DISINSERTION OF DUODENAL PAPILLA

V. Şurlin, E. Georgescu, Milena Georgescu, S. Săndulescu, I. Georgescu
1st Clinic of Surgery, Clinic Emergency Hospital of Craiova
University of Medicine and Pharmacy of Craiova

DISINSERTION OF DUODENAL PAPILLA DURING DUODENAL SURGERY – 20 YEARS AFTER SURGICAL REPAIR *(Abstract):* The authors present the case of a 68 years old patient admitted for chronic calculous cholecistitis and symptomatic choledocolithiasis with obstructive jaundice and moderate biochemical cholestasis. The patient had a Reichel-Polya gastric resection for ulcer 20 years ago with disinsertion of duodenal papilla repaired with jejunal loop patch in "Roux en Y". Intraoperatively we noticed chronic sclerous acalculous cholecistitis, equivalence of cholecisto-choledocal fistula, choledocolithiasis. Exploration of the duodenal papilla identified a relative oddian stenosis. The first and second parts of duodenum were absent and replaced by a jejunal loop in "Roux en Y" patching the papilla on the side, with a free blind end and anastomosed laterally to the gastric stump. The second, subvaterian part of duodenum have been closed and left blind. The treatment of the common bile duct lithiasis consisted in cholecistectomy with primary closure of the large communication between the gallbladder and common bile duct, coledocolithotomy, common bile duct (CBD) lavage. To ensure an adequate biliary flow we decided for a side-to-side anastomosis between the CBD and the blind part of the jejunal Roux-en-Y loop. The blind end of the second subvaterian part of the duodenum was anastomosed in an end-to-end fashion also to the blind end of the jejunal Roux-en-Y- loop to ensure some biliary flow through remaining part of the duodenum. The postoperative course was simple. At 2 years of follow-up the patient is free of symptoms.

KEY WORDS : PAPILLA DISINSERTION, ROUX-EN-Y, STENOSING PAPILLITIS.

Correspondence to: Dr. Valeriu Şurlin, address: Calea Bucureşti 34, A8b, 3/10, 200484 Craiova, Dolj, Romania, telephone: +40251502174, e-mail: vsurlin@gmail.com*.

INTRODUCTION

Disinsertion of the duodenal papilla may accidentally occur during surgery for duodenal ulcer, especially for chronic scarring postbulbar duodenal ulcer. One of the possibilities of surgical repair is with a jejunal Roux-en-Y limb [1,2]. Very little information is available as follow-up.

We report the case of a patient that we investigated and operated for gallbladder lithiasis and choledocolithiasis, 20 years after a repair for a disinsertion of papilla during duodenal ulcer surgery.

CASE PRESENTATION

A 68 years old patient is admitted to our surgical unit for pain in the right hypocondrium with jaundice. The onset of the symptoms was sudden, two days before, after some fatty meal. Three to four hours afterwards, he experienced increasing pain in the epigastrium and the right hypocondrium followed shortly by progressive jaundice,

* received date: 05.06.2010
accepted date: 28.10.2010

nausea and vomiting. Antispasmodic and analgesic non-morphine medication relieved the pain 5-6 hours later but the jaundice remained constant.

Medical history of the patient included heavy smoking and moderate alcohol intake. He was diagnosed with duodenal ulcer 30 years ago and had surgery for it 20 years ago, a gastric resection with some intraoperative problems, but the patient couldn't tell more. He was doing fine ever since, with no symptoms of ulcerous disease, apart occasional heartburn and right hypocondrium pain after fatty meals. Those symptoms were attributed by his family doctor to the gallbladder lithiasis that was found at ultrasonographic examination.

Upon admission, the patient was in good physical condition, a BMI of 27.3, good mental status. General physical examination was normal, beside the jaundice. Examination of the abdomen revealed profound tenderness and a palpable gallbladder in the right hypocondrium, discreet hepatomegaly and a midline abdominal scar from xyphoid to umbilicus, without any incisional hernia. Cardiovascular and respiratory status was normal. Rectal tact was normal.

