Clinics of Surgery

Clinical Image

ISSN 2638-1451 | Volume 5

Method for the Formation of a Reflux Pancreatojejunostomy

Vladimir Leonidovich Martynov[1*], Dmitry Germanovich Kolchin[2], Vitaliy Nikolaevic Rulev[3], Vadim Aleksandrovich Trukhalev[4] and Vadim Aleksandrovich[5]

[1]Doctor of Medical Sciences, Associate Professor, National Research Nizhny Novgorod State University named after N.I. Lobachevsky (UNN), Russia

[2]Surgeon of the highest category in the surgical department of GBUZ NO, City Clinical Hospital No. 12, Sormovsky, District of Nizhny Novgorod

[3]Candidate ohf Medical Sciences, Head of the Surgical Department of GBUZ NO, City Clinical Hospital No. 12, Sormovsky, District of Nizhny Novgorod

[4]Candidate of Medical Sciences, Deputy Chief Physician for Surgery, GBUZ NO GKB No. 12, Sormovsky, District of Nizhny Novgorod

[5]Kurilov surgeon of the 1st category of the surgical department of GBUZ NO, City Clinical Hospital No. 12, Sormovsky, District of Nizhny Novgorod

***Corresponding author:**

Martynov Vladimir Leonidovich,
associate professor, consultant of surgical unit of "GBUZ NO" GKB No. 12 of Sormovsky district of Nizhny Novgorod, 603033, Nizhny Novgorod, ul. Zaprudnaya, 3 - 176; t.s. 89049188600, tr. 2256629,
E-mail: hirurgia12@mail.ru

Received: 15 Feb 2021
Accepted: 02 Mar 2021
Published: 08 Mar 2021

Keywords:

Cavity formations of the abdominal and retroperitoneal organs; Reflux; Intraoperative reflux prevention; Small intestine plug

Citation:

Vladimir Leonidovich Martynov, Method for the Formation of a Reflux Pancreatojejunostomy. Clin Surg. 2021; 5(1): 1-6

1. Summary

There is no reliable and physiological method for draining the cavities of the abdominal organs and cavities of the retroperitoneal space. The author has developed a reflux method for drainage of these formations. As proof, an example of a reflux drainage of a pancreatic cyst is given.

2. Clinical Image

The question of choosing the optimal and rational therapeutic tactics for cystic pancreatitis is still relevant and one of the most difficult in modern pancreatology [1]. The presence of intraductal hypertension in chronic pancreatitis in 40–45%, the presence of cysts in a third of patients determines the increasing surgical activity of this pathology, the emergence of new methods of operations. Longitudinal pancreatojejunostomy is considered the "gold standard" of surgical treatment of chronic pancreatitis: on the Brown loop [2], with a plug on the adductor loop, or according to the Ru method [3, 4]. According to published data, of all cystodigestive anastomoses, preference is given to the formation of an anastomosis with the jejunum on a disconnected loop according to Roux [3, 5], on the loop of the jejunum with interintestinal anastomosis according to Brown and with the formation of a "plug" according to [6]. But the imposition of a cyst pancreatojejunostomy with a completely non-disconnected intestinal loop is unacceptable [7], which increases the risk of infection of the cyst cavity, progression of pancreatitis. Thus, the complexity of early diagnosis and adequate surgical correction, a significant proportion of unsatisfactory results, as well as the low quality of life of patients after unsuccessful reconstructive and restorative surgeries on the extrahepatic bile ducts, pancreatic ducts require the search for new ways to solve the problem [8-10]. Jejunoanastomosis with interintestinal anastomosis according to Brown does not allow to fully avoid the above complications even with the use of a "plug" by A.A. Shalimov [11], which eventually undergoes recanalization. The authors

themselves point to the possible restoration of the patency of the intestinal canal due to bedsore ligatures and metal clips at the site of their imposition. Their intussusception also cannot always reliably prevent the restoration of the intestinal lumen. This outcome does not prevent the ingress of intestinal contents into the drained structures. In the European surgical school, preference is given to reconstruction with the Roux-off loop of the jejunum, the length of which should be at least 40 cm to avoid reflux of bile and intestinal contents into the stomach stump and esophagus [12]. Opponents of the anastomosis on the Roux loop declare the complexity of such operations, are dissatisfied with the exclusion of a significant portion of the small intestine from digestion, note a significant number (2 - 17.6%) of complications in the form of anastomotic leakage [13-15], reflux of intestinal contents remains in the drained structure in 27% of patients [16].

