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孤立性延髓脓肿的临床诊治分析

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[摘要] **目的:** 分析孤立性延髓脓肿的临床表现、诊治及预后。**方法:** 对 2014—2017 年海军军医大学附属长海医院神经内科确诊的 2 例孤立性延髓脓肿患者的临床资料进行回顾分析。**结果:** 患者分别为 48 岁女性、39 岁男性, 均以急性头晕起病, 病程 6~10 d, 可伴有饮水呛咳(2/2)、声音嘶哑(2/2)、视物成双(1/2), 查体可见患侧咽反射迟钝或消失(2/2)、对侧浅感觉障碍、肌力减退(1/2)、闭目难立征阳性(1/2)。病程中曾有低热。头 MRI 平扫+增强示左侧延髓小片状(或结节状)稍长 T₁、稍长 T₂ 信号, 磁共振成像液体衰减反转恢复序列(fluid attenuated inversion recovery, FLAIR)呈高信号, 扩散加权成像(diffusion-weighted imaging, DWI)呈高信号, 增强后边缘呈环形强化。感染源不明。给予 2 种以上能透过血脑屏障的广谱抗生素联合抗感染治疗后, 患者临床表现及影像学均较前明显好转。出院后随访, 恢复良好, 未复发。**结论:** 延髓脓肿极罕见, 部分病因不明, 细菌培养可能阴性, 较典型的影像表现为囊壁光滑的环形强化占位灶。对于脓肿位置深或位于功能区、直径较小、薄壁者首选单纯药物治疗, 静脉应用血-脑屏障渗透性好的广谱抗生素, 并根据患者临床症状及脓腔变化进行调整。

[关键词] 延髓脓肿; 脑干脓肿; 孤立性; 影像; 治疗

[中图分类号] R 742 **[文献标志码]** A

Clinical diagnosis and treatment of solitary medulla oblongata abscess

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[Abstract] **Objective:** To analyze the clinical features, diagnosis, treatment, and prognosis of solitary medulla oblongata abscess. **Methods:** From 2014 to 2017, clinical data of 2 patients diagnosed as solitary medulla oblongata abscess were retrospectively analyzed. **Results:** One patient was female aged 48 years, and the other patient was male aged 39 years. The disease duration of 2 cases ranged from 6 to 10 days. The first symptom was acute dizziness, which may be accompanied by choking (2/2), hoarseness (2/2), or diplopia (1/2). Nervous system examination showed slow or disappeared gag reflex at the affected side (2/2), disorders of shallow sensation disturbances and limb paralysis at the contralateral side (1/2), and positive Romberg's sign (1/2). Low fever occurred during the course of the disease. Computed tomography and magnetic resonance angiography showed no obvious abnormality. Abnormal signal was found in the left medulla oblongata on magnetic resonance imaging, and the edges showed ring reinforcement after enhancement. Cerebrospinal fluid examination showed no significant abnormality. The source of infection was unknown. Given two or more broad-spectrum antibiotic that readily penetrate the blood-brain-barrier, the clinical manifestations and imaging were significantly improved. The patients were followed up with good outcomes. **Conclusions:** The medulla oblongata is extremely rare with some unknown etiology. Negative bacterial cultures may be associated with limited lesions. The typical images show cystic space-occupying lesions with a smooth inner wall and ring-enhancement. For abscess which is deep or in functional areas, and with smaller diameter or thin wall, intravenous administration of antibiotics is the first choice. Broad-spectrum antibiotics that easily penetrate the blood-brain-barrier should be adjusted according to the changes of patient's clinical symptoms and abscess cavity.

[Key Words] medulla oblongata abscess; brain stem abscess; solitary; image; treatment

脑脓肿是颅内严重的局部化脓性感染, 其中脑干脓肿不足 1%^[1-4], 延髓脓肿更为罕见, 临床诊治

缺乏经验。海军军医大学长海医院神经内科收治 2 例孤立性延髓脓肿典型患者, 现将诊治经验分析如

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下,供同行参考,以提高对此类疾病的诊治水平。

1 资料与方法

1.1 患者1入院情况 患者女性,48岁,汉族,因“突发头晕伴饮水呛咳10 d”门诊拟“脑梗死”于2014年5月5日收入院。查体:神清语利,左侧睑裂略小。双侧瞳孔等大同圆,直径约2.5 mm,直接、间接对光反射均灵敏,左侧颜面部触觉、痛觉、冷热觉减退。双侧额纹对称,双侧闭目有力,双侧鼻唇沟对称,示齿口角无偏斜,鼓腮无漏气。伸舌居中,悬雍垂偏右,吞咽困难,声音嘶哑,左侧咽反射迟钝。洼田饮水试验3分。四肢肌张力正常,右上肢肌力4级,余肢体肌力5级。双侧指鼻试验、快