Laboratory tests indicated values in the normal range for red blood and white blood cells count, serum urea and creatinine. Serum bilirubin was 8.64 mg/dl, conjugated fraction of bilirubin - 7.52 mg/dl, unconjugated fraction of bilirubin - 1.02 mg/dl, serum alkaline phosphatase = 264 UI/l, ALAT = 78 UI/l, ASAT = 84 UI/l. The coagulation profile was normal, the pulmonary X-Ray – normal and ECG – normal.

Abdominal US (ultrasonography) revealed a small gallbladder with thick walls containing multiple calculi of 1-1.5 cm in size; the common bile duct (CBD) was 11 mm with visible calculus of 0.8 cm in the distal part; liver steatosis. Medical treatment was started with broad spectrum antibiotics – 3rd class cephalosporin 2x/day, intravenous serum and glucose, amino acids and vitamin K.

He was scheduled for intervention with the objective of coledocolithotomy, cholecistectomy and restoration of normal bile flow with a temporary T-tube drainage most probably. The patient was considered ASA III.

The patient was submitted to general anesthesia with oro-tracheal intubation and a midline iterative laparotomy was performed. The upper mesocolic floor presented an intense perivisceritis with fibrous, well-organized adherences. The inframesocolic compartment was free of adherences and we could note the presence of an end-to-side jejunojejunostomy (Fig. 1). We judged that it was due probably to a Roux-en-Y gastro-jejunal anastomosis in the upper mesocolic floor.

We performed careful dissection in the upper mesocolic floor, freeing firstly the inferior liver surface and progressive restoring of anatomy. We found a sclerous atrophic gallbladder with lithiasis inside, a dilated and shortened cystic duct as an equivalence of cholecysto-choledocal fistula, and a dilated CBD with thick fibrous walls.

To our surprise, the first and the second part of the duodenum were absent, instead of it, a blinded loop of jejunum was covering the pancreatic head, that was further down anastomosed to the stomach and descended in the inframesocolic floor to the end-to-end anastomosis previously mentioned. The IIIrd part of duodenum was closed, and left as a free blind end (Fig. 1, medalion).

We understood then, that during the previous surgery for peptic ulcer, a lesion of the papilla occurred and it was repaired with a jejunal Roux-en-Y limb.

We performed cholecistectomy, leaving a 1 cm collar of cystic duct on the common bile duct. The GB contained a small pigment stone – 0.6-0.8 cm.

The first attempt of stone retrieval from the CBD through the enlarged cystic duct was unsuccessful. A choledocotomy was then performed and the stone from the distal choledoc was retrieved with a Desjardines- type biliary forceps.

