

Emergency Whipple's at a Rural Hospital in Jamaica

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INTRODUCTION

Whipple's pancreaticoduodenectomy, a major surgical procedure with high morbidity and mortality rates is safest when done by experienced surgeons in high volume centres. It is often performed electively for carcinoma of the head of the pancreas or Ampulla of Vater, rarely for pancreaticoduodenal injuries and even rarer during surgery for an acute abdomen. Complications include anastomotic leaks and fistulae. We present a case of Whipple's pancreaticoduodenectomy for a young woman presenting with acute abdominal pain at a rural hospital in Jamaica.

Case Report

A 25-year old woman with no known chronic illness presented with a four-month history of abdominal pain and an abdominal ultrasound showing an intra-abdominal mass.

This was confirmed by abdominal computed tomography which placed this mass in the upper abdomen and retroperitoneally. Approximately two days after abdominal CT, the patient presented to the emergency room with a history of sudden onset of severe epigastric pain radiating to the back. This pain was severe, constant and aggravated by lying supine or on the right side. There were no other gastrointestinal or any urinary symptoms present. Clinical examination revealed a young woman in severe painful distress with pink and moist mucous membranes, anicteric sclerae and a normal body temperature. She had mild tenderness in the right upper quadrant with no guarding or rebound tenderness, the cardio-respiratory systems were normal. The differential diagnoses included torsion of the intra-abdominal mass or haemorrhage into this mass and acute pancreatitis. Blood investigations were all normal except for mild increases in the alkaline phosphatase and serum amylase levels. At emergency exploratory laparotomy, we found an 11 x 7 x 5 cm mass in the head of the pancreas. This mass was mobile and not attached to the superior mesenteric vessels or other contiguous structures. It was therefore deemed to be resectable. A modified pylorus sparing Whipple's procedure was therefore performed with *Roux- en-y* reconstruction as shown in the Figure.

Postoperatively, the patient did quite well with all blood parameters including electrolytes, blood glucose and liver function tests remaining normal throughout the hospital stay. She had her nasogastric tube discontinued and clear fluid started orally on day 5. A sump drain left in the pan-

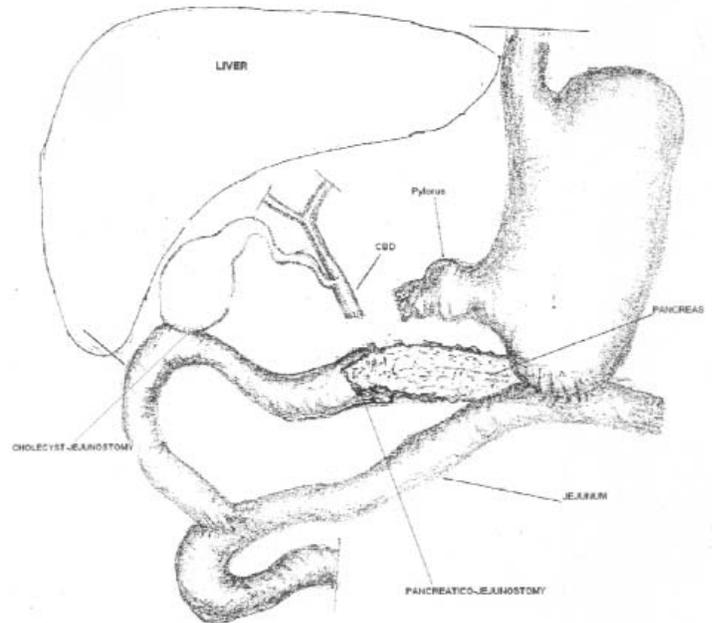


Figure: Shows pylorus sparing whipples with cholecystojejunostomy.

creatic bed was removed on day 6. She was fully established on a normal diet by day 7 and was discharged from hospital on day 10. Histology showed a pancreatic endocrine neoplasm. Approximately three months postoperatively, she had a bout of severe epigastric pain which responded well to analgesics and H2 antagonists. A barium meal showed slight hold-up at the gastrojejunostomy anastomotic site but otherwise there was free flow of barium.

