BJHBS

Rupture of pancreatic pseudocyst and therapeutic conduct: a case report

Victor P. Graciano,[1*] Andressa C. Rodante,[2] Idari F. O. Netto,[3] Alessandro S. Pin,[3] Ludymilla O. P. Lacerda,[4] Gabriela M. Pontes,[4] Ricardo D. Marciano[1]

Abstract

Introduction: To report on a clinical case of a pancreatic pseudocyst that evolved to rupture and to understand the main therapeutic approaches adopted for pancreatic pseudocysts, thus fostering a better approach to such cases. Case report: Female patient, 30 years old, with pseudocystoadenoma and acute abdomen due to cystic rupture. Discussion: The therapeutic forms for pancreatic pseudocysts are expectant management, drainage (endoscopic and percutaneous) and surgical treatment. Results: The best approach addresses the treatment of the patient's clinical condition and pancreatic pseudocyst. For this to happen, a clinical evaluation, by means of complementary examinations, is required.

1. Centro Universitário de Mineiros. Trindade, GO, Brazil.

2. Hospital de Urgência de Goiânia. Goiânia, GO, Brazil.

3. Centro Universitário de Goiatuba, Unicerrado. Goiatuba, GO, Brazil.

4. Universidade de Rio Verde Campus Aparecida de Goiânia, Faculdade de Medicina. Aparecida de Goiânia, GO, Brazil.

*Correspondence address:
E-mail: victorgraciano41@gmail.com
ORCID: https://orcid.org/0000-0003-3643-2481

BJHBS, Rio de Janeiro, 2023;22(1):45-48
DOI: 10.12957/ bjhbs.2023.76956
Received on 25/10/2022. Approved on 06/02/2023.

Keywords: Pancreatic pseudocyst; Pancreatitis; Surgical anastomosis.

Introduction

Pancreatic pseudocysts are, in most cases, a complication of acute pancreatitis; however, they can be caused by cystic pancreatic neoplasms, which correspond to about 10% of cystic lesions. There are several ways to classify cystic formations of the pancreas. These include division by epithelial lining, which can be of type 1, 2 or 3. The first is defined as absence of epithelial lining (pseudocyst), and is the factor that differs from type 2, in which an epithelial lining (mucinous cystadenomas and serous cystadenomas) exists. Finally, type 3 is characterized by the degeneration of solid lesions (papillary cystic-solid tumors, ductal adenocarcinomas, and neuroendocrine tumors).[3]

Pseudocysts are composed of a collection of fluids, rich in amylase, usually close to the head and body region of the pancreas, which encapsulates and forms cystic lesions of peripancreatic and/or intrapancreatic origin. This cystic formation is characterized by a well-defined capsule with solid material inside and an absence of epithelial lining. The collection accumulates in a more localized way and becomes delimited after 4 weeks. After this period, it may present a necrotic character with solid characteristics.[5]

This study aims to report a clinical case of pancreatic pseudocyst and to discuss the main therapeutic forms adopted for this pathology, thus showing the most appropriate conduct for these rare cases.

Case report

A 30-year-old female patient, a chronic alcoholic, reported that she had started to experience epigastric pain, nausea and weight loss about 2 months previously. It evolved with asthenia, hyporexia, vomiting (containing only food remains) and a continuous band-like pain in the abdomen with irradiation to the back when the pain intensified. She did not report fever, dyspnea, dysuria or other complaints.

The exam requested was an abdominal tomography, which showed a unilocular expansive lesion in close contact with the body of the pancreas and without communication with the main pancreatic duct.

The case evolved into an acute clinical picture of intense, colicky pain, with an intensity of 10/10, located in the hypochondrium and left flank. In addition, she was sweating, tachycardic, hypotensive (90/50mmHg), with a rigid abdomen, presenting pain on superficial and deep palpation, with pain on sudden decompression in the hypochondrium and left flank. An exploratory laparotomy was performed. Intraoperatively, a greenish fluid with associated debris was identified, the result of the rupture of a pseudocyst. Pseudocyst-gastric bypass, pseudocyst drainage, exhaustive lavage and closure in layers were performed.

