TREATMENT OF PANCREATIC PSEUDOCYST THROUGH ROUX-EN-Y CYSTOJEJUNOSTOMY

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Abstract: *The pancreas pseudocyst is one of the most important late complications (3-6 weeks) of severe acute pancreatitis with an incidence of 10-15% and has a proportional increase in the severity of pancreatitis. Major advances in the diagnostic and therapeutic strategy of acute pancreatitis over the past few years have influenced the therapeutic attitude in the pancreas pseudocyst, so that old protocols such as "any 6 cm diameter pseudocyst must be operated immediately" or "each day of surgery delay increases possibility of complications" are no longer accepted and used. Today, pancreatic pseudocyst treatment benefits from two distinct therapeutic pathways: conservative therapy, associated with dynamic monitoring and follow-up to complete resorption, and pseudocyst drainage (endoscopically, percutane guided echographically and surgically).(1,2,3)*

CASE REPORT

We present the case of a 48-year-old patient, known in the past with erosive toxic gastritis, chronic etiology, who presented in the Emergency Room (ER) for diarrheal, melaena, (8 stools/day), diffuse abdominal pain, fatigue, asthenia, insomnia. In the ER, blood tests were performed (total bilirubin 1.93 mg/dl, cholinesterase 4724 UL, iron 40.1 µg/dl, C-reactive protein 39.44 mg/l, urea 16 mg/dl, erythrocyte sedimentation rate (ESR) 22 mm/h, Hb - 10g/dl), ECG, and after all exams we set the diagnosis of enterocolitis, mean normocytosis anemia, erosive toxic gastritis, chronic etiology and recommended balanced diet, treatment with Normix, Hepiflor, Controloc, rehydration salts.

Gastroenterological consultation recommended performing the Adler test due to low hemoglobin levels and an abdominal ultrasound that revealed a liver with medium steatosis, kidney without calyeal dilatation, normal spleen, gallbladder without calculus, bladder in semi-repletion. Following the clinical and paraclinical investigations, the above diagnosis was established, therefore the decision to admit the patient within the Gastroenterology ward was taken for specialized treatment, a conservative treatment under which the symptoms improved.

On 02.07.2018, the patient performed an abdominal ultrasound showing a liver enlarged by right liver lobe of 17 cm, left hepatic lobe of 8.6 cm, with medium steatosis with a segment of hyperechogenic segment III (atheatose) of 2 cm, gallbladder with micro lithiasis, pancreas invisible with cystic form of 10/7 cm in the pancreatic head (possibly pseudocyst).

On 05.07.2018, an abdomino-pelvic CT was performed which revealed an intraperitoneal mass with acute hematic densities in contact with D2, hiatal hernia, cholecystic lithiasis and main gall bladder (figure no. 1) for which surgical consultation was required, with the transfer of the patient to the Surgery Department in order to institute the Surgical Specialty Treatment.

Hydroelectrolytic re-balancing with correction of anemia was inititated and due to the anemia and hematic densities highlighted at the first CT, it was decided to repeat the abdomino-pelvic CT with contrast substance which revealed the aspect of pancreatic cephalic pseudocyst, loco-regional compressible, gallbladder lithiasis.

On 13.07.2018, after an appropriate preoperative preparation, surgical intervention in general anesthesia orotraheal intubation was performed by xifo-subombilical exploratory laparotomy showing a 10\10 cm pancreatic pseudocyst (figures no. 2,3) with loco-regional and duodenum compression, for which cyst isolation was practiced, revealing hematic fluid and old clotted blood (as a result of low haemoglobin levels), cystic wall biopsy, Roux-en-Y cysto-cystojejunostomy (figure no. 4) cholecystectomy, lavage, peritoneal drainage.

Favourable postoperative progression, without fever, stable blood pressure and cardio-respiratory, with no abdominal pain, permeable drainage tube with minimal drainage, suppressed on the 3rd postoperative day, no complicated laparotomy wound, intestinal transit resumed for faeces and gases, retained digestive tolerance.

