

doi: 10.13241/j.cnki.pmb.2017.10.020

单切口和双切口联合手术对闭角型青光眼合并白内障患者视力、IOP 及 CCT 的影响 *

韩莎莎¹ 张贺鹏¹ 葛翠洁¹ 张 兰¹ 徐国辉²

(1 哈励逊国际和平医院眼科 河北 衡水 053000; 2 河北医科大学第三医院 河北 石家庄 050023)

摘要 目的:探讨单切口和双切口联合手术对闭角型青光眼合并白内障患者视力、眼压(IOP)及中央前房深度(CCT)的影响。**方法:**选择2013年6月至2016年6月我院收治的90例闭角型青光眼合并白内障患者,随机分为观察组和对照组,每组各45例。对照组采用单切口手术治疗,观察组采用双切口手术治疗。观察并比较两组患者治疗前后角膜内皮细胞密度、面积、最佳矫正视力、裸眼视力、IOP以及术后并发症的发生率。**结果:**与术前比较,两组患者术后角膜内皮细胞密度均升高,且观察组高于对照组,差异具有统计学意义($P<0.05$);与术前比较,两组患者术后角膜内皮细胞面积均减小,且观察组小于对照组,差异具有统计学意义($P<0.05$);与术前比较,两组患者术后最佳矫正视力、裸眼视力均升高,且观察组高于对照组,差异具有统计学意义($P<0.05$);与术前比较,两组患者术后IOP均降低,且观察组低于对照组,差异具有统计学意义($P<0.05$);与术前比较,两组患者术后CCT均升高,且观察组高于对照组,差异具有统计学意义($P<0.05$);观察组术后并发症总发生率低于对照组($P<0.05$)。**结论:**双切口手术治疗闭角型青光眼合并白内障的效果显著,能够有效改善患者视力、IOP及CCT水平,且安全性高,值得临床推广。

关键词:单切口手术;双切口手术;闭角型青光眼;白内障

中图分类号:R775 **文献标识码:**A **文章编号:**1673-6273(2017)10-1879-04

Effects of Single and Double Incisions Operation on Visual Acuity, IOP and CCT in Patients with Angle Closure Glaucoma and Cataract*

HAN Sha-sha¹, ZHANG He-peng¹, GE Cui-jie¹, ZHANG Lan¹, XU Guo-hui²

(1 Department of Ophthalmology, Halixun International Peace Hospital, Hengshui, Hebei, 053000, China;

2 Department of Ophthalmology, The First Hospital of Hebei Medical University, Shijiazhuang, Hebei, 050023, China)

ABSTRACT Objective: To study the effects of single and double incisions operation on visual acuity, IOP and CCT in patients with angle closure glaucoma complicated with cataract. **Methods:** 90 patients with angle-closure glaucoma and cataract from June 2013 to June 2016 who were treated in our hospital were researched and randomly divided into the observation group and the control group, with 45 cases in each group. The patients in the control group were treated with single incision operation, while the patients in the observation group were treated with double incision operation. Then the corneal endothelial cell density and area, the best corrected visual acuity and naked eye visual acuity, the IOP, the CCT and the incidence of postoperative complications in the two groups were observed and compared. **Results:** Compared with before operation, the corneal endothelial cell density in the two groups increased after operation, and the observation group was higher than that of the control group, and the differences were statistically significant ($P<0.05$); Compared with before operation, the corneal endothelial cell area in the two groups decreased after operation, and the observation group was lower than that of the control group, and the differences were statistically significant ($P<0.05$); Compared with before operation, the best corrected visual acuity and naked eye visual acuity in the two groups increased after operation, and the observation group were higher than those of the control group, and the differences were statistically significant ($P<0.05$); Compared with before operation, the IOP in the two groups decreased after operation, and the observation group was lower than that of the control group, and the differences were statistically significant ($P<0.05$); Compared with before operation, the CCT in the two groups increased after operation, and the observation group was higher than that of the control group, and the differences were statistically significant ($P<0.05$); The incidence of postoperative complications in the observation group was lower than that of the control group ($P<0.05$). **Conclusion:** Double incision surgery has better clinical effects on the treatment of the angle closure glaucoma combined with cataract, which can effectively improve the visual acuity, IOP, and CCT with high security, and it is worthy of clinical application.

