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颅内静脉系统血栓形成合并脑出血的临床特点、危险因素、诊断方法 以及治疗方案分析*

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摘要 目的:探讨颅内静脉系统血栓形成(CVST)合并脑出血的临床特点、危险因素、诊断方法以及治疗方案。**方法:**选择我院于2002年2月到2017年5月收治的CVST确诊患者38例为研究对象,按照是否合并脑出血分为脑出血组16例与对照组22例,比较两组患者的临床特点、危险因素、诊断方法、治疗方案与预后。**结果:**脑出血患者MRI显示受累横窦8例、海绵窦6例、乙状窦2例;对照组显示受累横窦10例、海绵窦8例、乙状窦4例。脑出血组的头痛、意识改变、运动障碍等临床症状发生率明显高于对照组($P<0.05$),两组感觉障碍、视力下降与痫性发作比例对比差异无统计学意义($P>0.05$)。二分类变量Logistic回归分析显示脑膜炎、贫血、先天性凝血酶原疾病为导致CVST合并脑出血发生的主要独立危险因素($P<0.05$)。所有患者均给予脱水降颅压及支持对症治疗,脑出血组预后不良8例,不良率为50.0%;对照组预后不良4例,不良率为18.2%,脑出血组的预后不良率明显高于对照组($P<0.05$)。**结论:**CVST合并脑出血在临床上比较常见,多表现为头痛、意识改变、运动障碍等,MRI诊断有很好的效果,脑膜炎、贫血、先天性凝血酶原疾病为导致CVST合并脑出血发生的危险因素,抗凝、溶栓等治疗能取得较好的效果。

关键词:颅内静脉系统血栓形成;脑出血;临床特点;危险因素;诊断方法

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Clinical Features, Risk Factors, Diagnosis and Treatment of Intracranial Venous Thrombosis Combined with Cerebral Hemorrhage*

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ABSTRACT Objective: To investigate the clinical features, risk factors, diagnosis and treatment of intracranial venous thrombosis (CVST) combined with cerebral hemorrhage. **Methods:** 38 cases of CVST patients admitted in our hospital from February 2002 to May 2017 were selected as the research object, all the patients were divided into the cerebral hemorrhage group (16 cases) and control group (22 cases) according to whether the patients with cerebral hemorrhage, the clinical features, risk factors, diagnosis, treatment ways and effects were compared between the two groups. **Results:** In the cerebral hemorrhage group, MRI showed 8 patients of transverse sinus, 6 patients of cavernous sinus and 2 patients of sigmoid sinus, so that were 10 patients, 8 patients and 4 patients in the control group. The headache, altered consciousness, movement disorders in the cerebral hemorrhage group were significantly higher than those of the control group ($P<0.05$). The sensory dysfunction, decreased visual acuity compared in the two groups showed no significant difference ($P>0.05$). Two categories of variables Logistic regression analysis showed that meningitis, anemia and congenital prothrombin were the major independent risk factors for CVST combined with intracerebral hemorrhage ($P<0.05$). All patients were given dehydration to reduce intracranial pressure and symptomatic treatment, there were 8 patients of poor prognosis in the cerebral hemorrhage group, the rate was 50%; so that were 4 patients in the control group, the rate was 18.2%, so the cerebral hemorrhage group was significantly higher than the control group ($P<0.05$). **Conclusion:** CVST combined with cerebral hemorrhage is very common in clinical practice, the symptom is more with headache, altered consciousness, movement disorders, MRI diagnosis has good effect, meningitis, anemia and congenital prothrombin are the risk factors with cerebral hemorrhage, anticoagulation and thrombolysis treatment can achieve better results.

Key word: Intracranial venous thrombosis; Cerebral hemorrhage; Clinical features; Risk factors; Diagnostic methods

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颅内静脉系统血栓形成(cerebral venous and sinus thrombosis, CVST)是脑卒中的一种少见类型,多发病于成年人,包括脑静脉血栓形成和静脉窦血栓形成等类型,占全部脑血管病的5.0%左右^[1,2]。现代研究表明 CVST 是由多种病因所致的颅内静

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脉回流受阻、颅内压增高的脑血管疾病^[3,4]。由于 CVT 侧支循环的差异因素与涉及部位的不同,临床表现复杂多变,在临床上容易漏诊与误诊^[5,6]。CVST 易合并脑出血,可使疾病的诊断和治疗更加复杂,也会增加患者的死亡率^[7]。