Discussion

Numerous therapeutic approaches exist to treat pancreatic pseudocysts that result from acute pancreatitis or from an exacerbation of chronic pancreatitis. The interventions that may be adopted are expectant management, endoscopic drainage, percutaneous drainage, and surgical treatment. In the case of the last three interventions and in the absence of complicating factors, the procedure can be delayed for up to 6 months after the initial episode of pancreatitis, since this allows the wall of the pseudocyst to thicken and mature.[6]

Expectant management

The choice of expectant management is especially appropriate in the case of small, asymptomatic pseudocysts. Spontaneous resolution is common, especially in clinical cases that occur after an episode of acute pancreatitis. It is worth mentioning that stable pseudocysts, i.e., those that do not increase in size, rarely cause symptoms and the gold standard for the treatment of uncomplicated pseudocysts is conservative. Conservative actions include the use of analgesics, antiemetics and a hypocaloric diet.[6]

Endoscopic drainage

This type of procedure is often used when the pseudocyst is close to the stomach and duodenum. It is a viable alternative for pseudocysts in which the site comprises dozens of collateral vessels. When symptoms, infection or pseudocyst growth occur for at least 4 weeks after the onset of pancreatitis and no complications arise, endoscopic ultrasound-guided drainage is the gold standard treatment.[1,7]

Percutaneous drainage

This type of procedure is performed only in critically ill patients who cannot tolerate surgical or endoscopic procedures, or in those with an infected or complicated immature pseudocyst, since percutaneous drainage does not require wall maturation before intervention.[6]

Surgical procedure

Surgical treatment is the most invasive and definitive form of resolution of pancreatic pseudocyst presentations. Drainage can be either external or internal. The first is used in the case of pseudocysts, whether complicated or not, when the wall covering the collection still does not present an adequate consistency for internal drainage to be carried out, but this treatment is currently in disuse. Internal drainage is the surgical treatment most often used by surgeons today. For this to occur, the exact location of the pseudocyst must be known.[6]

Internal surgical drainage

The type of procedure used will depend on the location and characteristics of the pseudocyst. The location can be in the head, body or tail, and treatment will depend on whether the pseudocyst is fistulized or not, as will be classified in the following text.

If the pseudocyst is in the head of the pancreas and does not have a fistula with a pancreatic duct, the best procedure is to perform an omentoplasty. On the other hand, if a fistula is present between the pancreatic duct and the cystic formation, an anastomosis between the pseudocyst and the digestive tract is the preferred procedure. Care must be taken with drainage in the second duodenal portion to avoid injury to the duodenal papilla or the terminal bile duct. If the pseudocyst is in the body of the pancreas and no fistula exists, the recommended procedure is unfolding with omentoplasty. In the case of fistulization between the pancreatic duct and the cyst, a central pancreatectomy or anastomosis between the pseudocyst and the digestive tract is performed. In cases where the pseudocyst is in the tail of the pancreas, with a fistula between the pancreatic duct and the cyst, the recommended procedure is a distal pancreatectomy or budding procedure with omentoplasty.[3]

This classification has a level of evidence-5 and recommendation-4 (expert opinion), and all types of procedures must be associated with the use of albendazole, 1 week before surgery and up to 2 months postoperatively.[2]

In the clinical case under discussion, an abdominal tomography was performed, which showed a unilocular expansive lesion in close contact with the body of the pancreas and with no communication to the main pancreatic duct, in addition to lateral rejection of the stomach. With these findings, it was possible to suggest the course of treatment to be performed. Among the available treatments, the most viable ones could be surgery with anastomosis between the pseudocyst and the gastric tract, endoscopic drainage, expectant management, or even percutaneous drainage, due to the location of the liquid collection.

