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MDCT in estimation of an angle size of blood vessels invasion by pancreatic carcinoma

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According to the NCCN criteria, resectability of Pancreatic Carcinoma (PC) is commonly assessed by MDCT and depends on tumor's relation to neighboring blood vessels, such as Celiac Trunk (CT), Hepatic Artery (HA), Superior Mesenteric Artery (SMA), Portal Vein (PV) and Superior Mesenteric Vein (SMV). The aim of this study was to investigate methodology of the assessment of local vascular invasion of pancreatic carcinoma by MDCT using the angle measuring tool. 50 consecutive 64-MDCT scans of patients with the PC were retrospectively analyzed. Maximal angle of blood vessel's circumference that was in direct contact with the tumor was measured using the angle measuring tool on axial section and length of direct contact on MPR-reconstructed section. Accordingly, resectability was estimated using the NCCN criteria. Frequencies and correlations were statistically analyzed using Spearman's (rS) and Pearson's correlation coefficient (r). Average size of tumor was 36 ± 13 mm (10-68 mm). Majority of PCs were in advanced stage (60% T3 and 36% T4), located in the head of the pancreas (62%). 22% tumors were estimated as resectable, 48% borderline resectable and 30% unresectable. SMV and PV were invaded most frequently (50% and 46%) and surrounding arteries in lower percent (SMA in 26%, HA in 22% and CT in 16%). Location, size and T-stage correlated with the frequency of local vascular invasion ($rS > 0.450$). Maximal angle correlated with the length of the vascular infiltration ($r > 0.450$). Precise estimation of vascular invasion in PC by MDCT is possible using the angle measuring tool.

Biography

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