近年,随着磁共振静脉成像(MRV)、核磁共振平扫(magnetic resonance imaging, MRI)、CT 等影像学技术的发展和广泛应用,当前对 CVST 合并脑出血疾病的早期诊断率有明显的提高^[8,9]。CVST 合并脑出血需要进行早期治疗,延误最佳治疗时间,可能会导致患者残障、脑疝、失明等严重后果,甚至危及生命。当前临床上主要治疗方法包括降颅压、抗凝、溶栓和改善脑循环等,但是不同患者的预后也有所差异^[10-12]。本研究以 2002 年至 2017 年我院收治的 38 例 CVST 的患者为研究对象,并依据合并脑出血情况进行了分类调查,探讨了 CVST 合并脑出血的临床特点、危险因素、诊断方法以及治疗方案,报道如下。

1 资料与方法

1.1 研究对象

选择我院 2002 年 2 月到 2017 年 5 月收治的 CVST 确诊患者 38 例为研究对象,年龄 20-80 岁;符合根据美国心脏学会/美国卒中学会 (AHA/ASA) 关于治疗指南中的 CVST 诊断标准,并经 MRV、CT、MRI 等影像学检查证实;颅内造影提示颅内静脉和(或)静脉窦部分或完全不显影,且脑血液循环时间超

过 9s 以上;临床资料完整;研究通过医院伦理委员会的批准。排除标准:合并精神疾病患者;妊娠与哺乳期妇女。按照是否合并脑出血分为脑出血组 16 例与对照组 22 例。

1.2 调查内容

收集所有患者的临床资料,比较两组的临床特点、影像学特点、受累静脉窦部位、治疗方案与预后情况,调查与分析脑出血发生的危险因素。预后评估根据出院时患者的改良 Rankin 评分(mRS)进行判定为预后良好。

1.3 统计学分析

选择 SPSS21.00 进行统计分析,计量数据用均数 $\pm$ 标准差($\bar{x}\pm s$)表示,组间比较采用 t 检验,计数数据选用百分比表示,组间比较采用 χ^2 检验或 Fisher 精确检验等,采用二分类变量 Logistic 回归分析独立影响因素,以 $P<0.05$ 为差异具有统计学意义。

2 结果

2.1 两组一般情况对比

脑出血组中男 10 例,女 6 例;平均年龄为 54.22 ± 6.39 岁;平均体重指数为 22.11 ± 2.49 kg/m²;受累位置:横窦 8 例(图 1),海绵窦 6 例,乙状窦 2 例。对照组中男 14 例,女 8 例;平均年龄为 54.98 ± 5.33 岁;平均体重指数为 22.67 ± 2.10 kg/m²;受累位置:横窦 10 例(图 2),海绵窦 8 例,乙状窦 4 例。

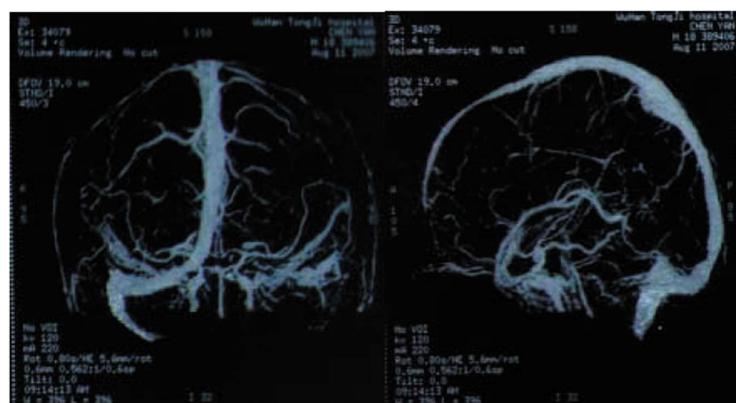


图 1 MRI 见左侧横窦大静脉不显影,右侧横窦、上矢状窦、脑表面静脉明显代偿扩张

Fig.1 MRI showed the left transverse veins absent, right transverse sinus, superior sagittal sinus and cerebral superficial veins obvious compensatory expansion

