

超声乳化联合选择性小梁激光成形术在开角型青光眼中的作用

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Effect of phacoemulsification with selective laser trabeculoplasty on primary open angle glaucoma

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Abstract

• AIM: To compare the effect of primary open angle glaucoma (POAG) with well-controlled drugs on the intraocular pressure (IOP) using phacoemulsification combined selective laser trabeculoplasty (phacoemulsification combined SLT) versus SLT alone.

• METHODS: By a prospective clinical case control study, 24 patients (30 eyes) with POAG were randomly divided into 2 groups: eleven patients (14 eyes) were treated with phacoemulsification combined SLT and 13 patients (16 eyes) were treated with SLT alone. IOP at 3, 6, 9mo, visual acuity and glaucoma medicines at 9mo were observed postoperatively.

• RESULTS: The mean IOP of both groups was significantly decreased after the surgery. IOP of phacoemulsification combined SLT had decreased markedly than SLT alone after 3, 6mo. There was statistical significance between the 2 groups ($P=0.001$). The numbers of glaucoma drugs were markedly decreased postoperatively than preoperatively in both groups. Statistical significance were found between the 2 groups ($P=0.03$).

• CONCLUSION: The study demonstrates that phacoemulsification with SLT and SLT can markedly reduce the IOP of POAG patients with good IOP control using drugs. The IOP-reducing effect of phacoemulsification combined SLT exceeds markedly than that of SLT alone.

• KEYWORDS: phacoemulsification; selective laser trabeculoplasty; intraocular pressure; primary open angle glaucoma

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摘要

目的:比较选择性小梁激光成形术(SLT)和超声乳化联合选择性小梁激光成形术(Phaco+SLT)在药物控制良好的开角型青光眼(POAG)中的降眼压作用。

方法:采用前瞻性临床病例对照研究,24例30眼药物控制眼压良好的开角型青光眼随机分为两组,其中Phaco+SLT组11例14眼;SLT组13例16眼。测量术后3,6,9mo的眼压及术后9mo的视力和抗青光眼用药数量。

结果:两组术后平均眼压比术前眼压明显降低。Phaco+SLT组在术后6,9mo的平均眼压明显低于SLT组,两组眼压比较有统计学意义($P=0.001$);两组术后抗青光眼用药数量比术前明显降低,两组间比较有统计学意义($P=0.03$)。

结论:Phaco+SLT和SLT能明显降低开角型青光眼患者眼压,Phaco+SLT降眼压作用明显优于SLT。

关键词:超声乳化;选择性小梁激光成形术;眼压;开角型青光眼

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0 引言

青光眼是全世界范围内引起不可逆性失明的致盲眼病。降低眼压依然是唯一的治疗措施^[1-3]。目前,药物、激光和手术是其主要治疗方法。药物是治疗青光眼的首要措施。在药物不能控制眼压时,手术在很大程度上能够降低眼压。尽管青光眼手术能长期有效的控制眼压。但是,它也有许多不利因素^[4]。基础和临床研究表明功能性小梁网功能障碍是眼压增高的主要原因^[5]。因此,任何降压手术最简单易行的方法是提高小梁网的流出率。选择性小梁激光成形术是一种微创的降压手术,通过在小梁网和施氏管内侧壁开辟的管道促进房水进入施氏管^[6,7]。当然,在多数情况下,选择性小梁激光成形术(SLT)降压作用并不强于传统滤过性手术。但是,SLT能较快的为眼科医生,特别为白内障手术医生所接受。SLT

在青光眼白内障联合手术中是相当安全的,其降压效果明显高于单纯超声乳化术^[8]。以往文献报道其在术前眼压控制不良($>21\text{mmHg}$)病例中的效果,而对眼压控制良好的青光眼患者鲜有报道。我们目前的研究为证实超声乳化联合 SLT 在术前眼压控制良好($\leq 21\text{mmHg}$)的开角型青光眼病例中的降压效果。

1 对象和方法

1.1 对象 我院 2012-01/2013-01 经门诊诊断为开角型青光眼的患者 24 例 30 眼,其中男 11 例,女 13 例,年龄 26~70(平均 51.5 ± 6.50)岁。分为两组:Phaco+SLT 组,11 例 14 眼,采用超声乳化+选择性小梁激光成形术;SLT 组,13 例 16 眼,采用选择性小梁激光成形术。入选标准:(1)临床确诊的开角型青光眼患者,年龄 >40 岁患者晶状体混浊 N_1C_1 。诊断标准参考第八版眼科学教材;(2)正在应用降眼压药物治疗的患者需经过药物洗脱期,即停用原降眼压药物: β 肾上腺素受体阻滞剂及前列腺素停用 4wk,肾上腺素能兴奋剂停用 2wk,胆碱能制剂及碳酸酐酶抑制剂停用 1wk。(3)年龄 ≥ 20 岁。排除标准:(1)近 2mo 有内眼手术史或激光手术史者;(2)患有影响临床试验可靠性的急性眼病(如严重睑缘炎、结膜炎、角膜炎或葡萄膜炎)或慢性眼病者;(3)严重心、肺、肝及肾功能障碍者;(4)配戴角膜接触镜者或角膜病变影响测量眼压者;(5)妊娠及哺乳期妇女;(6)有其他非青光眼视神经病变的患者。

