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微创钻孔引流术对高血压脑出血患者近期疗效及颅内感染、血肿再扩大的影响*

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摘要 目的:研究微创钻孔引流术对高血压脑出血患者近期疗效及颅内感染、血肿再扩大的影响。**方法:**选取 2017 年 3 月至 2019 年 2 月的 81 例高血压脑出血患者。按照随机数表法分为观察组(n=42)和对照组(n=39),对照组采用常规开颅血肿清除术治疗,观察组采用微创钻孔引流术治疗。观察两组治疗疗效情况,血肿量、髓鞘碱性蛋白(MBP)、中枢神经特异蛋白 S100 水平、NIHSS、GCS 评分,不良反应情况。**结果:**治疗后,观察组总有效率显著高于对照组[92.86%(39/42)vs69.23%(27/39)]($P<0.05$);血肿量、MBP、S100 水平均显著低于对照组[(9.32±2.70)mL vs (15.51±3.01)mL, (3.65±0.52)μg/L vs (4.20±0.71)μg/L, (0.98±0.26)μg/L vs (1.39±0.35)μg/L]($P<0.05$);NIHSS 评分显著低于对照组[(3.90±2.71)分 vs (6.34±1.42)分]($P<0.05$);GCS 评分显著高于对照组[(14.84±3.52)分 vs (10.69±3.98)分]($P<0.05$);不良反应总发生率显著低于对照组[9.52%(4/42)vs38.46%(15/39)]($P<0.05$)。**结论:**微创钻孔引流术治疗高血压脑出血患者的近期疗效显著,血肿清除彻底,可有效改善脑神经缺损,减少颅内感染,促进预后恢复。

关键词:微创钻孔引流术;高血压脑出血;近期疗效;颅内感染

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Hypertensive Cerebral Hemorrhage: Short-term Effect of Minimally Invasive Drilling and Drainage on Patients and Role of Intracranial Infection and Hematoma Enlargement*

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ABSTRACT Objective: To study the short-term effect of minimally invasive drilling and drainage on patients with hypertensive cerebral hemorrhage and the role of intracranial infection and hematoma enlargement. **Methods:** A total of 81 patients with hypertensive cerebral hemorrhage, who received therapy from March 2017 to February 2019 in 922 Hospital of joint logistics support force of Chinese people's Liberation Army, were chosen as research subjects and were randomly divided into observation group (n=42) and control group (n=39). The control group was treated with removal of hematoma by conventional craniotomy, while the observation group was treated with minimally invasive drilling and drainage. Then the therapeutic effect, Hematoma volume, Myelin basic protein (MBP), central nerve specific protein S100 level, NIHSS, GCS score, adverse reactions of the two groups after treatment were compared. **Results:** After treatment, The total effective rate [92.86% (39/42)] of observation group was significantly higher than that [69.23% (27/39)] of control group ($P<0.05$). Hematoma volume, MBP, S100 levels were significantly lower than those in the control group [(9.32±2.70)mL vs (15.51±3.01)mL, (3.65±0.52)μg/L vs (4.20±0.71)μg/L, (0.98±0.26)μg/L vs (1.39±0.35)μg/L] ($P<0.05$). NIHSS score was significantly lower than that of the control group [(3.90±2.71)scores vs (6.34±1.42)scores] ($P<0.05$). GCS score was significantly higher than that of the control group [(14.84±3.52)scores vs (10.69±3.98)scores] ($P<0.05$). The total incidence of adverse reactions was significantly lower than that of the control group [9.52% (4/42)vs38.46% (15/39)] ($P<0.05$). **Conclusion:** Minimally invasive drilling and drainage has a significant short-term effect in the treatment of patients with hypertensive intracerebral hemorrhage. It can completely remove the hematoma, which can effectively improve the brain nerve defect, reduce intracranial infection, and promote the recovery of prognosis of the patients.

Key words: Minimally invasive drilling and drainage; Hypertensive cerebral hemorrhage; Short-term effects; Intracranial infection

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前言

高血压是临床上常见的慢性病,是心脑血管最主要的危险因素,可导致脑底的小动脉发生病理性变化^[1,2]。脑出血是高血压最严重的并发症之一,具有起病急、进展快、死亡率高的特点^[3]。临床表明^[4,5],多因情绪波动或过多活动中发病,患者可出现剧烈头痛,恶心、呕吐等症状,且大多患者伴有躁动、嗜睡或昏迷,当血肿扩大时,会增加脑水肿,引起颅内压增高,严重的可出现呼吸衰竭,给患者的生命带来了威胁。临床上多采用手术治疗,以往传统术式具有创伤大、预后不良、恢复慢等不足^[6]。随着医学的不断研究,微创术式的研发,给高血压脑出血治疗带来了满意的效果^[7]。微创钻孔引流术操作简单,可显著抑制患者的血肿再扩大,改善神经功能。本研究旨在探讨微创钻孔引流术对高血压脑出血患者近期疗效及影响机制。