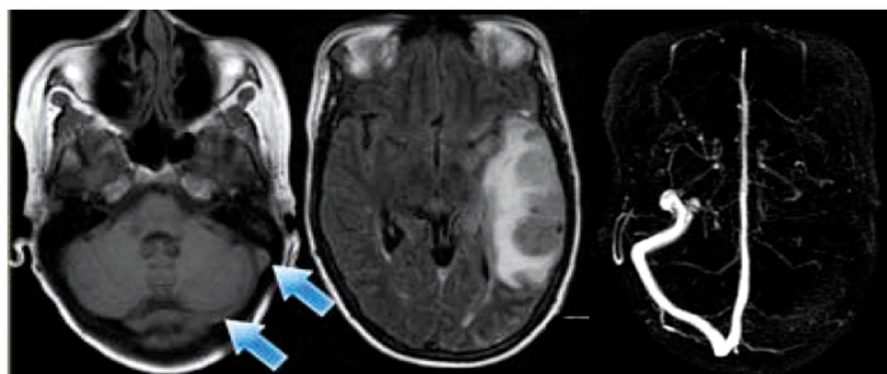


图 2 MRI 可左侧横窦内条状等 T1 信号(蓝色箭头),为窦内血栓,左侧横窦存在,合并脑出血

Fig. 2 MRI showed the left lateral sinus T1 strip signal (blue arrow), sinus thrombus in the left transverse sinus, cerebral hemorrhage

2.2 两组临床症状对比

脑出血组的头痛、意识改变、运动障碍等临床症状发生率

明显高于对照组($P<0.05$),两组感觉障碍、视力下降与痫性发作比例对比差异无统计学意义($P>0.05$)。见表 1。

表 1 两组患者临床症状的对比[例(%)]

Table 1 Comparison of the clinical symptoms between two groups of patients[n (%)]

Groups	n	Headache	Conscious change	Dyskinesia	Sensory impairment	Decreased vision	Seizure
Cerebral hemorrhage group	16	14(87.5%)	7(43.8%)	9(56.3%)	3(18.8%)	3(18.8%)	4(25.0%)
Control group	22	11(50.0%)	1(4.5%)	2(9.1%)	2(9.1%)	3(13.6%)	3(13.6%)
P		<0.05	<0.05	<0.05	>0.05	>0.05	>0.05

2.3 颅内静脉系统血栓形成合并脑出血的危险因素分析

在 38 例患者中,以调查的临床资料作为自变量,以脑出血作为因变量,二分类变量 Logistic 回归分析表明脑膜炎、贫血、

先天性凝血酶原疾病为导致 CVST 合并脑出血发生的主要独立危险因素($P<0.05$)。见表 2。

表 2 CVST 合并脑出血发生的多因素 logistic 回归分析

Table 2 Multivariate logistic regression analysis of CVST combined intracerebral hemorrhage

Index	β	Exp(β)	P	OR	95%CI
Meningitis	2.563	12.492	0.004	2.341	1.382-5.200
Anemia	1.783	5.893	0.007	1.844	1.332-3.299
Congenital prothrombin disease	2.114	0.184	0.023	4.882	2.783-8.113

2.4 两组治疗方案与预后对比

所有患者均给予脱水降颅压及支持对症治疗,脑出血组中取栓治疗 1 例,溶栓治疗 1 例,抗凝治疗 13 例,抗血小板治疗 1 例,预后不良 8 例,不良率为 50.0%;对照组中取栓治疗 0 例,

溶栓治疗 1 例,抗凝治疗 17 例,抗血小板治疗 4 例,预后不良 4 例,不良率为 18.2%,脑出血组的预后不良率明显高于对照组($P<0.05$)。见表 3。

表 3 两组治疗方案与预后对比[例(%)]

Table 3 Comparison of the treatment protocols and prognosis between two groups [n (%)]

Groups	N	Embolectomy	Thrombolysis	Anticoagulation	Antiplatelet	Poor prognosis	Rate
Cerebral hemorrhage group	16	1(6.3%)	1(6.3%)	13(81.3%)	1(6.3%)	8	50.0%
Control group	22	0(0.0%)	1(4.5%)	17(77.3%)	4(18.2%)	4	18.2%
P			>0.05				<0.05