For internal drainage of the hollow organs of the abdominal cavity and cavity formations of the retroperitoneal space, the Roux-isolated loop of the small intestine is most often used, which is the "gold standard". But this method of drainage has its drawbacks, which affect the immediate and late postoperative periods, the development of functional and organic complications, and the quality of life of patients. Therefore, the development of new approaches to solving these problems is urgent.

We have improved the approach to drainage of the hollow organs of the abdominal cavity and cavity formations of the retroperitoneal space with the creation of an interintestinal anastomosis with the formation of a “plug” developed in the clinic on the adductor loop of the small intestine (Figure 1-3).

The data of the scientific calculation made justify the practical performance of the operation by the surgeons without compressing the intestinal wall:

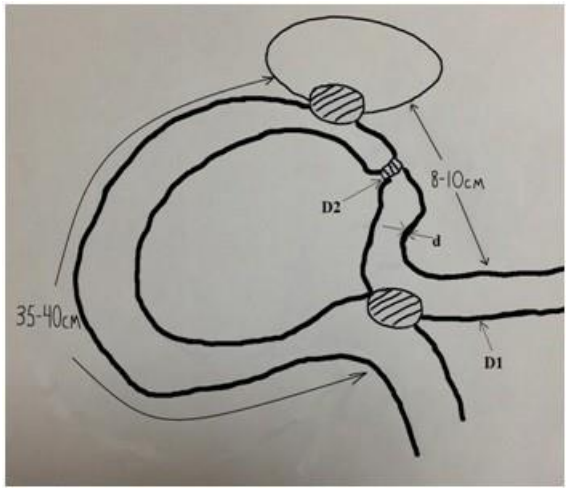

Figure 1: Scheme of drainage of the cavity formation of the abdominal cavity or retroperitoneal space using a "plug".

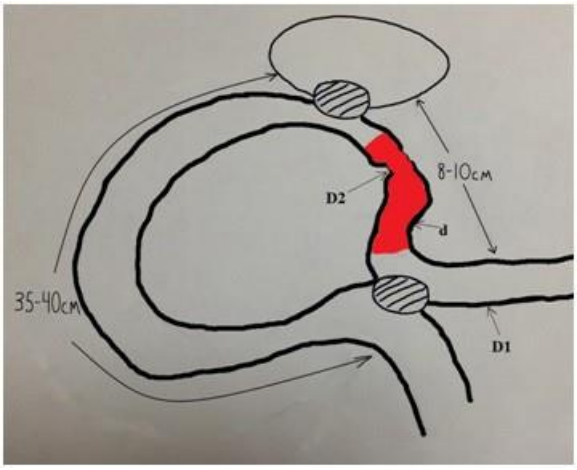

Figure 2: The area of the small intestine that does not pass chyme (painted over)

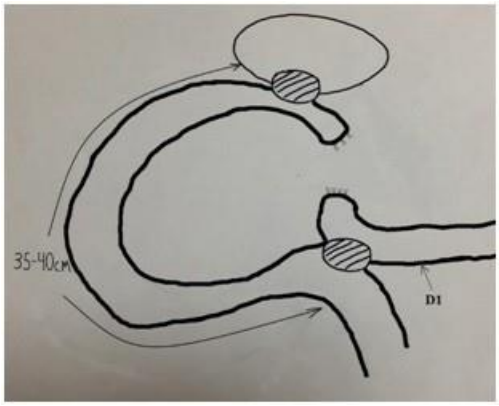

Figure 3: A mentally distant section of the intestine that does not pass chyme - a variant of the method of drainage according to Ru

- injections at 3, 9 o'clock in relation to the mesentery of the intestine in the place of the supposed "plug" impose a serous-muscular suture (Figure 4, 5).

- separately tie the ends of the suture threads, invaginate the antimesenteric wall of the intestine until it touches the mesenteric wall (Figure 7-11).

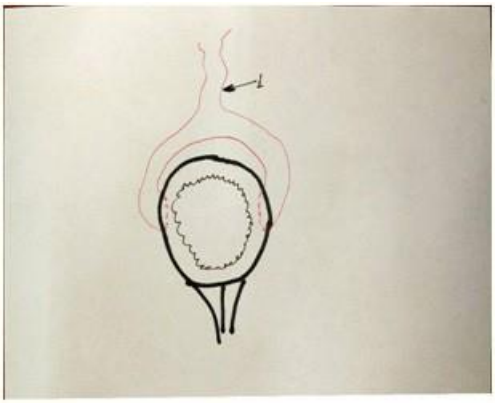

Figure 4: Scheme of ligation (1) through the serous-muscular membrane at 3 and 9 hours.

Figure 5: Photo of ligation through the serous-muscular membrane at 3 and 9 o'clock.

