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LETTER TO THE EDITOR

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A quick technique for en bloc liver and pancreas procurement

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Sir: In their recent report, de Ville de Goyet et al. [9] described what they called "a quick en bloc technique for procurement of cadaveric liver". In fact, that technique is *not* an en bloc technique for cadaveric liver and pancreas procurement; rather, it is a quick technique for liver procurement with the surrounding tissues in order to avoid any injury to normal or abnormal hepatic blood supply vessels. With their technique, the whole pancreas cannot be used as a vascularized organ but only for purposes of experimental islet preparation since "the duodenum is removed from the bloc by transection of the pancreas head in which the common bile duct is cut".

Techniques for en bloc liver and pancreas procurement are numerous [1–6, 8], and quick en bloc procedures have been reported for many years by several authors [5, 8]. Briefly, these procedures involve entering the lesser sac through the gastrocolic ligament; the entire transverse colon, with the hepatic and splenic flexures, is turned down to the pelvis. The tail and the body of the pancreas are then mobilized along with the spleen, which can be either removed for typing and crossmatching or used as a handle. A previous, extended Kocher maneuver is prolonged to the ligament of Treitz, which is divided. Right gastroepiploic and pyloric vessels are divided. Using the gastrointestinal stapling device, the proximal portion of the duodenum is transected. Thus, the lesser omentum is separated from the right edge of the esophagus and the small curvature of the stomach. Care should be taken to ensure that the left gastric artery remains undamaged in the event of a left hepatic artery. Such a maneuver makes it possible for the stomach to be easily pushed out of the operating field and the infradiaphragmatic aorta encircled above the celiac axis.

During the insitu flushing of the abdominal organs through the aorta, the fundus of the gall-bladder is opened and the bile flushed out with cold saline. The duodenal lumen is irrigated with an antimicrobial solution (Isobetadine), injected with a needle and syringe through the first jejunum loop wall. Thus, the distal portion of the duodenum or the first jejunal loop can be divided using the gastrointestinal stapling device, retaining a segment of duodenum along with the whole pancreas. When flushing is complete [2–3 l University of Wisconsin (UW) solution], both liver and pancreas are harvested en bloc.

The superior mesenteric artery (SMA) and vein are divided under the neck of the pancreas so that the entire bowel is turned out of the abdominal cavity. A carrel patch is trimmed around the celiac axis and the origin of the SMA by dividing the retroperitoneal tissue (retropancreatic lymphatics, solar plexus) around the aorta, which is fully exposed and incised anteriorly and laterally. During this procedure, the orifices of the renal arteries should not be approached. Next, the inferior vena cava is transected below the liver, above the renal veins, and distally in the pericardium, along with a patch of diaphragm. The bloc (liver + pancreas) is removed and placed in iced UW preservation fluid bath for backtable work. Bile is again flushed out through a small opening in the common bile duct. Ex vivo the organs are separated, taking into consideration the anatomical variations; all vessels are trimmed according to the length of the recipient vessels.

One can divide the vessels in the following way:
1. The portal vein is divided transversally at the upper edge of the neck of the pancreas.
2. The arterial supply is divided according to the particular anatomical variation:
(a) In the case of a normal arterial supply to the liver, the celiac axis goes with either the splenic artery to the pancreas or the common hepatic artery to the liver graft. The gastroduodenal artery is divided close to the proper hepatic artery.
(b) In the case of a left hepatic artery from the celiac axis, the celiac axis goes with the common hepatic artery and the left gastric artery to the liver graft.
(c) In the case of a right hepatic artery coming from the SMA [7], the right hepatic artery is divided at the edge of the pancreas. The liver stump of the right hepatic artery is sutured to the stump of the gastroduodenal artery. The pancreas stump of the right hepatic artery is sutured to the gastroduodenal artery.

So why don't liver transplant surgeons use the quick en bloc liver-pancreas procurement technique? The answer is clear: it saves time and work to send a human pancreas to the laboratory for experimental purposes, and one avoids the organizational problems associated with whole pancreas transplantation.

Pancreas transplantation represents only a small part of the transplantation activities that go on inside an exchange organization such as Eurotransplant; in 1994, only 95 pancreases were transplanted, compared to as many as 2997 kidneys, 892 livers, and 696 hearts. Thus, when organs from a multiple organ donor are offered, priority is always given to the liver and heart recipients. When kidneys are

dispatched, priority is given to full HLA matched or hyperimmunized recipients.

Therefore, the ideal way to manage the multiple organ donor in order to avoid pancreas wastage and to give organs to the 100 potential pancreas/kidney recipients on the waiting list should be to consider any good liver donor as a good pancreas donor (except for diabetic donors). In such circumstances, quick en bloc liver and pancreas procurement should be recommended with prospective typing of the cadaveric donor whenever possible.

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