

Role of Arterial Variants in Pancreatic Surgery

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Context Surgical resection is the only curative option for the treatment of pancreatic adenocarcinoma. If preoperatively undetected, the presence of arterial variants with or without their neoplastic involvement, could be the cause of intra- or post-operative complications, particularly during a pancreaticoduodenectomy (PD). As reported, a normal arterial anatomy of the celiac axis and of the superior mesenteric artery is present in only 55-60% of patients. **Objective** The objective of this study is to demonstrate the role of arterial variants in pancreatic surgery. **Methods** From 2008 to 2012, 85 patients were submitted to a multidetector CT scan before undergoing pancreatic surgery, paying particular attention to the 3D reconstruction of vascular anatomy. **Results** This preoperative evaluation showed a normal vascular anatomy in 84.7% of cases while 15.7% patients showed at least one arterial variant. In one patient we observed the origin of the gastroduodenal artery from the left hepatic artery, in 4 cases the left

hepatic artery (LHA) from the left gastric artery (LGA) (Michels type II), in 1 case (1.2%) the right hepatic artery (RHA) from the superior mesenteric artery (SMA) (Michels type III), in 1 case the RHA from the SMA and the LHA from LGA (Michels type II + type III), in 1 case the proper hepatic artery from the SMA (Michels type IX) and in 1 patient an accessory RHA for the IV hepatic segment from the SMA and an accessory left hepatic artery from the LGA (Michels type VII). The arcuate ligament syndrome was also detected in 4 subjects (4.7%). **Conclusions** According to our experience, the preoperative identification of these variant arteries seems very important. These data suggest that in patients who undergo pancreatic surgery, besides the evaluation of portal vein and/or superior mesenteric vessels tumor impairment, the arterial vascular anatomy should be always studied preoperatively to avoid severe intra- or post-operative complications such as bleeding, hepatic failure and biliary fistulas.