

论 著

肝脏炎性假瘤的增强CT、MRI表现特点与病理对照研究*

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【摘要】目的 分析肝脏炎性假瘤的增强计算机X线断层扫描(CT)、磁共振(MRI)表现特点及其与病理表现的关系。方法 收集我院经病理学检查证实的78例肝脏炎性假瘤患者临床资料,记录CT、MRI及二者联合对肝脏炎性假瘤的诊断准确率、CT及MRI增强扫描表现特点;根据肝脏炎性假瘤的病理表现分为中心坏死型、成片坏死型、纤维组织增多型、多组织混杂型,比较不同病理表现病灶的CT及MRI增强扫描表现特点。结果 CT、MRI及二者联合对肝脏炎性假瘤的诊断准确率分别为82.05%、83.33%、83.33%,不同检查方式诊断准确率无显著差异($P>0.05$)。根据CT、MRI增强扫描表现,可将其归为四周环形强化、无明显强化、环状+分隔状强化、不均匀持续强化共4种类型。不同病理表现病灶的CT及MRI增强扫描特点具有显著差异($P<0.05$),其中中心坏死型以四周环形强化居多(85.71%),成片坏死型以无明显强化居多(83.33%),纤维组织增多型以环状+分隔状强化居多(86.67%),多组织混杂型以不均匀持续强化居多(91.67%)。结论 肝脏炎性假瘤不同病理表现的CT及MRI增强扫描表现特点不同,应结合其他临床资料综合判断。

【关键词】肝脏炎性假瘤; CT; MRI; 增强扫描; 病理表现

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Manifestation Characteristics of Contrast-enhanced CT and MRI of Hepatic Inflammatory Pseudotumor in Comparison with Pathology*

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ABSTRACT

Objective To analyze the manifestation characteristics of contrast-enhanced computed tomography (CT) and magnetic resonance imaging (MRI) of hepatic inflammatory pseudotumor and their relationship with pathological manifestations. **Methods** The clinical data of 78 patients with hepatic inflammatory pseudotumor confirmed by pathological examination in the hospital were collected, and the diagnostic accuracy rates of CT, MRI and their combination for hepatic inflammatory pseudotumor and the manifestation characteristics of CT and MRI contrast-enhanced scans were recorded. According to the pathological manifestations of hepatic inflammatory pseudotumor, the lesions were classified into central necrosis type, patchy necrosis type, increased fibrous tissue type and multi-tissue mixed type. The manifestation characteristics of contrast-enhanced CT and MRI scans were compared among lesions of different pathological manifestations. **Results** The diagnostic accuracy rates of CT, MRI and their combination for hepatic inflammatory pseudotumor were 82.05%, 83.33%, and 83.33% respectively, but there was no significant difference in the diagnostic accuracy rate of different examination methods ($P>0.05$). According to the manifestations of contrast-enhanced CT and MRI scans, the lesions could be assigned to four types of circumferential annular enhancement, no obvious enhancement, annular+septal enhancement and heterogeneous continuous enhancement. There were significant differences in characteristics of contrast-enhanced CT and MRI scans among lesions of different pathological manifestations ($P<0.05$). The central necrosis type was mostly with circumferential annular enhancement (85.71%), the patchy necrosis was mostly without obvious enhancement (83.33%), the increased fibrous tissue type was mostly with annular+septal enhancement (86.67%), and the multi-tissue mixed type was mostly with heterogeneous continuous enhancement (91.67%). **Conclusion** Different pathological manifestations of hepatic inflammatory pseudotumor have different characteristics of contrast-enhanced CT and MRI scans, which should be comprehensively judged in combination with other clinical data.