Key words: Single incision surgery; Double incision surgery; Angle-closure glaucoma; Cataract

Chinese Library Classification(CLC): R775 **Document code:** A

Article ID: 1673-6273(2017)10-1879-04

* 基金项目:河北省自然科学基金项目(Z-BORY)

作者简介:韩莎莎(1984-),女,本科,研究方向:眼表疾病、青光眼、眼外伤等,电话:15130885558

(收稿日期:2016-10-12 接受日期:2016-10-29)

前言

在眼科疾病中,闭角型青光眼和白内障均较为常见,其发病率随着年龄的不断增长,也呈现着逐渐升高的趋势,该病复杂难治,且会对患者的视力造成影响,对其的治疗目的不仅要控制眼压,并要求将视力提高^[1,2]。目前临床主要对患者实施手术治疗,单切口超声乳化吸除联合小梁切除术、人工晶状体植入术应用较多,该方式可使眼压、视力等临床症状得到一定的改善,但效果不尽人意^[3,4]。双切口联合手术的方式虽复杂于比单切口,但其可降低超声能量、器械对虹膜、结膜的刺激性,促进患者眼压、视力等临床症状的改善^[5,6]。本研究在闭角型青光眼合并白内障患者中分别进行单切口和双切口联合手术进行治疗,旨在对比手术效果,探讨最有效的手术方式,现报道如下。

1 资料与方法

1.1 一般资料

选择 2013 年 6 月 -2016 年 6 月我院接诊的闭角型青光眼合并白内障患者 90 例。纳入标准:① 青光眼、白内障符合《现代眼科学》^[7]中提出的诊断标准;② 年龄 ≥ 18 岁且 ≤ 75 岁;③ 未伴有其余严重全身性并发症;④ 同意参与此次研究。排除标准:① 既往有眼外伤、内眼手术及激光手术史;② 伴有眼底出血、黄斑变形、角膜瘢痕、虹膜异常、视网膜脱离、视神经萎缩等症状的患者;③ 判断能力、精神能力异常;④ 妊娠期、哺乳期妇女。通过随机数表法分为观察组和对照组,各 45 例。观察组男 24 例(38 眼),女 21 例(34 眼),年龄 37~71 岁,平均 (53.23 ± 1.34) 岁;对照组男 23 例(37 眼),女 22 例(34 眼),年龄 35~73 岁,平均 (53.30 ± 1.31) 岁。本次研究已在我院伦理委员会批准下实施,一般基本资料比较($P > 0.05$)。

1.2 方法

两组患者在手术前 30 min 给予复方托吡卡胺滴散眼瞳,利多卡因麻醉球周,常规铺巾消毒,将上直肌固定在眼球。对照组(单切口联合手术):将穹窿部作为基底,在角膜缘上方作一

个大约 6~7 mm 的结膜瓣,采用电凝止血,在角膜缘 3 mm 左右处,作一个大约 4 mm 的巩膜隧道,使用 3.2 mm 的穿刺到,通过巩膜隧道进入前房,注入粘弹剂,进行水分分离以及环形撕囊后,超声乳化吸除晶状体,清除干净残余皮质,再次注入粘弹剂,在后房处,将人工晶状体植入,粘弹剂吸除后,切除角巩膜组织,大小约在 2 mm $\times$ 2 mm 左右,在虹膜处,行根部切除术,恢复虹膜,在巩膜隧道两边的分别作切口,形成一个巩膜瓣,最后缝合两端及结膜瓣,分别使用 10-0、8-0 的缝合线。观察组(双切口联合手术):将穹窿部作为基底,在 12:00 位角膜缘后,作大约 4 mm $\times$ 3 mm 的 1/2 厚巩膜瓣,并在透明角膜缘 11 点的位置作切口,行白内障的超声乳化手术,手术方式同于对照组。对巩膜瓣开一个深层切口,行虹膜周切术、小梁切除术。术后缝合方式同于对照组。所有患者术后均应用典必殊滴眼液滴眼,持续 1 周。

