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Imaging liver transplantation candidates using gadolinium enhanced MDCT angiography

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Abstract: Aim: To report our experience with gadolinium enhanced computed tomography angiography (Gd-CTA) for end-stage liver disease patients who are candidates for liver transplantation as an alternative to iodinated contrast enhanced CTA and gadolinium enhanced magnetic resonance (MR) angiography. Materials and methods: Seventeen patients with end-stage liver disease were evaluated with Gd-CTA. The patients were 10 men (58.8%) and 7 women (41.1%) (age range: 37-59 years). Multidetector CT (MDCT) was performed using 16-detector-row CT scanners. 3D images of the celiac artery, superior mesenteric artery, portal vein, and inferior vena cava (IVC) were obtained for thorough assessment using multiple plane reconstruction and maximum-intensity projection. Adequate images were defined by complete opacification of the celiac, superior mesenteric, hepatic propria, bilateral hepatic arteries, main portal vein and bilateral intrahepatic portal branches, and IVC. Results: All 17 Gd-CTAs were rated as diagnostic. Adequate CT arteriography (celiac, common hepatic, hepatic propia, and bilateral hepatic artery) and portography were obtained in all the patients. Engorged gastric and coronary varices were detected in 5 patients (29.4%). Severe splenorenal shunt was found in 2 patients (11.7%). Thrombus of the portal vein was observed in 3 patients (17.6%). The radiological findings and operational findings were not discordant in any of the operated patients. Conclusion: The degree of enhancement and image quality achieved using these gadolinium-enhanced MDCT angiographies appear adequate for angiographic evaluation of liver transplantation. Therefore, the use of 3D Gd-CTA in selected cases and settings can be advantageous in the pretransplantation evaluation.

Key words: Liver Transplantation, candidates, gadolinium, MDCT angiography

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