

doi: 10.13241/j.cnki.pmb.2014.33.015

视网膜静脉阻塞与颈动脉狭窄的相关性研究*

陈泽华¹ 付彩云¹ 刘俊² 黎其友² 阴正勤^{2△}

(1 解放军总医院 北京 100853; 2 第三军医大学附属西南医院 重庆 400038)

摘要 目的:探究视网膜静脉阻塞与颈动脉狭窄的相关性研究,并为其临床检测、治疗与预后提供参考。**方法:**选择我院 55 例视网膜静脉阻塞患者(55 只眼)为研究组,对其裸眼视力、矫正视力、眼压、眼底血管荧光造影(FFA)等检查资料进行分析,并进行多普勒彩超检查,记录其颈动脉狭窄情况,并对两种疾病之间的关系进行分析。同时选取 55 例健康人作为对照组。**结果:**研究组 55 例患者确诊为视网膜静脉阻塞(RVO),多普勒结果显示患者患侧与健侧颈动脉血流动力学各项差异不明显($P>0.05$);其 IMT 值较之对照组显著增高($P<0.05$);其 PSV 与 EDV 值有所降低,差异具有统计学意义($P<0.05$)。**结论:**视网膜静脉阻塞患者大多存在颈动脉狭窄,因此检测颈动脉血流动力学对于诊断与预防视网膜静脉阻塞有着重要作用。

关键词:视网膜静脉阻塞;颈动脉狭窄;血流动力学

中图分类号:R774 **文献标识码:**A **文章编号:**1673-6273(2014)33-6461-03

Correlation of Retinal Vein Occlusion with Stenosis of Carotid Artery*

CHEN Ze-hua¹, FU Cai-yun¹, LIU Jun², LI Qi-you², YIN Zheng-qin^{2△}

(1 General Hospital of PLA, Beijing, 100853, China; 2 Third Military Medical University Southeast Hospital, Chongqing, 400038, China)

ABSTRACT Objective: To explore the improvement the visual function after treatment on the patients that suffer from carotid artery stenosis with retinal vein occlusion and to provide the basis for clinical treatment. **Methods:** 55 patients with retinal vein occlusion (55 eyes) were treated as the study group, and the naked vision, corrected visual acuity, intraocular pressure and fundus fluorescein angiography (FFA) were examined, the carotid artery stenosis and the relationships of them were analyzed. Another 55 healthy people were selected as the control group. **Results:** The examination data of 55 patients were diagnosed with retinal vein occlusion (RVO). The results of Doppler ultrasonography showed that there was no difference of carotid artery hemodynamics on sick side and healthy sides ($P>0.05$). The value of IMT compared with that of the control group increased, PSV and EDV decreased with statistically significant differences ($P<0.05$). **Conclusion:** The detection of carotid artery hemodynamics for patients with retinal vein occlusion is important for the diagnosis and prevention of the disease.

Key words: Retinal vein occlusion; Carotid artery stenosis; Hemodynamics

Chinese Library Classification(CLC): R774 **Document code:** A

Article ID: 1673-6273(2014)33-6461-03

前言

视网膜静脉阻塞(retinal vein occlusion, RVO)是一种比较常见的眼底血管病,该病可以引起视力障碍,甚至眼部致盲。目前,对视网膜静脉阻塞发病机制研究以多因素发病为主,主要包括高血压、动脉硬化血液高黏度和血流动力学异常等^[1-3]。颈动脉狭窄(carotid artery stenosis)可导致眼部血供异常,在临床中时常见有颈动脉狭窄合并视网膜静脉阻塞发病患者。视网膜静脉阻塞后,促进新生血管形成,导致病变进一步恶化^[4,5]。因此,了解视网膜静脉阻塞与颈动脉阻塞的相关性是预防疾病的关键。本文对 55 例视网膜静脉阻塞患者进行颈动脉狭窄的研究,探究两种疾病之间相关性,为临床预防及治疗颈动脉狭窄相关的脑血管意外发生。

1 资料与方法

1.1 临床资料

2012 年 3 月至 2013 年 3 月期间,我院临床眼科经初步眼部检查,包括裸眼、矫正视力,眼压,散瞳眼底检查等和眼底血管荧光造影(FFA)检查确诊为视网膜静脉阻塞患者 55 例作为研究组。其中男性 34 例,女性 21 例,年龄在 26~68 周岁,平均年龄 48.7 周岁;病程 4~8 个月,平均病程 5.2 个月。经过详细询问患者病史,患者中 18 例伴有高血压史,20 例伴有糖尿病史,2 例兼有,6 例伴有高血脂史。另选取 55 例排除眼部疾患的志愿者作为对照组,两组患者在年龄、性别上的差异无统计学意义($P>0.05$),具有可比性。