1.3 观察指标

① 使用 KONAN BOBO-CA 非接触式角膜内皮细胞、显微镜记录患者手术前后角膜内皮细胞密度和角膜内皮细胞面积;② 术后 3 个月,记录两组患者最佳矫正视力和裸眼视力;使用裂隙灯显微镜记录手术前后眼压(IOP)和中央前房深度(CCT);③ 记录术后并发症。

1.4 统计学分析

数据通过 SPSS18.0 处理,计量资料用均数 $\pm$ 标准差($\bar{x} \pm s$)表示,并采用 t 检验,计数资料的比较采用 χ^2 检验, $P < 0.05$ 表示差异显著。

2 结果

2.1 两组患者手术前后角膜内皮细胞密度、角膜内皮细胞面积比较

术前两组患者角膜内皮细胞密度、角膜内皮细胞面积无显著差异($P > 0.05$);术后两组患者均发生降低($P < 0.05$),观察组角膜内皮细胞密度比对照组高,角膜内皮细胞面积比对照组小($P < 0.05$),见表 1。

表 1 两组患者手术前后角膜内皮细胞密度、角膜内皮细胞面积比较($\bar{x} \pm s$)

Table 1 Comparison of corneal endothelial cell density and corneal endothelial cell area before and after operation in two groups($\bar{x} \pm s$)

Groups	n	Corneal endothelial cell density(number/mm ²)		Corneal endothelial cell area(μm^2)	
		Before operation	After operation	Before operation	After operation
Observation group	45	2274.12 $\pm$ 275.41	1756.94 $\pm$ 239.12**	467.81 $\pm$ 41.03	521.23 $\pm$ 54.61**
Control group	45	2278.02 $\pm$ 271.23	1509.47 $\pm$ 214.23*	471.09 $\pm$ 40.14	598.86 $\pm$ 52.47*
t value		0.068	5.171	0.383	6.876
P value		0.946	0.000	0.702	0.000

Note: Compared with before operation, * $P < 0.05$; compared with control group after operation, ** $P < 0.05$.

2.2 两组患者手术前后最佳矫正视力、裸眼视力比较

术前两组患者最佳矫正视力、裸眼视力无显著差异($P > 0.05$);术后两组患者均得到改善($P < 0.05$),观察组最佳矫正视力、裸眼视力均高于对照组($P < 0.05$),见表 2。

2.3 两组患者手术前后 IOP、CCT 比较

术前两组患者 IOP、CCT 水平无显著差异($P > 0.05$);术后两组患者较术前比较均得到改善($P < 0.05$),观察组 IOP 低于对照组,CCT 高于对照组($P < 0.05$),见表 3。

2.4 两组患者术后并发症

观察组虹膜损伤、玻璃体脱出、角膜水肿、前色素膜炎、前

房出血的总发生率低于对照组($P<0.05$),见表4。

表2 两组患者手术前后最佳矫正视力、裸眼视力比较($\bar{x}\pm s$)

Table 2 Comparison of best corrected visual acuity and naked eye visual acuity before and after operation in two groups($\bar{x}\pm s$)

Groups	n	Best corrected visual acuity		Naked eye visual acuity	
		Before operation	After operation	Before operation	After operation
Observation group	45	0.23 $\pm$ 0.03	0.72 $\pm$ 0.08**	0.14 $\pm$ 0.04	0.64 $\pm$ 0.06**
Control group	45	0.22 $\pm$ 0.03	0.51 $\pm$ 0.07*	0.15 $\pm$ 0.04	0.43 $\pm$ 0.05*
t value		1.581	13.252	1.186	18.037
P value		0.117	0.000	0.239	0.000

Note: Compared with before operation, * $P<0.05$; compared with control group after operation, ** $P<0.05$.

