

Case Report

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Successful Surgical Removal of Firmly Impacted Pancreatic Duct Stent: Two Case Report

Merab A. Kiladze^{1*}, Malkhaz Mizandari², George Kherodinashvili¹, Otar Kepuladze¹

¹Clinic "GIDMEDI", Tbilisi, Georgia

²"New Hospitals", Tbilisi, Georgia

ABSTRACT

Successful surgical removal of firmly impacted pancreatic duct stent: Two case report

Recently, the self-expandable metallic and plastic stents are increasingly being used for management of different pancreatic disorders. The major indications for pancreatic stent placement are: pancreatic duct stones, chronic pancreatitis, pancreatic strictures, unresectable pancreatic cancer, preventing POPF and post-ERCP pancreatitis, papillary adenoma. Stent placement or retrieval and exchange is difficult process and sometimes it could be the serious clinical challenge. We report two cases of successful removal of firmly impacted pancreatic duct stent by open surgical intervention and transduodenal approach with lateral "side-to-side" pancreaticojejunostomy to prevent the risk of main pancreatic duct restenosis in the first case and with the sphincteroplasty in the second.

Therefore, in these challenging cases of firmly impacted pancreatic duct stents, our choice seems to be the most optimal and effective surgical procedure, which could be considered like "parachute" option after failed attempts of stents removal by endoscopic and radiological procedures.

*Corresponding author

Dr. Merab Kiladze, Lubiana Str.,2/6,Clinic "GIDMEDI",0159,Tbilisi,Georgia. E-mail: kiladzemerabi@gmail.com.

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Introduction

In recent years, the self-expandable metallic and plastic stents are increasingly being used for management of biliary and pancreatic strictures. Pancreatic stents are used for a variety of different pancreatic disorders: pancreatic duct stones, chronic pancreatitis, pancreatic strictures, unresectable pancreatic cancer, preventing POPF and post-ERCP pancreatitis, papillary adenoma [1-8]. Conventionally the pancreatic duct stents placement are done by endoscopic transpapillary procedure, but recently there are increasingly more reports of feasibility of percutaneous image-guided pancreatic duct (PD) drainage and stenting, which appears to be a safe and effective procedures, but it should be noted that these procedures also are not without any complications and may have some adverse events [9-14,23,24]. Two cases of firmly impacted pancreatic stents removal recently observed in our institution led us to report our experience of successful management of these particular cases.

Report of cases

Indications for stents placement in our cases were the following: pancreatic duct stones with balloon assisted percutaneous descending litholapaxy (BAPDL), and pancreatic stricture as a result of chronic pancreatitis. These procedures were performed percutaneously by using interventional radiology technique and

insertion of one uncovered and one covered stent were done at another institution. After the 1 and 2 year follow-up period stent removal was considered in both cases because of abdominal pain, discomfort, stent migration and malposition with partially protruding into the duodenal lumen.

The patients had previously undergone failed attempts of stents removal by endoscopic and radiological procedures and so, considering these findings the patients were scheduled for open surgical intervention and stents extraction. Before the surgical treatment the prophylactic percutaneous image-guided pancreatic duct drainage placement were done to prevent the postoperative complications and POPF.

Surgical Treatment

The patients were positioned supine on operative table and under general anesthesia, an nasogastric tube, urinary catheter and a central venous catheter for liquid infusion were positioned. The abdomen was entered via upper midline laparotomy incision. A wide Kocher maneuver was performed by using of sharp dissection and electrocautery. The gastocolic ligament was divided and the anterior aspect of entire pancreas was exposed after fibrous adhesions between the posterior wall of the stomach and the anterior surface of the pancreas were taken down. After the identification of palpable stent the duodenotomy was performed between two stay sutures (Figure 1). The stent was grabbed by forceps and step by step pancreatic sphincterotomy over the

stent by means of scalpel and cautery was started. With some technical difficulties of force tug the stent was then dis-impacted and completely extracted (Figure 2). The pancreatic duct was then identified, overlying pancreatic parenchyma was cut over the previously placed duct drainage catheter and opening of the duct was achieved. The jejunum was divided 20-30 cm distal to the ligament of Treitz, 40-cm Roux-en-Y limb was constructed and passed retrocolically through a mesenteric window. The standard two-layer side-to-side, lateral pancreaticojejunal anastomosis was performed with transanastomotic placement of pancreatic duct drainage catheter to provide complete intraluminal decompression (Figure 3). Intestinal continuity was reestablished by means of an end-to-side sutured jejunojejunostomy. In the second case the pancreaticojejunostomy was not created because of wide opening of wirsungostomy at papilla Vateri and just sphincteroplasty was created. The postoperative course was uneventful, the patients were discharged from the hospital at 5-th p/o day and pancreatic duct drainage catheters were removed at 3-4 weeks after surgery.



