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Acute Pancreatitis Complicated by Upper Digestive Compression Ductal Disconnection Syndrome and Upper Gastrointestinal Hemorrhage: A Case Report

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Abstract **Case Report**

The natural history of acute necrotizing-hemorrhagic pancreatitis is sometimes characterized by the unpredictable occurrence of several complications. The formation of pseudocysts constitutes an important evolutionary turning point. Their evolution is unpredictable, ranging from simple spontaneous resolution to the occurrence of serious complications. We report the case of a severe idiopathic acute pancreatitis that presented several successive complications: a gastrointestinal hemorrhage on a laminated irregular non-aneurysmal gastro-duodenal artery as well as a ductal disconnection syndrome and a high occlusive syndrome due to compression by a pseudocyst. The interest of this observation lies in the originality of the clinical presentation, the rarity of published cases, and the complex management required.

Keywords: Acute Pancreatitis, pseudocyst, Hemorrhagic complications.

INTRODUCTION

The natural history of acute necrotic-hemorrhagic pancreatitis is sometimes characterized by the unpredictable occurrence of multiple complications. The formation of pseudocysts marks a significant evolutionary milestone when it occurs. Its frequency is estimated to be between 5 and 15% of cases in the literature. Its progression is unpredictable, ranging from simple spontaneous resorption to the occurrence of severe complications. The main complications observed are obstruction, superinfection, and hemorrhage. Hemorrhagic complications are most often associated with the formation of a pseudoaneurysm. Their management is complex and must be multidisciplinary. We report the case of severe idiopathic acute pancreatitis that presented multiple complications over time [1].

CASE PRESENTATION

Mr. P.G., 72 years old, with a history of cholecystectomy in 2006, was hospitalized on November 23, 2022, in the intensive care unit of the Joseph Imbert Hospital Center in Arles for the management of severe idiopathic acute pancreatitis with SIRS (acute respiratory distress syndrome with acute renal failure). The progression was marked by the onset of a high obstructive syndrome characterized by abdominal pain, food vomiting, and a sensation of gastric fullness. An abdominal CT scan performed on January 5, 2023, revealed a 9 x 7 cm collection in the pancreas (Figure 1).

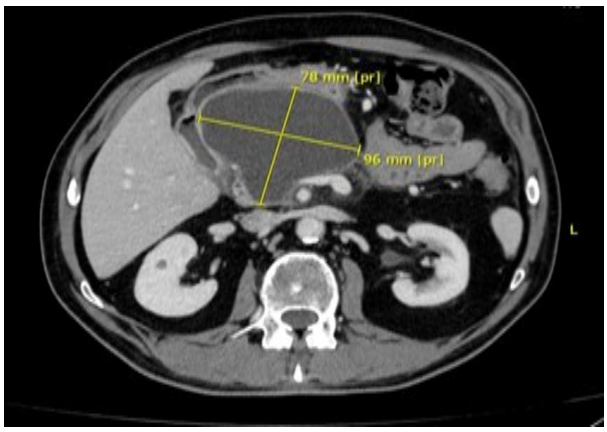

Figure 1: Abdominal CT scan from 05/01/2023: a 5 x 7 cm collection at the level of the pancreas

The decision was made to transfer the patient to the North Hospital of Marseille for the placement of an Axios stent. During his hospitalization at the North Hospital of Marseille, a recurrence of the obstructive syndrome was noted and a CT scan revealed an organized necrosis measuring 77 x 55 x 100 mm at the

level of the pancreas (CT scan from 01/29/2023) (Figure 2).

