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黄斑部视网膜前膜患者手术前后黄斑区结构变化及与视功能预后的关系

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摘要 目的:探讨黄斑部视网膜前膜患者手术前后黄斑区域结构变化情况,及其与患者术后视功能的关系。**方法:**对2014年2月-2016年8月间在我院进行手术治疗的黄斑部视网膜前膜患者60例(60眼)的临床资料进行回顾性分析。所有患者均进行光学相干断层扫描(OCT)检查,观察黄斑中心凹及各方位视网膜厚度变化,同时记录患者手术前后最佳矫正视力(BCVA),分析其相关性。**结果:**术后53例(53眼)患者视力提高,占88.33%,7例(7眼)患者视力不变,占11.67%。术前患者BCVA为(0.18±0.07),术后3个月BCVA为(0.38±0.12),术后3个月BCVA较术前显著提高($P<0.05$)。患者术后黄斑中心凹厚度、内环颞侧厚度、内环鼻侧厚度、内环上方厚度、内环下方厚度、外环颞侧厚度、外环鼻侧厚度、外环上方厚度、外环下方厚度较术前均显著降低,差异具有统计学意义($P<0.05$)。经Pearson相关分析显示,患者术前黄斑中心凹厚度、内环颞侧厚度、外环颞侧厚度、术前后黄斑中心凹厚度差值、术前后内环颞侧厚度差值、术前后外环颞侧厚度差值与术后BCVA呈负相关($P<0.05$)。**结论:**玻璃体切除术可以显著降低黄斑部视网膜前膜患者黄斑区视网膜厚度,提高患者视功能,术前黄斑区域形态对患者术后视力恢复有一定影响。

关键词:视网膜前膜;黄斑;视功能;相关性

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Relationship between Macular Structure Changes and Prognosis of Visual Function in Patients with Macular Epiretinal Membrane before and after Operation

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ABSTRACT Objective: To investigate the changes of macular region structure before and after operation in patients with macular epiretinal membrane, and its relationship with the visual function of patients. **Methods:** The clinical data of 60 patients with macular epiretinal membrane (60 eyes) in our hospital from February 2014 to August 2016 were retrospectively analyzed. All patients were examined with optical coherence tomography (OCT) examination, and observed the changes of macula central fovea and retinal each azimuth thickness, and the best corrected visual acuity (BCVA) was recorded before and after operation, and the correlations of them were analysed. **Results:** The visual acuity was improved in 53 patients (53 eyes) after operation, accounting for 88.33%, and the visual acuity was unchanged in 7 patients (7 eyes), accounting for 11.67%. The preoperative BCVA of patients was (0.18±0.07), and it was (0.38±0.12) at 3 months after operation, which was significantly higher than before operation ($P<0.05$). Postoperative macular central thickness, inner side of the inner ring thickness, nasal side of the inner ring thickness, above the inner ring thickness, below the inner ring thickness, outer ring temporal side thickness, external ring nasal side thickness, above the outer ring thickness, below the outer ring thickness in patients compared with the preoperative were significantly lower, the difference was statistically significant ($P<0.05$). The Pearson correlation analysis showed that preoperative macular central thickness, preoperative inner side of the inner ring thickness, preoperative outer ring temporal side thickness, the difference of macular fovea thickness before and after operation, the difference of the medial temporal before and after operation was, the difference of outer ring temporal side before and after operation were negatively correlated with postoperative BCVA ($P<0.05$). **Conclusion:** Vitrectomy can significantly reduce macular retinal thickness in patients with macular epiretinal membrane, and it can improve the visual function of patients, and the shape of macular region before operation had some influence on postoperative visual acuity.

Key words: Epiretinal membrane; Macular; Visual function; Correlation

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前言

视网膜前膜是由多种原因导致的视网膜色素上皮细胞和

胶质细胞迁移至视网膜与玻璃体交界处,进而形成无血管纤维的细胞膜性疾病^[1],发生在黄斑区域的视网膜前膜称为黄斑部视网膜前膜。该病进展缓慢,早期无临床症状,但随病情发展后

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患者可出现视力下降、复视、视物变形等,严重影响眼部功能。目前对于黄斑部视网膜前膜的病因和发病机制尚未完全明确,临床上对于黄斑部视网膜前膜尚无有效的药物治疗方法,对于进行性视力下降或存在视物变形的患者一般考虑进行玻璃体切除手术治疗^[2,3]。对大部分黄斑部视网膜前膜患者进行玻璃体切除手术可以促进其视功能恢复,但由于黄斑部视网膜前膜病变复杂,患者术后预后的影响因素较多,导致临床上对于该病术后结果尚存在争议^[4]。本研究应用新一代频谱光学相干断层成像(Optical coherence tomography, OCT)观察行玻璃体切除手术治疗前后患者黄斑结构变化及其与视功能的关系,旨在为临床治疗提供依据。

