

颅脑术后创腔张力性积液的诊治分析

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【摘要】目的 探讨颅脑术后创腔张力性积液的临床特点、治疗方法及预后。方法 回顾性分析2019年8月至2021年10月收治的10例颅脑术后创腔张力性积液的临床资料。结果 10例中,星形细胞瘤5例,胶质母细胞瘤2例,中枢神经细胞瘤1例,转移性肺癌1例,脑脓肿1例。3例行开颅积液清除术,7例行钻孔引流术。10例术后症状明显改善。出院时GOS评分5分6例,4分2例,3分2例。术后随访3个月,创腔完全消失3例,缩小失去张力7例。结论 创腔张力性积液是颅脑术后少见的并发症,以脑肿瘤术后多见;一旦发现创腔张力性积液,及时行钻孔引流术,可取得较好的预后。

【关键词】 颅脑手术;创腔张力性积液;钻孔引流术;疗效

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Diagnosis and treatment of space-occupying cysts in the resection cavity after craniotomy: report of 10 cases

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【Abstract】 Objective To discuss the clinical manifestations, and treatment methodss and outcomes of the patients with space-occupying cysts in the resection cavity after craniotomy. Methods The clinical data of 10 patients who developed space-occupying cysts in the resection cavity after craniotomy from August 2019 to October 2021 were analyzed retrospectively. Results The pathological results showed astrocytoma in 5 patients, glioblastoma in 2, central neurocytoma in 1, metastatic lung cancer in 1 and brain abscess in 1. Three patients underwent craniotomy, and 7 patients were treated with burr-hole drainage. All the symptoms were improved after operation. GOS score of 5 was achieved in 6 patients, score of 4 in 2, score of 3 in 2 on discharge. CT or MRI images 3 months after operation showed that the cysts disappeared completely in 3 patients, and the cysts were reduced without tension in 7 patients. Conclusions Space-occupying cyst in the resection cavity is a rare complication after craniotomy, especially in the patients with brain tumor. Once space-occupying cysts is developed, the burr-hole drainage is recommended, which can relieve symptoms and improve patients' outcomes.

【Key words】 Space-occupying cysts; Craniotomy; Burr-hole drainage; Outcomes

颅内占位性病变,尤其是颅内肿瘤,开颅手术是目前的一线治疗方式,可切除病灶、缓解占位效应,但会发生并发症,如颅内出血、脑水肿、颅内感染等^[1]。术后创腔张力性积液是开颅手术较为少见的并发症^[2-4],会使病情加重,需及时处理。2019年8月至2021年10月因颅内占位性病变共行开颅手术3 505例,其中恶性病变1 470例,良性2 035例;术后发生创腔张力性积液10例,发生率约为0.28%,现总结如下。

1 资料与方法

1.1 一般资料 10例中,男5例,女5例;年龄34~69岁,平均51.0岁;病灶位于左侧额叶3例,左侧颞顶

叶2例,右侧顶叶2例,右侧侧脑室三角区1例,左侧侧脑室1例,右侧额叶1例;术后病理显示星形细胞瘤5例,胶质母细胞瘤2例,中枢神经细胞瘤、转移性肺癌、脑脓肿各1例。发现张力性积液的时间在术后3~50 d,平均22.6 d,集中在术后30 d内。主要表现为颅内压增高症状及神经功能障碍,其中意识障碍加重5例,肢体活动障碍加重3例,语言不利加重1例,头痛1例。

1.2 影像学检查 根据积液与脑室的关系,分为孤立性积液7例,积液伴脑室扩张3例。CT表现为创腔混杂密度影,周围结构受压及不同程度的水肿,密度高于脑脊液。MRI多表现为T₁像低信号、T₂像高信号、压水像高信号,增强后边缘呈环状强化、伴周围结构受压和脑水肿,信号不同于脑脊液(图1、2)。

1.3 囊液检查 抽取积液多为深褐色或淡黄色,1例比较清澈;4例积液检测显示蛋含量明显高于正常脑脊液,1例积液渗透压为364 mOsm/kg。

1.4 治疗方法 3 例行开颅积液清除术,6 例行钻孔引流术,1 例行经皮穿刺引流加脑室-腹腔分流术。术前过渡阶段应用脱水药物缓解症状。

2 结果

钻孔引流术时间 50~120 min,平均 71.3 min;开颅积液清除术时间 188~290 min,平均 239.3 min。10 例术后症状均改善。出院时 GOS 评分 5 分 6 例,4 分 2 例,3 分 2 例。术后 3 个月复查 CT 或 MRI 显示创腔完全消失 3 例,缩小失去张力 7 例。

