CIRUGÍA ESPAÑOLA

www.elsevier.es/cirugia

Original article

Morbidity and Mortality in Pancreatic Resection☆

Elías Dominguez-Comesaña,[a,*] *Francisco Javier Gonzalez-Rodriguez,*[a] *José Luis Ulla-Rocha,*[b] *Ángel Lede-Fernandez,*[a] *José Luis Portela-Serra,*[a] *Miguel Ángel Piñon-Cimadevila*[c]

[a] *Unidad de Cirugía Hepatobiliar y Pancreática, Servicio de Cirugía, Complejo Hospitalario de Pontevedra, Pontevedra, Spain*
[b] *Servicio de Gastroenterología, Complejo Hospitalario de Pontevedra, Pontevedra, Spain*
[c] *Servicio de Cirugía, Complejo Hospitalario de Pontevedra, Pontevedra, Spain*

ARTICLE INFO

Article history:
Received 2 September 2012
Accepted 16 December 2012
Available online 13 February 2014

Keywords:
Pancreatic resection
Pancreatectomy
Postoperative morbidity

ABSTRACT

Aim: Assess the postoperative morbidity rates in pancreatic resection.
Material and method: Prospective observational study which includes 117 patients who underwent surgery consecutively due to pancreatic or periampullary tumours. In 61 of the patients, cephalic pancreatectomy was carried out; 15 underwent total pancreatectomy; one underwent enucleation and 40 underwent distal pancreatectomy.
Results: Overall morbidity was 48.7% (59% for cephalic pancreatectomy, 35% for distal pancreatectomy and 46.7% for total pancreatectomy). The most frequent complications were intra-abdominal abscesses and collections (15.38%) and medical complications (13.68%). The incidence of pancreatic fistula was 9.83% for cephalic pancreatectomy and 10% for distal pancreatectomy. The reintervention incidence was 14.53%. Overall mortality was 5.12% (6.56% for cephalic pancreatectomy, 2.5% for distal pancreatectomy and 6.67% for total pancreatectomy). The presence of postoperative complications, the need for reintervention and the fact of being over 70 years of age correlated significantly with mortality.
Discussion: Pancreatic resection has high morbidity rates. Mortality is low and is practically limited to patients older than 70 years.

Morbimortalidad de la resección pancreática

Palabras clave:
Resección pancreática
Pancreatectomía
Morbilidad postoperatoria

RESUMEN

Objetivo: Evaluar la morbimortalidad postoperatoria de la resección pancreática.
Material y métodos: Estudio observacional prospectivo que incluye 117 pacientes intervenidos quirúrgicamente de forma consecutiva por presentar tumoración pancreática o periampular. En 61 de ellos se hizo pancreatectomía cefálica; en 15, pancreatectomía total; en uno, enucleación y en 40, resección corporocaudal.
Resultados: La morbilidad global fue de 48,7% (59% para la pancreatectomía cefálica, 35% para la resección corporocaudal y 46,7% para la pancreatectomía total). Las complicaciones

☆ Please cite this article as: Dominguez-Comesaña E, Gonzalez-Rodriguez FJ, Ulla-Rocha JL, Lede-Fernandez Á, Portela-Serra JL, Piñon-Cimadevila MÁ. Morbimortalidad de la resección pancreática. Cir Esp. 2013;91:651–658.

* *Corresponding author.*
E-mail address: eliasdomcom@gmail.com (E. Dominguez-Comesaña).

2173-5077/$ – see front matter

más frecuentes fueron las colecciones y abscesos intraabdominales, con un 15,38% y las complicaciones médicas, con un 13,68%. La incidencia de fístula pancreática fue de 9,83%, para la pancreatectomía cefálica y de 10% para la resección corporocaudal. La incidencia de reintervención fue de 14,53%. La mortalidad global fue de 5,12% (6,56% para la pancreatectomía cefálica, 2,5% para la resección corporocaudal y 6,67% para la pancreatectomía total). La presencia de complicaciones postoperatorias, la necesidad de reintervención y la edad superior a 70 años correlacionaron significativamente con la mortalidad.

