

胆囊癌及其病灶局部侵犯的MRI诊断及影像学特征

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【摘要】目的:探讨胆囊癌及其病灶局部侵犯的MRI影像学特征及在胆囊癌临床诊断中的应用价值。**方法:**选择阜新矿业(集团)有限责任公司总医院2016年6月~2018年6月收治的70例胆囊癌患者进行前瞻性研究,所有患者进行MRI与螺旋CT检查。以手术病理或活检病理结果为基准,计算两种检查方法诊断胆囊癌的敏感性与特异性及局部组织器官侵犯(包括胆管受侵、肝脏直接受侵、肝门淋巴结受侵、胰腺受浸润)的检出率并进行比较。总结MRI诊断胆囊癌的影像学表现特征。**结果:**70例患者中经手术病理或活检证实胆囊癌60例、胆囊良性肿瘤10例。MRI诊断胆囊癌的敏感性为96.67%(58/60),高于螺旋CT的85.00%(51/60),差异有统计学意义($P<0.05$)。MRI诊断胆囊癌的特异性为80.00%(8/10),螺旋CT为60.00%(6/10),差异无统计学意义($P>0.05$)。MRI对胆管受侵与肝脏直接受侵的检出率分别为100%(30/30)与94.12%(32/34),高于螺旋CT的80.00%(24/30)与73.53%(25/34),差异有统计学意义($P<0.05$)。**结论:**MRI诊断胆囊癌具有较高的敏感性与特异性,且有利于准确评估肿瘤局部浸润范围,可提高对病灶局部侵犯的检出率,较螺旋CT有更大的临床价值,值得推广应用。

【关键词】胆囊癌;局部侵犯;螺旋CT;MRI;敏感性;特异性

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MRI features and diagnosis of gallbladder carcinoma and local invasion of gallbladder carcinoma

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Abstract: Objective To explore the magnetic resonance imaging (MRI) features of gallbladder carcinoma and local invasion and its application in the diagnosis of gallbladder carcinoma. **Methods** A prospective study on 70 patients with suspected gallbladder carcinoma admitted to Fuxin Mining Group General Hospital from June 2016 to June 2018 was conducted. All patients underwent MRI and spiral CT examinations. Based on the pathological results obtained by surgery or biopsy, two inspection methods were used to diagnose the sensitivity and specificity of gallbladder carcinoma. The detection rates of local invasions, including bile duct invasion, direct infiltration into the liver, hilar lymph node invasion and infiltration into the pancreas, were compared. Finally, the MRI features for the diagnosis of gallbladder carcinoma were summarized. **Results** The results of surgery or biopsy showed that there are 60 cases of gallbladder carcinoma and 10 cases of benign gallbladder tumors. The sensitivity of MRI in the diagnosis of gallbladder carcinoma was 96.67% (58/60), which was higher than 85.00% (51/60) of spiral CT, with statistical differences ($P<0.05$). However, the specificity of MRI in the diagnosis of gallbladder carcinoma was similar to that of spiral CT, without statistical differences [80.00% (8/10) vs 60.00% (6/10), $P>0.05$]. The detection rates of MRI on bile duct invasion and direct invasion of the liver were 100% (30/30) and 94.12% (32/34), respectively, higher than 80.00% (24/30) and 73.53% (25/34) of spiral CT, with statistical differences ($P<0.05$). **Conclusion** MRI for the diagnosis of gallbladder carcinoma has high sensitivity and specificity, which is conducive to accurately assess the extent of local invasion of the tumor and improve the detection rate of local invasion of the tumor. MRI has greater clinical value than spiral CT and is worthy of popularization and application.

Keywords: gallbladder carcinoma; local invasion; spiral CT; magnetic resonance imaging; sensitivity; specificity

前言

胆囊癌为胆道系统常见肿瘤,发病率0.6%~3%,早

期症状隐匿,早期诊断较困难,多数患者确诊时往往已处于中晚期,多存在局部组织器官侵犯,预后差,5年生存率不足20%^[1]。早发现、早诊断胆囊癌对改善患者预后具有重要意义,选择有效的影像学方法提高诊断准确率成为当前研究重点。超声在胆囊病变的诊断中应用广泛,但其对胆囊癌局部组织浸润范围的显示较差^[2];

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螺旋CT的软组织分辨率高、扫描速度快,亦常被用于胆囊癌的临床诊断^[3]。专家发现,MRI在胆囊病变中的诊断效能已逐渐超过螺旋CT,可有效评价胆囊癌局部组织侵袭范围及脏器转移,同时还可通过磁共振胰胆管成像(MRCP)对胆囊形态、胆管解剖结构进行三维立体、多角度显示,对胰管病变也有良好的显示效果^[4]。以往研究多集中于超声、螺旋CT对胆囊癌的诊断价值,关于MRI与其他检查方法的比较研究则较少。本研究以70例拟诊胆囊癌患者作为研究对象进行前瞻性研究,均行MRI检查及螺旋CT检查,对比两种检查方法的诊断价值,并总结胆囊癌及其病灶局部侵犯的MRI影像学特征表现,现报道如下。

