Clinics in Surgery

Case Report
Published: 23 Aug, 2017

Pancreatogastrostomy after Pancreaticoduodenectomy in Cirrhotic Patient with Portal Hypertension a Case Report

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Abstract

Introduction: There is a few evidence in literature about pancreaticoduodenectomy in cirrhotic patients, increase mortality, morbidity and complications, there is no published evidence about the role of pancreaticogastrostomy reconstruction.

Case: We present a patient who underwent a PD with pancreaticogastrostomy reconstruction by a pancreatic cancer of the head, he was operated whit Child – Pugh A, in the postoperative evolution, present bleeding episodes that merited two endoscopic and one surgical interventions. Once recovered he has continued in vigilance without complications.

Discussion: The surgical time was longer as well as wound complications in 14%, internal hemorrhage in 6% vs. 2%, pancreatic fistula in 19% vs. 10% and hospital mortality 12% vs. 1.6% the median survival was 19 month vs. 24 months in no cirrhotic patients, the rate of complications in general is 46% vs. 22% in no cirrhotic patients.

Conclusion: There is no contraindication to do the PD in cirrhotic patients in Child Pugh A including patients with portal hypertension in specialized centers, but we don´t recommend the reconstruction with pancreatogastrostomy in this cases.

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Received Date: *19 Jun 2017*
Accepted Date: *14 Aug 2017*
Published Date: *23 Aug 2017*

Citation:
Salazar-Álvarez A, López-Gómez J, Álvarez-Bojórquez M, Zaragoza-Cruz N, Padilla-Rosciano AE. Pancreatogastrostomy after Pancreaticoduodenectomy in Cirrhotic Patient with Portal Hypertension a Case Report. Clin Surg. 2017; 2: 1602.

Introduction

For tumors involving the head of the pancreas, pancreaticoduodenectomy (PD) is the procedure of choice. As is known, it was described in 1909 by Kausch but the technique became widely known after the first successful surgical resection was performed by Whipple and Parsons and presented to the American Surgical Association by Parsons in 1935 [1]. Although operative mortality in patients undergoing PD has fallen to <5%, incidences of postoperative morbidity remain high at 35% - 60% [1]. It has been demonstrated that the results of this procedure are worse in patients with associated comorbidity like obesity, hypoalbuminemia or advanced age and several studies have reported a higher number of postoperative complications after abdominal surgery in cirrhotic patients. The most common early complications of PD include pancreatic fistula, delayed gastric emptying, anastomotic leakage, and bleeding [2]. Traditionally, the pancreatic remnant has been anastomosed to the jejunum following PD but the remnant can also be anastomosed to the stomach [3,4], several studies have reported successful outcomes with pancreatogastrostomy and reduced leak rates compared with pancreaticojejunostomy, but this finding has not been reproducible in randomized trials. To date, however, there are few published studies that analyze the results of oncologic surgery in patients with liver disease, but in patient's well-compensated chronic liver disease should be routinely considered for PD at high volume centers with available expertise to manage liver cirrhosis, therefore, it is only recommended in patients with Child A cirrhosis without portal hypertension [5]. The surgical time was longer as well as wound complications, internal hemorrhage, pancreatic fistula and hospital mortality. The median survival was 19 months, and portal hypertensions are present in 24% cases of cirrhosis [5]. We present a case report of a patient with Child A cirrhosis that was operated of PD using pancreatogastrostomy as alternative to reduce risk of postoperative morbidity.

Clinical Case

63 years old masculine patient, with history of smoking and alcoholism, presented weight loss, asthenia, anorexia and jaundice. The physical exam showed only abdominal pain without ascites or a palpable mass. Initial blood test showed an elevation of the serum aminotransferases, bilirubin

and the CA 19.9 of 508. Computed tomography (CT) exposed a bile duct dilatation of 32 mm, a pancreatic mass without vascular invasion and ascites. An Upper Endoscopy was realized, with the presence of esophageal varices and portal hypertensive gastropathy. Then an ERCP was made to place a stent within the bile ducts, it revealed a mass in the ampulla and a biopsy was taken with result of pancreatic adenocarcinoma G2. The patient was diagnosed with a Pancreatic Adenocarcinoma and Child B Cirrhosis (8 points due to ascites, BT 21.9, ALB 2.0, INR 1.75), and not considered for oncologic treatment. He started best supportive care and treatment for cirrhosis. After 6 months of surveillance, the clinical conditions of the patient improved, so a new a new CT was made and it revealed only the bile duct dilatation with a stent without progression of the disease. At this time his liver disease was considered Child A Cirrhosis (5 points), so after a multidisciplinary discussion, we decided that surgical treatment was the best choice for the patient, even with the evidence of portal hypertension. The patient underwent pancreaticoduodenectomy with pancreaticogastrostomy reconstruction and a liver biopsy. In the postoperative, he developed upper GI bleeding (hematemesis) with the need of blood transfusion, omeprazole IV infusion, and ICU care. An Upper Endoscopy was made, and it showed clots and the pancreaticogastrostomy without active bleeding, the therapeutic management was the endoscopic application of hem spray and clot clearance. A new episode of hematemesis with hypovolemic shock was the setting of reintervention at day fourteen of the postoperative. A laparotomy was realized, without evidence of bleeding at the abdominal cavity. The patient required a total of 7 days at the ICU to fully recover from surgery. The pathological evaluation informed a pancreatic adenocarcinoma G2 of intestinal type with negative margins and metastatic disease in 2 out of 35 peripancreatic and peri duodenal lymph nodes, and unspecific chronic hepatitis.

