·病例报告·

前额叶完全孤立术治疗复发性癫痫一例

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【关键词】 癫痫,额叶; 星形细胞瘤; 神经外科手术; 病例报告
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Total prefrontal isolation for recurrent epilepsy after resection surgery: one case report

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患者 女性,17岁。因反复失神发作伴肢体抽搐14年,于2013年3月11日入院。患者3岁时开始出现癫痫发作,表现为易受惊吓、右眼睑跳动或突然抱人等症状,7~8次/d,外院诊断为"结节性硬化症继发癫痫",予托吡酯(妥泰)、卡马西平、丙戊酸钠(德巴金)、奥卡西平、左乙拉西坦和氯硝西泮等抗癫痫药物治疗无效。12岁时于外院行左侧额叶致痫灶切除术,术后癫痫发作频率未减少且出现精神异常、人格改变和游走等症状,为求进一步治疗收入我院。入院后体格检查:生长发育正常,检查不合作,注意力不集中、多动。四肢肌力、肌张力正常,病理征未引出。辅助检查:MRI显示左侧前额叶不规则蛛网膜下隙扩大、皮质和皮质下异常信号,范围达额眶回和直回(图1)。长程视频脑电图显示,癫痫发作频率10次/d,以过度运动为特征,最长历时80 s。脑电图显示,发作期间可见左侧颞区频繁低至中波幅不规则2~3 Hz慢波,以左侧前颞区为主的中波幅孤立尖波、尖-慢复合波;发作期可见双侧前额颞区阵发性低波幅30 Hz快波(图2)。临床诊断:左侧额叶癫痫。遂于全身麻醉下行左侧前额叶完全孤立术,自额上沟中部分离并切开脑沟底部白质进入脑室,左侧室间孔前外侧可见突入脑室的室管膜下结节样肿块,质地坚韧、边界不清,呈黄灰色,手术切除,沿脑室额角向外切开室管膜,于脑室额角外侧继续向外切开,经室管膜-白质-灰质直至其外侧裂,与岛叶环状沟前沟汇合;沿脑室内室管膜下切口继续切开白质直至显露蛛网膜下方前颅底骨性结构;向内横向切开额上回中部,向中线方向切开直达纵裂蛛网膜,向下直线切开额上回内侧面和扣带回达胼胝体水平,切开胼胝体前2/3,向深处可见透明隔腔隙,于中线切断前连合,直至视交叉上池。术中尽量保护离断额叶组织的动-静脉血供,使孤立后的脑组织能够存活。手术切除标本行病理学检查,证实毛细胞型星形细胞瘤,术后常规予奥卡西平300 mg(2次/d),患者术后恢复良好,

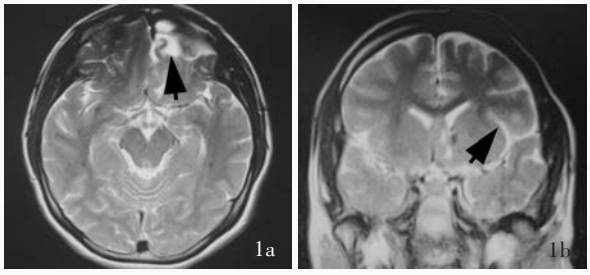

图1 术前T_2WI检查显示,左侧前额叶凸面蛛网膜下隙局限性增宽,左侧额眶回和直回皮质和皮质下异常高信号(箭头所示),范围广泛 1a 横断面 1b 冠状位

Figure 1 Preoperative T_2WI showed convex subarachnoid space in left prefrontal lobe being widened locally, abnormal hyperintense signals in cortical and subcortical of the left frontal orbital gyri and gyrus rectus (arrows indicate). Axial T_2WI (Panel 1a). Coronal T_2WI (Panel 1b).

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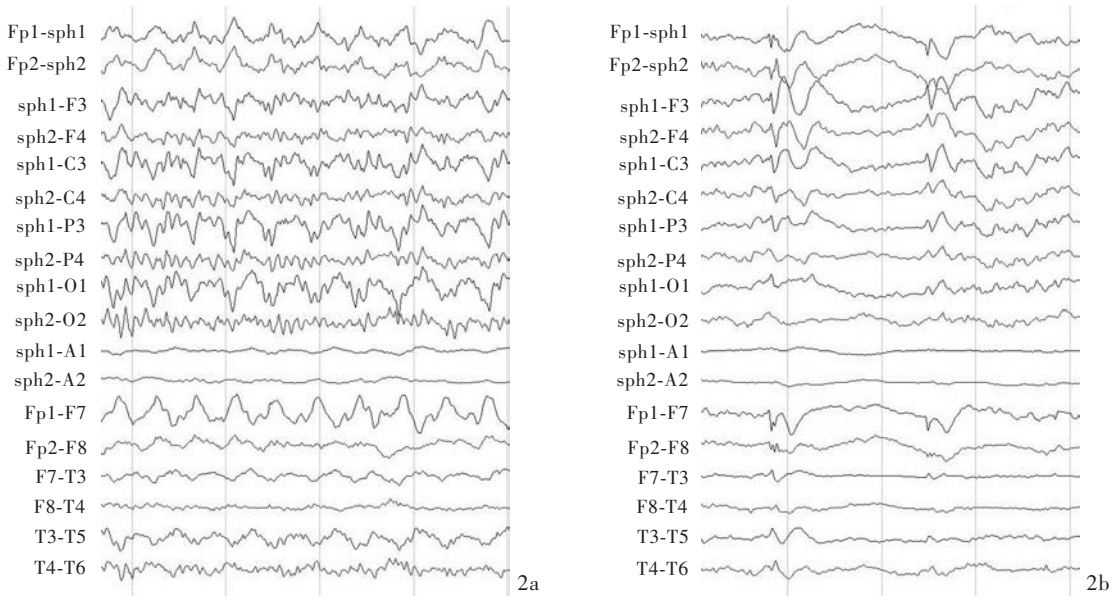