1 资料与方法

1.1 临床资料

选择阜新矿业(集团)有限责任公司总医院2016年6月~2018年6月收治的70例拟诊胆囊癌患者进行前瞻性研究,其中男32例、女38例;年龄38~79岁,平均 (56.12 ± 8.98) 岁。纳入标准:(1)经手术病理或活检病理确诊;(2)研究经医院伦理委员会批准和同意。排除标准:(1)伴胆囊穿孔、严重感染者;(2)临床资料不完善者。

1.2 检查方法

所有患者均于入院后进行MRI与螺旋CT检查。

1.2.1 MRI检查 检查仪器为西门子公司生产的1.5T磁共振,检查前禁水6 h,扫描序列包括轴位T₁WI、T₂WI、FS T₂WI、多时相VIBE序列,MRCP通过T₂加权TSE序列采集,以右前35°为冠状位,垂直位为中轴,以5°间隔采集12幅成像,范围包括胆囊、肝总管与胆总管区域,胆囊病灶或胆管梗阻位置进行轴位

扫描,呼吸门控成像。检查完毕后将所得图像传送至工作站,行最大密度投影、三维重建技术。

1.2.2 螺旋CT检查 检查仪器为GE公司生产的128排螺旋CT诊断仪,检查前饮用生理盐水800 mL充盈消化道。由膈顶扫描至腰₂下缘,层厚0.5 mm、层距0.5 mm。平扫后静注碘普罗胺针100 mL行3期扫描,后进行最大密度投影、三维重建、多平面重建技术。

1.3 观察指标

记录所有患者的病理结果及两种检查方法对胆囊癌、局部组织器官侵犯(包括胆管受侵、肝脏直接受侵、肝门淋巴结受侵、胰腺受浸润)的诊断结果。总结MRI诊断胆囊癌的影像学特征。

1.4 统计学方法

采用SPSS19.0处理数据,计数资料用 $n(\%)$ 表示,采取 χ^2 检验或连续校正 χ^2 检验,以 $P < 0.05$ 为差异有统计学意义。

2 结果

2.1 两种检查方法与病理结果对照

70例患者中经手术病理或活检证实胆囊癌60例、胆囊良性肿物10例。MRI诊断胆囊癌的敏感性为96.67%(58/60),高于螺旋CT的85.00%(51/60),差异有统计学意义($\chi^2 = 4.904, P = 0.027$)。MRI诊断胆囊癌的特异性为80.00%(8/10),螺旋CT为60.00%(6/10),差异无统计学意义($\chi^2 = 0.238, P = 0.626$)。

2.2 两种检查方法对局部组织器官侵犯的诊断结果比较

MRI对胆管受侵与肝脏直接受侵的检出率均高于螺旋CT,差异有统计学意义($P < 0.05$),见表1。

表1 两种检查方法对局部组织器官侵犯的诊断结果比较

Tab.1 Comparison of the diagnostic results of two kinds of examination methods for local tissue and organ invasions

检查方法	胆管受侵(30例)		肝脏直接受侵(34例)		肝门淋巴结受侵(14例)		胰腺受浸润(9例)	
	检出例数	检出率/%	检出例数	检出率/%	检出例数	检出率/%	检出例数	检出率/%
MRI	30	100.00	32	94.12	13	92.86	9	100.00
螺旋CT	24	80.00	25	73.53	10	71.43	7	63.00
χ^2 值	4.630*		5.314		0.974*		0.563*	
P 值	0.031		0.021		0.324		0.453	

*连续校正 χ^2 检验

2.3 MRI诊断胆囊癌的影像学特征

胆囊癌根据原发形态可分为结节型、厚壁型、实变型,本研究中分别为19、24、17例。①结节型胆囊

癌的MRI主要表现为胆囊壁向腔内突出,基底可宽窄不一,边界清晰,增强扫描可见结节状软组织早期明显强化;MRCP上胆囊形态不规则,有充盈缺损或

部分囊腔消失。②厚壁型胆囊癌的MRI主要表现为胆囊壁不规则的局限性或弥漫性增厚,增强扫描示增厚的胆囊壁不均匀强化;MRCP示胆囊不规则。③实变型胆囊癌的MRI主要表现为胆囊区不规则肿块,胆囊腔充填,原发病灶在T₁WI上低信号,T₂WI、STIR上高信号或混杂信号,增强扫描明显强化,信号不均(图1);MRCP上胆囊多不显影。