Figure no. 1. Abdominal CT – Pancreatic pseudocyst

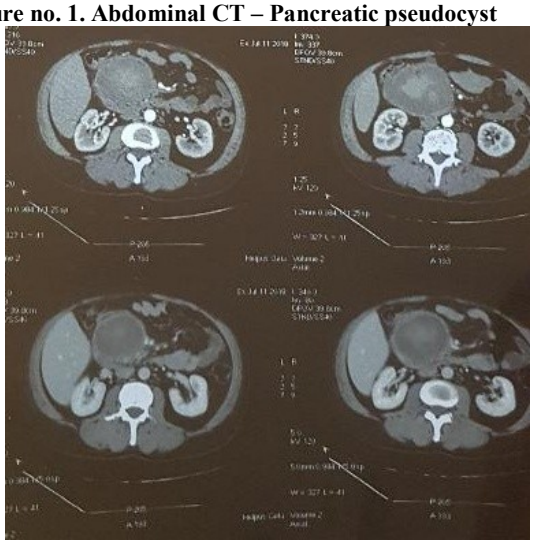

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Figure no. 2. Intraoperative view of pancreatic pseudocyst

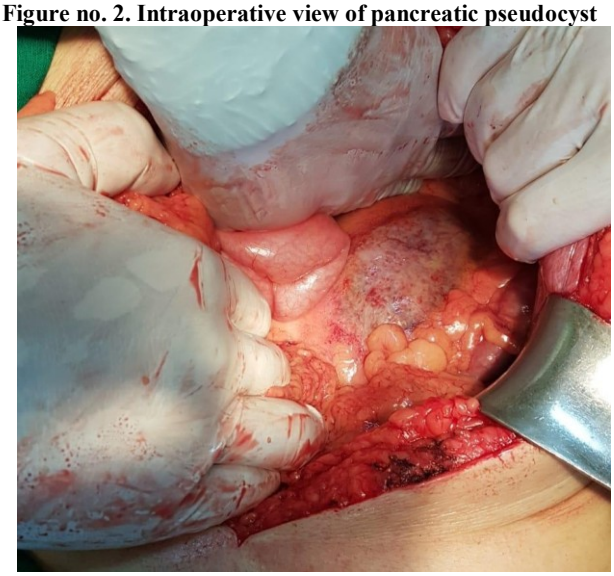


Figure no. 3. The content of pancreatic pseudocyst

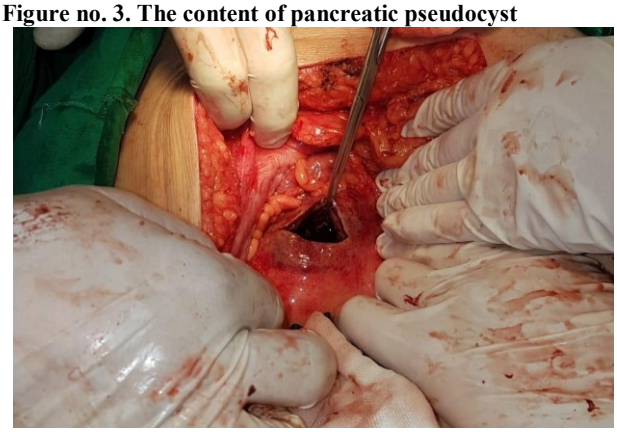
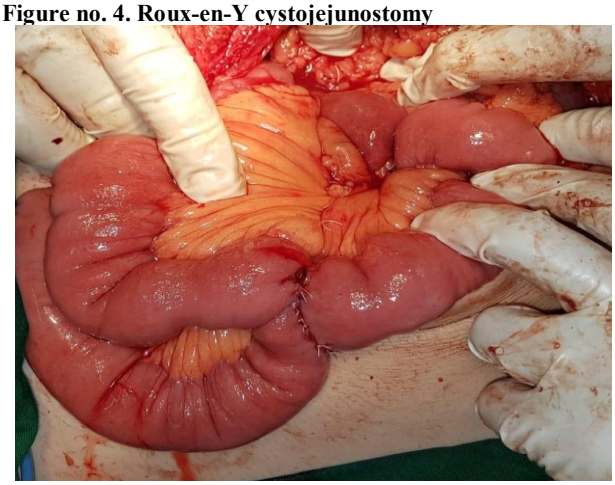


Figure no. 4. Roux-en-Y cystojejunostomy



DISCUSSIONS

Surgical treatment provides three therapeutic options: internal drainage, external drainage and resectional therapy. Internal drainage is the surgical choice for uncomplicated pancreatic pseudocysts, cystojejunostomy being the standard internal drainage procedure for pseudocysts that evolve to the base of the transversal mesocolon, with little recurrence, a technique used for the cyst that are located on pancreatic head.