Discussion

Pancreaticoduodenectomy (PD), or the Whipple procedure, is the only curative option for patients with periampullary malignancies [6]. Historically, cirrhosis has been associated with an elevated postoperative mortality rate, Improvements in surgical techniques and peri operative support have prompted the emergence of newly validated elective indications for surgery, and some recent data suggest that cirrhosis should not be considered as absolute contraindications to PD for pancreatic cancer of head, particularly in patients with Child-Pugh cirrhosis [7,8]. Like in our patient he was initially a Child B cirrhotic patient, and although he wasn´t present an unresectable disease we didn´t operate him until he became a Child A patient. Supporting our decision of the correct selection of patients, some studies reported that it is important to reduce morbidity and mortality rates, this is observed in more recent studies likely reflects inclusion of only Child-Pugh class A patients exclusion of patients with ASA scores of 3 or more and stage IV cancer patients, inclusion of elective operations, recognition of malnutrition as a risk factor for mortality and immunonutrition and the routine administration of postoperative antibiotics to prevent ascites infections, as described in two recent studies: no postoperative mortality after laparoscopic colectomy in 27 cirrhotic patients and a postoperative mortality rate not exceeding 9% after pancreatic resection in cirrhotic patients Regimbeau et al. [8], published a study about pancreatoduodenectomy in child pugh A patients, they conclude that the presence of cirrhosis does not complicate the surgical procedure and is not associated with an elevated pancreatic fistula rate. Several studies have shown the safety and positive early outcomes after PD with pancreatogastrostomy. The pancreatogastrostomy is an alternative reconstruction method after pancreaticoduodenectomy, it was reported for the first time by J.M. Waugh in 1946, and is associated with fewer anastomosis leaks. Yeo and cols, in 1995, published a randomized and prospective trial comparing the use of pancreatojejunostomy and pancreatogastrostomy, there weren´t have differences in anastomosis leaks in both techniques. Hallet reported a 10% reduction in pancreatic fistulas in high-risk patients and 5% in low-risk patients, the advantages is a greater vascular supply and an anastomosis free of tension, absence of enterokinase in the stomach, if a fistula is formed a nasogastric tube can handle the leak, greater accessibility to endoscopic instrumentation and there is no vascular damage by proteolysis. Menahem reported a significant decrease of pancreatic and biliary fistula as well as less hospital stay. The case control study published by Busquets compared the postoperative outcomes between 15 cirrhotic patients and 30 non-cirrhotic patients. In terms of postoperative hemorrhage, the non-cirrhotic patients had a higher proportion of events (7%) than the cirrhotic group (0%). Another study, conducted by El Nakeeb cirrhotic patients (6%) had more surgical re-exploration than the no cirrhotic patients (1.9%) because of internal bleeding (p=0.05). Regimbeau also describe that the mortality rate of patients with Child-Pugh a cirrhosis and portal hypertension was 25% but his total population was four patients. They also reported that all patients with post-operative mortality in his study died of complication relative to cirrhosis and not to pancreatic surgery [9]. The patient that we present had complication relative to cirrhosis but we think it was increased by the reconstruction of pancreatogastrostomy, because this surgical reconstruction modified the gastric mucosal´s pH and may be related with bleeding. One series reported by Sethi in a group of 4 patients who undergone PD for pancreatic cancer of the head, with a median follow-up time of 12 months (9–18), the recurrence rate was 50% and patient died after 18 months of follow-up. In the present series, patients with Child-Pugh A cirrhosis and patient without cirrhosis had similar results in terms of the adjuvant therapy rate (76% and 74% respectively), 3-year overall survival rate (44% and 50% respectively) and 3-year disease free survival (DSF) rate (34% and 18% respectively). Four and three Child-Pugh a cirrhotic patients having undergone PD for pancreatic cancer were real survivors after 2 and 3 years of follow-up, respectively. And Regimbeau demonstrate that even Child-Pugh B cirrhotic patients can receive adjuvant therapy. Is important the selection of patients to reduce morbidity [10]. Our patients initially were a Child – Pugh B cirrhotic, but with the support of medical treatment he achieves reduce to Child – Pugh A, and became a surgical candidate to PD. The patients with Child-Pugh B cirrhosis in Regimbeau´s series had a high complication rate and mortality rate (91% and 55%, respectively). The median survival for Child-Pugh B patients was 12 months (2–25) with a recurrence rate at 3 years of 100%. Enakeeb published a study of 67 patients with liver cirrhosis undergoing PD. Child-Pugh B is associated with an increased risk of postoperative morbidity and mortality and patients with portal hypertension had poorer outcomes than patients without portal hypertension. The surgical time was longer as well as wound complications in 14%, internal haemorrhage in 6% vs. 2%, bleeding of pancreaticogastrostomy in 1.5% without statistical difference with no cirrhotic group, pancreatic fistula in 19% vs. 10% and hospital mortality 12% vs. 1.6% the median survival was 19 months vs. 24 months in no cirrhotic patients. The rate of complications in general is 46% vs. 22% in no cirrhotic patients.

Conclusion

The PD is a safe procedure and there is no contraindication to do the PD in cirrhotic patients in Child Pugh A including patients with portal hypertension in specialized centers, but we don´t recommend the reconstruction with pancreatogastrostomy in this cases.

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