图2　脑电图检查所见　2a　发作期可见以双侧前额颞区为主的阵发性低波幅30 Hz快波，波幅逐渐升高，频率逐渐减慢　2b　发作间期可见左侧颞区频繁长程低至中波幅不规则2～3 Hz慢波，并可见以左侧前颞区为主的中波幅孤立尖波、尖-慢复合波

Figure 2　EEG findings. Ictal EEG: bilateral prefrontal and temporal paroxysmal low-range 30 Hz fast wave, the amplitude went up and the frequency slowed down to 8 Hz gradually (Panel 2a). Interictal EEG: left temporal region frequent long-distance irregular slow waves of 2–3 Hz with middle and low amplitude and spread to entire hemisphere. There were isolated sharp wave and spike-slow waves existing in the left anterior temporal region (Panel 2b).

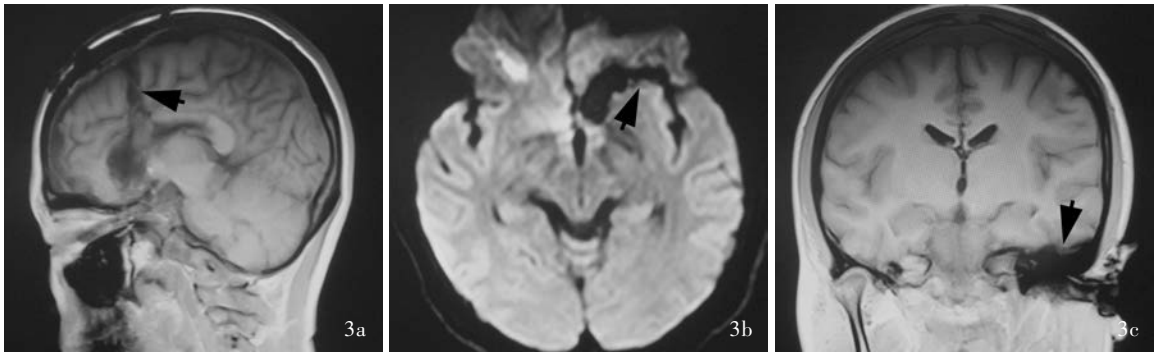

图3　术后MRI检查显示，左侧前额叶、胼胝体和前连合完全离断，左侧前额叶完全孤立（箭头所示）　3a　矢状位T_1WI　3b　横断面DWI　3c　冠状位T_1WI

Figure 3　Postoperative MRI showed left prefrontal lobe, corpus callosum and anterior commissure have been disconnected and left prefrontal lobe was isolated completely (arrows indicate). Sagittal T_1WI (Panel 3a). Axial DWI (Panel 3b). Coronal T_1WI (Panel 3c).

3个月时复查MRI可见左侧额叶完全孤立（图3）。随访16个月未见癫痫发作。

讨　论

目前，药物难治性额叶癫痫的外科治疗仍以致痫灶切除术为主，但术后癫痫发作缓解率低于颞叶癫痫[1]。离断术也称孤立术，其理论基础为：通过孤立致痫灶，切断痫样放电传导通路，达到与致痫灶切除术相同的治疗目的[2]。药物难治性额叶癫痫，尤其是术后复发性，前额叶完全孤立术可能有效[3]。术中既保持离断额叶组织的正常代谢，又完全阻断前额叶与其他脑组织的电联系。手术成功的关键是将目标区域即前额叶与其他脑区完全离断，切开前连合和胼胝体前部有助于前额叶的完全孤立。

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·临床医学图像·

颅内动-静脉畸形

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Intracranial arteriovenous malformation

