

· 临床研究 ·

年龄相关性白内障患者术后视觉质量的影响因素

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【摘要】 **目的** 分析年龄相关性白内障患者术后视觉质量影响因素。**方法** 回顾性分析2020年4月至2022年4月于中国人民解放军联勤保障部队第九一〇医院眼科收治的2134例年龄相关性白内障患者的临床资料,采用视功能与生存质量调查问卷评估患者术后视觉质量。采用SPSS 20.0软件进行数据分析。根据数据类型,组间比较分别采用 t 检验及方差分析。采用多元线性回归分析患者术后视觉质量影响因素。**结果** 患者视觉适应、主观视觉、立体视觉、周边视觉、心理状态、活动能力、生活自理能力以及社交能力等评分较术前均明显改善,差异均有统计学意义($P<0.05$);且术后视觉质量总分[(76.64±11.37)分]明显高于术前[(55.72±10.89)分],差异有统计学意义($P<0.05$)。年龄、糖尿病史、术前干眼症状、角膜散光度、瞳孔大小、高度近视等一般资料,以及手术切口大小、超声乳化模式、人工晶状体类型、人工晶状体有效位置、术后干眼症状等临床资料对患者术后视觉质量影响显著($P<0.05$)。多元线性回归分析结果显示年龄、角膜散光度、高度近视、超声乳化模式、人工晶状体有效位置、术后干眼症状是患者术后视觉质量影响因素($\beta=0.832, 0.215, 0.314, 1.136, 0.763, 0.833; P<0.05$)。**结论** 年龄相关性白内障患者术后视觉质量受年龄、角膜散光度、高度近视、超声乳化模式等因素影响,需要从影响因素着手提高患者术后视觉质量。

【关键词】 老年人;白内障;视觉质量;因素

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Factors affecting postoperative visual quality in patients with age-related cataract

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【Abstract】 **Objective** To analyze the factors affecting postoperative visual quality in the patients with age-related cataract. **Methods** The clinical data of 2 134 patients with age-related cataract treated at the Ophthalmology Department of the 910th Hospital of the Chinese People's Liberation Army Joint Logistics Support Force from April 2020 to April 2022 were retrospectively analyzed. The postoperative visual quality of patients was evaluated using the questionnaire of visual function and quality of life, and SPSS 20.0 was used for data analysis. Comparison between two groups was performed using t test or variance analysis depending on data type. Multiple linear regression was used to analyze the factors affecting postoperative visual quality. **Results** The scores of visual adaptation, subjective vision, stereovision and peripheral vision, mental state, mobility, self-care ability and social ability were significantly improved compared with those before surgery, and the differences were statistically significant ($P<0.05$). The total score of postoperative visual quality [(76.64±11.37) points] was significantly higher than that before surgery [(55.72±10.89) points], and the difference was statistically significant ($P<0.05$). General data such as age, history of diabetes, preoperative dry eye symptoms, corneal astigmatism, pupil size, high myopia, and clinical data such as surgical incision size, phacoemulsification mode, intraocular lens type, effective position of the intraocular lens, postoperative dry eye symptoms had significant effects on postoperative visual quality ($P<0.05$). Multiple linear regression analysis showed that age, corneal astigmatism, high myopia, phacoemulsification mode, effective position of the intraocular lens, and postoperative dry eye symptoms were the factors affecting postoperative visual quality ($\beta=0.832, 0.215, 0.314, 1.136, 0.763, 0.833; P<0.05$). **Conclusion** The postoperative visual quality of patients with age-related cataract is affected by such factors as age, corneal astigmatism, high myopia, and phacoemulsification mode. It is necessary to improve the postoperative visual quality of the patients by focusing on the above influencing factors.

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表 2 不同一般资料患者术后视觉质量比较

Table 2 Comparison of postoperative visual quality of patients with different general data

(*n* = 2 134, points, $\bar{x} \pm s$)

Index	Visual quality score	<i>t</i> / <i>F</i>	<i>P</i> value
Age		3.215	0.001
60-70 years	75.84±10.26		
>70 years	77.42±12.31		
Gender		1.243	0.214
Male	76.35±11.82		
Female	76.96±10.84		
Education level		0.707	0.493
Primary school and below	76.19±12.34		
Middle school	76.94±11.87		
University and above	76.57±10.03		
Marital status		0.951	0.342
Married	76.44±10.62		
Divorced/Widowed/Unmarried	76.91±12.32		
Drinking	76.81±11.95	0.395	0.693
Smoking	76.67±13.65	0.105	0.916
Diabetes mellitus	75.79±11.35	2.754	0.006
Hypertension	76.99±12.47	1.364	0.173
Duration of disease		2.229	0.108
<5 years	77.02±12.38		
5-10 years	76.88±12.04		
>10 years	75.8±8.64		
Preoperative dry eye symptoms	75.41±12.38	2.488	0.013
Preoperative axial length		2.749	0.064
24.1-26.5 mm	75.89±11.37		
26.5-29.9 mm	76.94±12.04		
≥29.9 mm	77.30±9.84		
Corneal astigmatism		2.862	0.004
>45 D	75.79±12.97		
≤45 D	77.22±10.09		
Corneal diopter		3.437	0.001
>1.3 D	75.46±13.11		
≤1.3 D	77.24±10.32		
Pupil size		21.458	0.000
<2 mm	75.11±11.63		
2-3 mm	78.39±12.48		
>3 mm	75.27±7.99		
High myopia		2.703	0.007
Yes	75.28±12.49		
No	76.96±11.07		