Figure 6: Photo of carrying out three ligatures through the serous-muscular membrane at 3 and 9 o'clock

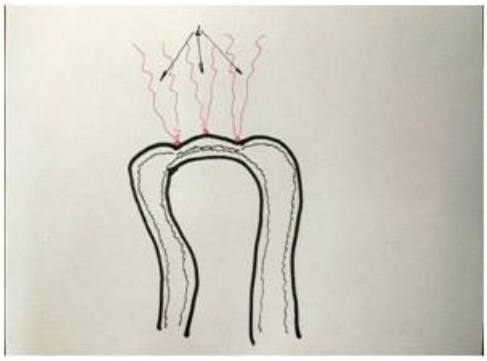

Figure 7: Scheme of approaching the antimesenteric wall to the mesenteric wall with three ligatures (1).

Figure 8: Photo of the approach of the antimesenteric wall to the mesenteric wall by three ligatures.

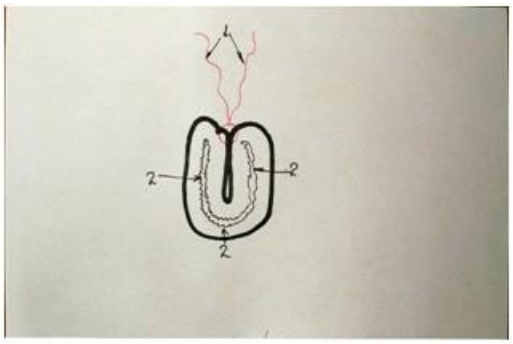

Figure 9: The intestinal lumen (2) was eliminated by invaginating sutures (1).

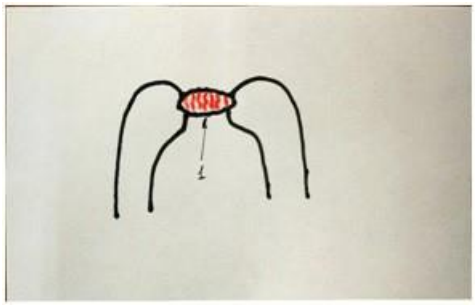

Figure 10: Scheme - the line of invaginating sutures is fixed with a free strand of an omentum with a ligature (1).

Figure 11: Photo - the line of invaginating sutures is fixed by a free strand of an omentum with a ligature.

- from a strand of a free omentum and a non-absorbable ligature passed through it, we form a developed "plug", the diameter of which is equal to the diameter of the invaginated section of the intestine, tying the ends of the thread, which determines the anatomical constancy of the created structure (Figure 10).

Thus, during internal drainage of cavities in the abdominal cavity and retroperitoneal space, a "plug" has been developed for the small bowel adductor loop, which excludes compression, ischemia (proven by microcirculation studies) and necrosis of the intestinal wall with subsequent migration of the created structure into the lumen of the gastrointestinal tract and determines planned a reflux effect.