Figure 2: Abdominal CT scan from 29/01/2023: an organized necrosis measuring 77 x 55 x 100 mm

The patient underwent two necrosectomy sessions and the placement of a nasocystic drain after the removal of the Axios stent with good clinical evolution (resumption of enteral feeding) and radiographic improvement (absence of a drainable collection). Four months later, the patient consulted due to the onset of symptoms (early satiety). A CT scan was requested, revealing a 96 x 78 mm collection at the level of the pancreas, for which a cystogastrostomy was performed, and a ductal disconnection syndrome was diagnosed. On the fourth day after the cystogastrostomy, the patient experienced a significant upper gastrointestinal hemorrhage with hemodynamic instability. An emergency gastroscopy was performed revealing a stent in place, a clot adhering to the distal end of the endoprosthesis (Figure 3), and the abdominal CT scan revealed a pancreatic body-head pseudocyst with the stent in place. This pseudocyst contained hyperdense hemorrhagic material with bleeding stigmas from the gastroduodenal artery, which was slender, irregular, and laminated in close contact with a small residual collection. Notably, there was no arterial aneurysm (Figure 4). Spontaneous cessation of bleeding was observed on the control CT scan at 48 hours.

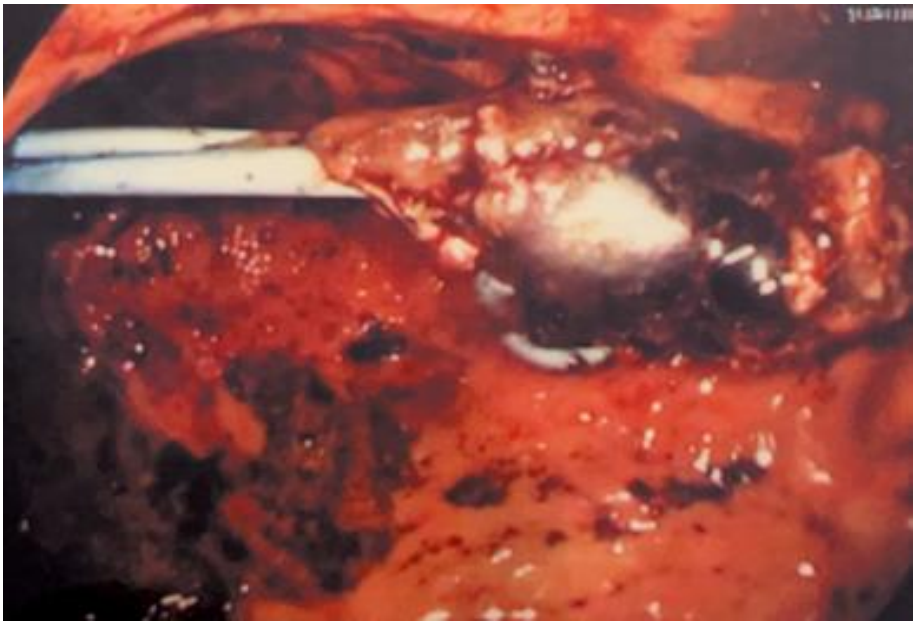

Figure 3: FOGD: prosthesis in place, a clot adherent to the distal end of the endoprosthesis

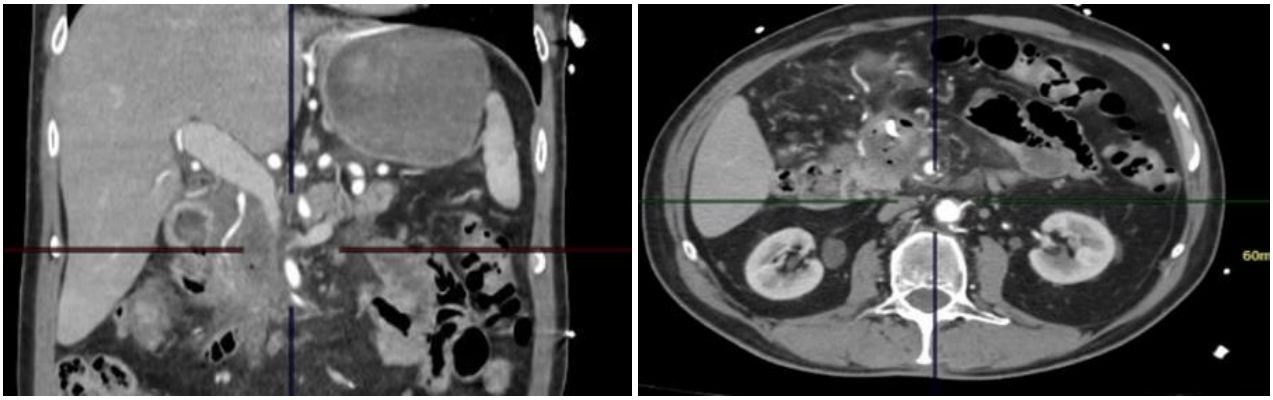

Figure 4: Gastroduodenal artery which was slender, irregular, and laminated in close contact with a small residual collection. Notably, there was no arterial aneurysm