1.2 主要仪器

* 基金项目:国家重点基础研究发展计划(973 计划)(2013CB967001)

作者简介:陈泽华, E-mail: enhance741@126.com

△ 通讯作者:阴正勤, E-mail: qinzyin@yahoo.com.cn

(收稿日期:2014-06-09 接受日期:2014-06-30)

视力表、指示棒、遮眼板、视野计、视标、眼压计、Canon CF-60UVi FUNDUS CAMERA 眼底血管造影系统、美国通用 vivid7 彩色多普勒超声诊断仪。

1.3 方法

1.3.1 常规眼部检查 对两组患者进行常规眼部检查, 视力表检测裸眼视力、矫正视力, 利用非接触式眼压计检测眼压。

1.3.2 常规血液检查 对两组患者进行血常规检查, 包括血压、血糖、血脂。

1.3.3 多普勒彩超检查 利用美国通用 vivid7 彩色多普勒超声诊断仪对两组患者的颈动脉内中膜厚度(IMT)、收缩期峰值血流速度(PSV)与舒张末期容积值(EDV)。检测者头部侧偏, 充分暴露颈部一侧, 扫描仪频率调至 10 Hz, 自胸锁乳突肌开始扫描。检测患者两侧颈动脉栓塞情况, 斑块大小、位置等。

1.4 统计学处理

采用 SPSS 17.0 对数据进行处理, 组间比较采用 t 检验, 以

$P < 0.05$ 表示差异具有统计学意义。

2 结果

2.1 研究组患者眼部检查结果

研究组患者眼部患侧裸眼视力为 0.1~0.3, 健侧裸眼视力为 1.0~1.4, 患侧眼压为 8.0~10.0 mmHg, 健侧眼压为 15.0~21.0 mmHg。与健侧比较, 研究组患者眼部的患侧视力下降, 眼压降低, 差异具有统计学意义($P < 0.05$)。

2.2 两组超声检测结果

研究组 55 例患者中共检出斑块 80 个, 左侧 46, 右侧 34。颈总动脉分叉处检出 64 个, 颈总动脉主干处检出 8 处, 颈内动脉起始处检出 8 个。研究组患者的眼部患侧与健侧 IMT 值、PSV 与 EDV 值比较, 差异无统计学意义($P > 0.05$)。研究组 IMT 值双侧均高于对照组 ($t = 6.39, P < 0.05$), PSV 与 EDV 值低于对照组 ($P < 0.05$)。见表 1。

表 1 两组患者颈动脉中膜厚度、收缩期峰值血流速度与舒张末期容积的比较

Table 1 Comparison of the IMT, PSV and EDV of patients between two groups

Group	Case		IMT(mm)	PSV(cm/s)	EDV(cm/s)
Study	55	Effected	0.88± 0.12	56.32± 14.93	17.76± 7.04
		Healthy	0.87± 0.14	55.96± 13.08	17.02± 8.13
Control	55		0.70± 0.11	67.32± 10.36	25.93± 6.94
t			6.39	10.28	10.21
P			0.0382	0.0182	0.0273

3 讨论

眼动脉(ophthalmic artery)起自颈内动脉, 作为其第一分支, 眼动脉与视神经一起自视神经管入眼眶^[6-8]。眼动脉的作用主要是营养视网膜内层, 保证其血供正常, 防止视网膜营养不良, 出现眼部致盲现象^[9]。视网膜静脉阻塞的病因比较复杂, 为多因素致病, 外伤、口服避孕药、过度疲劳、高血压、动脉硬化、血液高黏度和血流动力学异常等均有可能引起视网膜静脉阻塞^[10-13]。

颈动脉是眼部血管供应的最主要来源, 颈动脉狭窄多是由于颈动脉的粥样斑块导致的颈动脉管腔的狭窄, 发病率较高, 多发生于颈总动脉分叉和颈内动脉起始段, 有些狭窄性病变甚至可能逐渐发展至完全闭塞性病变。颈动脉出现狭窄, 影响眼动脉血流动力学, 不同程度上引起眼部血流的低灌注, 进而影响视网膜的营养血供, 从而导致低灌注性眼部病变或“缺血性眼病”的发生^[14-16]。

本研究发现, 视网膜静脉阻塞患者经过检查后发现大多存在颈动脉狭窄现象, 并且出现明显斑块。颈部动脉粥样硬化一般危险因素为血脂异常、高血压、糖尿病等^[17]。在本次研究中, 颈动脉粥样硬化患者的主要表现为内膜出现粥样硬化斑块。根据美国心脏病学会相关规定, 将其分为Ⅲ型斑块前期、Ⅳ型粥样斑块、V 型纤维粥样斑块^[18]。研究显示, Ⅲ型斑块前期主要病理机制为 IMT 值的明显增加。斑块一般大多于颈总动脉分叉处出现, 并且左侧多于右侧, 这与既往研究相一致^[19]。