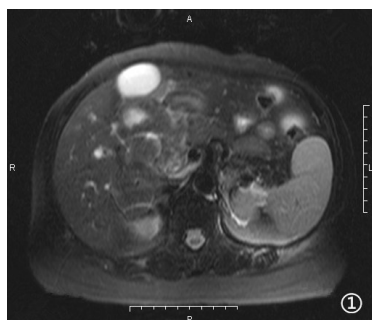


图1 T₂WI胆囊窝区见软组织肿块,呈不均匀高信号,与邻近肝脏界限不清

Fig.1 T₂WI showed a soft tissue mass at the gallbladder fossa area, with non-uniform high signals, and unclear boundary with the adjacent liver

2.4 胆囊癌患者邻近结构受侵的MRI影像学表现

本研究中30例胆管受侵、34例肝实质受侵、9例胰腺受浸润,MRI主要表现为增厚的胆囊壁与上述邻近结构的脂肪界面消失和(或)局部形成肿块(图2);14例肝门淋巴结受侵,主要表现为肝门区软组织信号结节,部分融合成团。



图2 同一患者冠状位显示胆管受侵,肝内胆管“软藤状”扩张
Fig.2 Coronal position of the same patient showed bile duct invasion and "soft vine" expansion of intrahepatic bile duct

3 讨论

原发性胆囊癌多起源于胆囊底部与体部,发病可能与胆结石、胆囊炎等因素有关^[5]。超声凭借其无创、费用低、操作简便等优势成为胆囊疾病的首选检

查方法^[6],但其在胆囊癌诊断中的应用有较大局限之处,如无法确定胆囊癌局部浸润范围,对息肉与腺肌病的鉴别有较大难度,易造成误诊^[7]。探讨更有效的检查方法提高胆囊癌的诊断准确性具有重要意义。

本研究将MRI与螺旋CT诊断胆囊癌的效能进行对比,结果发现MRI相较螺旋CT在病灶诊断及局部组织器官侵犯诊断的准确性均更高,是一种相对优势更大的胆囊癌检查方法。拟诊胆囊癌患者行腹部螺旋CT,可发现胆囊壁明显强化,门脉期可持续强化,有利于诊断原发性胆囊癌。胆囊癌的MRI扫描多表现为T₁WI稍低或低信号,T₂WI不均匀高信号,增强扫描可见胆囊内、胆囊壁强化软组织信号。目前认为,螺旋CT与MRI对胆囊癌原发灶的显示类似,MRI间接征象优于螺旋CT是其对胆囊癌原发灶的诊断准确性高于螺旋CT的主要原因^[8-9]。证据表明,胆囊癌的发生与结石等有密切联系,且患者多合并肝内、外胆管扩张^[10]。本研究中60例胆囊癌患者中,有12例患者合并胆囊结石,均在MRI上表现为T₂WI低信号,且由于结石多被胆汁包绕,有利于胆囊癌的鉴别诊断。螺旋CT中则有4例胆囊结石未检出。肝内、外胆管扩张在MRI上多表现为肝内外胆管“软藤状”扩张^[11],有利于胆囊癌的确诊。

胆囊壁生理解剖结构特殊,仅有黏膜层与肌层直接相连,而无黏膜下组织,且肌层薄弱,使胆囊癌易侵犯肌层而突出浆膜外,造成周围局部组织器官受累^[12-13]。本研究结果显示,胆囊癌患者中以胆管受侵及肝脏受侵最常见,达50%左右,与胆囊肿物、局部肿大淋巴结推挤,或肿瘤本身浸润胆管等有关^[14-15]。螺旋CT主要通过平衡期胆道与邻近强化组织的密度对比判断胆管受累情况^[16]。而MRI对胆囊癌周围组织器官浸润范围的显示优于螺旋CT,可多平面、多序列显示周围组织受累及判断转移^[17-18]。此外,MRCP可清晰显示轻微胆管阻塞与胆管移位、挤压^[19],这是MRI胆囊癌患者胆管受侵与肝脏直接受侵检出率高于螺旋CT的主要原因。此外胆囊癌出现淋巴结转移的几率也较高。本研究60例胆囊癌患者中14例肝门淋巴结受侵,螺旋CT与MRI检出的淋巴结短径均在1 cm以上,漏诊的患者经病理证实短径均 ≤ 0.8 cm,提示影像学对较小的淋巴结转移的诊断不够敏感,这一问题目前缺乏有效的解决手段^[20]。有研究认为,淋巴结受侵的漏诊与影像学检查距手术时间的间隔较长也有一定关系,不排除小的淋巴结转移发生在影像学检查之后的可能,故影像学检查后确诊的胆囊癌患者应尽早施行手术^[21]。随着MRI在二级医院的普及,原发性胆囊癌的诊断

水平将获得明显提高。

综上所述,胆囊癌及其病灶局部侵犯的MRI影像学具有较明显特征,且对间接征象的显示也优于螺旋CT,对胆囊癌病灶及周围局部组织受侵的诊断准确率均高于螺旋CT,是更理想的检查方法。

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