Keywords: Hepatic Inflammatory Pseudotumor; CT; MRI; Contrast-enhanced Scan; Pathological Manifestations

肝脏炎性假瘤是一种慢性炎症细胞浸润及纤维结缔组织结节样增生的肝脏良性病变,但影像学表现与恶性病变相似,易误诊为肝细胞癌、转移性肝癌等,影响临床治疗^[1]。计算机X线断层扫描(computed tomography, CT)、磁共振(magnetic resonance imaging, MRI)是判断肝脏病变的常用影像学方法,肝脏炎性假瘤在CT平扫中表现为低密度或等密度影,边界欠清晰,在MRI平扫中肝脏炎性假瘤T₁WI、T₂WI等信号、低信号、高信号均可见,CT与MRI平扫时难以明确诊断,需要使用动态增强扫描进一步观察^[2]。肝脏炎性假瘤主要为门静脉供血,故增强扫描常在门脉期与延迟期表现出强化征象,但由于其病理表现随病程的变化而变化,病灶强化特点亦随之改变,使影像学诊断困难^[3]。因此,本研究就肝脏炎性假瘤CT及MRI增强扫描表现特点与病理表现的关系展开分析,为临床诊断提供参考数据。

1 资料与方法

1.1 一般资料 收集2019年1月至2021年12月我院经病理学检查证实的78例肝脏炎性假瘤患者临床资料。

纳入标准:行手术治疗或穿刺活检病理证实为肝脏炎性假瘤;单发病灶;病理学检查前1周内行CT及MRI检查;影像学及病理学检查前未接受放化疗等抗肿瘤治疗;影像学检查等资料完整。排除标准:对比剂过敏;严重心肾功能障碍;合并恶性肿瘤;存在癫痫、精神疾病等不能配合检查。78例肝脏炎性假瘤患者男性54例,女性24例;年龄28~69(54.19±10.02)岁;临床表现有69例肝区不适,15例伴发热,8例伴腹胀,另有9例患者无任何不适,为体检偶发。

1.2 方法 (1)CT:使用德国西门子64层螺旋CT扫描机,仰卧位腹部平扫后行增强扫描,对比剂为碘海醇(H10970322, 300mg I/mL, 扬子江药业集团有限公司),经肘静脉注射1.5mL/kg,注射速率3mL/s,注射对比剂30s、80s、180s后行动脉期、门脉期、延迟期3期增强扫描,管电压120kV,自动电流,螺距1.375,旋转时间0.5s/r,层厚及层间隔为5mm。(2)MRI:使用德国西门子3.0T MR扫描机,行上腹部横断位扫描,SE序列T₁WI成像TR 3.97ms, TE 1.26ms, FSE抑脂序列T₂WI成像TR 5500ms, TE 83ms,

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矩阵198×320; FSPGR正相T₁WI三期动态增强扫描, 对比剂为钆喷酸葡胺注射液(H10950272, 广州康臣药业有限公司, 7.04g/15mL), 经肘静脉注射, 注射剂量0.2mmol/kg, 注射速率3mL/s, 动脉期为20s, 门脉期为60s, 延迟期为90~120s。(3)图像分析: 由2名副高级职称放射科医师阅片, 分析病灶大小、边缘、密度、强化程度等, 判断不一致时二人讨论后得到统一结论。(4)病理表现: 参考《肝脏炎性假瘤的临床病理要点》^[4], 将肝脏炎性假瘤的病理表现分为中心坏死型(病灶中心肝细胞坏死, 周边肝实质炎性充血、水肿)、成片坏死型(病灶内大量凝固性坏死, 伴少量炎性细胞浸润, 无毛细血管及纤维组织增生)、纤维组织增多型(病灶纤维组织增多, 且增生的纤维组织间隔坏死组织)、多组织混杂型(病灶坏死组织较少, 伴大量炎性细胞浸润,

及成纤维细胞、血管内皮细胞、组织细胞增多, 少量的坏死组织与较多的纤维组织、肉芽组织相互混杂)。

1.3 统计学方法 采用SPSS 23.0软件处理、分析数据; 计数资料以n(%)表示, 采用 χ^2 检验; $P<0.05$ 为差异有统计学意义。

2 结果

2.1 CT、MRI及二者联合对肝脏炎性假瘤的诊断准确率比较 CT与MRI的诊断基本一致, 但有1例肝脏炎性假瘤CT增强扫描见病灶强度强化误判为少血供型肝细胞癌, 而MRI增强扫描见病灶内部分隔状强化, 判断为肝脏炎性假瘤, 诊断准确。CT、MRI及二者联合对肝脏炎性假瘤的诊断准确率分别为82.05%、83.33%、83.33%, 不同检查方式诊断准确率无显著差异($P>0.05$), 见表1。