Another type of surgical treatment is cysto-gastrostomy, which involves performing an anastomosis between the posterior wall of the stomach and the pancreatic cyst. This surgical variant is used in pancreatic cysts located in the body and the pancreas, and it can be performed laparoscopically.

External drainage is reserved for infected or immature pseudocysts, whose thin wall does not provide the anatomical conditions of a safe cysto-digestive anastomosis. Excision therapy (distal pancreatic resection), quoted in the literature (1,4, 5,6,7), has exceptional indications, the peripancreatic inflammatory process making the resection very difficult and dangerous.

Percutaneous guided ultrasound or CT is an interventional radiological procedure, but with limited indications (immature or infected pseudocysts located or fused in the immediate vicinity of the abdominal wall) due to the large number of failures, relapses, incidents and complications can cause: visceral lesions (stomach, colon, small intestine), large vessel bleeding, abscesses at the level of the catheter area.(6,7,8,9)

Endoscopic drainage tends to become the main therapeutic method for the pancreas pseudocyst (10,11,12) with two endoscopic drainage modalities: transapapilar - transductal drainage during retrograde-cholangio-pancreatography (11,12), and uncontrolled or controlled transgastric or transducted drainage ecoendoscopic therapy (13,14,15), therapy indicated in mature pseudocysts (6 weeks after the onset of severe acute pancreatitis), more than 6 cm in diameter, symptomatic (persistent epigastric pain, insufficient gastric emptying, obstructive jaundice with or without angiocolitis).

Endoscopic drainage results in better and better results than percutaneous drainage.(16) It uses transmural metal or plastic stents for intra-pancreatic fluid drainage.(17,18) Some authors show the same value in terms of the results of this method with surgically performed cystogastrostomy.

Transpapillary drainage is recommended in pseudocysts that communicate with the ductal system and involves performing an endoscopic sphincterotomy with its risks and installing a catheter drainage.(19) Direct transmural drainage through the gastric wall consists of creating an internal derivative between the pseudo-stomach and the endoscopic stomach.(20) The method is done in advanced endoscopic centers that benefit from endoscopic ultrasound and interventional endoscopy instrumentation.(21) The method is also accompanied by risks, primarily haemorrhage in the section of the gastric wall and the pseudocyst.(22) The use of ecoendoscopy with the Doppler system allows viewing parietal vessels and making the section in an avascular area.(23) If the pseudocyst is uncomplicated and his content is fluid, the drainage efficiency is very good.(24)

CONCLUSIONS

Large pancreatic pseudocystis with locoregional compression needs surgical intervention with multiple methods of resolution.

The choice of classical surgery is influenced by the nature of the complication (infection, haemorrhage, obstruction), the location of the pseudocyst, the morphological characteristics of the pancreatic pseudocyst (walls, content).

Elective surgery type of intervention is cysto-jejunostomy with a small number of relapses.

REFERENCES

1. Yeo CJ. Pseudocysts of pancreas. În Shackelford's Surgery of the Alimentary Tract, Ediţia a 4-a sub redacţia lui Zuidema G, vol. 3., W.B. Saunders Co (Philadelphia,