DISCUSSION

Originally described by Allesandro Codivilla in 1898, the operation of pancreaticoduodenectomy was first performed by Kausch in 1908 and made popular by Allen Oldfather Whipple in the 1930s. The operation that Dr Whipple described in 1935 has since been greatly modified; it involved an 'en bloc' resection of the head of the pancreas, together with the distal stomach and antrum, the duodenum and upper jejunum and the distal biliary tree including the gall bladder (2). A more limited duodenectomy with preservation of the stomach and antropylic region is preferred by some experts but this pylorus preserving procedure is associated with increased morbidity and involves less lymphadenectomy. In this index case, we opted for a pylorus preserving procedure and retained the distal biliary tree and gall bladder. We reconstructed using a *Roux- en-Y* anastomosis with gastrojejunostomy, end to side pancreaticojejunostomy and a side to side cholecystojejunostomy. This method of reconstruction

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is deemed to be safe and found to reduce morbidity and mortality after pancreaticoduodenectomy because it prevents reflux of intestinal contents into the biliary tree and secondary cholangitis (3, 4). Cholecystojejunostomy is not the preferred method of reconstruction for the biliary tree but it was felt to be a safer method in our hands at the time of surgery.

The 'Achilles heel' of the Whipple's procedure is the pancreaticojejunal anastomosis and even in the best series leak rates remain 10–20%. In this case, an end-to-end invagination pancreaticojejunostomy which is recommended for patients with a soft pancreas and non-dilated ducts was performed. The duct to mucosa pancreaticojejunostomy is preferred for the firmer pancreas with a dilated duct. The latter procedure gives an overall better leak rate after pancreaticojejunostomy (5). The sump drain left in the pancreatic bed provided a means of monitoring for leaks at the pancreaticojejunal anastomosis; amylase levels obtained therefrom on two occasions were within normal limits.

Whipple's pancreaticoduodenectomy is a safe procedure when performed in high volume centres by specialists. In Jamaica, this means a type A institution with intensive care facilities. This patient presented with an acute abdomen and needed an emergency laparotomy and the decision was made to proceed after making sure measures were in place to ensure the safety of the patient. The measures included:

- C The operation being conducted by a senior surgeon with about thirty years experience, ably assisted by two experienced surgeons
- C Anaesthesia being provided by a consultant anaesthetist and two nurse anaesthetists
- C Ensuring laboratory and other support services were ready, with adequate amounts of blood and blood products.
- C Basing the choice of operation on the experience of the team, with the aim being to decrease operative blood loss and operating time.
- C Should the procedure not be incident free, there were plans and measures in place to transfer the patient to an intensive care facility in Kingston.

With these measures in place, we proceeded. The total blood loss was about 500 mls and total operative time approximately four hours. There was no need for blood transfusion and postoperatively the patient was nursed in the recovery room by nurses trained in Critical Care nursing.

Having embarked on this laparotomy, based on our differential diagnoses and having assessed the intra-operative findings and seeing that the operation was in our capabilities, closing and transferring this patient to another facility was probably riskier than proceeding since there are patient management factors that can go awry when trying to transfer a patient from a rural hospital to one in Kingston. This article does not intend to encourage others to take on such operations in Type B institutions but rather seek to encourage surgeons to follow the dictum "*Choose well, cut well, get well*". We chose a fit 25-year old woman to do an operation that we were comfortable with (pylorus preserving pancreaticoduodenectomy) and this young woman responded well needing only approximately sixteen hours of intensive nursing and no postoperative ventilation after an operation that lasted four hours.

The patient is being followed-up with yearly abdominal ultrasounds and abdominal computed tomography scans and after three years there has been no clinical or radiological evidence of recurrence. Her liver function tests and glucose profiles have also remained normal.

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