

EMERGENCY WHIPPLE'S PROCEDURE IN TRAUMATIC PANCREATODUODENAL INJURY; HOW SAFE?

Travmatik pankreatoduodenal yaralanmalarda acil Whipple ameliyatı ne kadar güvenlidir?

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Cer San D (J Surg Arts), 2014;7(1):33-35. <http://dx.doi.org/10.14717/jsurgarts.2014.117>

ABSTRACT

Emergency Whipple's procedure is done in endoscopy-related perforation, uncontrollable intraduodenal tumor bleeding and traumatic pancreaticoduodenal injury. It has a high mortality and morbidity rate. We are presenting a case of pancreaticoduodenal injury of grade IV, in which emergency Whipple's procedure was done with good post operative recovery.

Key words: Whipple's procedure, pancreas, duodenum, trauma, emergency surgery.

ÖZET

Whipple ameliyatı, endoskopi sırasındaki duodenum travmaları, kanamalı duodenal tümörler ve pankreas-duodenum travmalarında acil şartlarda yapılması gerekebilir. Bu durumda morbidite ve mortalite oranı yüksektir. Bu yazıda, travmaya bağlı olarak grade 4 pankreatikoduodenal yaralanma oluşan bir hastada başarılı bir şekilde yapılan Whipple ameliyatlı bir hasta sunulmuştur.

Anahtar kelimeler: Whipple ameliyatı, pankreas, duodenum, travma, acil cerrahi.

INTRODUCTION

Emergency Whipple's procedure is a major surgical procedure with very high morbidity and mortality rate. Classic pancreaticoduodenectomy involves an enbloc resection of the head of the pancreas with 30-40% distal gastrectomy with antrectomy, duodenum, proximal jejunum, distal biliary tree at its junction with the cystic duct and cholecystectomy. For a pylorus-preserving pancreaticoduodenectomy, the proximal GI tract is divided 2 to 3 cm distal to the pylorus (2). Indications for emergency Whipple's procedure are endoscopy-related perforation, uncontrollable intraduodenal tumor bleeding and trauma. It is often performed electively for periampullary carcinoma. Postoperative complications of pancreaticoduodenectomy are anastomotic leaks and fistulae and hemorrhage.

CASE

A 14 year young male presented to casualty with blunt trauma abdomen. He had history of fall

from bullock cart and run over by it 12 hours earlier. He was primarily managed at Primary health care hospital. On admission he was in shock and severely pale. His GCS was 15/15 and chest was clear. Signs of peritonitis were present on abdominal examination. Free gas under right dome of diaphragm and subtrochantric fracture of right femur was detected on X-ray. He was resuscitated with IV fluid and one unit of blood transfusion preoperatively. Patient was taken for emergency exploratory laparotomy. Intraoperative findings were 2.5 litre of hemoperitoneum, complete transection of first part of duodenum and neck of the pancreas (Figure 1) and large central retroperitoneal hematoma. In view of grade 4 pancreaticoduodenal injuries, Whipple's procedure (pancreatoduodenectomy) performed with pancreatic and biliary stenting and feeding jejunostomy. Post operatively patient was kept in ICU. On post operative day (POD) 1 his Hb was 10.9 gm % and PCV was 29.5. Feeding started through feeding jejunostomy from POD 3 and patient was shifted to the

ward. Pancreatic and biliary stent were removed endoscopically on post operative day 20. Subtrochantric fracture of right femur was managed by

orthopaedic surgeon. Patient had good postoperative recovery.