我们还发现, 颈动脉狭窄患者由于其颈总动脉 IMT 值明显增加, 内膜出现斑块, 进一步影响眼动脉的血液供应, 出现视网

膜静脉栓塞, 导致患侧眼裸眼视力明显下降。颈总动脉分叉处形成斑块原因主要是其血流不稳定, 容易形成湍流, 出现斑块, 影响颈内动脉起始处血流动力学, 导致患者的颈内动脉收缩期峰值流速(PSV)与和颈内动脉舒张末期流速(EDV)降低^[20]。

综上所述, 颈动脉狭窄是视网膜静脉阻塞的发病因素之一, 临床治疗中应根据颈动脉狭窄程度对患者进行药物治疗或物理治疗, 阻止新生血管生成, 预防玻璃体积血或青光眼等并发症的发生。

参考文献(References)

- [1] Korematsu S, Goto H, Gotoh C, et al. Central retinal vein occlusion in a pediatric patient with SLE and antiphospholipid antibodies without anti-cardiolipin or anti- β 2 glycoprotein I antibodies [J]. BMC Pediatr, 2014, 14(1): 116
- [2] Noma H, Mimura T, Shimada K. Role of inflammation in previously untreated macular edema with branch retinal vein occlusion[J]. BMC Ophthalmol, 2014, 14(1): 67
- [3] Jeong SH, Kim JH, Kim JW, et al. Patient's Self-recognition of Reduced Visual Acuity Due to Recurrence of Macular Edema and Prompt Visitation to the Hospital in Retinal Vein Occlusion [J]. Korean J Ophthalmol, 2014, 28(3): 213-219
- [4] Kida T, Morishita S, Kakurai K, et al. Treatment of systemic hypertension is important for improvement of macular edema associated with retinal vein occlusion [J]. Clin Ophthalmol, 2014, 8: 955-958
- [5] Moisseiev E, Sagiv O, Lazar M. Intense exercise causing central retinal vein occlusion in a young patient: case report and review of the

- literature[J]. Case Rep Ophthalmol, 2014, 5(1): 116-120
- [6] Gore AD, Rao GS, Gore MA, et al. Multiple extra macular branch retinal vein occlusions in hyperhomocysteinemia [J]. Indian J Ophthalmol, 2014, 62(4): 489-491
- [7] Chen W, Wu Y, Zheng M, et al. Establishing an experimental rat model of photodynamically-induced retinal vein occlusion using erythrosin B[J]. Int J Ophthalmol, 2014, 7(2): 232-238
- [8] Rush RB, Simunovic MP, Aragon, et al. Treat-and-Extend Intravitreal Bevacizumab for Branch Retinal Vein Occlusion[J]. Ophthalmic Surg Lasers Imaging Retina, 2014, 45(3): 212-216
- [9] Cho YJ, Lee DH, Kang HM, et al. Reversal of early central retinal vein occlusion by alleviating optic nerve edema with an intravitreal dexamethasone Implant[J]. Korean J Ophthalmol, 2014, 28(2): 192-193
- [10] Kazarian AA, Burladinova AA, Lebenkova OA. Morphological characteristics of the macula in patients with retinal vein occlusion before and after the treatment: preliminary results[J]. Vestn Oftalmol, 2014, 130(1): 12-17(Russian)
- [11] Gokce G, Metin S, Erdem U, et al. Late hyperbaric oxygen treatment of cilioretinal artery occlusion with nonischemic central retinal vein occlusion secondary to high altitude [J]. High Alt Med Biol, 2014, 15(1): 84-88
- [12] Taylor M, Serbetci E, Ferreira A, et al. United Kingdom-based economic evaluation of ranibizumab for patients with retinal vein occlusion (RVO)[J]. J Med Econ, 2014, 17(6): 423-434
- [13] Yasuda S, Kachi S, Ueno S, et al. Electroretinograms and level of aqueous vascular endothelial growth factor in eyes with hemicentral retinal vein occlusion or branch retinal vein occlusion [J]. Jpn J Ophthalmol, 2014, 58(3): 232-236
- [14] Ozkaya A, Ozkaya HM, Alkin Z, et al. Incidental 'early' diagnosis of colorectal carcinoma by way of central retinal vein occlusion [J]. J Fr Ophthalmol, 2014, 37(5): e73-74
- [15] Parravano M, Oddone F, Boccassini B, et al. Exploring the morphological and functional retinal changes after dexamethasone intravitreal implant (Ozurdex) in macular edema due to retinal vein occlusion[J]. Ophthalmic Res, 2014, 51(3): 153-160
- [16] Yuan A, Ahmad BU, Xu D, et al. Comparison of intravitreal ranibizumab and bevacizumab for the treatment of macular edema secondary to retinal vein occlusion [J]. Int J Ophthalmol, 2014, 7(1): 86-91
- [17] Kamei M, Matsumura N, Suzuki M, et al. Reperfusion of large ischemic areas associated with central retinal vein occlusion: a potential novel treatment with activated protein C [J]. JAMA Ophthalmol, 2014, 132(3): 361-362
- [18] Rahimy E, Sarraf D. Paracentral acute middle maculopathy spectral-domain optical coherence tomography feature of deep capillary ischemia[J]. Curr Opin Ophthalmol, 2014, 25(3): 207-212
- [19] 姚静虹, 罗莎莎, 袁志兰, 等. 小鼠慢性高血压模型下视网膜神经节细胞的损伤[J]. 现代生物医学进展, 2013, 13(16): 3010-3013
- Yao Jing-hong, Luo Sha-sha, Yuan Zhi-lan, et al. The Damage of Retinal Ganglion Cells in Chronic High Intraocular Pressure Mice[J]. Progress in Modern Biomedicine, 2013, 13(16): 3010-3013
- [20] 赫雪飞, 朱雪菲, 沈伟, 等. 老年新生血管性青光眼患者治疗方案选择的影响因素分析[J]. 现代生物医学进展, 2013, 13(26): 5102-5104+5193
- He Xue-fei, Zhu Xue-fei, Shen Wei, et al. The Factors Affecting the Choice of Treatment of Neovascular Glaucoma in Elderly[J]. Progress in Modern Biomedicine, 2013, 13(26): 5102-5104+5193