表 3 不同临床资料患者术后视觉质量比较

Table 3 Comparison of postoperative visual quality of patients with different clinical data

(*n* = 2 134, points, $\bar{x} \pm s$)

Index	Visual quality score	<i>t</i> / <i>F</i>	<i>P</i> value
Surgical incision		1.033	0.302
Clear corneal incision	76.38±12.17		
Temporal clear cornea	76.89±10.55		
Surgical incision size		3.900	0.020
<2.4 mm	77.46±12.53		
2.4-3.0 mm	75.84±11.79		
≥ 3.0 mm	76.58±8.96		
Phacoemulsification mode		2.840	0.005
Blasting energy model	77.28±11.96		
Continuous ultrasonic energy model	75.88±10.58		
Intraocular lens type		2.748	0.006
Single	76.03±12.45		
Multiple	77.39±9.84		
Effective position of intraocular lens		2.880	0.004
Normal	77.06±11.85		
Abnormal	75.45±9.79		
Postoperative macular edema		1.493	0.136
Yes	76.03±11.96		
No	76.86±11.14		
Postoperative dry eye symptoms		2.646	0.008
Yes	75.33±12.62		
No	76.96±11.02		

表 4 患者视觉质量影响因素多元线性回归分析

Table 4 Multivariate linear regression analysis of factors affecting visual quality of patients

Factor	β	<i>SE</i>	<i>t</i>	<i>P</i> value
Constant term	8.534	0.153	11.235	<0.001
Age	0.832	0.165	6.724	<0.001
Diabetes mellitus	0.263	0.374	1.115	0.079
Preoperative dry eye symptoms	0.149	0.530	0.096	0.211
Corneal astigmatism	0.215	0.049	5.223	<0.001
Pupil size	0.366	0.713	0.088	0.245
High myopia	0.314	0.142	7.233	<0.001
Surgical incision size	0.453	0.522	1.015	0.061
Phacoemulsification mode	1.136	0.062	11.353	<0.001
Intraocular lens type	0.368	0.657	0.119	0.163
Effective position of intraocular lens	0.763	0.168	8.046	<0.001
Postoperative dry eye symptoms	0.833	0.127	6.376	<0.001

3 讨论

视觉质量由美国眼科基础和临床医学会提出,广义上来说,其为日常生活中使用电脑、阅读、驾驶汽车等生活场景下患者视力情况^[7,8]。本研究采用视功能与生存质量调查问卷评估患者视觉质量,患者术后视觉质量总分明显高于术前,显示患者接受手术有助于促进患者视觉质量改善。另一项研究也显示高度近视白内障患者术后视功能与生存质量调查问卷评分明显上升,也显示患者术后视觉质量明显改善^[9]。

本研究结果显示年龄是患者术后视觉质量影响因素,随着患者年龄增加,晶状体球面像差则逐渐由负变正,使其对角膜正球面抵消作用减弱,眼部球面像差进一步增加,影响患者视觉质量^[10]。另有研究显示术前角膜散光会增加患者术后角膜散光风险,而其不仅会使患者术后裸眼视力降低,还会导致患者出现视觉疲劳以及复视等问题,最终使患者术后视觉质量受到影响^[11],这与本研究中角膜散光度是患者术后视觉质量影响因素一致。本研究结果证实,高度近视患者术后视觉质量不佳。究其原因,高度近视患者多存在巩膜破裂,这会使晶状体在植入后偏移风险增加,进而影响患者术后视觉质量^[12]。本研究结果显示爆破能量模式超声乳化患者术后视觉质量评分较高,爆破式能量模式可以有效缩短手术时间,以减少手术对患者角膜内皮细胞伤害,而连续超声能量探头以无间歇方式运动,能量消耗相对较多,因此会出现能量浪费及异常热损伤,导致角膜内皮细胞损伤风险增加,影响术后视觉质量^[13,14]。人工晶状体有效位置为手术后晶状体处于眼轴方向最终位置,若是其出现偏斜,患者术后单眼复视、视力下降以及眩光等风险明显增加,使患者视觉质量受到影响^[15]。本研究结果显示白内障患者术后干

