

Technical note

Extra-pancreatic end-to-side hepaticojejunostomy: a practical modification of the duodenum-preserving pancreatic head resection (DPPHR) for chronic pancreatitis

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Background

Duodenum-preserving pancreatic head resection (DPPHR) is recognised for the surgical treatment of chronic pancreatitis. Approximately 15–20% of patients undergoing DPPHR require a synchronous biliary drainage procedure for stricture.

Methods and results

This report describes a technical modification involving the placement of an extra-pancreatic end-to-side Roux hepaticojejunostomy utilising the same jejunal loop employed for pancreaticojejunal anastomosis.

Discussion

Extra-pancreatic end-side hepaticojejunostomy is a simple technical modification of DPPHR. The biliary anastomosis is constructed according to the well-established principles of biliary reconstruction and represents a safe and valuable technical option.

Keywords

bile ducts, pancreas, chronic pancreatitis, pancreatectomy

Introduction

Duodenum-preserving pancreatic head resection (DPPHR) is a well-recognised option for the surgical treatment of patients with chronic pancreatitis, particularly when there is a predominant inflammatory mass in the head of the pancreas [1]. Approximately 15–20% of patients with a cephalic mass complicating chronic pancreatitis (CP) will also have obstructive jaundice secondary to a distal bile duct stricture, and in their technical descriptions of the operation, Beger's group describe the incorporation of a side-to-side choledochojejunostomy for relief of biliary obstruction into the procedure of DPPHR [2] (Figure 1). Bypass to the intra-pancreatic distal common bile duct may be difficult in view of post-inflammatory thickening and may distort the final 'resting' position of the Roux pancreaticojejunostomy. This paper describes a simple technical modification that permits safe Roux loop biliary decompression for those individuals undergoing DPPHR in whom there is a concomitant distal bile duct stricture (Figure 2).

Case report

A 51-year old man was referred for surgical treatment of painful chronic pancreatitis (CP) complicated by obstructive jaundice secondary to a distal bile duct stricture. He had an initial attack of severe pancreatitis some 3 years previously, probably related to alcohol. Eighteen months after this episode he developed a pancreatic pseudocyst, which was treated by endoscopic trans-gastric drainage. He then developed obstructive jaundice, type 2 diabetes and pain that was refractory to opiate therapy. Computed tomography demonstrated a probable inflammatory mass in the head of the pancreas with minimal dilatation of the main pancreatic duct. Endoscopic retrograde cholangiopancreatography (ERCP) confirmed a distal bile duct stricture and abnormality of the main pancreatic duct in keeping with a diagnosis of CP. Endoscopic brushings and biopsies showed no evidence of malignancy.

Following detailed risk assessment it was decided to proceed to DPPHR. At operation, the inflammatory mass in the head of pancreas was resected following the

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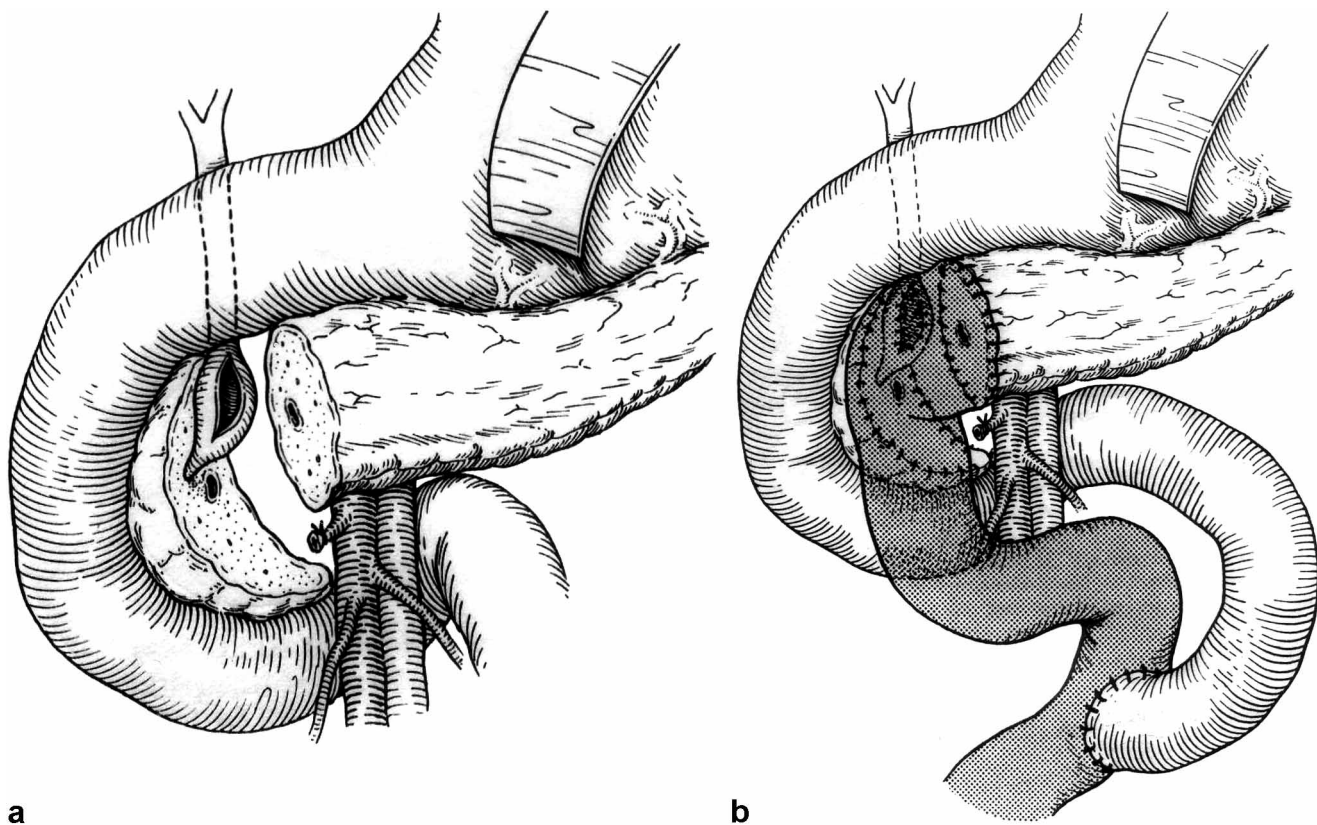