3 讨论

颅内静脉系统主要包括静脉窦血栓或颅内静脉,静脉又包括浅静脉、深静脉、颅内外脑静脉间以及其与静脉窦之间存在吻合支,横窦和上矢状窦可以汇集静脉血流^[12]。研究表明 CVST 是感染性或非感染性因素影响凝血功能,导致颅内静脉窦或深静脉内血栓形成,引起管腔闭塞、狭窄,造成脑静脉血回流受阻从而出现一系列相关的临床症状与体征^[13]。CVST 任何年龄均可发病,但多见于老年人,几乎占其脑梗死患者的 1/2^[14]。CVST 的临床症状不明显,症状有头痛、呕吐、痫性发作等,临床表现复杂多变且缺乏特异性,故早期诊断困难,易误诊^[15]。本研究显示脑出血组的头痛、意识改变、运动障碍等临床症状发生率明显高于对照组($P<0.05$),两组感觉障碍、视力下降与痫性发作比

例对比差异无统计学意义 ($P>0.05$)。脑出血到可导致颅内压增高,因而头痛是 CVST 合并脑出血最常见、最早出现的症状,常伴视乳头水肿、呕吐和恶心。同时随着上矢状窦血栓形成后,引起静脉淤血,脑皮质水肿,且意识障碍突出,癫痫或持续癫痫^[16]。

目前,对于 CVST 合并脑出血的诊断方法包括 CT、X 线、超声与 MRI 等,MRI 为诊断 CVST 最敏感的技术,具有对血流敏感、对静脉结构显示佳、非侵入性等优点^[17]。MRI 可见继发性改变,如缺血性脑梗塞、脑出血、脑水肿等,多局限于皮层下非主要动脉供血区域^[18]。有时在 T2 加权像上脑室旁白质可见高信号的斑块效应,血栓形成时 MRI 表现为受累静脉窦部分或全部不显影,病变血管段内血流速度下降^[19]。同时,MRI 检查可进行血栓与脑出血动态观察,并可精确的定位,间接征象能显示各种脑实质损害,较 CT 更具准确性和敏感性^[20]。但有研究表

明 MRI 血栓信号的改变在亚急性期最具有特异性,而在急性期血栓信号易与脑实质或流空信号相混淆,使 MRI 的诊断在临床应用时受到一定限制^[21]。

颅内静脉属容量血管,各静脉窦相互沟通,管内缺乏瓣膜,使脑静脉系统比动脉系统有较强的代偿能力,但同时也容易使病变蔓延至其他静脉窦或深静脉,诱发脑出血。早期对于 CVST 的报道大多为尸检病例报告,且只有 80.00% 的患者能发现病因^[22],特别是如果血栓形成仅局限于上矢状窦而无皮层静脉受累,病程常持续数周或数月,神经功能缺损常较严重,临床上误诊也比较常见^[23]。本研究显示脑膜炎、贫血、先天性凝血酶原疾病为导致 CVST 合并脑出血发生的主要独立危险因素。从机制上分析,脑膜炎等通过血源性播散、各种炎症因子影响凝血功能、直接扩散等而导致 CVST 合并脑出血,由于其解剖特点,其中海绵窦和横窦最常受累。先天性凝血酶原疾病导致机体血液处于高凝状态,而高凝状态则是血栓形成的基础,也可能引起 CVST 合并脑出血^[24]。贫血患者也可诱发机体形成高凝状态,是脑出血发生的基础^[25]。降颅压、抗凝、溶栓、改善脑循环治疗是 CVST 合并脑出血的主要治疗办法,改善颅内循环治疗能及时有效地帮助疏通脑血管有利于 CVST 合并患者静脉再通^[26]。本研究中,脑出血组的预后不良率明显高于对照组。抗凝治疗用于治疗 CVST 是安全有效的,能预防血栓扩大,明显改善临床症状,并利于侧支循环的建立。与肝素相比,低分子肝素的抗凝血因子的活性明显增强,对凝血和纤溶系统影响小,出血并发症低^[27]。对抗凝治疗无效、神经症状进行性恶化的病例可采用溶栓治疗,但溶栓后需继续服用华法林 3-6 个月,同时溶栓治疗可能出现的并发症也要积极进行预防干预^[28]。

总之,CVST 合并脑出血在临床上比较常见,多表现为头痛、意识改变、运动障碍等,MRI 对本病的诊断有很好的临床指导意义,脑膜炎、贫血、先天性凝血酶原疾病为导致 CVST 合并脑出血发生的危险因素,抗凝、溶栓等方法能取得比较好的治疗效果。

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