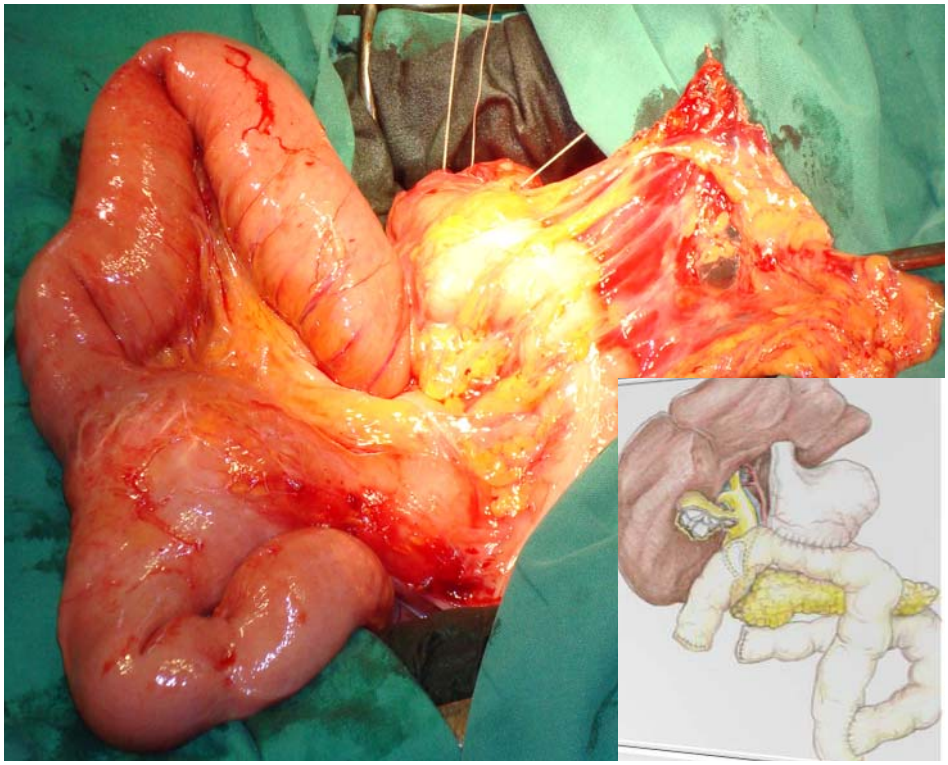

Fig.1 Intraoperative view

Colon with greater omentum at the right, the inframesocolic compartment at the left with the presence of and end-to-side jejunojejunostomy. Medalion: the first and the second part of the duodenum were absent, instead of it, a blinded loop of jejunum was covering the pancreatic head, that was further down anastomosed to the stomach and descended in the inframesocolic compartment floor to the end-to-end anastomosis. The IIIrd part of duodenum was closed, and left as a free blind end.

It was a brownish, 0.8 cm, singular calculus. Insertion of an exploratory probe through the papilla discovered a tight stenosis of 0.3-0.4 mm that was not possible to dilate with larger probes. The tip of the slim probe was palpable in the blind end of the Roux-en-Y jejunal limb (Fig. 2A). The cystic duct was closed by an interrupted suture. The choledocotomy was used to perform a side-to-side choledocojejunostomy to divert the bile flow directly into jejunum. We also decided to perform an end-to-end duodenojejunostomy between the blinded ends of the jejunal loop and the IInd subvaterian part of duodenum, as a measure to divert some of the bile flow into the remaining duodenum (Fig. 2B). Postoperative course was uneventful. At two years follow-up the patient is free of any digestive or biliary symptoms. A barium meal control X-ray shows the patency of all anastomoses (Fig. 3).

DISCUSSIONS

Disinsertion of the duodenal papilla can occur after blunt abdominal trauma or during surgery for chronic duodenal ulcer especially in postbulbar position with intense local scarring and retraction.

Usual repair involves a jejunal Roux-en-Y limb that is anastomosed in a terminal fashion to the pancreatic head around the papilla [3]. Other authors [4] recommend Hepp repair, which is similar to the first, but a duodenojejunostomy is also performed with the 2nd duodenum and a stricture of the jejunum beyond it, thus keeping the flow of the biliary and pancreatic secretion through the duodenum.