复轮替试验及跟膝胫试验均协调准确,Romberg征阴性,串连步态不能完成。右侧躯干及肢体痛温触觉减退,关节位置觉、振动觉未见异常。既往糖尿病史,糖化血红蛋白7.6%。血常规、生化、凝血、风湿免疫、肿瘤标志物、输血前3项、尿粪常规未见明显异常。2014年5月6日,头颅MRI平扫+增强(图1)示左侧延髓新发梗死可能性大,颈部磁共振血管成像(MR angiography, MRA)未见明显异常。给予抗血小板、调脂、改善循环等治疗效果差,一过性体温升高,最高37.8℃。脑脊液检查:无色、透明,细胞总数 $2 \times 10^6/L$,葡萄糖3.5 mmol/L、氯化物117 mmol/L、总蛋白0.44 g/L,涂片未查见细菌,病毒、抗酸染色均未见明显异常。

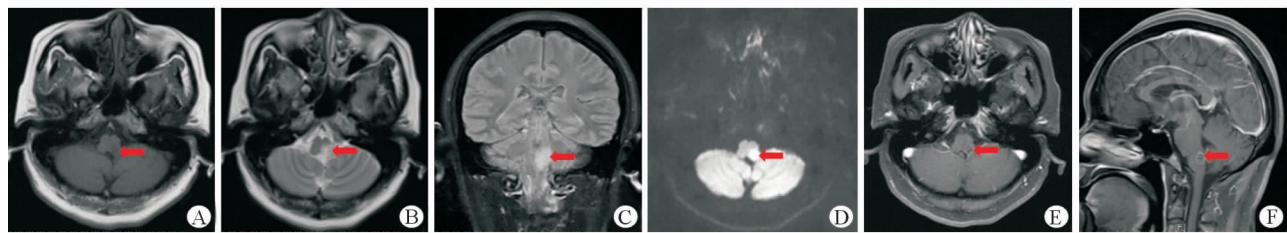


图1 患者1治疗前头颅MR平扫+增强

A:桥脑、延髓左侧可见团片状长T₁信号灶;B:桥脑、延髓左侧可见团片状长T₂信号灶;C:磁共振成像液体衰减反转恢复序列(fluid attenuated inversion recovery, FLAIR)呈片状高信号;D:扩散加权成像(diffusion-weighted imaging, DWI)呈高信号;E、F:增强后边缘呈环形强化

1.2 患者2入院情况 患者男性,39岁,汉族,因“头晕、视物成双6 d”于2017年3月27日入院,曾有一过性体温升高至37.6℃。查体:神志清楚,言语低微,视野无缺损;视物有重影,双眼球位置、各方向运动正常,双眼睑无下垂,双侧瞳孔等大同圆,直径约2.5 cm,直接、间接对光反射均灵敏,发“啊”音左侧软腭上抬无力,悬雍垂偏右,吞咽困难,声音嘶哑,左侧咽反射消失,洼田饮水试验2分。四肢肌力5级,双侧共济运动稳准,Romberg征阳性,串连步态向左侧倾倒。双侧深浅感觉对称,双侧病理征阴

性,脑膜刺激征阴性。颈部MRA未见明显异常。2017年3月30日,脑干薄层MR平扫+增强(图2)示左侧延髓异常信号,符合脓肿改变。脑脊液检查:无色、透明,细胞总数 $2 \times 10^6/L$,葡萄糖3.3 mmol/L、总蛋白0.49 g/L,墨汁染色未查见隐球菌,细菌涂片、培养未查见细菌,脑脊液寡克隆带电泳阴性,脑脊液IgA 6.5 mg/L、脑脊液IgG 82.5 mg/L,脑脊液病毒、抗酸染色均未见明显异常。T-SPORT、肝肾功电解质血脂、血常规、输血前3项、肿瘤标志物、糖化血红蛋白、尿粪常规、凝血未见异常。