眼症是患者术后视觉质量影响因素。原因在于,干眼症发生与泪液形成减少、内膜稳定性降低等关系密切,导致患者在术后出现异物感、烧灼感、干涩感以及视物模糊等不适^[16],最终造成患者术后视觉质量下降。

综上,白内障手术有助于改善患者视觉质量,而年龄、角膜散光度、高度近视、超声乳化模式、人工晶状体有效位置、术后干眼症状是患者术后视觉质量影响因素,基于患者术后视觉质量影响因素针对性干预有助于提高患者术后视觉质量,对临床工作具有重要指导意义。

【参考文献】

[1] 范巍,张广斌. 飞秒激光辅助超乳联合 Toric IOL 植入术矫正高度近视白内障合并角膜规则散光[J]. 国际眼科杂志, 2023, 23(2): 325-328. DOI: 10.3980/j.issn.1672-5123.2023.2.28.

[2] Rewri P, Lohan A, Aggarwal S, et al. Cataract surgical reach: falling short to catch white cataracts! [J]. Indian J Ophthalmol, 2021, 69(6): 1575-1578. DOI: 10.4103/ijo.IJO_2560_20.

[3] Hashemi H, Pakzad R, Yekta A, et al. Global and regional prevalence of age-related cataract: a comprehensive systematic review and meta-analysis[J]. Eye (Lond), 2020, 34(8): 1357-1370. DOI: 10.1038/s41433-020-0806-3.

[4] 王广江,董竟. 高度近视合并白内障患者不同 IOL 植入方案的术后视觉质量评估[J]. 国际眼科杂志, 2023, 23(3): 456-461. DOI: 10.3980/j.issn.1672-5123.2023.3.21.

[5] 孙凌彪. 白内障防治指南[M]. 北京: 人民卫生出版社, 1998: 18.

[6] Fletcher AE, Ellwein LB, Selvaraj S, et al. Measurements of vision function and quality of life in patients with cataracts in southern India. Report of instrument development [J]. Arch Ophthalmol, 1997, 115(6): 767-774. DOI: 10.1001/archophth.1997.01100150769013.

[7] 王海伟,岳岩坤,陈小丽,等. 白内障手术对年龄相关性黄斑变性患者视功能及视觉相关生存质量的影响[J]. 临床和实

验医学杂志, 2020, 19(5): 549-553. DOI: 10.3969/j.issn.1671-4695.2020.05.031.

[8] Bhandari S, Chew EY. Cataract surgery and the risk of progression of macular degeneration[J]. Curr Opin Ophthalmol, 2023, 34(1): 27-31. DOI: 10.1097/ICU.0000000000000909.

[9] 张娅萍,曲来强,冉团政,等. 高度近视白内障术后视功能和生存质量早期变化[J]. 中华眼视光学与视觉科学杂志, 2022, 24(11): 827-833. DOI: 10.3760/cma.j.cn115909-20220316-00096.

[10] 孙堂胜,赵广愚,郑两定,等. 年龄相关性白内障患者三焦点与单焦点 IOL 植入术后早期视觉质量比较[J]. 国际眼科杂志, 2021, 21(12): 2124-2129. DOI: 10.3980/j.issn.1672-5123.2021.12.20.

[11] 王海燕,孙朝晖,冯艳霞,等. 白内障合并中低度数角膜散光患者植入散光型人工晶体的效果及主观视觉质量分析[J]. 河北医药, 2020, 42(15): 2273-2277. DOI: 10.3969/j.issn.1002-7386.2020.15.007.

[12] Yao Y, Lu Q, Wei L, et al. Efficacy and complications of cataract surgery in high myopia[J]. J Cataract Refract Surg, 2021, 47(11): 1473-1480. DOI: 10.1097/j.jcrs.0000000000000664.

[13] 赵抒羽,何锦贤,吴燕纯,等. OPD-Scan III 型像差分析仪评估高度近视合并白内障患者植入三焦点 IOL 术后视觉质量[J]. 国际眼科杂志, 2022, 22(2): 318-321. DOI: 10.3980/j.issn.1672-5123.2022.2.28.

[14] Petrella L, Nunes S, Perdigão F, et al. Feasibility assessment of the Eye Scan Ultrasound System for cataract characterization and optimal phacoemulsification energy estimation: protocol for a pilot, nonblinded and monocentre study [J]. Pilot Feasibility Stud, 2022, 8(1): 219-228. DOI: 10.1186/s40814-022-01173-2.

[15] 何思瑾,吴强. 人工晶状体有效位置的计算及影响因素[J]. 中华实验眼科杂志, 2023, 41(6): 598-602. DOI: 10.3760/cma.j.cn115989-20220304-00088.

[16] 罗丽,李华,宋胜仿,等. 不同程度及类型干眼症患者视觉质量的改变及其相关因素[J]. 中国临床医生杂志, 2022, 50(5): 535-539. DOI: 10.3969/j.issn.2095-8552.2022.05.010.

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