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动态增强MRA诊断活体肝移植术后血管并发症

Evaluation of vascular complications after living donor liver transplantation with dynamic contrast-enhanced MR angiography

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中文摘要：

目的 评估钆贝葡胺动态增强磁共振血管成像(DCE MRA)对活体肝移植术后肝动脉、门静脉、肝静脉血管并发症的诊断价值。 方法 34例活体肝移植受体,术后均接受MR扫描。经静脉注入1 ml钆贝葡胺注射液后同时启动testbolus测出循环至腹主动脉时间。后行冠状位三维T1加权快速扰相小角度梯度回波(3D-FLASH)序列扫描,自动脉期开始连续扫描4期,每期相隔10 s,获得肝动脉、门静脉、肝静脉期图像。两名放射科医师观察原始及最大密度重建(MIP)图像。并把MRA图像质量定为5级。观测肝动脉、门静脉、肝静脉及下腔静脉吻合口与邻近血管的相对大小、血管的显示程度,并将结果与同期进行的数字减影血管造影(DSA)、超声和临床综合资料的结果对照。 结果 MRA对于肝动脉、门静脉、肝静脉系统的显示均较好。肝动脉狭窄4例,门静脉狭窄6例,门静脉栓塞2例,肝中静脉重度狭窄1例。其中DSA证实10例,手术证实4例,其余均经超声、随访等证实。 结论 钆贝葡胺动态增强MRA安全无创,对肝动脉、门静脉、肝静脉显示清楚,对于血管并发症的诊断准确率较高,有可能成为活体肝移植术后诊断血管并发症首选的影像学检查手段。

英文摘要：

Objective To observe the value of dynamic contrast-enhanced MR angiography (DCE MRA) with gadobenate dimeglumine in evaluation of vascular complications after living donor liver transplantation. **Methods** Thirty-four consecutive patients were examined with MR after living donor liver transplantation. First, 1 ml gadobenate dimeglumine was injected in vein to infer the time of gadobenate dimeglumine reaching abdominal artery performing testbolus. Then a scan with three-dimensional T1-weighted fast low-angle shot (3D-FLASH) sequence was performed. Four phases in series from arterial period were scanned and every phase paused 10 s to obtain images of the arterial, portal venous and hepatic venous systems. The original and maximum intensity projection (MIP) reconstructed images, categorized vessel visualization on a five-point scale and observed stoma of hepatic artery, portal venous and hepatic venous inferior vena cava, diameter and display of surrounding vessels were observed. The results were compared with those of digital subtraction angiography (DSA), ultrasound and clinical data. **Results** Overall vessel visualization assessment demonstrated good or very good ratings for the majority of patients. Among all 34 patients, hepatic artery stenosis was found in 4, portal vein stenosis in 6, portal vein thrombosis was detected in 2, while middle hepatic veins stenosis was detected in 1 patient, among whom 10 patients were confirmed with DSA, 4 with surgery, the others with ultrasound or follow-up. **Conclusion** Gadobenate dimeglumine DCE MRA is a highly accurate, noninvasive tool for evaluation of vascular complications after living donor liver transplantation, may be regarded as the first choice in postoperative evaluation.

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