Figure 1. (a) and (b) Bile duct anastomosis at the time of DPPHR using the technique described by Beger and colleagues. Reproduced with the kind permission of Chapman and Hall Medical.

technique described by Beger and Schoenberg [3]. Although the distal bile duct was exposed within the head of pancreas, it was thick-walled (from a combination of post-inflammatory change and previous endoscopic stent placement) and surrounded by dense fibrous tissue. By contrast, the supra-pancreatic bile duct (although also thick-walled) was readily amenable to bypass. Hence, the duct was mobilised and transected above the insertion of the cystic duct following cholecystectomy. A standard single-layer interrupted end-to-side Roux hepaticojejunostomy [4] was performed using 3-0 PDS sutures (Ethicon, Edinburgh, UK). The Roux loop was then placed down into the hollow of the head of pancreas and a separate end-to-side pancreaticojejunostomy was fashioned (the main pancreatic duct in the juxtaduodenal pancreatic remnant was oversewn).

Postoperative recovery was uncomplicated. Histological analysis of the resected specimen confirmed chronic pancreatitis. The patient's subsequent course was complicated by an episode of abdominal pain and vomiting due to a short-segment duodenal stenosis (thought to be

secondary to duodenal ischaemia) which responded to endoscopic dilatation and has not recurred. He remains well and pain-free 24 months after operation.

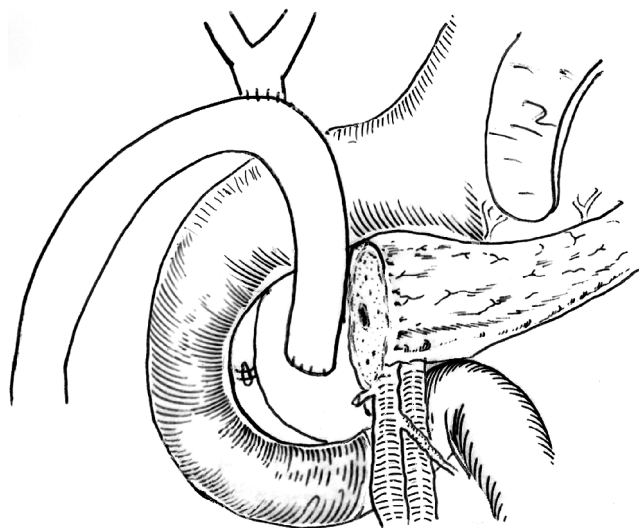


Figure 2. Extra-pancreatic end-side hepaticojejunostomy at the time of DPPHR.

Discussion

Duodenum-preserving pancreatic head resection is now a well-established therapeutic option for the surgical treatment of chronic pancreatitis, particularly in those individuals with an inflammatory mass in the head of pancreas. The modification of Roux-en-Y hepaticojejunostomy described here is not a new technique, rather a relatively simple solution that avoided the need for a technically difficult side-to-side biliary reconstruction to thickened bile duct within the head of the pancreas.

It may also be argued that the patency rates for a bypass away from the portion of the bile duct affected by pancreatic inflammation may be better than for a biliary-enteric anastomosis to the distal duct within the hollow of the pancreas. Further, it could also be argued that blood supply to the proximal duct would be less likely to be compromised than the blood supply to the distal duct after resection of the pancreatic head. The technique requires little extra dissection beyond that required to display and divide the common hepatic duct, and the Roux loop to be used for the pancreaticojejunostomy is readily available for this biliary-enteric anastomosis. Having completed the extra-pancreatic hepaticojejunostomy, the Roux loop is then placed down into the hollow of the pancreas, and the surgeon has a reasonable degree of freedom to select carefully the lie and placement of the pancreaticojejunal anastomosis. In the case described here, there was a single pancreaticojejunal anastomosis (to the pancreatic remnant on the left of the portal vein) in keeping with the authors' preference for

overseeing the pancreatic duct opening on the duodenal side.

In summary, the conventional technique of intra-pancreatic biliary anastomosis in those patients requiring biliary reconstruction at the time of DPPHR is a well-recognised technique. The evidence provided by this report is not a recommendation for procedural modification; rather, this is a useful option when biliary reconstruction within the head of the pancreas would otherwise be difficult. This extra-pancreatic end-to-side hepaticojejunostomy follows the standard principles of biliary-enteric anastomosis and appears to be a valuable therapeutic option.

References

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