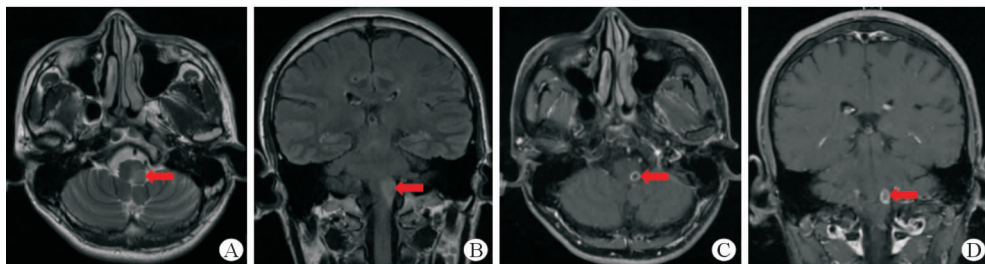


图2 患者2治疗前脑干MR平扫+增强

A:延髓左侧见结节状T₂高信号;B:FLAIR呈片状高信号;C、D:增强后呈明显环形强化

2 结果

2.1 治疗效果及预后 患者分别为48岁女性、39岁男性,均以急性头晕起病,病程6~10 d,可伴有饮水呛咳(2/2)、声音嘶哑(2/2)、视物成双(1/2),查体可见患侧咽反射迟钝或消失(2/2)、对侧浅感觉障碍、肌力减退(1/2)、闭目难立征阳性(1/2)。病程中曾有低热。头颅CT未见明显异常。头颅MRI平扫+增强示左侧延髓小片状(或结节状)稍长T₁、稍长T₂信号,FLAIR呈高信号,DWI呈高信号,增强后边缘呈环形强化。颈MRA未见明显异常。脑脊液压力、常规、生化及细菌涂片、培养等检查未见明显异常。感染源不明。给予2种以上能透过血脑屏障的广谱抗生素联合抗感染治疗后,临床表现及影像学较前明显好转。出院后随访,恢复良好,未

复发。

2.2 患者1治疗方案 患者1给予甲硝唑、青霉素等药物治疗后,症状有所好转,先后住院3次,共给予甲硝唑100 mL 2 h×37 d、头孢曲松2 g q12 h×15 d、青霉素400万U q6 h×33 d、400万U q8 h×15 d。2014年10月11日,复查头MR增强(图3)示左侧延髓脓肿较前明显吸收,遗留轻微饮水呛咳,洼田饮水试验2分。

2.3 患者2治疗方案 患者2头孢过敏,给予青霉素400万U q8 h×17 d、万古霉素1 g q12 h×18 d,美罗培南1 g q8 h×4 d。2017年4月10日,复查脑干平扫及增强MR(图4)示延髓左侧异常信号,符合炎症吸收期改变,较2017年3月30日范围减小。头晕、视物成双改善后出院,后至当地医院继续万古霉素、美罗培南治疗1个月,无明显后遗症状。

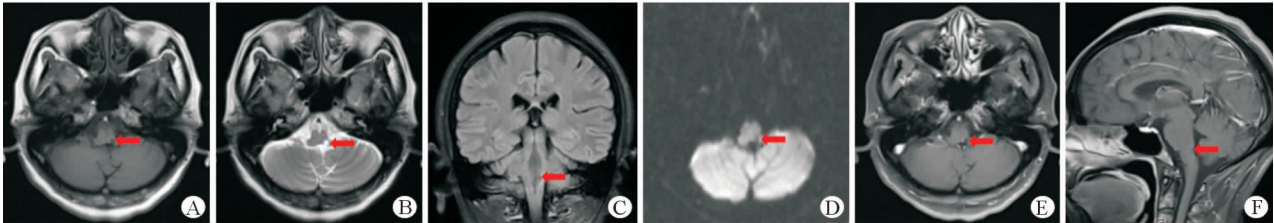


图3 患者1治疗后头颅MR平扫+增强

A:延髓左侧可见小斑片状长T₁信号灶;B:延髓左侧可见小斑片状长T₂信号灶;C:FLAIR呈低信号;D:DWI未见受限;E、F:增强后边缘可疑点状强化

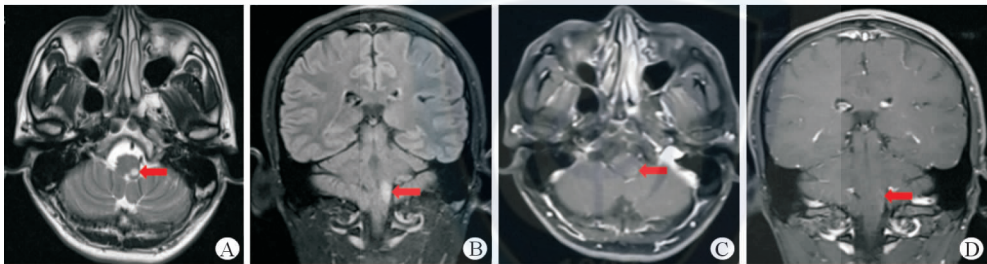


图4 患者2治疗后脑干MR平扫+增强

A:延髓左侧见T₂高信号;B:FLAIR高信号;C、D:增强稍有环形强化

3 讨论

孤立性脑干脓肿是一种罕见的致命性颅内感染,易误诊为急性脑卒中合并全身感染,占有颅内脓肿不足1%^[1-4],好发于桥脑,其次是中脑,少见延髓^[5-6],可由血行感染、邻近器官感染播散引起,约半数属为隐源性脑脓肿^[7],常与免疫相关疾病如艾滋病和糖尿病相关^[8]。本研究2例既往无明确感染史,病因不明,其中1例既往患糖尿病。