However, since the patient presented unstable hemodynamic activity, extreme weight loss and subacute malnutrition, the initial management was preoperative nutrition. However, after 20 days, the clinical picture worsened with the appearance of a possible acute abdomen, presence of abdominal distension, flat abdomen, tachycardia and intense acute pain. Associated with this condition, imaging tests found a large amount of free fluid in the abdominal cavity. At

that moment, the main hypothesis was a ruptured pancreatic pseudocyst and, in these circumstances, the best course of action was an exploratory laparotomy with pseudocystogastroanastomosis, including collection of material for culture without biopsy of the ruptured material.

In pseudocysts with a retrogastric location, the main invasive surgical technique for drainage is pseudocystogastroanastomosis (anastomosis of the pseudocyst with the posterior gastric wall), which is known as the *Jurasz* technique. This aims to establish communication of the pseudocyst with the anterior wall or back of the stomach, so that the collection drains into the stomach.[4]

Conclusion

The best management for cases of pancreatic pseudocyst will depend on the patient's clinical state, the complications present and their location.

A review of the bibliography led to the conclusion that, due to the specific case and the numerous forms of treatment, initially, the patient was hemodynamically unstable, malnourished and incapable of being subjected to definitive invasive procedures. However, after evolving into a clinical picture of acute abdomen with a rare rupture of the pseudocyst, the best therapeutic approach was an exploratory laparotomy with pseudocystogastroanastomosis, due to its location in the body of the pancreas.

Therefore, one can conclude that the ideal scenario in cases of cystic lesions of the pancreas is clinical evaluation, imaging and programming of the most appropriate therapy, especially because the majority of these cases are pancreatic pseudocysts after episodes of acute pancreatitis. However, as an acute situation of urgency existed in the case under analysis, the surgical procedure was mandatory, with no time to investigate the etiology of the cystic lesion initially found. The patient had a good postoperative evolution, with no signs of recurrence or growth of the lesion, a fact that suggests that the condition was a pancreatic pseudocyst and not a neoplastic cystic lesion of the pancreas.

References

1. DE-Moura DT, Farias GF, Brunaldi VO, et al. Lumen-apposing metal stent and electrocautery enhanced delivery system (hot axios[tm]) for drainage of walled-off necrosis: the first Brazilian case report. ABCD. Arquivos Brasileiros de Cirurgia Digestiva (São Paulo) [Internet]. 2019 [cited 31 Mar 2022];32(1). Available in: https://doi.org/10.1590/0102-672020180001e1430
2. Dziri C, Dougaz W, Bouasker I. Surgery of the pancreatic cystic echinococcosis: systematic review. Translational Gastroenterology and Hepatology [Internet]. 8 Dec 2017 [cited 31 Mar 2022];2(12):105. Available in: https://doi.org/10.21037/tgh.2017.11.13
3. Farah JF, Lupinacci RM, Apodaca-Torres FR. Ressecção laparoscópica dos cistoadenomas pancreáticos. ABCD. Arquivos Brasileiros de Cirurgia Digestiva (São Paulo) [Internet]. Set 2012 [cited 31 Mar 2022];25(3):165-8 Available in: https://doi.org/10.1590/s0102-67202012000300006
4. Jorge EM, Paiano VF, Sakai AA, et al. Pseudocisto pancreático com ruptura espontânea para trato gastrointestinal: um relato de caso Pancreatic pseudocyst with spontaneous rupture into the gastrointestinal tract: a case report. Brazilian Journal of Development, 7(7), 72084-72088. 2021.
5. Matsuoka LEA, Alexopoulos SP. Surgical Management of Pancreatic Pseudocysts. Gastrointestinal Endoscopy Clinics of North America, [S.L.], v. 28, n. 2, p. 131-141, Apr. 2018.
6. Misra D, Sood T. Pancreatic Pseudocyst. [Updated 2021 Aug 11]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2021 Jan-. Available in: https://www.ncbi.nlm.nih.gov/books/NBK557594.
7. Yang D, Amin S, Gonzale S, et al. Transpapillary drainage has no added benefit on treatment outcomes in patients undergoing EUS-guided transmural drainage of pancreatic pseudocysts: a large multicenter study. Gastrointestinal Endoscopy. 2017;83(4). Available in: https://doi.org/10.1016/j.gie.2015.10.040.