

全聋伴眩晕的突发性聋患者凝血状态分析

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[摘要] 目的:通过分析全聋伴眩晕的突发性聋(简称突聋)患者凝血功能状态及预后,为改进治疗方案,从而改善预后提供依据。方法:选取2017年1月—2020年12月于河北省人民医院耳鼻咽喉头颈外科住院治疗的全聋伴眩晕的突聋患者33例作为研究组;同期住院治疗的低频型、全频型、全聋型患者各33例以及高频型患者26例作为突聋对照组,无中耳及内耳疾病史的住院患者33例为正常对照组。分析研究组与各对照组间纤维蛋白原(FIB)、D-二聚体(D-D)、凝血酶原时间(PT)、活化部分凝血活酶时间(APTT)水平及不同类型突聋患者的疗效。结果:①研究组FIB、D-D分别为2.50(2.11, 2.95)、0.27(0.16, 0.51),均高于正常组[2.31(1.92, 2.50)、0.17(0.12, 0.21)];APTT为25.2(23.1, 28.1),低于正常组[27.3(26.4, 29.7)],差异均有统计学意义($P < 0.01$)。②研究组FIB高于低频组[2.37(1.81, 2.68)];D-D分别高于低频组[0.16(0.12, 0.25)]、高频组[0.13(0.11, 0.23)]、全频组[0.16(0.11, 0.28)]、全聋组[0.18(1.45, 0.30)];APTT为25.75±3.18/25.2(23.1, 28.1),低于低频组(27.72±2.22)、全频组[26.7(25.8, 28.7)],差异均有统计学意义($P < 0.05$)。③研究组疗效最差(无效率为63.6%),低频组疗效最好(痊愈率为75.8%),各型突聋组间疗效差异有统计学意义($P < 0.05$)。结论:高凝状态、血栓形成可能是全聋型突聋患者的发病影响因素之一。全聋伴眩晕的突聋患者比全聋型及其他各型突聋的高凝状态更严重,预后最差。

[关键词] 聋,突发性;眩晕;凝血状态

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Analysis of coagulation state in sudden deafness patients with total deafness and vertigo

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Abstract Objective: To analyze the coagulation status and prognosis of sudden deafness patients with total deafness accompanied by vertigo, and to provide basis for improving the treatment of this disease. **Methods:** From January 2017 to December 2020, 33 patients with total deafness and vertigo sudden deafness who were hospitalized in the Department of Otolaryngology Head and Neck Surgery, Hebei Provincial People's Hospital were selected as the research group. During the same period, 33 cases of low frequency type, full frequency type, total deafness and 26 cases of high frequency type were treated as control group. Thirty-three cases of inpatients without history of middle ear and inner ear diseases were treated as normal control group. The levels of fibrinogen(FIB), D-Dimer (D-D), Prothrombin Time(PT), Activated Partial Thrombin Time(APTT) between the research group and the control group were analyzed, and the therapeutic effects of different types of sudden deafness patients were analyzed. **Results:** FIB and D-D of total deafness with vertigo were 2.50(2.11, 2.95) and 0.27(0.16, 0.51) respectively, which were higher than 2.31(1.92, 2.50) and 0.17(0.12, 0.21) of normal group. APTT was 25.2(23.1, 28.1), lower than 27.3(26.4, 29.7) in the normal group, the differences were statistically significant ($P < 0.01$). ② FIB of total deafness with vertigo was 2.50(2.11, 2.95), which was higher than that of low frequency group 2.37(1.81, 2.68). D-D was 0.27(0.16, 0.51), higher than low frequency group 0.16(0.12, 0.25), high frequency group of 0.13(0.11, 0.23), the whole frequency group 0.16(0.11, 0.28), total of 0.18(1.45, 0.30). APTT was 25.75±3.18/25.2(23.1, 28.1), lower than 27.72±2.22 in low frequency group and 26.7(25.8, 28.7) in full frequency group, with statistical significance($P < 0.05$). ③ The total deafness with vertigo group had the worst curative effect(ineffective rate was 63.6%), and the low frequency group had the best curative effect(recovery rate was 75.8%). The difference of curative effect among different types of sudden deafness groups was statistically significant($P < 0.05$). **Conclusion:** Hypercoagulability and thrombosis may be one of the influencing factors of total sudden deafness. The hypercoagulable state of sudden deafness patients with total

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deafness and vertigo is more serious than that of total deafness and other types of sudden deafness, and the prognosis is the worst.