记录术前眼压、最佳矫正视力(BCVA)和青光眼用药史。联合手术适应证:最佳矫正视力 ≤ 0.5 。以 SLT 治疗前最后眼压测量值作为治疗前基线眼压,2 组平均眼压分别为 $17.2\pm 3.6\text{mmHg}$ 和 $16.94\pm 5.1\text{mmHg}$;术前平均视力分别为 0.4 ± 0.33 和 0.4 ± 0.72 ;术前平均用药数量分别为 3.12 ± 0.53 和 3.0 ± 0.22 。两组患者术前各项参数经统计学比较无明显差异($P>0.05$)。

1.2 方法

1.2.1 手术方法 超声乳化手术方法:执行标准的透明角膜切口,同时植入人工晶状体。激光治疗方法:采用 Q 开关倍频 Nd:YAG 激光(duet 二合一激光系统,Coherent 公司),波长 308nm,脉冲时间为 3ns,患者坐位,表面麻醉(4g/L 盐酸奥布卡因)下放置 Latina 专用镜瞄准在小梁网部位调至清晰,能量从 0.4mJ 起始,以 0.1mJ 递增调至刚有微小气泡产生,治疗部位为鼻侧 90° 以上小梁网,激光斑直径 $200\mu\text{m}$,10 点不重叠光斑,操作由同一医师完成。激光前后用药情况:术后妥布霉素地塞米松(1g/L 妥布霉素地塞米松)点眼 3d,4 次/d,术后 1h 测量眼压,眼压升高超过 10mmHg 者予盐酸卡替洛尔滴眼液,2 次/d,以后根据眼压水平增减局部用药。Phaco+SLT 组患者行超声乳化后 1wk 后行 SLT 治疗。

1.2.2 观察指标 治疗前后眼压,用 Goldman 测量眼压。同时记录患者治疗前后视力、降眼压药使用情况,随诊时间为术后 9mo。

统计学分析:数据采用 SPSS 13.0 软件进行统计学处理。平均值采用 $\bar{x}\pm s$ 表示,术前和术后数据比较采用配对资料的 t 检验,以 $P<0.05$ 为有统计学意义。

2 结果

2.1 术后眼压 在术后 9mo 的随访中,两组眼压明显降低。其中术后 3mo,两组眼压降低最明显,两组眼压比较无明显统计学意义($P=0.06$);术后 6,9mo,两组眼压比较有明显统计学意义($P=0.001$,表 1)。

表 1 两组患者术后降压效果比较 ($\bar{x}\pm s$, mmHg)

组别	3mo	6mo	9mo
Phaco+SLT 组	12 ± 4.45	12 ± 6.65	13 ± 7.35
SLT 组	13.2 ± 5.21	15 ± 2.27	17 ± 19.56
t	3.11	7.34	5.62
P	0.06	0.001	0.001

2.2 术后视力 患者 24 例在术后 9mo 后的平均视力较术前有明显提高,Phaco+SLT 组平均视力 0.80 ± 0.50 ,SLT 组平均视力 0.7 ± 0.27 。经统计学处理,两组间差异无统计学意义($P=0.07$)。

2.3 用药数量 Phaco+SLT 组和 SLT 组术后 9mo 用药数量较术前明显减少,术后平均用药数量分别为 1.4 ± 0.32 和 2.6 ± 0.41 ,经统计学处理,两组间差异有明显统计学意义($P=0.03$)。

3 讨论

本试验结果表明 Phaco+SLT 和 SLT 术都取得了明显的降眼压效果,但是 Phaco+SLT 术后长期降压效果优于单纯施行 SLT 术;在术后抗青光眼用药数量也明显优于 SLT 术。

SLT 与亚激光小梁切除术不同,激光选择性作用于含黑色素的小梁网细胞,对周围组织无损伤,保持了小梁组织的结构完整。同时,吸收激光能量的小梁网细胞裂解,激发生物学效应,通过释放各种细胞因子,促进小梁网组织细胞增生,加大小梁网间隙,促进房水外流,降低眼压。由于激光作用时间短,无损伤,具有可重复性^[9,10]。但是,大量研究表明 SLT 的远期降眼压效果并不理想^[11]。以往的文献报道单纯超声乳化能有效的降低眼压^[12,13]。大多学者和临床医生认为其降眼压机制在于:摘除晶状体能加深前房深度,随后促进房水的流出^[14,15]。我们研究表明超声乳化联合选择性小梁激光成形术降眼压作用明显大于单纯晶状体摘除,与以往报道结果相一致^[16,17]。超声乳化联合选择性小梁激光成形术的优势也表现在抗青光眼用药的减少。新近的研究表明长期使用抗青光眼药物,特别是前列腺素类药物,不仅损害眼表结构,而且能够改变角膜中央厚度和影响角膜内皮细胞功能^[18,19]。黄斑囊样水肿也是前列腺素类药物的常见并发症^[20]。随着抗青光眼药物使用种类的增加,患者用药的依从性成比例的下降。因此,SLT 能减少抗青光眼药物对眼部的损害,减少频繁滴眼药的次数;同时 SLT 具有重复使用的优势。众所周知眼压波动是青光眼视野进展的危险因素。超声乳化可能降低眼压,但对眼压波动未有明显的影响。研究表明 SLT 可以降低日间眼压变化^[21,22]。

总之,超声乳化联合选择性激光小梁形成术对开角型青光眼能有效降压,而且减少日间眼压波动,操作简便、副作用小,可作为确诊者的一线治疗;对小梁切除术后高眼压的患者也能起到降压作用,是治疗开角型青光眼的有效措施。

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