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Guillaume Pierre Carrier, Pierre Alric, Pierre-Emmanuel Colombo. ASO Author Reflections: Preoperative Embolization or Arterial Reconstruction for Distal Pancreatectomy with Celiac Axis Resection. *Annals of Surgical Oncology*, 2020, 10.1245/s10434-020-08800-3 . hal-02894810

HAL Id: hal-02894810

<https://hal.science/hal-02894810>

Submitted on 19 Aug 2021

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ASO Author Reflections: Preoperative Embolization or Arterial Reconstruction for Distal Pancreatectomy with Celiac Axis Resection

Guillaume Carrier, MD¹, Pierre Alric, MD, PhD², and Pierre-Emmanuel Colombo, MD, PhD¹

¹Department of Surgical Oncology, Institut du Cancer de Montpellier (ICM), Montpellier, France; ²Department of Thoracic and Vascular Surgery, Arnaud de Villeneuve Hospital, Montpellier, France

Resectability of pancreatic carcinoma (PC) is directly linked to vascular extension. The modified “Appleby” procedure has been applied for locally advanced body/tail PC and includes distal pancreatectomy with en bloc resection of the celiac axis (CA) and the common hepatic artery (CHA). Liver arterial supply is then based on the retrograde blood flow through the pancreaticoduodenal arcades and the gastroduodenal artery (GDA). However, a risk of severe postoperative liver ischemia remains after this procedure.

Preoperative embolization of the CA branches (CHA, splenic, and left gastric arteries) is currently recommended to reinforce liver and gastric perfusion.¹ Embolization offers the opportunity to avoid arterial reconstruction and its risks on radiated arteries. However, a residual risk of postoperative liver and/or biliary ischemia and a high pancreatic leak rate have been observed after this strategy.² Arterial reconstruction is still required if preoperative embolization is not feasible or if the liver perfusion through the GDA is not adequate despite embolization. This situation may happen if damage to the pancreaticoduodenal arcades occurs during dissection of the mesenteric-portal venous axis. A nonplanned arterial reconstruction may be hazardous if finally required peroperatively and may be compromised by preoperative embolization leaving coils in the CHA.² Systematic arterial reconstruction is sometimes

preferred to allow arterial supercharge of liver inflow without compromising perfusion of the pancreaticoduodenal region.³

Distal pancreatectomy with CA resection is a complex and uncommon procedure reserved to highly selected PC responding to multimodal neoadjuvant treatment. Larger studies are still awaited to determine the best strategy for selective embolization or arterial reconstruction. Progress in perioperative assessment of liver perfusion will probably help surgeons to determine the requirement of reconstruction. Primary reconstruction with direct arterial anastomosis between the aorta or the CA stump and the remaining hepatic artery (HA) is feasible in the majority of cases in our experience, as illustrated in a video.⁴ Progresses in arterial bypass are awaited to secure arterial reconstruction when primary anastomosis is not feasible. In situ arterial reconstructions with biological substitutes (saphenous or left renal veins, hypogastric artery, and cryopreserved homograft) are superior to prosthetics grafts (standard and rifampicin-bonded or silver-coated Dacron graft), due to their resistance to infection and better patency.⁵

DISCLOSURE The authors declare no conflicts of interest.

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