延髓脓肿的临床表现取决于脓肿大小和感染的阶段,症状可能包括颅神经麻痹、轻偏瘫、吞咽困

难、语言障碍及头痛、恶心等非特异性症状。由于解剖部位特殊,即使是小脓肿也可导致严重后果,大脓肿可引起第四脑室脑积水^[9]。

影像学技术的不断进步为脑脓肿的早期诊断与鉴别诊断提供了有效手段。CT和MRI是诊断脑脓肿的主要影像学方法。典型的成熟期脑脓肿CT显示境界不清、形态不规则的低密度区,增强后环形强化。MRI中脓肿表现为T₁低信号、T₂高信号,增强后可见环形强化,脓肿壁完整、光滑、均匀。脓肿包膜在T₁WI显示不清,在T₂WI为光滑、薄壁的低信号“暗带”,为脓肿包膜的特征性表现^[10]。脓

肿腔在 DWI 上呈高信号,表观弥散系数(apparent diffusion coefficient, ADC)图呈低信号,真菌脓肿 ADC 值高于细菌性脓肿^[11]。氢质子磁共振波谱成像(¹H magnetic resonance spectroscopy, ¹H-MRS)、灌注成像(PMRI)、磁敏感成像(susceptibility weighted imaging, SWI)等也能为脑脓肿诊断和鉴别诊断提供帮助^[12]。脓肿坏死中心缺乏正常脑组织的代谢产物,胞质氨基酸(amino acid, AA)和乳酸水平升高,是诊断脑脓肿的关键性指标,但检测不到 AA 峰并不能排除脑脓肿^[13]。PMRI 通过评估组织的血管容积以及肿瘤血管的增生情况,可鉴别脑内高级别胶质瘤、单发脑转移瘤和脑脓肿。单发脑转移瘤周围水肿区的局部脑血容量(regional cerebral blood volume, rCBV)降低,胶质瘤增高,而脑脓肿则无明显改变。脑肿瘤壁的 rCBV 则明显高于脑脓肿壁^[5]。脓肿病灶边缘外侧在 SWI 表现为完整光滑的低信号环,病灶边缘内侧则是比脓腔信号高的环,即脓肿边缘出现双环征,可作为脑脓肿区别于坏死性胶质瘤的特异性影像特征^[14-15]。本研究患者头颅 CT 未见明显异常,头颅 MRI 平扫+增强示左侧延髓小片状(或结节状)稍长 T₁、稍长 T₂ 信号,FLAIR 呈高信号,DWI 呈高信号,增强后边缘呈环形强化。脑脊液压力、常规、生化及细菌涂片、培养等检查未见明显异常,可能与病灶局限有关。

治疗上,对于中耳炎、牙龈炎、先天性心脏病等脑脓肿潜在诱因,需及时请专科处理;对于糖尿病、免疫抑制或缺陷等基础疾病及易感因素也应积极干预。广谱抗生素的使用和手术方式的改进则改善了脑干脓肿的预后^[9]。无明显颅内压增高、脓肿较小(直径<2 cm)的脑干脓肿可尽早经验性使用血脑屏障透过性好的广谱抗生素,并及时根据细菌培养药敏试验、影像学复查及症状变化进行调整,推荐静脉应用抗生素 6~8 周,复查 MRI 若脓腔未消失或 DWI 显示脓腔不接近脑脊液信号,即使体温正常,也应继续静脉应用抗生素^[16]。万古霉素或碳青霉烯类药物推荐作为脑脓肿的标准治疗方法,大剂量美罗培南亦可考虑^[17]。若临床症状恶化、脓肿增大,或是多房性、靠近表面、大型脓肿(直径>2 cm),应考虑手术治疗,立体定向抽吸、显微外科引流可降低感染播散的风险,且定向穿刺更适合深部、多发性和位于功能区的脓肿^[18]。对反复穿刺无效的脓肿及窦道所导致的脓肿应考虑开颅切除^[16]。

脓液的完全排空可能会缩短抗生素治疗所需时间,手术治疗的脑脓肿应静脉应用抗生素 4~6 周,原则上使用抗生素应持续到术后体温恢复正常 10~14 d^[7,16]。本研究患者感染源不明,给予 2 种以上能透过血脑屏障的广谱抗生素联合抗感染治疗后,临床表现及影像学较前明显好转,出院后随访,恢复良好,未复发。

综上所述,延髓脓肿是脑脓肿的罕见类型,经过积极治疗,有望获得良好预后。

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