(上接第 6460 页)

- [8] Rong Y, Song H, You S, et al. Association of Toll-like receptor 3 polymorphisms with chronic hepatitis B and hepatitis B-related acute-on-chronic liver failure[J]. Inflammation, 2013, 36(2): 413-418
- [9] Wang L-Y, Meng Q-H, Zou Z-Q, et al. Increased frequency of circulating Th17 cells in acute-on-chronic hepatitis B liver failure[J]. Dig Dis Sci, 2012, 57(3): 667-674
- [10] Poludasu S, Cavusoglu E, Khan W, et al. Neutrophil to lymphocyte ratio as a predictor of long-term mortality in African Americans undergoing percutaneous coronary intervention [J]. Clin Cardiol, 2009, 32(12): E6-E10
- [11] Chen H-M, Liu H-L, Yang Y-C, et al. Serum IL-21 levels associated with chronic hepatitis B and hepatitis B-related liver failure [J]. Exp Ther Med, 2014, 7(4): 1013-1019
- [12] Xie F, Yan L, Lu J, et al. Effects of nucleoside analogue on patients with chronic hepatitis B-associated liver failure: meta-analysis[J]. PLoS one, 2013, 8(1): e54773
- [13] Wang L, Chen H, Fan C, et al. Efficacy and safety of telbivudine therapy in liver failure patients with chronic hepatitis B virus infection[J]. J Med Virol, 2013, 85(11): 1907-1912
- [14] Seto WK, Lai CL, Yuen MF. Acute-on-chronic liver failure in chronic hepatitis B[J]. J Gastroenterol Hepatol, 2012, 27(4): 662-669
- [15] Xu Z, Ren X, Liu Y, et al. Association of hepatitis B virus mutations in basal core promoter and precore regions with severity of liver disease: an investigation of 793 Chinese patients with mild and severe chronic hepatitis B and acute-on-chronic liver failure [J]. Clin J Gastroenterol, 2011, 46(3): 391-400
- [16] Dao D Y, Seremba E, Ajmera V, et al. Use of nucleoside (tide) analogues in patients with hepatitis B-related acute liver failure[J]. Dig Dis Sci, 2012, 57(5): 1349-1357
- [17] Xu B-Y, Tan W-T, Tan S, et al. Serum Testosterone Levels and Androgen Receptor CAG Polymorphism Correlate with Hepatitis B Virus (HBV)-Related Acute Liver Failure in Male HBV Carriers[J]. PLoS one, 2013, 8(12): e84213
- [18] Bose S, Tripathi D M, Sakhuja P, et al. Genetic polymorphisms of CYP2E1 and DNA repair genes HOGG1 and XRCC1: Association with hepatitis B related advanced liver disease and cancer[J]. Gene, 2013, 519(2): 231-237
- [19] Bernal W, Auzinger G, Dhawan A, et al. Acute liver failure [J]. The Lancet, 2010, 376(9736): 190-201
- [20] Seto WK, Lai CL, Yuen MF. Acute on chronic liver failure in chronic hepatitis B[J]. J Gastroenterol Hepatol, 2012, 27(4): 662-669