1 资料与方法

1.1 一般资料

收集 2017 年 3 月至 2019 年 2 月我院的 81 例高血压脑出血患者,均符合高血压脑出血诊断标准。纳入标准^[8]:经 CT 检测证实为脑内出血;病发至入院时间不超过 3h;配合研究者;排除标准:患有其他严重疾病;脑出血量 > 30 mL;患有消化性溃疡;患有感染性疾病;因其他疾病引起的脑出血;伴有活动性出血;患有免疫性疾病;患有精神疾病;按照简单随机数表法分为观察组(n=42)和对照组(n=39),观察组男 24 例,女 18 例,年龄 40~80 岁,平均(49.37±5.92)岁,病程 1~7 年,平均(2.90±0.72)年,就诊时间 1~3h,平均(2.15±0.32)h,出血部位:基底节 21 例,小脑 10 例,丘脑 6 例,脑叶 5 例;对照组男 26 例,女 13 例,年龄 41~80 岁,平均(50.03±6.01)岁,病程 1~7 年,平均(2.86±0.75)年,就诊时间 1~3h,平均(2.17±0.30)h,出血部位:基底节 19 例,小脑 11 例,丘脑 6 例,脑叶 3 例。两组在性别、年龄、病程等一般资料均显著差异($P>0.05$)。

1.2 方法

对照组采用常规开颅血肿清除术,行全麻,全层切开头皮,避开重要组织,将切口采用乳突撑开器扩张,于颅骨开凿直径 3 cm 的骨窗钻孔,于硬脑膜行 "十" 字形切口,在直视下

对血肿进行清除处理,术后电凝止血,置入引流管,采取常规治疗。观察组采用微创钻孔引流术治疗,床旁局部浸润麻醉后常规消毒铺巾,将血肿距离头皮最近处作为穿刺点,避开重要组织处,于穿刺点使用 "T" 型颅钻行头皮、颅骨钻孔,颅锥刺破硬脑膜,采用 12 号 /14 号带针芯硅胶引流管穿刺血肿,拔出针芯,缓慢抽吸血肿,注意固定引流管和缝合头皮时不改变引流管深度,术后 24h 确认无活动性出血后经引流管注入尿激酶溶解血肿引流,3~5d(少数延长至 7d)后拔除引流管。

1.3 观察指标

观察两组治疗疗效情况,血肿量、髓鞘碱性蛋白(MBP)、中枢神经特异蛋白 S100 水平、血脑屏障功能、NIHSS、GCS 评分,不良反应情况。

指标检测:分别于两组治疗前后采用格拉斯哥预后评分(GCS)评估患者的预后恢复情况,分数越高表明患者的预后恢复情况约好;采用美国国立卫生研究院卒中量表(NIHSS)评估患者的神经功能缺损情况,分数越高表明患者的神经损伤功能越严重;取静脉血和脑脊液,采用全自动生物分析仪检测患者的血清及脑脊液白蛋白水平;采用 ELISA 检测患者的 MBP 水平;采用电化学发光法检测 S100 水平;采用多田氏公式计算血肿体积。

1.4 疗效评定标准

NIHSS 评分减少 90%以上为显效^[9]。NIHSS 评分减少 46%~90%为有效;NIHSS 评分减少 18%~45%为有效;NIHSS 评分减少低于 18%为无效。

1.5 统计学分析

使用 SPSS18.0 统计软件进行统计,数据均符合正态分布,计数资料以[(例)%]表示,用 χ^2 检验比较,计量资料以($\bar{x} \pm s$)表示,采用 t 检验,组内比较使用配对样本 t 检验,采用 $P<0.05$ 为差异有统计学意义。

2 结果

2.1 两组治疗疗效情况对比

治疗后,观察组总有效率为 92.86%,显著高于对照组($P<0.05$),见表 1。

表 1 两组治疗疗效情况对比[例(%)]

Table 1 Comparison of therapeutic effect between two groups[n(%)]

Groups	n	cure	Effective	valid	invalid	Total efficiency
Observation group	42	19(45.24)	12(28.57)	8(19.05)	3(7.14)	39(92.86)
Control group	39	11(28.21)	9(23.08)	7(17.95)	12(30.77)	27(69.23)

2.2 两组血肿量、MBP、S100 水平变化

两组治疗前血肿量、MBP、S100 水平均无明显差异($P>0.05$),两组治疗后血肿量均较治疗前降低,MBP、S100 均升高,两组治疗后存在统计学意义($P<0.05$),见表 2。

2.3 两组 NIHSS、GCS 评分变化

两组治疗前 NIHSS、GCS 评分均无显著差异($P>0.05$),治疗后,两组血肿量、GCS 评分均较治疗前显著改善($P<0.05$),两组治疗后具有统计学差异($P<0.05$),见表 3。