Key words deafness, sudden; vertigo; coagulation state

突发性聋(简称突聋)是耳科常见的急症,除听力下降外,常伴有耳鸣、眩晕等症状。根据听力曲线类型不同,突聋可分为低频型、高频型、全频型和全聋型^[1]。全聋型突聋(伴或不伴眩晕)考虑与内耳血栓形成有关,与其他类型相比,全聋伴眩晕的患者症状最重,预后更差。本研究对全聋伴眩晕的突聋患者临床常用评估凝血状态的参数进行分析,旨在为改进全聋伴眩晕的突聋治疗方案、改善预后提供依据。

1 资料与方法

1.1 研究对象

选取2017年1月—2020年12月于河北省人民医院耳鼻咽喉头颈外科住院治疗的全聋伴眩晕的突聋患者33例为研究对象(研究组),同期住院治疗的低频型、全频型、全聋型(不伴眩晕)患者各33例以及高频型患者26例作为突聋对照组,无中耳及内耳疾病史的住院患者(包括声带息肉、会厌囊肿、外耳道骨瘤)33例为正常对照组。对研究组与各对照组间凝血参数进行比较。纳入标准:①根据《突发性聋诊断和治疗指南(2015)》^[1]对突聋患者进行分型、诊治和疗效评估;②均为首次单耳发病,发病时间在2周内,入院前未接受治疗;③无慢性中耳炎病史,无噪声暴露史,无耳外伤及耳毒药物接触史,无聋病家族史;④均无重大疾病及重大手术史;⑤全聋伴眩晕患者均为持续性眩晕(持续时间3~10 d),在住院期间均完善头颅核磁排除中枢性病变。

1.2 资料收集

通过医学电子病历系统收集所有纳入者的一般资料,包括年龄、性别;相关检验结果,包括纤维蛋白原(FIB)、D-二聚体(D-D)、凝血酶原时间(PT)、活化部分凝血活酶时间(APTT);突聋患者还收集发病侧别、发病时间、是否伴有眩晕以及治疗前、治疗14 d后的听力学检查结果(痊愈且疗程小于14 d者收集最后一次听力结果)。

1.3 统计学方法

应用SPSS 23.0软件对数据进行处理。计量资料满足正态分布及方差齐,采用 t 检验,用 $\bar{X} \pm S$ 表示;不满足正态分布或方差不齐,两独立样本比较采用Mann-Whitney U 检验,多个独立样本检验采用Kruskal-Wallis检验,用四分位数 $M(P_{25}, P_{75})$ 表示。等级分类计数资料采用秩和检验。检验标准定为 $\alpha = 0.05, P < 0.05$ 为差异有统计学意义。

2 结果

2.1 研究组与对照组的一般资料比较

研究组与对照组(包括正常及突聋对照)中各亚组间的性别构成比差异无统计学意义($P > 0.05$);研究组与全频组、全聋组、正常组间的年龄差异无统计学意义($P > 0.05$),研究组年龄高于低频组、高频组,差异有统计学意义($P < 0.05$),见表1。

2.2 研究组与正常组的凝血参数比较

研究组FIB、D-D均高于正常组,差异有统计学意义(均 $P < 0.01$);APTT低于正常组,差异有统计学意义($P < 0.01$);PT与正常组比较差异无统计学意义($P > 0.05$)。见表2。

2.3 研究组与各突聋对照组的凝血参数比较

研究组FIB高于低频组,差异有统计学意义($P = 0.032$);D-D分别高于低频组、高频组、全频组、全聋组,差异均有统计学意义(分别 $P = 0.006, P = 0.003, P = 0.014, P = 0.049$);APTT低于低频组和全频组,差异均有统计学意义(分别 $P = 0.005, P = 0.020$)。见表3。

2.4 研究组与各突聋对照组的疗效比较

突聋患者各组间疗效差异有统计学意义($P < 0.05$),研究组、高频组和全聋组疗效较差,无效率分别为63.6%、46.2%和33.3%;低频组、全频组痊愈率分别为75.8%和39.4%,见表4。研究组疗效最差,低频组疗效最好。