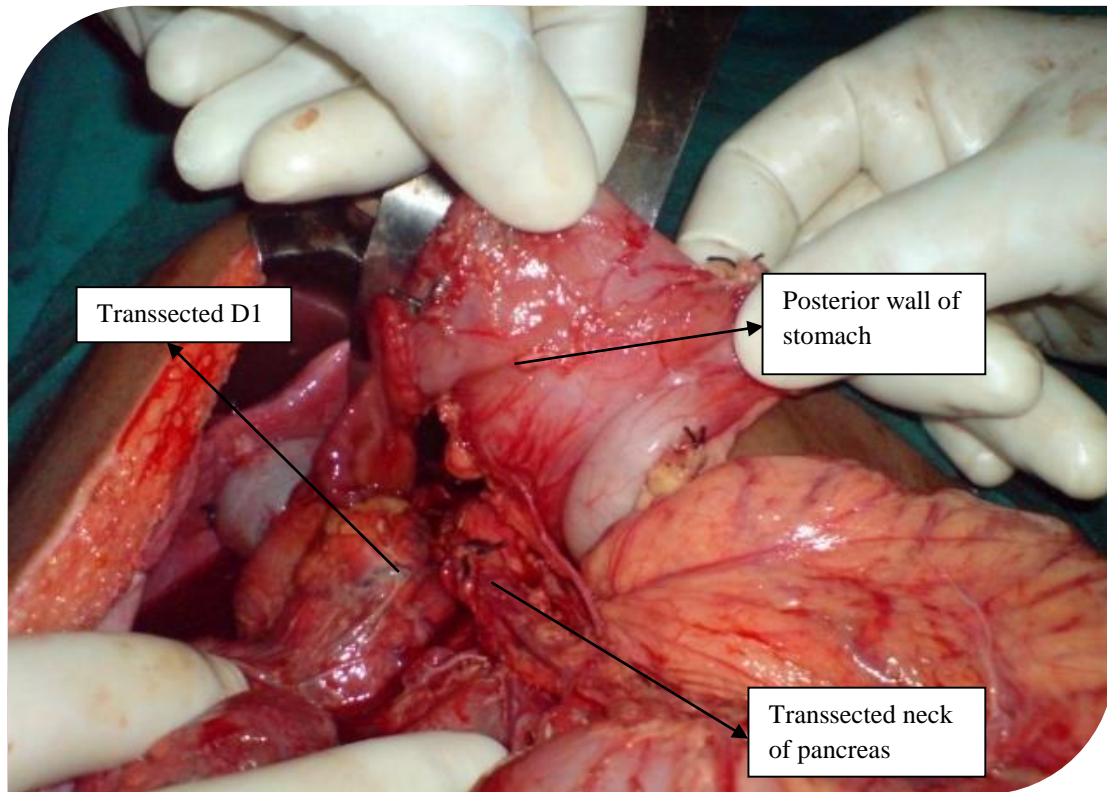


Figure 1: Pancreaticoduodenal injury.

DISCUSSION

The first successful pancreaticoduodenectomy was performed by a German surgeon, Kausch in 1912 in two stages (1). In the first stage, he decompressed the biliary tree, and 6 weeks later, he completed the extirpation and the reconstruction, including a pancreaticoduodenal anastomosis to the third part of the duodenum. The operation was popu-

larized by Whipple, who reported his series of pancreaticoduodenectomy in 1935. He had performed the procedure on 3 patients as a 2-stage operation for periampullary neoplasm, and then later refined his technique to a 1-stage procedure (1). Traverso and Longmire in 1978 introduced the pylorus preserving pancreaticoduodenectomy (2).

Table 1: Grading of pancreaticoduodenal injury (9).			
Grade	Type of injury	Duodenal injury	Pancreatic injury
I	Hematoma	Involving a single portion of the duodenum	Minor contusion without duct injury
	Laceration	Partial thickness, no perforation	Superficial laceration without duct injury
II	Hematoma	Involving more than one portion	Major contusion without duct injury or tissue loss
	Laceration	Disruption <50% of the circumference	Major laceration without duct injury or tissue loss
III	Laceration	Disruption 50%-75% of the circumference of D2	Distal transection or parenchymal injury with duct injury
		Disruption 50%-100% of the circumference of D1, D3, D4	
IV	Laceration	Disruption >75% of the circumference of D2 and involving the ampulla or distal common bile duct	Proximal transection or parenchymal injury involving the ampulla
V	Laceration	Massive disruption of the duodenopancreatic complex	Massive disruption of the pancreatic head
	Vascular	Devascularization of the duodenum	

Emergency pancreaticoduodenectomy procedure is mainly been performed for abdominal trauma. The mortality rate for pancreatic injury is 9-34% and for duodenal injury is 6-25%. Complication following duodenal and pancreatic injury is alarmingly frequent and occurring in 30-60% of patients (3-6). In traumatic pancreaticoduodenal injury, the patients are usually young. In view of this high mortality rate, it is debatable whether a pancreaticoduodenectomy should be carried out on an emergency basis or not (7-9).

In conclusion, emergency pancreatoduodenectomy may be considered, under exceptional circumstances, by surgeons experienced in pancreatic resections, but unfavourable perioperative conditions should be included in the preoperative planning and risk assessment of such patients.

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