DISCUSSION

Severe pancreatitis is defined as acute pancreatitis accompanied by persistent organ failure [2, 3]. One of the causes of death in severe pancreatitis is the infection of necrosis by bacteria or fungi. Infectious complications occur in 20 to 40% of cases during acute necrotizing pancreatitis and are responsible for 50 to 80% of deaths. Among other complications, hemorrhages are a serious complication of severe acute pancreatitis. Respiratory complications are present in varying degrees of severity in 75% of cases of severe acute pancreatitis.

Post-pancreatitis collections are a classic complication in the evolution of acute pancreatitis [4]. The Atlanta classification allows for a distinction between four types of collections based on the nature of the pancreatitis and the duration of its progression. In the long term following acute pancreatitis, only symptomatic collections should be drained. The symptoms vary depending on the location and size of the collection [5]. A pancreatic organized necrosis or a pancreatic pseudocyst can cause an obstructive syndrome through extrinsic gastro-duodenal compression, as was the case with our patient. Endoscopic drainage of peri-pancreatic collections can be performed via the transduodenal or transgastric route.

The procedure involves creating a communication between the pancreatic collection and the lumen of the digestive tract by placing one or more stents (plastic or metal). This procedure is called cystogastrostomy or cystoduodenostomy. A sample for bacteriological analysis is systematically taken to guide antibiotic therapy. If drainage alone is not sufficient, the anastomosis allows access to the collection at a later time if necessary to perform endoscopic necrosectomy sessions.

Disconnection is a rupture of the main pancreatic duct, with a viable upstream pancreas whose exocrine secretions no longer drain into the digestive tract, leading to the formation of pseudocysts or fistulas [6, 7]. The definitive diagnosis theoretically requires documentation of ductal necrosis during the performance of a therapeutic ERCP, which cannot be done for diagnostic purposes due to the risk of post-ERCP pancreatitis. In such cases, MRI is a good practical examination if disconnection is suspected. In the event of a fistula or external drainage, an amylase level > 3 times the normal value supports the diagnosis of pancreatic disconnection.

Hemorrhagic complications during acute pancreatitis (AP) can be divided into two groups: hemorrhages directly related to AP (pseudoaneurysms and arterial ruptures) and hemorrhages not directly related to AP (gastric ulcer, tube lesion) [8].

The arteries most often involved in arterial hemorrhages are the splenic artery (31 to 52%), the gastroduodenal artery (17 to 28%), the pancreaticoduodenal arcades (11 to 26%), and less commonly, the superior mesenteric artery and the left gastric artery. A non-hemorrhagic pseudoaneurysm can be discovered incidentally or in the presence of worsening abdominal pain. Gastrointestinal hemorrhage may occur due to the rupture of the artery and the presence of drains or stents in the necrotic collections.

The contrast-enhanced CT scan with arterial phase is the reference examination for diagnosing arterial complications during acute pancreatitis. It has replaced angiography due to its wide availability and non-invasive nature [9-11].

Interventional radiology has gradually replaced surgery in the management of arterial complications during acute pancreatitis. Arterial embolization is currently the first-line treatment. The immediate success rate is high (from 79 to 100%), The recurrence rate is between 11% and 37%, and a new embolization attempt often stops the bleeding.

CONCLUSION

The occurrence of a pseudocyst following acute pancreatitis is a common event. The role of imaging is to make a positive diagnosis and to be able to consider

differential diagnoses, particularly pancreatic cystic tumors, which will require different management. There is no morphological factor predictive of the evolution of a pseudocyst; thus, therapeutic management must take into account the clinical symptoms. The management of pseudocysts is multidisciplinary (gastroenterological, surgical, and radiological). The role of interventional radiology is important in vascular, hemorrhagic, digestive, and infectious complications.

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