表1 研究组与对照组的一般资料比较

项目	研究组	对照组				
		低频组	高频组	全频组	全聋组	正常组
性别						
男	18	15	15	15	12	18
女	15	18	11	18	21	15
年龄/岁	59(48,63) ¹⁾²⁾	35(30,53)	39(31,54)	50(40,56)	56(44,63)	51(43,59)

与低频组比较,¹⁾ $P < 0.05$;与高频组比较,²⁾ $P < 0.05$ 。

表 2 研究组与正常组的凝血参数比较

组别	$M(P_{25}, P_{75})$			
	FIB/(g · L ⁻¹)	D-D/(mg · L ⁻¹)	PT/s	APTT/s
研究组	2.50(2.11, 2.95)	0.27(0.16, 0.51)	10.7(10.3, 11.3)	25.2(23.1, 28.1)
正常组	2.31(1.92, 2.50)	0.17(0.12, 0.21)	11.1(10.5, 11.5)	27.3(26.4, 29.7)
U	340.00	279.00	432.50	306.50
P	0.009	0.001	0.150	0.002

表 3 研究组与各突聋对照组的凝血参数比较

组别	FIB/(g · L ⁻¹)	D-D/(mg · L ⁻¹)	PT/s	APTT/s
研究组	2.50(2.11, 2.95) ¹⁾	0.27(0.16, 0.51) ¹⁾²⁾³⁾⁴⁾	10.7(10.3, 11.3)	25.75 ± 3.18 ^{a)1)} / 25.2(23.1, 28.1) ^{b)3)}
对照组				
低频组	2.37(1.81, 2.68)	0.16(0.12, 0.25)	10.8(10.6, 11.3)	27.72 ± 2.22
高频组	2.40(1.95, 2.77)	0.13(0.11, 0.23)	10.5(10.1, 10.8)	27.15 ± 2.97
全频组	2.56(2.25, 2.89)	0.16(0.11, 0.28)	10.8(10.4, 11.0)	26.7(25.8, 28.7)
全聋组	2.63(2.07, 2.78)	0.18(1.45, 0.30)	11.0(10.4, 11.5)	26.38 ± 3.19

注: ^{a)}数据满足正态分布及方差齐时所用数值; ^{b)}不满足正态分布或方差不齐时所用数值。

与低频组比较, ¹⁾P < 0.05; 与高频组比较, ²⁾P < 0.05; 与全频组比较, ³⁾P < 0.05; 与全聋组比较, ⁴⁾P < 0.05。

表 4 不同类型突聋患者的疗效比较

组别	例数	预后				Z 值	P 值
		无效	有效	显效	痊愈		
研究组	33	21(63.6)	5(15.2)	6(18.2)	1(3.0)		
对照组							
低频组	33	3(9.1)	2(6.1)	3(9.1)	25(75.8)		
高频组	26	12(46.2)	7(26.9)	0(0)	7(26.9)	41.010	0.001
全频组	33	9(27.3)	5(15.2)	6(18.2)	13(39.4)		
全聋组	33	11(33.3)	5(15.2)	10(30.3)	7(21.2)		

3 讨论

FIB 作为凝血因子 I, 是参与凝血和止血的重要蛋白。内、外源性凝血途径经过一系列酶促反应激活凝血因子 X、Xa 与 Va、Ca²⁺ 等形成凝血酶原激活物激活凝血酶, 凝血酶催化 FIB 凝固成不溶于水的纤维蛋白, 并与血小板、白细胞、红细胞等形成血栓^[2]。FIB 水平是了解人体凝血状态的重要指标, 血浆 FIB 升高与心脑血管疾病(包括缺血性心脏病、脑卒中和其他血栓栓塞性疾病等)的发生有关。Ihler 等^[3]发现血清高 FIB 可导致豚鼠耳蜗血流量减少, 去纤维蛋白药物可增强耳蜗血流量。Oya 等^[4-5]对突聋与 FIB 相关性研究行 Meta 分析发现, 高 FIB 可能与突聋发病相关, FIB 升高可通过增加血液黏度、导致微血栓形成影响内耳供血, 也可能通过促炎功能激活多种免疫细胞影响内耳微循环。虽然该发病机制尚不完全清楚, 但应采取适当的治疗, 尤其是对于严重的听力损失和较高的初始血浆 FIB 水平的突聋患者。