1 资料与方法

1.1 临床资料

对2014年2月-2016年8月间在我院进行手术治疗的黄斑部视网膜前膜患者60例(60眼)的临床资料进行回顾性分析。纳入标准:(1)所有患者均符合《实用眼科诊断》中关于黄斑部视网膜前膜的诊断标准^[5],并经OCT检查确诊;(2)患者符合手术指征;(3)患者资料齐全,完成3个月以上随访。排除标准:(1)既往有眼部外伤史、眼部手术史患者;(2)合并糖尿病、高血压等全身性疾病患者;(3)合并白内障、青光眼等其他影响视力和眼部结构的疾病患者;(4)屈光度>6.00 D,眼轴长度>26 mm患者。所选患者病症均为特发性黄斑部视网膜前膜,其中男性34例(34眼),女性26例(26眼),年龄18~72岁,平均年龄(51.8±9.2)岁。本研究经医院伦理委员会同意。

1.2 方法

1.2.1 手术方法 所有患者均行标准经睫状体平坦部三切口闭合式玻璃体切除术治疗,手术在球后麻醉下进行,手术中首先切除玻璃体皮质,再根据患者病变情况切除病变的前膜,手术中应尽量将黄斑部的纤维增殖膜切除干净。所有患者都充填了膨胀性气体;所有患者术中均进行黄斑区内界膜剥除术;所有患者均进行气-液交换术治疗;且所有手术均由同一高年资医生进行操作。

1.2.2 检查方法 分别于术前、术后3个月应用德国Zeiss公司生产的Cirrus TMHD 4000 OCT检查仪检查患者黄斑区域结构,扫描速度为27000A/s,扫描区域为黄斑部6.0 mm×6.0 mm,扫描深度2 mm,轴向分辨率5 μm,水平分辨率<15 μm。观察黄斑中心凹及各方位视网膜厚度变化,同时记录患者手术前、术后3个月最佳矫正视力(Best corrected visual acuity, BCVA),以及术后并发症发生情况。

1.3 BCVA 评价标准^[6]

(1)BCVA≥0.1时:视力提高:术后3个月患者BCVA提高两行或以上者;视力下降:术后3个月患者BCVA下降两行或以上者;视力不变:术后3个月患者BCVA提高或降低不足两行者。

(2)BCVA<0.1时:视力提高:术后3个月患者BCVA提高0.02者;视力下降:术后3个月患者BCVA下降0.02者;视力不变:术后3个月患者BCVA提高或降低不足0.02者。

1.4 统计学处理

所有数据均应用SPSS 22.0统计学软件进行分析处理,其中计量资料以均数±标准差($\bar{x} \pm s$)表示,术前、术后3个月黄斑中心凹及各方位视网膜厚度、BCVA比较实施t检验,应用Pearson相关性分析术后BCVA与黄斑中心凹及各方位视网膜厚度的相关性, $P<0.05$ 为差异具有统计学意义。

2 结果

2.1 患者手术前、后 BCVA 变化

术后53例(53眼)患者视力提高,占88.33%,7例(7眼)患者视力不变,占11.67%。术前患者BCVA为(0.18±0.07),术后3个月BCVA为(0.38±0.12),术后3个月BCVA较术前显著提高,差异有统计学意义($t=2.893$, $P=0.000$)。

2.2 患者手术前、后黄斑中心凹及各方位视网膜厚度变化

患者术后黄斑中心凹厚度、内环颞侧厚度、内环鼻侧厚度、内环上方厚度、内环下方厚度、外环颞侧厚度、外环鼻侧厚度、外环上方厚度、外环下方厚度较术前均显著降低,差异具有统计学意义($P<0.05$),见表1。

表1 患者手术前、后黄斑中心凹及各方位视网膜厚度变化(L/μm)

Table 1 Changes of retinal thickness before and after operation in patients with macular fovea (L/μm)

Retinal positions	Before operation	3 months after operation	t	P
Macular central thickness	508.78±86.78	378.29±72.62	2.882	0.000
Inner side of the inner ring thickness	468.52±92.56	322.13±55.32	2.903	0.000
Nasal side of the inner ring thickness	468.53±88.32	386.25±52.62	2.842	0.000
Above the inner ring thickness	480.52±85.32	351.52±40.52	2.873	0.000
Below the inner ring thickness	451.82±95.62	355.62±41.30	2.856	0.000
Outer ring temporal side thickness	361.23±75.62	318.11±42.15	2.788	0.000
External ring nasal side thickness	378.25±55.52	318.23±26.82	2.806	0.000
Above the outer ring thickness	385.45±64.25	311.21±28.52	2.812	0.000
Below the outer ring thickness	358.42±78.52	291.28±32.15	2.832	0.000

2.3 术后并发症发生情况

所有患者均完成手术治疗,其中8例(8眼)患者术后出现黄斑区小点状出血病灶,6例(6眼)患者术后次日出现眼压偏

低,术后2 d后眼压均恢复至正常。所有患者在随访期间未出现眼内感染、玻璃体出血、复发和视网膜脱落等。

2.4 患者术后 BCVA 的相关性分析

经 Pearson 相关分析显示,患者术前黄斑中心凹厚度、内环颞侧厚度、外环颞侧厚度、术前后黄斑中心凹厚度差值、术前后内环颞侧厚度差值、术前后外环颞侧厚度差值与术后 BCVA 呈负相关($P<0.05$),见表 2。