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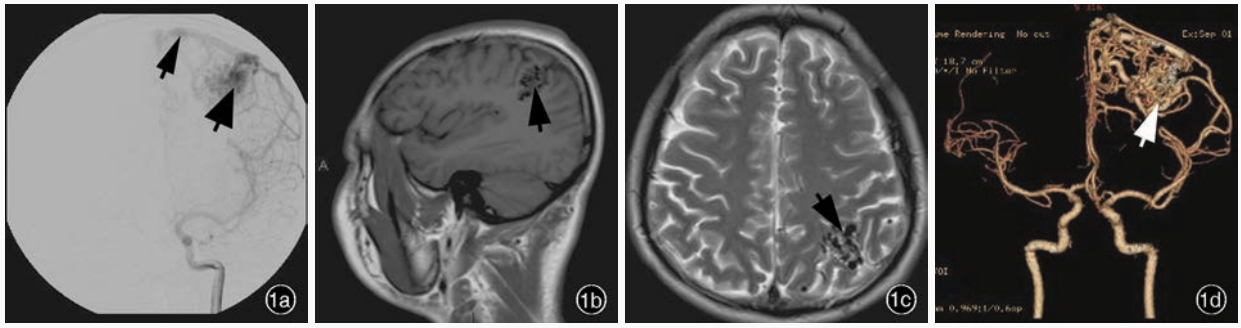

图1 男性患者,28岁。主因左侧肢体麻木2个月伴左手欠协调1周就诊。头部MRI显示左侧顶叶占位性病变。临床诊断为脑血管畸形,予手术切除。术后病理证实为动-静脉畸形。影像学检查所见 1a 动脉期DSA显示,左侧顶叶团状异常血管影(粗箭头所示),左侧大脑中动脉供血,供血动脉未见增粗;可见引流静脉,引流入上矢状窦(细箭头所示) 1b 矢状位T_1WI显示,左侧顶叶"蜂巢"样异常流空血管影,呈低信号(箭头所示) 1c 横断面T_2WI可见左侧顶叶病灶内迂曲蚓状、斑点状低信号(箭头所示),无明显占位效应;病灶内侧可见粗大的引流静脉 1d 3D-CTA显示,左侧顶叶"蜂巢"样病变(箭头所示),由左侧大脑前动脉和大脑中动脉供血;可见多支增粗的引流静脉,引流入上矢状窦

Figure 1 A 28-year-old male patient had suffered from numbness in his left side for 2 months and motor incoordination in his left hand for one week. MRI showed a space-occupying lesion located in left parietal lobe. Postoperative pathological diagnosis revealed arteriovenous malformation (AVM). Arterial phase imaging of DSA showed a cluster of abnormal vessels located in left parietal lobe (thick arrow indicates), which was supplied by left middle cerebral artery without dilatation. DSA also revealed dilated draining veins which drained to the superior sagittal sinus (thin arrow indicates, Panel 1a). Sagittal T_1WI showed an irregular honeycomb-like lesion with hypointense flow void effect (arrow indicates, Panel 1b). Axial T_2WI showed there existed tortuous and speckled low-intensity signals within the tumor (arrow indicates) with no obvious mass effect. A dilated draining vein was found inside the lesion (Panel 1c). 3D-CTA showed an irregular honeycomb-like lesion (arrow indicates), which was supplied by left middle cerebral artery and anterior cerebral artery, located in left partial lobe. Several dilated veins were drained to superior sagittal sinus (Panel 1d).

颅内动-静脉畸形(AVM)是脑血管畸形的最常见类型。主要由供血动脉、相互缠绕且管径不同的畸形血管团和扩张的引流静脉组成。脑实质(软脑膜)型动-静脉畸形的基底位于脑表面,呈楔形,尖端指向脑室,畸形血管团内可见神经胶质增生、无功能的脑组织、陈旧性出血和营养不良性钙化。数字减影血管造影术(DSA)是诊断的"金标准",典型征象包括动脉期显影的畸形血管团、扩张的供血动脉和引流静脉(图1a),可伴动-静脉瘘(动脉期静脉显影),供血动脉可扩张形成动脉瘤,引流静脉可扩张形成静脉湖。CT扫描未合并出血的病灶多呈等或稍高密度,部分可见条形或斑片样钙化,边界不清,若合并急性期出血则呈混杂密度影。MRI可见畸形血管团呈点状、线样或"蜂巢"样排列的长T_1、短T_2流空信号,无明显占位效应,具有特异性(图1b,1c)。3D-CTA和3D-MRA不仅可以完整显示动-静脉畸形全貌,清晰分辨供血动脉系统和引流静脉系统,而且能够对引流静脉导入静脉窦的全过程进行显影(图1d),临床诊断符合率较高,与DSA相比,具有无创性,可用于动-静脉畸形的筛查和诊断。颅内动-静脉畸形的影像学表现具有特异性,易于诊断,若合并出血,需与其他出血性病变相鉴别。明确患者年龄、病史有助于除外高血压性脑出血、外伤性脑出血、淀粉样脑血管病;增强扫描呈囊实性强化有助于除外肿瘤性病变合并出血。MRI显示血肿内和周围异常流空信号,以及增强后迂曲血管影有助于明确诊断动-静脉畸形。

(天津市环湖医院神经放射科韩彤供稿)