D-D 是纤维蛋白溶解系统分解血栓后产生的特异性降解产物, D-D 升高提示机体处于高凝状态、纤维蛋白溶解亢进, D-D 是诊断血栓栓塞性疾

病的敏感指标^[6]。高颖等^[7]观察 113 例突聋患者发现, 突聋患者 D-D 水平高于健康人, D-D 与突聋的发病相关。进一步对突聋分型进行分析, 发现全聋型患者高凝状态占比较全频型高, 但全聋型与全频型相比, 两者 D-D 差异无统计学意义。APTT、PT 分别是内、外源凝血系统敏感指标, 其缩短常见于血栓前状态、血栓性疾病等。研究发现 APTT、PT 与突聋的发病相关, 全聋型患者 APTT 较全频型短^[8-9]。综上, 突聋患者与对照组相比血液处于高凝状态。

本研究结果显示, 全聋伴眩晕患者 FIB、D-D 高于正常组, APTT 低于正常组, 与其他型突聋相比, 全聋伴眩晕患者的 FIB 高于低频组, D-D 高于其他各组, APTT 低于低频组及全频组, 说明全聋伴眩晕患者的高凝状态不仅较正常人高, 而且比其他各型突聋患者严重, 甚至比单纯全聋患者严重。高凝状态可能是全聋伴眩晕患者的高危因素。

目前认为, 不同类型的突聋发病机制不尽相同, 预后差异大, 全聋型突聋可能与内耳血管微血栓形成、血管栓塞有关^[1]。内耳供血动脉受累程度、部位不同, 导致的内耳损害范围和程度不尽相

同,可以表现不同的症状。耳蜗与前庭供血有同源性,均来自于迷路动脉,其分支耳蜗总动脉供应耳蜗,前庭前动脉及来自耳蜗总动脉的前庭后动脉供应前庭、半规管^[10]。耳蜗供血动脉受累,主要表现为耳鸣、耳聋及耳塞等耳蜗损害症状。迷路动脉主干受累,累及前庭前后动脉,还会伴有眩晕等平衡器官损害症状,从而表现为全聋伴眩晕^[11]。虽然目前没有检测手段能直接证明突聋患者迷路动脉或其分支中有血栓形成,但国内外多项研究均发现,突聋,尤其是全聋型、全频型的发病与机体高凝、血栓形成有关^[12-13]。两者的治疗方案都是以糖皮质激素、改善内耳微循环、降低纤维蛋白原及营养神经等药物为主,但普遍发现全聋型预后较差,尤其是伴有眩晕者^[1]。本研究结果显示不同类型突聋整体痊愈率与国内研究相符^[14],全聋伴眩晕者疗效最差,其好转率仅为36.4%,其次为高频组和全聋组,好转率分别为53.8%和66.7%,低频组疗效最好,好转率为90.9%。根据内耳血供特点及全聋伴眩晕患者的凝血状态,可以推测全聋伴眩晕患者的血液处于高凝状态,迷路动脉主干供血受累,导致内耳缺血程度较其他类型突聋更重,病变累及范围更广,这可能导致其内耳功能受损最重。研究组疗效与各型对照组相比最差,考虑还与目前的突聋治疗针对性差有关。

研究显示,突聋患者发生脑卒中的风险较正常人明显增高,而脑卒中患者发生突聋的概率也高于非卒中者^[15-17]。Chang等^[17]回顾性分析了20余万例伴或不伴眩晕的突聋及周围性眩晕患者,发现与单纯突聋或周围性眩晕相比,伴眩晕的突聋患者发生脑卒中的风险明显增加,并认为伴眩晕的突聋或许不单纯是传统意义上的良性外周性病变^[18],可以认为是迷路动脉栓塞导致的内耳卒中,现有的突聋治疗方案对其针对性不强,导致疗效不佳。目前国内外指南虽已分型治疗,但尚未有针对全聋伴眩晕患者治疗的指导意见。溶栓、抗血小板、抗凝等均是治疗脑卒中的有效手段,在目前治疗基础上加用抗凝、溶栓类药物,或许是改善全聋伴眩晕的突聋患者预后的一个可行措施。Yue等^[19]研究发现低分子量肝素可显著提高突聋的治愈率,因此仍需进一步基础及临床研究,来了解抗凝、溶栓治疗的风险和获益。不排除部分突聋包括突聋伴眩晕患者有内耳出血性病变。另外,对于伴眩晕的全聋型患者,可将突聋的发生视为心脏卒中和脑卒中的预警信号,进行综合评估和必要的干预,以预防心脑血管卒中的发生。