2.1. We give a clinical example of internal drainage of a pancreatic cyst using the developed technique

Patient S, 31 years old, was admitted to the GBUZ NO "GKB No. 12" on 17.03.12 with a diagnosis of "Acute pancreatitis. Pancreatic cyst ". He complained of general weakness, constant pain of a girdle nature, nausea, vomiting that does not bring relief, dry mouth. Ill for two days, when he began to note these complaints. The condition did not improve, the ambulance was delivered to the GBUZ NO "GKB No. 12", where he was hospitalized. In 2011, she was diagnosed with a pancreatic cyst. A course of conservative treatment was carried out. The condition has improved. The survey was carried out. FGDS (03.21.2012) - gastroduodenitis. Deformed stomach. Signs of pancreatitis. Ultrasound (03/19/2012): diffuse liver changes as fatty hepatitis. Diffuse changes in the pancreas like chronic pancreatitis. LIVER without focal changes, slightly increased in size. Liver size: oblique-vertical size of the right lobe 156 mm (norm up to 150 mm). The edge of the liver corresponds to normal values (angle). The contour of the liver is even, clear. Liver parenchyma of diffusely increased echogenicity. There are no functional and morphological signs of portal hypertension. The vascular pattern of the liver is not deformed. Hepatic veins are not dilated. The spleen is not enlarged. The spleen is of normal echo structure. The structure of the spleen is homogeneous. The gallbladder is not enlarged, with an S-shaped bend in the neck area. The dimensions of the gallbladder are 80 x 26 mm. The wall of the gallbladder is not thickened. The gallbladder contains acoustically clear bile. Intrahepatic bile ducts are not dilated. The lumen of the common bile duct is 8 mm. The PANCREAS is visualized fragmentarily in the projection of the body up to 19 mm, increased echogenicity, heterogeneous structure. In the projection of the head - a cyst up to 10 cm in diameter, the wall up to 6 mm contains an echogenic sediment. Conclusion: diffuse liver changes of the type of fatty hepatosis. Diffuse changes in the pancreas like chronic pancreatitis. Pancreatic pseudocyst. Operation (No. 105) internal drainage of the pancreatic cyst 23.03.12. A tumor-like formation in the epigastrium and right hypochondrium is visually and palpable (Figure 12). Mid-median laparotomy. Moderately expressed adhesions in the abdominal cavity, adhesions are separated. In the region of the head and body of the pancreas, a tumor-like formation with a diameter of up to 15 cm is determined, which bulges into the lower floor of the abdominal cavity through the mesentery of the transverse colon (pancreatic cyst) (Figure 13). The cyst in the lower pole is isolated from the surrounding tissues and punctured. Removed 1 liter of brown liquid (taken for inoculation and sensitivity to antibiotics), the last portion of the liquid with - fibrin (Figure 14). At the puncture site, the cyst was dissected for 5 cm, its cavity was washed with 800 ml of saline sodium chloride solution (Figure 15). A loop of the jejunum was isolated 50 cm from Treitz's ligament. Imposed cyst pancreatojejunostomy with a two-row suture, the suture line is covered by the peritoneum (Figure 16, 17). A two-row anastomosis was placed between the adductor and the deferent parts of the jejunum (Figure 18, 19). Above the anastomosis, a “plug” with a diameter of 2 cm was placed on the adductor gut (Figure 20). A water test has been carried out - no liquid flows above the “plug”: the plug is applied adequately (Figure 21). Control of hemostasis. Through the counter-openings, 2 trapping drains were placed into the abdominal cavity. Layered suture of the wound. Ac. sticker.

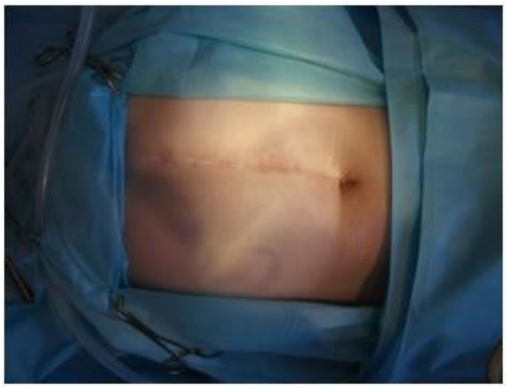

Figure 12: Visually and palpation is determined by tumor formation in the epigastrium and right hypochondrium

Figure 13: In the region of the head and body of the pancreas, a tumor-like formation with a diameter of up to 15 cm is determined, which bulges into the lower floor of the abdominal cavity through the mesentery of the transverse colon

Figure 14: The cyst is punctured. Removed 1 liter of brown liquid

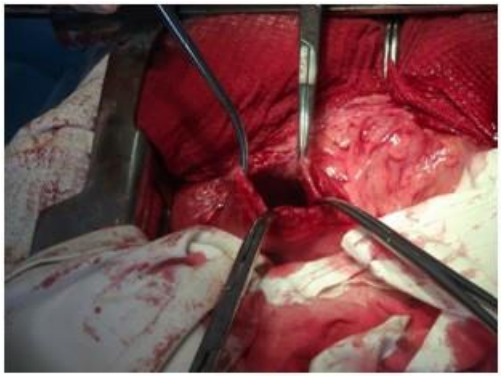

Figure 15: At the puncture site, the cyst is dissected for 5 cm

Figure 16: Between the wall of the cyst and the loop of the jejunum, gray-serous sutures are applied. The formation of an anastomosis between them has begun

Figure 17: An anastomosis is formed between the cyst of the pancreas and the loop of the jejunum

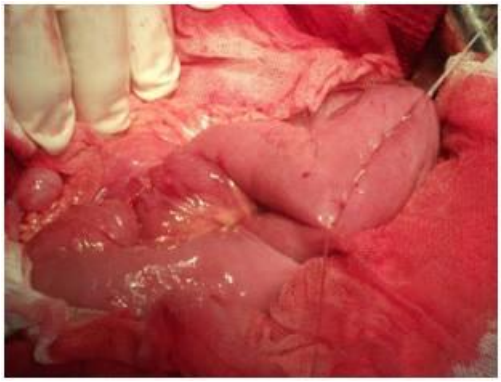

Figure 18: Serous-muscular sutures are placed between the adductor and the abductor jejunum

Figure 19: Anastomosis is formed between the adductor and efferent parts of the jejunum