2.2 CT、MRI增强扫描表现特点 根据CT、MRI增强扫描表现, 可将其归为四周环形强化、无明显强化、环状+分隔状强化、不均匀持续强化共4种类型, 具体表现见表2, 典型表现见图1。

2.3 不同病理表现病灶的CT及MRI增强扫描特点 不同病理表现病灶的CT及MRI增强扫描特点具有显著差异($P<0.05$), 其中中心坏死型以四周环形强化居多(85.71%), 成片坏死型以无明显强化居多(83.33%), 纤维组织增多型以环状+分隔状强化居多(86.67%), 多组织混杂型以不均匀持续强化居多(91.67%), 见表3。

表1 CT、MRI及二者联合的诊断准确率比较

诊断方式	n	准确	不准确
CT	78	64(82.05)	14(17.95)
MRI	78	65(83.33)	13(16.67)
CT+MRI	78	65(83.33)	13(16.67)
χ^2		0.060	
P		0.970	

表2 CT、MRI增强扫描表现特点

增强扫描表现类型	具体表现
四周环形强化	病灶中心无强化或低强化, 病灶周围见厚薄不均环状强化带
无明显强化	增强扫描各期均未见明显强化
环状+分隔状强化	病灶内部见连续或不连续的分隔状强化, 或病灶周围轻度环状强化
不均匀持续强化	病灶呈持续性不均匀强化, 延迟期强化程度增加, 病灶内部分隔或结节强化明显

表3 不同病理表现病灶的CT及MRI增强扫描特点比较

病理表现	n	四周环形强化	无明显强化	环状+分隔状强化	不均匀持续强化
中心坏死型	21	18(85.71)	2(9.52)	1(4.76)	0(0.00)
成片坏死型	18	3(16.67)	15(83.33)	0(0.00)	0(0.00)
纤维组织增多型	15	0(0.00)	0(0.00)	13(86.67)	2(13.33)
多组织混杂型	24	0(0.00)	0(0.00)	2(8.33)	22(91.67)
χ^2		52.223	52.716	50.284	61.256
P		<0.001	<0.001	<0.001	<0.001

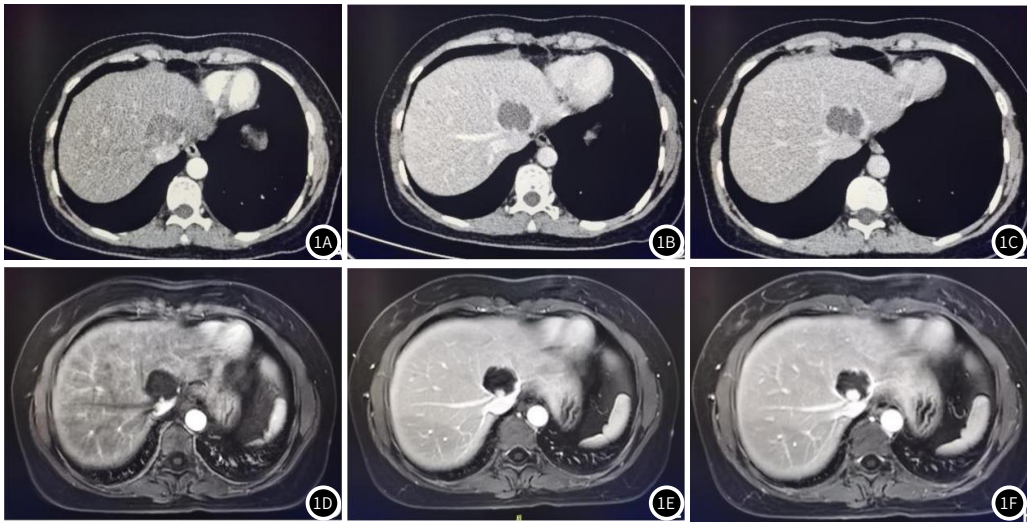


图1A-图1F CT及MRI典型增强扫描表现

图1A-图1C为CT增强扫描, 图1A为动脉期, 可见肝左内叶腔静脉前方低密度结节, 边缘轻微强化; 图1B为门脉期, 见边缘呈明显环形强化; 图1C为延迟期, 边缘环形强化无减退。图1D-图1F为MRI增强扫描, 图1D为动脉期, 见病灶边缘轻微强化; 图1E为门脉期, 病灶边缘呈环形强化, 病灶内部可见贴壁结节强化; 图1F为延迟期, 病灶内部结节强化更明显。