Figure 3: Surgical specimen: Dis-impacted pancreatic stent

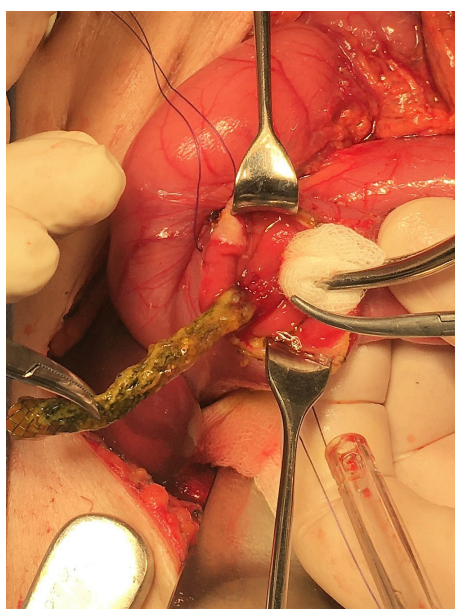


Figure 1: Duodenotomy over the impacted pancreatic stent

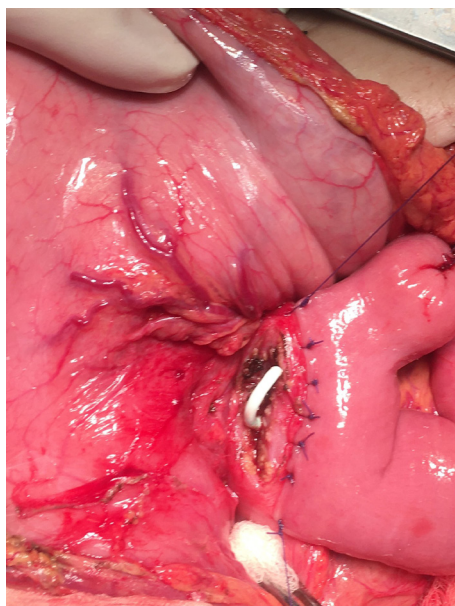


Figure 2: Lateral pancreaticojejunostomy with transanastomotic stenting

Discussion

Pancreatic duct stent placement is increasingly performed for management of different pancreatic disorders [15-22]. The major indications for pancreatic stent placement are as follows: pancreatic duct stones, chronic pancreatitis, pancreatic strictures, unresectable pancreatic cancer, papillary adenoma, pancreas divisum, main pancreatic duct injuries, pancreatic fistulae and in prevention of post-ERCP pancreatitis. It is well known that endoscopic placement of stents and so, endoscopic therapy has played and still plays a major role in the management of different pancreatic disorders [15]. But recently there are increasingly more reports of feasibility of percutaneous image-guided PD drainage and stenting by using interventional radiology technique, which could be considered as alternative option to endoscopy therapy. Regardless the fact, that these methods are generally accepted and considered as effective and safe procedures, both of them are not without some specific complications, which have been reported from 5%-39% [15]. The potential complications and adverse events of pancreatic stents placement, exchange and removal are: stents migration and dislocation; stent-induced strictures; stents fragmentation during removal; obstruction and dysfunction due to mucosal hyperplasia; stents clogging and impaction and at last even the bowel perforation. In our study the combination of stents obstruction and firmly impaction were present, which required the surgical intervention for successful solving this challenging problem.

Conclusions

Removal of stent is difficult process and sometimes it could be the serious clinical challenge. Endoscopic and radiologic approaches are the first-line options of stents removal and in failed attempts the surgical intervention should be scheduled for stents extraction. Open transduodenal stents removal with lateral pancreaticojejunostomy to prevent the pancreatic duct restenosis seems to be the most optimal and effective surgical procedure of removal the firmly impacted pancreatic duct stents in these difficult cases, which therefore could be considered like a real alternative approach and “parachute” option after failed attempts of stents removal by endoscopic and radiological procedures.

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