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（收稿日期:2013-05-03）

·临床医学图像·

脑脓肿

doi:10.3969/j.issn.1672-6731.2013.07.018

Encephalopyosis

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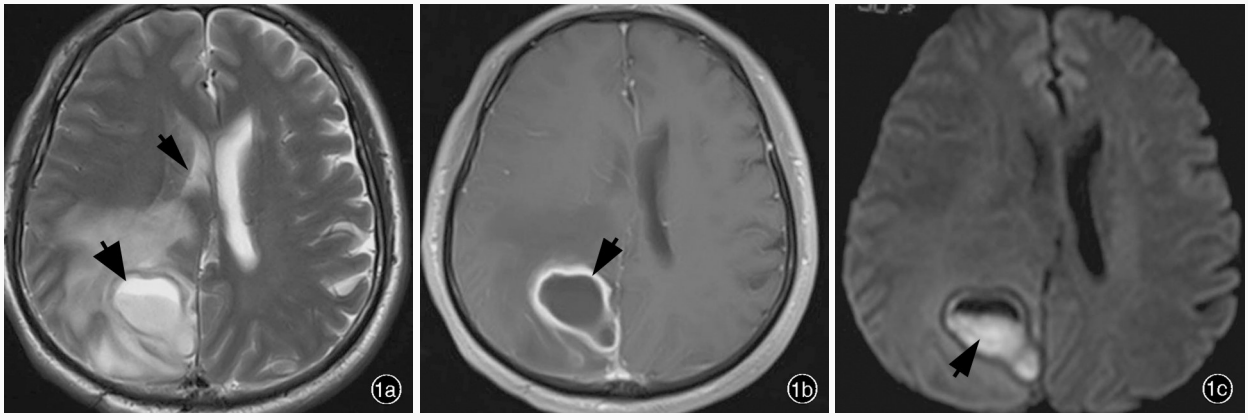

图1 男性患者,55岁。临床诊断为脑脓肿 1a 横断面T_2WI显示,右侧顶叶不规则囊性占位性病变,病灶中心呈高信号、囊壁为略低信号,囊壁光滑、薄厚均匀,病灶周围组织明显水肿(粗箭头所示),右侧侧脑室受压(细箭头所示) 1b 横断面T_1WI增强扫描显示,病灶中心呈低信号,周围组织呈明显环形强化(箭头所示) 1c 横断面DWI显示囊液呈高信号(箭头所示)

Figure 1 A 55-year-old male patient was diagnosed as encephalopyosis. Axial T_2WI showed an irregular cystic lesion with hyperintense in central area surrounded by a well-defined hypointense capsule with obvious surrounding edema located in right parietal lobe (thick arrow indicates). The right lateral ventricle was compressed (thin arrow indicates, Panel 1a). Axial contrast T_1WI showed hypointensity in central focus and apparent ring-shaped enhancement in peripheral tissue (arrow indicates, Panel 1b). Axial DWI revealed cystic fluid with hyperintensity (arrow indicates, Panel 1c).

脑脓肿的形成需经历急性炎症反应、化脓和包膜形成等阶段。化脓性细菌感染脑组织,引起化脓性脑炎,如不及时治疗,病灶中心液化形成脓液,脓腔周围出现肉芽组织及血管丰富的包膜,即脑脓肿形成。感染源以化脓性细菌为主,部分为隐球菌、放线菌、其他真菌或原虫(如阿米巴原虫)。

脑脓肿的影像学分期包括脑炎早期、脑炎晚期、囊性变早期和囊性变晚期。各期影像学表现不尽相同。(1)CT表现:在脑炎早期和晚期,病灶及周围组织水肿呈不规则形、边界模糊的低密度影,病灶无明显强化或呈不规则斑片状强化;在化脓和脓肿形成期,脓腔为低密度区,周围是环形囊壁,呈等或略高密度。增强扫描显示,囊壁呈薄层环状强化,部分强化环的白质侧较薄、灰质侧较厚。(2)MRI表现:在脑炎早期,病灶呈边界模糊的长T_1、长T_2信号,其内可见斑片状强化。在脑炎晚期,病灶中心T_1WI呈低信号,边缘为等或稍高信号;T_2WI呈高信号,边缘为低信号,水肿及占位效应明显,可见明显但不规则的边缘强化。在囊性变早期,脓液呈长T_1、长T_2改变,囊壁T_1WI呈等或略高信号,T_2WI为等或略低信号(图1a),表现为清晰的薄壁强化(图1b)。囊性变晚期,脓腔塌陷,囊壁增厚,水肿及占位效应减轻。MRI对脑脓肿的诊断较CT敏感,更易区分病灶内的液化、坏死和脑炎等成分,更早检出脓肿向脑实质外的扩展(如硬膜下脓肿),为首选的影像学检查方法。由于脓腔内蛋白性脓液妨碍了水分子的扩散,扩散加权成像(DWI)呈高信号(图1c),而其他大多数囊性变区域和肿瘤坏死区为低信号,DWI序列用于鉴别诊断存在优势;磁共振波谱成像(MRS)能够显示脓腔内特异性氨基酸峰及乳酸峰,对定性诊断有一定帮助。少数脑脓肿影像学表现不典型,易造成误诊,需结合临床资料;对于处于囊性变期的脑脓肿需注意与胶质瘤、颅内转移瘤、淋巴瘤、颅内血肿、术后残腔、多发性硬化、脱髓鞘假瘤等类似环形强化的病变相鉴别。

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