表3 两组手术治疗前后 IOP、CCT 比较($\bar{x}\pm s$)

Table 3 Comparison of IOP and CCT before and after operation in two groups($\bar{x}\pm s$)

Groups	n	IOP(mmHg)		CCT(mm)	
		Before operation	After operation	Before operation	After operation
Observation group	45	22.21 $\pm$ 3.81	11.74 $\pm$ 2.08**	1.54 $\pm$ 0.32	3.26 $\pm$ 0.72**
Control group	45	22.24 $\pm$ 3.80	17.37 $\pm$ 2.34*	1.58 $\pm$ 0.31	2.43 $\pm$ 0.51*
t value		0.037	12.063	0.602	6.310
P value		0.970	0.000	0.548	0.000

Note: Compared with before operation, * $P<0.05$; compared with control group after operation, ** $P<0.05$.

表4 两组患者术后并发症(例,%)

Table 4 Comparison of complication after operation in two groups(n, %)

Groups	n	Iris injuries	Prolapse of vitreous	Corneal edema	Anterior uveitis	Hyphema	Total incidence rate
Observation group	45	1(2.22)	1(2.22)	1(2.22)	1(2.22)	1(2.22)	5(11.11)
Control group	45	2(4.44)	2(4.44)	3(6.67)	3(6.67)	3(6.67)	13(28.89)
X ² value		0.345	0.345	1.046	1.046	1.046	4.444
P value		0.557	0.557	0.306	0.306	0.306	0.035

3 讨论

在闭角型青光眼合并白内障患者中,主要发病机制是由于瞳孔阻滞、虹膜高褶、晶状体因素而只是闭角型青光眼房角关闭^[8,9]。由于晶状体变厚,位置相对前移,令瞳孔缘和晶状体表面相互紧密接触,引发瞳孔阻滞,前房变浅,房角关闭,升高眼压^[10]。因此,治疗主要以恢复视力,改善眼压和中央前房深度为主。超声乳化白内障吸除人工晶状体植入和小梁切除术三联手术的主要原理是摘出白内障,可使青光眼发病机制中的晶状体因素接触,消除虹膜和晶状体的接触,减轻瞳孔阻滞,该术式可一次性治疗青光眼和白内障,促进视力和视功能的恢复,避免进行多次内眼手术,在临床上应用广泛^[11,12]。单切口主要指在同一切口中进行超声乳化白内障吸除术和小梁切除术,但在一定程度上促使术后滤过泡的瘢痕化,影响治疗效果^[13]。双切口术式主要是在透明角膜切口处实施超声乳化白内障吸除人工晶状体植入术,在上方巩膜切口处实施小梁切除术^[14,15],该术式

可使器械进出及超声乳化能量对结膜组织和滤过泡区巩膜的刺激得到减少,提高滤过泡成功率,从而促进患者视力、眼压的恢复^[16,17]。

有报道称,闭角型青光眼合并白内障患者在实施手术的过程中,会致使患者角膜内皮数量不断减少,甚至出现角膜内皮失代偿,若症状严重还可发生不可逆性角膜水肿,甚至失明^[18]。而角膜内皮细胞损失后,主要是通过增大细胞面积来代偿^[19]。本研究结果指出,单切口联合手术的患者角膜内皮细胞密度丢失程度比双切口联合手术要高,而且单切口联合手术的患者角膜内皮细胞面积更大。这是因为在单切口的操作过程中,会对角膜内皮细胞造成损伤,手术切口大,存在前房角创伤等潜在威胁,致使此类情况的发生,而双切口联合手术的方式,术中降低了器械的进出和超声乳化能量对结膜组织、滤过泡区巩膜的刺激,并具有手术创伤小,术中前房稳定等优点。本研究结果还显示,使用双切口联合手术的患者,术后最佳矫正视力、裸眼视力、IOP、CCT 的改善情况均比单切口联合手术的患者要更为

优异。在施妍霞等^[20]学者的研究中在闭角型青光眼白内障患者中实施不同切口术式, 研究指出双切口联合手术更具有优势, 和本研究结果相似。此外, 使用双切口联合手术的患者, 术后虹膜损伤、玻璃体脱出、角膜水肿、前色素膜炎、前房出血的总发生率低于单切口联合手术的患者, 提示双切口的方式患者给患者带来的痛苦较少, 应用安全性更高。

综上所述, 在闭角型青光眼合并白内障患者中应用双切口联合手术的效果显著, 可有效改善患者视力、IOP、CCT 水平, 安全性高, 值得应用推广。

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