional surgery.

Treatment of acute pancreatitis includes intravenous hydration, appropriate nutrition and pain management.

As mentioned above, pancreatitis is associated with the development of a pancreatic fistula, and management of the fistula determines the patient's outcome. The management of local complications requiring treatment is all the more difficult as the associated pancreatic fistula increases in complexity. Infected peripancreatic collections can be drained percutaneously, since reoperation will undoubtedly predispose to leakage from one of the other anastomoses [1-9].

Conclusion

Postoperative acute pancreatitis represents a potentially fatal pathology, although it is underestimated due to the neglect of a transiently elevated serum amylase.

Post-operative imaging is very difficult, and potentially unable to distinguish benign manifestations from severe cases, which are treated without prior radiology.

It is an independent risk factor for the development of pancreatic fistula, intraperitoneal collections and abscesses, peritonitis and septic shock after duodenopancreatectomy procedures, hence the importance of diagnosis and treatment.

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Conflict of Interest

All authors declare no conflict of interest relevant to this article.

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