London, Toronto); 1996. p. 63-80.
2. Nemeş R, Curcă T, Paraliov T, Munteanu M, Pasalega M, Dincă M, Mesina C, Martin L, Cheie M, Talposi L, Martin, R. Cystic Tumors of the pancreas. Considerations upon 34 operated cases. Romanian Journal of Gastroenterology. 2002;11:303.
3. Joseph TF, Muler PR. Interventional approach to pancreatic fluid collection. Radiologic Clinics of North America. 2003;41:1217.
4. Wallace MB, Hawes RH. Endoscopic ultrasound in the evaluation and treatment of chronic pancreatitis. Pancreas. 2001;23:26.
5. Usatoff V, Brancatasino R. Operative treatment of pseudocysts in patient with chronic pancreatitis. Br J Surg. 2000;87:1494.
6. Zhang AB. Treatment of pancreatic pseudocysts in line with D'Egidio's classification. World Journal of Gastroenterology. 2005;11:729.
7. Pitchumoni CS, Agarwal N. Pancreatic pseudocysts. When and how should drainage performed? Gastro-enterol Clin. North Am. 1999;28:615.
8. Yamashita K, Mikami Y. Three dimensional images of prior to percutaneous drainage. American Journal of Surgery. 2003;185:219.
9. Mircea AP, Spirchez Z, Branda H. Ultrasonografia interventională în hepato-gastroenterologie. În Gastro-enterologie şi Hepatologie. Actualităţi 2003, sub redacţia lui Tudorel Ciurea, Oliviu Pascu, Carol Stanciu, Ed. Medicală, Bucureşti; 2003. p. 425-436.
10. Norton ID, Clain JE, Wiersema MJ, Di Magno EP. Utility of endoscopic ultrasonography in endoscopic drainage of pancreatic pseudocysts in selected patients. Mayo Clin Proc. 2001;76:794.
11. Inui K, Yoshino J. EUS-guided one-step drainage of pancreatic pseudocysts: experience in 3 patients. Gastrointestinal Endoscopy. 2001;54:87.
12. Fusaroli P, Calleti G. Endoscopic Ultrasonography. Endoscopy. 2003;35:127.
13. Saftoiu A, Cazacu S. Ecoendoscopia digestivã superioarã diagnosticã si terapeuticã. În 'Gastroenterologie si Hepatologie. Actualitãti 2003, sub redactia lui Tudorel Ciurea, Oliviu Pascu, Carol Stanciu, Ed. Medicalã, Bucuresti; 2003. p. 519-539
14. Fockens P. EUS drainage of pancreatic pseudocysts. Gastrointestinal Endoscopy. 2002;56:S93.
15. Ahn JY, Seo DW, Eum J, Song TJ, Moon SH. Single-Step EUS-Guided Transmural Drainage of Pancreatic Pseudocysts: Analysis of Technical Feasibility, Efficacy, and Safety. Gut Liver. 2010;4:524-529.
16. Akshintala VS, Saxena P, Zaheer A, Rana U, Hutfless SM. A comparative evaluation of outcomes of endoscopic versus percutaneous drainage for symptomatic pancreatic pseudocysts. Gastrointest Endosc. 2004;79:921-928.
17. Bang JY, Hawes R, Bartolucci A, Varadarajulu S. Efficacy of metal and plastic stents for transmural drainage of pancreatic fluid collections: A systematic review. Digestive Endoscopy. 2015;27:486-498.
18. Park DH, Lee SS, Moon SH, Choi SY, Jung SW. Endoscopic ultrasound-guided versus conventional transmural drainage for pancreatic pseudocysts: a prospective randomized trial. Endoscopy. 2009;41:842-848.
19. Lin H, Zhan XB, Jin ZD, Zou DW, Li ZS. Prognostic factors for successful endoscopic transpapillary drainage of pancreatic pseudocysts. Dig Dis Sci. 2014;59:459-464.
20. Song T, Lee S. Endoscopic drainage of pseudocysts. Clin Endosc. 2014;47:222-226.
21. Kato S, Katanuma A, Maguchi H, Takahashi K, Osanai M, et al. Efficacy, Safety, and Long-Term Follow-Up Results of EUS-Guided Transmural Drainage for Pancreatic Pseudocyst. Diagn Ther Endosc. 2013;924291.
22. Sial GZK, Qazi, AQ, Yusuf MA. Endoscopic Cystogastrostomy: Minimally Invasive Approach for Pancreatic Pseudocyst. APSP J Case Rep. 2015;6:4.
23. Dítě P, Novotný I, Lata J, Vaníček J, Bulik M. Endoscopic drainage treatment of pancreatic pseudocysts. Hepatogastroenterology. 2013;60:1773-1777.
24. Bang JY, Wilcox CM, Trevino JM, Ramesh J, Hasan M, et al. Relationship between stent characteristics and treatment outcomes in endoscopic transmural drainage of uncomplicated pancreatic pseudocysts. Surg Endosc. 2014;28:2877-2883.