Figure 20: Above the anastomosis on the adductor gut, a "plug" is applied

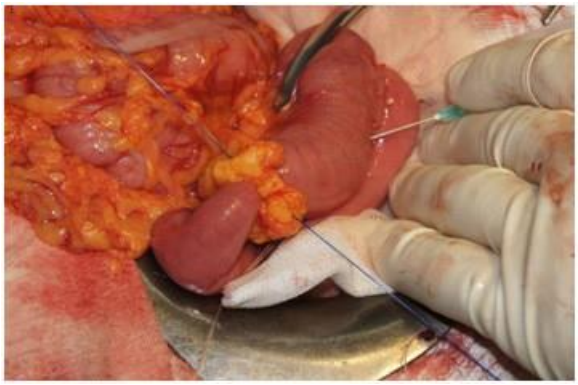

Figure 21: A water test has been carried out - liquid does not flow above the "plug": the plug is applied adequately

Control ultrasound in the postoperative period (04/03/2013): diffuse liver changes like fatty hepatitis. Diffuse changes in the pancreas like chronic pancreatitis. Smooth postoperative period. Discharged 04.04.2012 for outpatient observation by a surgeon.

References

1. Trail ON, et al. Surgical treatment of chronic cystic pancreatitis. Bulletin of Siberian Medicine. 2016; 15.
2. Dryazhenkov GI. Diagnostics and surgical treatment of chronic pancreatitis as an outcome of an acute process in a general surgery department Collection of materials. First Congress of Surgeons of the Volga Federal District (with international participation). Nizhny

Novgorod. 2016; 85-97.

3. Mukhin AS, Otdeinov LA. Optimization of surgical tactics in the treatment of pancreatic cysts. Collection of materials. The first congress of surgeons of the Volga Federal District (with international participation), Nizhny Novgorod. 2016.
4. Chu YC, Yang CC, Yeh YH, Chen CH, Yueh SK. Double-balloon enteroscopy application in biliary tract disease - its therapeutic and diagnosis functions. Gastrointest. Endosc. 2008; 68: 585-91.
5. Sarvanov AV. Some reasons for failure in the surgical treatment of iatrogenic damage to the bile ducts. Clinical medicine. 2017; 58-63. 6. Markov, P.V. Surgical treatment of recurrent benign strictures of biliodigestive and biliary anastomoses / P.V. Markov // Bulletin of surgical gastroenterology. - 2017. - No. 4. P. 29-32.
6. Stepan EV, et al. External pancreatic fistulas - diagnosis and treatment. Bulletin of surgical gastroenterology. 2017; 4: 3-7.
7. Poluektov VL, Morozov SV, Dolgikh VT, et al. Method of surgical treatment of postnecrotic cysts of the pancreas. Bulletin of surgery. 2016;175: 87-9.
8. Kozlov IA, et al. Surgical treatment of complicated chronic pancreatitis. High-tech medicine. 2017; 4: 43-55.
9. Benkabbou A, Castaing D, Salloum C, Adam R, Azoulay D, Vibert E. Treatment of failed Roux-en-Y hepaticojejunostomy after post-cholecystectomy bile ducts injuries. Surgery. 2013; 153: 95-102.
10. Addeo P, Delpero JR, Paye F, Oussoultzoglou E, Fuchshuber PR, Sauvanet A, et al. Pancreatic fistula after a pancreaticoduodenectomy for ductal adenocarcinoma and its association with morbidity: a multicenter study of the French Surgical Association HPB (Oxford). 2014; 16: 46-55.
11. Shalimov AA, Atavov RS, et al. Surgery of the liver and bile ducts. Kiev: Health, 1993.512 p. 13. Atavov, R.S. Unsolved problems in the issue of choosing the optimal biliodigestive anastomosis. Medical science and education of the Urals. 2017; 18: 61-4.
12. Wirtzfeld D. Total gastrectomy and gastrointestinal reconstruction. Literature review currentthrough. Hebbard. 2015.
13. Abdullaev AA. Surgical tactics for extrahepatic biliary tract injuries. Bulletin of the Russian Military Medical Academy. 2019; S1: 15-8.
14. Koroleva AA. Diagnostics and choice of a method of surgical treatment of cystic transformations of the bile ducts in adults: diss. ... Cand. honey. sciences. Moscow. 2017; 112 p.
15. Kotelnikova LP. Results of surgical treatment of extrahepatic bile duct injuries. Kotelnikova et al. Perm Medical Journal. 2020; 37: 63-72.
16. Kulezneva Yu V. Experience of using hepatocholescintigraphy in the diagnosis of functional concussion of biliodigestive anastomoses. Annals of Surgical Hepatology. 2019; 24: 53-60.