3 讨论

3.1 临床表现 创腔张力性积液主要表现为局灶性神经功能障碍和颅内压增高症状,严重时可能造成脑疝而危及病人生命^[5-7];往往因术后一段时间内症状再次加重而被发现,短则数天^[3,4],长则数月^[8,9]。本文病例发现时间最短为术后 3 d,最长术后 50 d,主要集中在术后 30 d 内。以往文献报道称创腔张力性积液多见于胶质瘤术后^[2,4],也可见于脑出血^[10]、脑膜瘤^[11]或颞叶切除术后^[8]。本文病例病变性质符合上述报道,但 1 例为脑脓肿术后,排除脓肿复发后,行钻孔引流术,取得良好的效果。

3.2 发生机制 创腔张力性积液的具体发生机制尚不明确,主要有单向活瓣学说及高渗透压学说。单

向活瓣学说认为创腔和周围脑室或蛛网膜下腔之间存在一单向活瓣,允许脑脊液不断进入创腔,而又不能顺利流出^[3,12]。高渗透压学说认为创腔表面的炎性反应、残留肿瘤细胞异常分泌物和手术用止血材料造成一种高渗透压环境,吸引周围的脑脊液不断流入创腔,造成积液越来越多,从而产生张力^[4,13]。我们认为,术后遗留一个口小腔大的创腔,脑脊液通过蛛网膜裂口进入其中,混杂止血材料、炎症细胞等,形成局部高渗环境使其积聚在创腔内,形成一个恶性循环,使脑脊液进大于出,逐渐产生张力。本文病例创腔积液检测显示蛋白含量明显高于脑脊液,影像学积液特征也不同于脑脊液,这提示存在这种高渗环境。本文 1 例创腔积液在不同时间复查有自发缩小的趋势,我们考虑间隔时间较长,创腔内积液与脑脊液不断交换,可逐渐达到平衡,使积液稳定或缩小。

3.3 影像学表现 张力性积液影像学主要表现为局部积液伴周围结构受压及脑水肿,CT 呈混杂密度, MRI T₁ 像多为低、等信号, T₂ 像和压水像为高信号,增强可见环形强化。主要应与肿瘤复发相鉴别,肿瘤复发呈浸润性生长,形态多不规则,可见实性瘤结节。张力性积液为膨胀性进展,多为圆形、椭圆形,形态较为规则,增强后无实质性肿块。