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囊侵犯、囊外扩张、Gleason分级高和治疗性手术后早期生化衰竭的高发生率有关,使得两位观察者对中央带癌的判读有较大的差异。

缺点:以临床中使用的穿刺病理标本为标准,而不是与手术组织切片相比较,局限性包括固有的活检取样错误、取样不足和由于肿瘤异质性导致的疾病病理学基础,穿刺活检约9.5%患者被认为根治性前列腺切除术后病理降级以及病理升级^[25] Gleason(3+4)和(4+3)肿瘤生物学行为及预后存在差异,未对其进行特定分级处理;未对分区进行详细比较。分析没有进行病灶水平或扇区水平的分析,有待将来进一步研究。

总而言之,PI-RADS v2.1版是比较好的质量控制方案减少前列腺影像分析过程中出现的混淆,对mpMRI的评分是适当的,且重复性好,并且随着2019 ISUP病理更新,在诊断显著性前列腺癌上更加贴近临床。在移行带及PI-RADS v2.1<3分和Gleason评分<7分(4-6分)上PI-RADSv 2.1评分一致性较好,PI-RADS v2.1版可以用来诊断有临床意义前列腺癌。当评分≥4时则意味着很有可能患有显著性前列腺癌,有助于对肿瘤诊断及预后的监测。

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3 讨论

肝脏炎性假瘤发病原因尚未阐明,可能与感染、免疫、染色体异常等因素有关,其病灶直径变化幅度大,多为单发肿块,病灶多发时可分布于肝两叶^[5]。肝脏炎性假瘤病理表现多样是其影像学诊断困难的主要原因,病灶早期以肝细胞坏死、炎性细胞浸润、病灶周边肝组织充血、水肿表现为主,随着病程进展,坏死组织增多,随后纤维组织增生,病灶进入修复期,坏死组织、纤维组织及肉芽组织相互交织,肉芽肿形成^[6]。

影像学特点与病灶病理表现密切相关^[7]。本研究根据病例表现特点分析增强扫描表现,发现不同病理表现病灶的CT及MRI增强扫描特点具有显著差异,中心坏死型以四周环形强化居多,成片坏死型以无明显强化居多,纤维组织增多型以环状+分隔状强化居多,多组织混杂型以不均匀持续强化居多。分析其原因为:早期病灶肝细胞坏死,血液供应减少,CT与MRI增强扫描显示无明显强化,同时病灶周边肝实质炎性充血、水肿,此部分增强扫描可见明显强化,即四周环形强化表现;随着肝细胞坏死的扩大,炎性细胞浸润减少,病灶内部及周围均无血液供应,增强扫描可见各期均无强化,即本文的无明显强化表现;随后,纤维组织大量增生,其中间隔坏死组织,纤维组织中毛细血管较多,增强扫描可见连续或不连续的分隔状强化;最后,肉芽肿形成,各组织相互交织,肉芽组织与纤维组织含较多毛细血管,故增强扫描可见病灶内部分隔或结节强化明显,呈不均匀持续强化^[8]。

目前,CT及MRI增强扫描诊断肝脏炎性假瘤仍有较高误诊与漏诊率^[9]。本研究发现,CT与MRI的诊断基本一致,CT、MRI及二者联合对肝脏炎性假瘤的诊断准确率分别为82.05%、83.33%、83.33%,并无显著差异。总结CT及MRI增强扫描判断错误的原因

为:肝脏炎性假瘤影像学表现复杂且多样,与多种肝脏良性、恶性病灶表现相似,如少血供型肝细胞癌表现为病灶无明显强化,与肝脏炎性假瘤易混淆,转移性肝癌也可见病灶周围环状增强,影响判断,需要结合肝硬化、肝炎或原发恶性肿瘤病史等综合评估。因此,使用CT及MRI增强扫描诊断肝脏炎性假瘤时,应结合患者病史、实验室检查等信息,综合判断,以提高诊断准确率^[10]。

综上所述,CT及MRI增强扫描诊断肝脏炎性假瘤的准确率仍待加强,不同病理表现的强化特点不同,可结合病史等其他临床资料综合判断。

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