

孙阳,郑元义,吴伟,牛诚诚,王志刚.载超顺磁性氧化铁高分子微球对兔肝癌MR成像效果的影响[J].中国医学影像技术,2012,28(8):1445~1448

载超顺磁性氧化铁高分子微球对兔肝癌MR成像效果的影响

Influence of superparamagnetic iron oxide loaded polymer microspheres on enhanced MRI for liver cancer of rabbits

投稿时间: 2012-03-26 最后修改时间: 2012-05-01

DOI:

中文关键词: [超顺磁性氧化铁](#) [高分子材料](#) [磁共振成像](#) [对比剂](#) [肝肿瘤](#)

英文关键词: [Superparamagnetic iron oxide](#) [Polymer](#) [Magnetic resonance imaging](#) [Contrast agent](#) [Liver neoplasms](#)

基金项目:国家自然科学基金重点项目(81130025);国际(中加)合作项目(81161120548);青年科学基金项目(30900371)。

作者	单位	E-mail
孙阳	重庆医科大学超声影像学研究所, 重庆 400010 ; 重庆医科大学附属第二医院超声科,	
郑元义	重庆医科大学超声影像学研究所, 重庆 400010 ; 重庆医科大学附属第二医院超声科,	
吴伟	重庆医科大学附属第二医院放射科, 重庆 400010	
牛诚诚	重庆医科大学超声影像学研究所, 重庆 400010 ; 重庆医科大学附属第二医院超声科,	
王志刚	重庆医科大学超声影像学研究所, 重庆 400010 ; 重庆医科大学附属第二医院超声科,	wzg62942443@163.com

摘要点击次数: 379

全文下载次数: 134

中文摘要:

目的 观察自制载超顺磁性氧化铁(SPIO)高分子微球(s-PLGA)对兔肝癌MR成像效果的影响。方法 双乳化法制备载SPIO的高分子微球。建立兔VX2肝癌模型12只,于肿瘤种植后21天将随机分为3组,分别经耳缘静脉注入s-PLGA(s-PLGA组)、生理盐水(生理盐水组)以及PLGA 1 ml/kg体质量(PLGA组)。注射前、后行MR平扫及增强扫描,分别测量肝实质和肿瘤的信号强度,计算肿瘤/肝实质信号强度比。扫描结束后处死动物,取肝癌标本行HE及普鲁士蓝染色,于显微镜下观察。结果 制备的s-PLGA呈规则球形,直径约800 nm。MR成像显示,注射s-PLGA后,肝实质信号强度显著下降,肿瘤信号无明显变化,肿瘤/肝实质信号强度比相对高,明显高于生理盐水及PLGA组($P<0.05$)。普鲁士蓝染色显示,s-PLGA组兔肝实质内有较多蓝染颗粒分布。结论 自制s-PLGA能有效增强兔肝脏肿瘤与正常组织间的信号强度对比,对诊断肝癌可能具有一定应用价值。

英文摘要:

Objective To investigate the influence of self-made superparamagnetic iron oxide (SPIO) loaded polymer microspheres (s-PLGA) on MR imaging for liver tumor in rabbits. **Methods** Double emulsion method was utilized to prepare the s-PLGA. Twenty-one days after implantation of VX2 tumor in liver, 12 rabbits were randomly and equally divided into three groups with the injection of s-PLGA (s-PLGA group), saline (saline group), and PLGA 1 ml/kg (PLGA group) via ear vein respectively. MR imaging was performed before and after injection of the above three agents, the signal intensity (SI) of liver parenchyma and liver tumor were measured, then the signal ratio of liver tumor to liver parenchyma was calculated before and after enhancement. After MR scanning, the rabbits were sacrificed, and Prussian blue and HE staining of the livers were done. **Results** The s-PLGA microcapsules were observed with regular spherical morphology, and the average size of s-PLGA was about 800 nm. After injection of s-PLGA, SI of liver parenchyma reduced markedly, while no significant changes of SI were found in liver tumors, and the signal ratio of liver tumor to liver parenchyma increased significantly compared with the other two groups ($P<0.05$). Accumulation of blue particles within liver parenchyma was observed in s-PLGA group. **Conclusion** The self-made s-PLGA microspheres can effectively enhance SI contrast between the tumor and normal liver tissue in rabbits, which may having potential application value in the detection of liver cancer.

[查看全文](#) [查看/发表评论](#) [下载PDF阅读器](#)

您是第6331963位访问者

版权所有:《中国医学影像技术》期刊社

主管单位:中国科学院 主办单位:中国科学院声学研究所

地址:北京市海淀区北四环西路21号大猷楼502室 邮政编码:100190 电话:010-82547901/2/3 传真:010-82547903

京ICP备12000849号-1

本系统由北京勤云科技发展有限公司设计