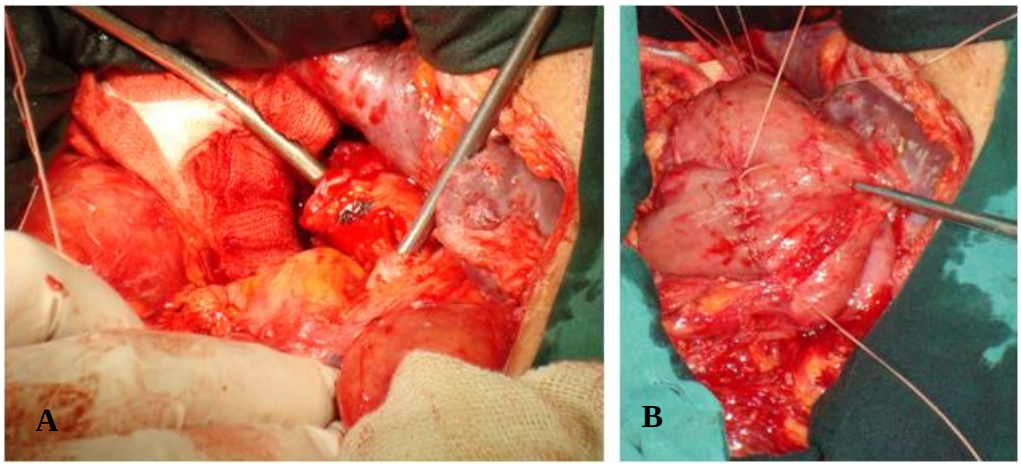

Fig. 2 Intraoperative view

A. the probe at the left is inserted into the enlarged cystic duct, the probe at the right is inserted into the choledoc through the choledocotomy, passes through the papilla ans is palpated in the end of the jejunal loop
B. end to end anastomosis between the end of the jejunal Roux-en-Y loop and the closed blind end of the IInd subvaterian duodenum

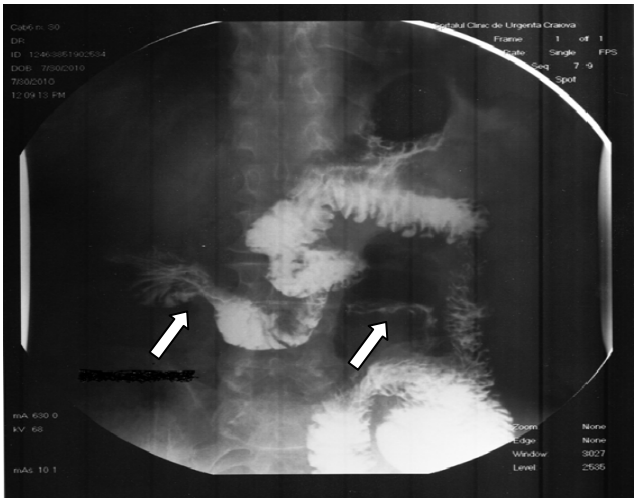

Fig.3 Barium meal X-ray, radiologic control at 2 years of follow-up

The contrast is passing from the stomach also in the aferent jejunal loop, in a retrograde manner and from there is evacuated in the efferent loop, through the duodenum and the first part of the jejunum (white arrows)

There are few reports in the literature about long-term outcomes. Kawarada et al [5] at 15 month, Artemeva et al [6] at 66 months and Schmitt et al [7] at 10 years are reporting good results with symptom-free patients.

We decided to report this case, after 20 years from papilla disinsertion repair that we operated for obstructive jaundice with gallbladder and choledocal lithiasis. To our knowledge this is the longest interval of follow-up ever reported.

The decision for an open approach was determined by the fact that the patient was considered fit for surgery and previous gastric surgery. Although, previous gastric surgery is nowadays no longer an absolute counter-indication for laparoscopic approach, the adherences that we encountered during dissection proved that the decision was a right one.

Due to lack of precise information about the previous operation the situation we encountered during the operation was a surprising discovery.

When exploring the passage through the papilla with a metallic probe, we noticed a tight stenosis. The etiology of this stenosis is interesting to discuss. This could be due to either repeated passages of the stones or to the scarring tissue resulted from healing process after papillary and most certainly, pancreatic head lesion during the first intervention. The second hypothesis seems more logic because in the anamnesis of the patient there were no other episodes of temporary jaundice, prolonged and repeated episodes of colicky pain or acute pancreatitis that could be related to repeated passages of calculi through the papilla.

The gastric resection could explain the gallbladder lithiasis. The enlargement and the shortening of the cystic duct, like an equivalent of cholecistocholedocal fistula stood as a witness for calculi migration in the CBD. The stenosis of the papilla could also have played an important role in the retention of the migrated calculi in the CBD.

After removal of the calculi from CBD, cholecystectomy and closure of the large cystic duct, we had two options for the restoration of the bile flow – transduodenal sphincterotomy and choledoco-jejunostomy. Both have advantages and disadvantages.