利益冲突 所有作者均声明不存在利益冲突

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[1] 中华耳鼻咽喉头颈外科杂志编辑委员会,中华医学会耳鼻咽喉头颈外科学分会.突发性聋诊断和治疗指南

大龄隐耳耳模矫正疗效分析

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[摘要] 目的:研究耳廓矫正系统对年龄超过6个月患儿的隐耳畸形矫正疗效。方法:将2017年1月—2021年1月广州市妇女儿童医疗中心耳鼻咽喉科接诊的隐耳畸形患儿按年龄分为研究组(≥ 6 个月)和对照组(< 6 个月),均佩戴Earwell耳廓矫正系统,治疗结束后继续随访3~6个月,统计两组矫正疗效、并发症及复发情况。结果:研究组治疗开始阶段和巩固治疗阶段平均时间分别为 (20.29 ± 7.14) d和 (31.82 ± 9.65) d,对照组分别为 (7.5 ± 3.21) d和 (16.64 ± 6.53) d,两组治疗时间差异有统计学意义($P=0.001$)。研究组有效率90.91%(20/22),对照组96.43%(27/28),两组比较差异无统计学意义($P=0.576$);研究组治愈率31.82%(7/22),对照组85.71%(24/28),对照组治愈率高于研究组($P=0.002$)。两组患儿均有并发症发生,研究组最常发生的并发症是皮肤红肿18例(81.82%),矫形器脱落16例(72.73%),压疮12例(54.55%);对照组最常发生的并发症是皮肤湿疹9例(32.14%),压疮6例(21.43%),矫形器脱落5例(17.86%)。两组并发症发生率比较差异有统计学意义($P<0.05$)。结论:大龄隐耳畸形患儿仍可积极尝试矫形系统矫正隐耳,但仅能拉出被隐藏的耳廓部分,对于合并的其他畸形如耳轮粘连、对耳轮上脚发育不良等不能改善。治疗前需跟家长充分沟通治疗过程中可能出现的并发症情况,鼓励患儿坚持佩戴矫正器是治疗成功的关键。

[关键词] 隐耳畸形;儿童;矫正装置;治疗效果

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Nonsurgical correction of cryptotia in children older than early neonates

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Abstract Objective: To study the clinical application of nonsurgical correction of cryptotia in children older than 6 months. **Methods:** The children with cryptotia deformity treated in Guangzhou Women and Children's Medical Center from January 2017 to January 2021 were divided into two groups according to their ages. The study group was over 6 months old and the control group was under 6 months old. They were treated with a Earwell auricle correction system, the follow-up was continued for 3—6 months, and the correction effects, complications and recurrence after the treatment were calculated in the two groups. **Results:** The average time of the treatment start stage and consolidation stage in the study group was (20.29 ± 7.14) days and (31.82 ± 9.65) days, and respectively the control group was (7.5 ± 3.21) days and (16.64 ± 6.53) days, the difference in treatment time between the two groups was statistically significant ($P=0.001$). The effective rate in the study group was 90.91% (20/22), and the effective rate in the control group was 96.43% (27/28), there was no statistically significant difference between the two groups ($P=0.576$). The recovery rate in the study group was 31.82% (7/22), and the recovery rate in the control group was 85.71% (24/28), the cure rate of the control group was higher than that of the study group ($P=0.002$). Complications occurred in both groups. The most common complications in the study group were skin redness and swelling 18 cases (81.82%) and stent shedding 16 cases (72.73%), pressure ulcers followed by 12 cases (54.55%). The most common complication in the control group was skin eczema 9 cases (32.14%), pressure ulcers 6 cases (21.43%), stent shedding 5 cases (17.86%). There was a statistical difference in the incidence of complications between the two groups ($P<0.05$). **Conclusion:** For older children with cryptotia, Earwell correction systems can still be actively tried to correct hidden ears, but only the hidden auricle

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