表 2 患者术后 BCVA 的相关性分析

Table 2 Correlation analysis of postoperative BCVA in patients

Retinal positions	r	P
Preoperative macular central thickness	-0.548	0.000
Preoperative inner side of the inner ring thickness	-0.528	0.000
Preoperative outer ring temporal side thickness	-0.573	0.000
The difference of macular fovea thickness before and after operation	-0.532	0.000
The difference of the medial temporal before and after operation	-0.482	0.000
The difference of outer ring temporal side before and after operation	-0.392	0.000

3 讨论

黄斑部视网膜前膜是眼部的常见疾病,多发于中老年人,有研究报道,该病发病率约为 2.4%~6.5%,其中大部分为 40 岁以上的中老年人^[7-9]。患者可表现为多种形式的视功能受损,轻者可特异性症状,重者可因黄斑区域纤维性机化增殖导致视网膜局部和黄斑中心凹被遮挡,引起视力下降、复视、视物变形等,严重影响眼部功能,也给患者的生活带来严重影响^[10]。目前,临床上对于黄斑部视网膜前膜尚无特效药物,对于病变严重的患者一般进行手术治疗。玻璃体切除手术是目前治疗黄斑部视网膜前膜的主要方法。有文献报道^[11,12],75%~85%的患者进行玻璃体切除手术视力可以明显提高。但由于黄斑部视网膜前膜病变复杂,患者术后预后的影响因素较多,致使临床上对于该病术后结果和预后相关因素尚存在争议^[13]。

本研究对 2014 年 2 月-2016 年 8 月间在我院行手术治疗的黄斑部视网膜前膜患者 60 例(60 眼)的临床资料进行回顾性分析,术后 53 例(53 眼)患者视力提高,占 88.33%,7 例(7 眼)患者视力不变,符合相关报道^[14]。术前患者 BCVA 为(0.18 ± 0.07),术后 3 个月 BCVA 为(0.38 ± 0.12),较术前显著提高。证实大部分黄斑部视网膜前膜患者经过玻璃体切除手术治疗视力可以明显提高。从患者术后并发症来看,其中 8 例(8 眼)患者术后出现黄斑区小点状出血病灶,6 例(6 眼)患者术后次日出现眼压偏低,术后 2 d 后眼压均恢复至正常。表明玻璃体切除手术安全有效,适用于黄斑部视网膜前膜治疗。本研究还对患者手术前、后黄斑中心凹及各方位视网膜厚度变化进行了比较,结果患者术后黄斑中心凹厚度、内环颞侧厚度、内环鼻侧厚度、内环上方厚度、内环下方厚度、外环颞侧厚度、外环鼻侧厚度、外环上方厚度、外环下方厚度较术前均显著降低。以往有学者报道经过玻璃体切除手术治疗后一般难以恢复正常的黄斑结构,但这些报道大多关注黄斑中心凹变化,对各方位视网膜厚度变化关注较少,本研究结果证实除黄斑中心凹外,各方位视网膜厚度均显著降低^[15,16]。笔者认为引起以上变化的主要原因是:(1)在手术中剥除了内界膜,而内界膜是米勒细胞的基地板,因此术后可能引起米勒细胞变性退行性变性,导致视网膜厚度减少^[17];(2)玻璃体切除术中应用曲安奈德,在降低手术炎症反映的同时消除了视网膜水肿,影响了视网膜厚度^[18,19];(3)玻璃体切除术引起视网膜内层神经纤维变化,导致术

后视网膜厚度减少^[20]。

目前,对于黄斑部视网膜前膜手术后黄斑区结构变化与视功能的相关性仍存在争议,有研究报道患者术后 BCVA 与黄斑中心厚度无相关性^[21]。也有学者认为患者术后 BCVA 与黄斑中心厚度呈负相关^[22]。本研究结果表明,患者术前黄斑中心凹厚度、术前内环颞侧厚度、术前外环颞侧厚度、术后与术前黄斑中心凹厚度差值、术后与术前内环颞侧差值、术后与术前外环颞侧差值与术后 BCVA 呈负相关。与姚稚云等报道基本相同^[23]。笔者认为玻璃体切术后将患者病变区域的纤维性机化增殖进行切除,从而有效的恢复了患者视力。但同时值得注意的是患者术前黄斑部结构可能影响术后视力恢复,如患者术前黄斑中心凹厚度较小,术中如盲目的追求完整剥除增殖膜可能导致医源性损伤,影响患者视功能恢复^[24,25]。

综上所述,玻璃体切除术可以显著降低黄斑部视网膜前膜患者黄斑区视网膜厚度,提高患者视功能,术前黄斑区域形态对患者术后视力恢复有一定影响。

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