The choledocojejunostomy should be larger than 2 cm to avoid later stenosis and may result in a sump syndrome due to accumulation of food debris in the distal choledo in 5% of the patients [8].

The sphincterotomy with sphincteroplasty may also stenosate in time, may show recidive of CBD lithiasis and may induce acute pancreatitis, but avoids sump syndrome. In this case, due to previous surgery in this area with pancreatic head lesion, papillary desinsertion, consecutive dissection in the area (the remains of the second duodenum were found free and closed), we considered that the scarring tissue will render the sphincterotomy very difficult and will not provide enough healthy jejunal mucosa in the vicinity to allow a good sphincteroplasty. So, we made an option for choledocojejunostomy.

The idea to anastomose the free blind ends of the jeunal limb to the second duodenum was to try to divert some of the bile flow away from the gastrojejunostomy in order to reduce "silent" biliary reflux to the gastric stump, theoretically responsible for risk for gastric stump cancer. To ensure a complete diversion of bile flow through the duodenum we should have employed a Rosanov-like stricture on the jejunal limb immediately after the cholecodojejuostomy.

However, we were aware that it has been previously shown that Rosanov strictures recanalize after a while even if it is achieved with linear staple [9].

Better results are obtained if the stapler is fired over a membrane of bovine pericardium [10] or Teflon [11].

In the end the postoperative course of the patient was completely uneventful and he is free of any symptoms at 2 years follow-up. A control barium meal X-ray shows that the contrast, in larger quantities is engaging both in the efferent and in afferent jejunal loop, but the latter could also empty thorough the IIIrd part of duodenum (picture 6).

CONCLUSIONS

Papillar stenosis should be suspected and searched for in cases of choledocal lithiasis after papillary desinsertion repair. Choice of repair is directed by the necessity of restoration of normal biliary flow towards the digestive tract and local morphologic and anatomic changes. Detailed information from previous surgery will remain always essential for better planning of the intervention.

REFERENCES

1. Juvara I, Burlui D, Setlacec D. *Tehnici chirurgicale vol.1, Chirurgia stomacului*, Bucuresti, Ed. Medicala, 1984, p. 40
2. Winter J, Ulatowski L, Hoffmann E. The disinsertion of Vater's papilla in stomach resection. Causes, diagnosis and therapy, *Chirurg.* 1982; 53(9): 574-580.
3. Juvara I, Burlui D, Setlacec D. *Tehnici chirurgicale vol.1, Chirurgia stomacului,* Bucuresti, Ed. Medicala, 1984, p. 42
4. Corlette MB. Disconnection of the ampulla of Vater., *Surg Gynecol Obstet.* 1975; 141(6): 915-918.
5. Kawarada Y, Tani K, Yoshimine S, Mizumoto R. Blunt injury of duodenum with avulsion of papilla of Vater--report of a case, *Jpn J Surg.* 1984; 14(6): 499-504.
6. Artem'eva NN, Svetlovidov VV. Replantation of the major duodenal papilla, *Vestn Khir Im I I Grek.* 1988; 141(7): 33-36.
7. Schmitt JC, Sava G, Seror J. Accidental papillary disinsertions during gastroduodenectomies. Report of two cases, *Acta Chir Belg.* 1978; 77(5): 355-363.
8. de Aretxabala X, Bahamondes JC. Choledochoduodenostomy for common bile duct stones. *World J Surg* 1998; 22: 1171–1174.
9. Tu BN, Sarr MG, Kelly KA. Early clinical results with the uncut Roux reconstruction after gastrectomy: Limitations of the stapling technique. *Am J Surg* 1995; 170: 262–264.
10. Morton JM, Lucktong TA, Trasti S., Farrell TM. Bovine pericardium buttress limits recanalisation of the uncut Roux-en-Y in a porcine model, *J Gastrointestinal Surg*, 2004; 8(1): 127-131.
11. Richardson WS, Spivak H, Hudson JE, Budacz MA, Hunter JG. Teflon buttress inhibits recanalization of uncut stapled bowel. *J Gastrointestinal Surg* 2000; 4: 424–429.