Discusión: La resección pancreática tiene una morbilidad alta. La mortalidad es baja y está prácticamente limitada a los pacientes mayores de 70 años.

Introduction

Pancreatic resection is a technically complex operation, but its mortality rate has declined gradually to less than 5% reference centres.[1–4] However, this procedure has a high incidence of postoperative complications that require the participation of an integrated and coordinated team of surgeons, radiologists, endoscopists and anaesthesiologists for proper management. Continuous improvements in the results obtained with this surgery in recent years are attributed to the incorporation of novel surgical techniques and perioperative management based on published experience. Therefore, access to the results in different centres will allow for comparisons that contribute to better outcomes. Few series have been published in the Spanish literature. Therefore, this study reports our postoperative complications and mortality results with pancreatic resection in our centre.

Patients and Methods

A prospective observational study was conducted. The study included 117 patients treated with pancreatic resection for pancreatic or periampullary tumours from January 2005 through December 2011. Data were collected prospectively from an anonymous database designed at the beginning of the study and analysed in June 2012. Demographic data, preoperative biliary drainage, surgical technique, transfusion requirements, complications, mortality and postoperative hospital stay were analysed.

Surgical Technique

Cephalic Pancreatoduodenectomy

A subcostal laparotomy is performed for cephalic pancreatoduodenectomy (CPD). The pancreaticoduodenal block is exposed to mobilise the hepatic flexure of the colon and to perform the Kocher manoeuvre to the left side of the aorta after metastatic disease is excluded. The interaortocaval lymph nodes, which are only analysed intraoperatively if they are >1 cm in size, are resected at this time in continuity with the specimen. The omental cavity is accessed after sectioning the gastrocolic ligament, and the gastrocolic trunk is transected at the level of the superior mesenteric vein, which dissects the superior mesenteric vein and artery and transects the accessible branches. Antegrade cholecystectomy is performed, and the hepatic pedicle is dissected with skeletonisation of the vessels. The gastroduodenal artery is transected following confirmation of no obstruction in the celiac trunk using clamping. The bile duct is sectioned below the main biliary convergence, and its proximal portion remains occluded with a *bulldog clamp* until reconstruction. Hepatic pedicle lymphadenectomy extends from the biliary convergence to the origin of the hepatic artery. The gastric antrum is then resected and removed en bloc with the pancreatic head. Pyloric preservation is not performed. The pancreas is sectioned to the left of the portal vein, and pulsatile bleeding on the sectioned edge of the pancreatic body is monitored. An intraoperative biopsy of the pancreatic and biliary transection edges is performed in cases of malignant tumour. The jejunum is transected approximately 15 cm from the ligament of Treitz and transposed to the right side of the mesenteric axis. Finally, the retroportal pancreatic lamina is sectioned to the right side of the superior mesenteric artery to complete the resection. Reconstruction starts with pancreatic anastomosis. Pancreatic duct-jejunal anastomosis was performed in all cases 3 using 6/0 polyglycolic acid interrupted stitches guided by an intraluminal drain tube approximately 6–8 cm in length and size adapted to the diameter of the pancreatic duct. A catheter guide was not used in patients with a large diameter duct. The pancreatic remnant was invaginated into the stomach (1 case) or jejunum (2 cases) in patients with a duct diameter <1.5 mm. End to side hepaticojejunostomy was performed at 8–15 cm of the pancreatic anastomosis using 5/0 or 6/0 polyglycolic acid sutures. Finally, end to side gastrojejunostomy was performed using 4/0 running absorbable sutures. Child-type reconstruction was performed at the beginning of the series, but Roux-en-Y reconstruction with one loop for pancreatic and biliary trans-mesocolic anastomosis and another for gastrojejunal anastomosis in the antecolic position was performed in the last 2 years. Two closed drains, one peripancreatic and one subhepatic, were left in all cases.

Corporocaudal Pancreatectomy

An attempt was made to preserve the spleen and the splenic vessels if the tumour was benign. The Warshaw technique was used if the splenic vessels could not be preserved. En-bloc splenectomy was performed in cases of malignant tumour.