2.4 两组不良反应情况对比

观察组不良反应总发生率显著低于对照组($P<0.05$),见表 4。

3 讨论

高血压脑出血属于急性占位病变,是高血压晚期并发症,近年来发现,随着时间的变化及生活习惯的改变,该病的发生率也越来越多,且逐渐呈年轻化趋势发展^[10]。临床表明^[11-13],局

表 2 两组血肿量、MBP、S100 水平变化($\bar{x} \pm s$)Table 2 Changes of hematoma volume, MBP and S100 levels in two groups($\bar{x} \pm s$)

Groups	n	Hematoma volume (mL)		MBP(μ g/L)		S100(μ g/L)	
		Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
Observation group	42	21.06 $\pm$ 4.23	9.32 $\pm$ 2.70	1.50 $\pm$ 0.16	3.65 $\pm$ 0.52	0.70 $\pm$ 0.22	0.98 $\pm$ 0.26
Control group	39	20.98 $\pm$ 4.30	15.51 $\pm$ 3.01	1.52 $\pm$ 0.20	4.20 $\pm$ 0.71	0.65 $\pm$ 0.23	1.39 $\pm$ 0.35

表 3 两组 NIHSS、GCS 评分变化($\bar{x} \pm s$, 分)Table 3 Changes of NIHSS and GCS scores in two groups($\bar{x} \pm s$, scores)

Groups	n	NIHSS		GCS	
		Before treatment	After treatment	Before treatment	After treatment
Observation group	42	13.68 $\pm$ 6.04	3.90 $\pm$ 2.71	8.03 $\pm$ 1.38	14.84 $\pm$ 3.52
Control group	39	14.05 $\pm$ 6.10	6.34 $\pm$ 1.42	8.10 $\pm$ 1.42	10.69 $\pm$ 3.98

表 4 两组不良反应情况对比[例(%)]

Table 4 Comparison of adverse reactions between two groups[n(%)]

Groups	n	wound infection	Gastrointestinal hemorrhage	Arrhythmia	Intracranial infection	Electrolyte disorder	Total incidence
Observation group	42	2(4.76)	1(2.38)	1(2.38)	0(0.00)	0(0.00)	4(9.52)
Control group	39	4(10.26)	3(7.69)	3(7.69)	2(5.13)	3(7.69)	15(38.46)

部大量出血可造成机械压迫,还可使脑组织出现缺血缺氧等损伤,清除血肿、降低颅内压,恢复神经功能,减少脑组织损伤是治疗的关键^[4]。临床上治疗高血压脑出血的外科方法较多,不同的术式与治疗效果及术后并发症存在直接的联系,以往临床上传统的开颅手术具有视野良好的优点,可迅速解除脑组织压迫状况,彻底清除血肿,且止血效果显著,但其风险大、并发症多、预后差,极易引发术后感染,可加重脑水肿,促进应急性出血反应,导致继发脑损伤,无法达到满意的治疗效果^[15-17]。因此,探寻有效的治疗具有重要的意义^[18]。

自微创理念出现后,在现代手术的应用中越发广泛,微创钻孔引流术无需开颅,可减少了对正常脑组织的损伤,可减少术后并发症^[19]。且术式操作简单,可根据患者的出血情况选择钻孔路径,能够避免医源性脑损伤,可在局部麻醉的状态下进行,减少应激反应,可充分抽吸血肿,清除脑深部血肿,防止再出血^[20,21]。临床研究表明^[22,23],该术式整个治疗过程可经人手充分控制,无盲目区,密闭性较佳,可减少术后颅内感染,促进神经恢复。本研究显示,采用微创钻孔引流术治疗的患者 NIHSS、GCS 评分及治疗疗效均显著优于采用传统开颅手术治疗的。说明了微创钻孔引流术可有效改善患者的神经功能,提高预后。值得注意的是^[24,25],术前进行准确定位,首次抽血肿不宜过多,根据血肿量与性状确定抽出量,合理控制血压,血肿引流需要一定的时间,对于血肿量较大或急需减压的患者治疗效果欠佳。

基础研究表明^[26-28],血肿再扩大的病理机制为出血部位再次出血或持续性出血,可导致高血压脑出血病情进一步加重。本研究显示,采用微创钻孔引流术治疗的患者血肿量显著低于

采用传统开颅手术治疗的。说明了微创钻孔引流术可达到血肿清除彻底的效果。在手术的治疗过程中,极易破坏人体的天然血脑屏障保护,病原体侵入,加上术后需防止引流管,阻碍窗口愈合,均可导致颅内感染^[29]。本研究显示采用微创钻孔引流术治疗的患者 MBP、S100 水平升高程度低于对照组。说明了微创钻孔引流术可减少对患者的血脑屏障损伤,维持脑内部环境稳定,降低颅内感染。

综上所述,微创钻孔引流术治疗高血压脑出血患者的近期疗效显著,血肿清除彻底,可有效改善脑神经缺损,减少颅内感染,促进预后恢复。

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