3.4 治疗及预后 术后病情发生变化应及时复查头

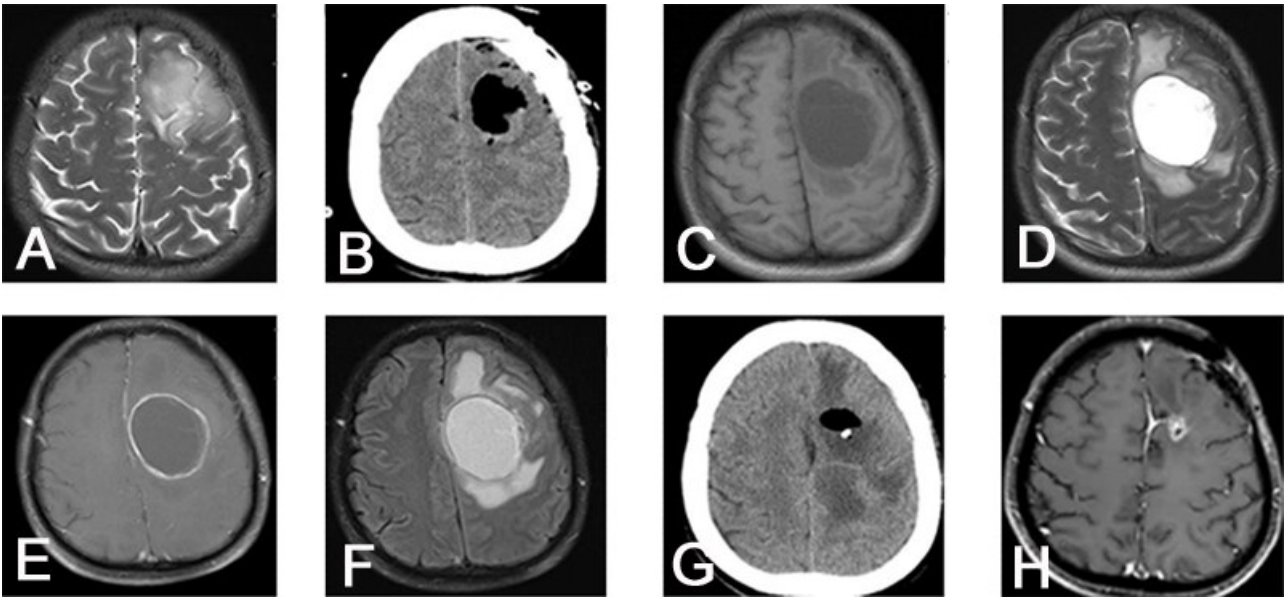


图 1 左侧额叶胶质瘤术后继发创腔张力性积液钻孔引流术前后影像

A. 肿瘤切除术前 MRI T₂ 像显示左侧额叶占位; B. 肿瘤切除术后当天 CT 未见创腔出血、积液; C. 肿瘤切除术后 2 周 MRI T₁ 像显示创腔积液呈低信号; D. 肿瘤切除术后 2 周 MRI T₂ 像显示创腔积液呈高信号,周围伴水肿; E. 肿瘤切除术后 2 周 MRI 增强显示创腔边缘呈圆形薄层强化; F. 肿瘤切除术后 2 周 MRI 压水像显示积液呈高信号,周围伴水肿; G. 钻孔引流术后 CT 显示创腔明显缩小,内有高低混杂密度影,可见引流管影; H. 引流术后 3 个月复查 MRI 显示积液完全消失

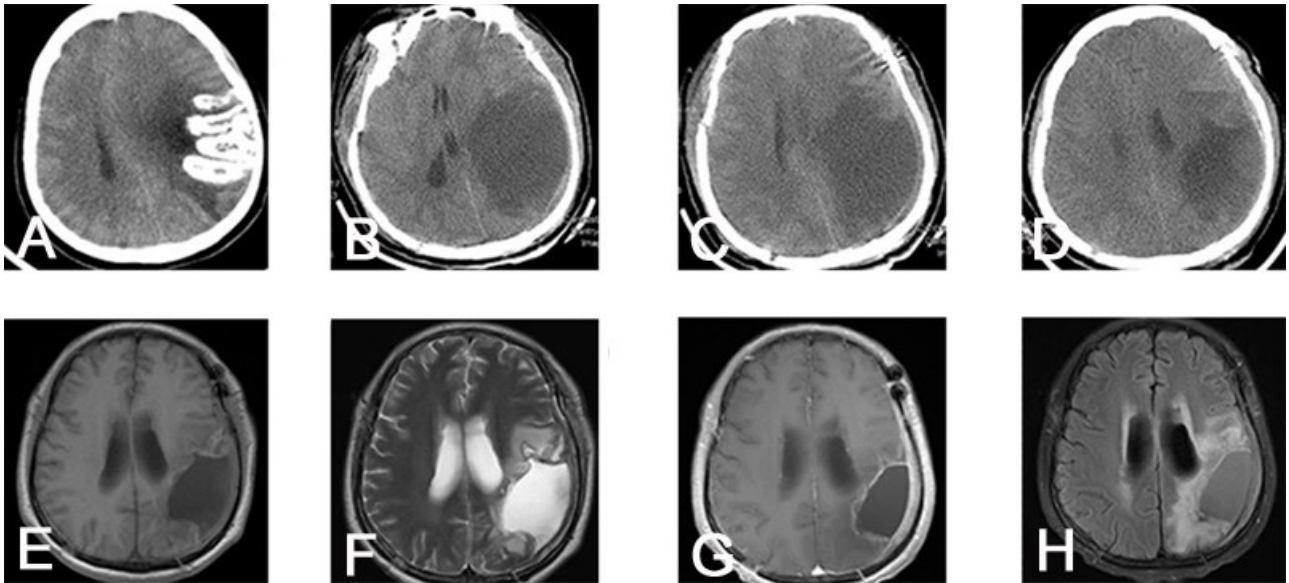


图2 左侧顶叶胶质瘤术后继发创腔张力性积液开颅手术前后影像

A. 肿瘤切除术前CT显示左侧顶叶高密度影;B、C. 肿瘤切除术后1周CT显示创腔积液呈略高密度,压迫中线结构;D. 开颅积液清除术后复查CT显示中线结构复位;E. 积液清除术后1个月MRI T₁像显示创腔积液呈低信号,较前缩小;F. 积液清除术后1个月复查MRI T₂像显示创腔积液呈高信号,较前缩小;G. 积液清除术后2个月复查MRI增强显示积液进一步缩小;H. 积液清除术后2个月复查MRI压水像显示积液呈略高信号,周围伴少许水肿,体积较前减少

部CT,一旦发现张力性积液,可给予脱水等保守治疗,必要时应果断进行手术。手术方法有开颅减压手术^[3]、创腔Ommaya囊植入术^[14]、创腔-腹腔分流术^[2]等。我们推荐行钻孔引流术,术中用生理盐水不断置换积液直至清亮,使其渗透压下降。钻孔引流术的手术时间短,创伤小,留置的引流管可预防短期内张力性积液复发。本文病例术后随访显示,创腔并不会立即消失。张力效应减轻后,病情改善,创腔会逐渐缩小直至闭合。

综上所述,创腔张力性积液是颅脑术后少见并发症,多见于体积较大的恶性肿瘤术后,主要表现为颅内压增高症状和神经功能障碍,头部CT、MRI有助于明确诊断。一旦发现张力性积液,推荐及时行钻孔引流术,可改善临床症状,取得较好的预后。

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