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【应用研究】

改良结膜入路眼眶内下壁减压术治疗轻中度甲状腺相关眼病的临床效果[△]

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Clinical effects of refined transconjunctival inferomedial wall decompression surgery to treat mild to moderate thyroid-associated ophthalmopathy

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[Abstract] **Objective** To evaluate the curative effect of refined transconjunctival inferomedial wall decompression to treat mild-moderate thyroid-associated ophthalmopathy (TAO). **Methods** Totally 10 patients (11 eyes) with mild-moderate TAO from January 2017 to August 2018 in Yunnan Second People's Hospital were retrospectively analyzed, who were received refined transconjunctival inferomedial wall decompression. All of patients were received orbital computed tomography in coronal, sagittal and horizontal positions and measurements including visual acuity, exophthalmos, diplopia, ocular appearance and anterior segment photography before operation. The improvements of exophthalmos, visual acuity and diplopia before and after operation were taken as evaluating indicators. The related data was counted and analyzed statistically. **Results** The exophthalmos of 11 eyes was (18.94 ± 1.40) mm before operation and (15.22 ± 1.46) mm after operation. The reduction of exophthalmos was (3.72 ± 0.64) mm, with statistically significant ($t = 18.379, P < 0.001$). The visual acuity was 0.53 ± 0.29 before operation and 0.62 ± 0.32 after operation. The visual acuity increased by 0.08 ± 0.1 , with statistically significant ($t = -2.733, P = 0.021$). There were 2 patients with diplopia before operation and another 2 patients suffered from diplopia after operation, all of whom were mild diplopia. Diplopia did not exacerbate after operation in the 2 patients who had diplopia before operation. **Conclusion** Refined transconjunctival inferomedial wall decompression can effectively improve exophthalmos and visual acuity with low rates of diplopia after operation, and the surgical incision is concealed and beautiful, so it is a reliable way for orbital decompression.

[Key words] transconjunctival inferomedial wall decompression surgery; thyroid-associated ophthalmology; exophthalmos; rectification

【摘要】目的 评价改良结膜入路眼眶内下壁减压术治疗轻中度甲状腺相关眼病的疗效。**方法** 回顾性分析2017年1月至2018年8月在云南省第二人民医院行改良结膜入路眼眶内下壁减压术治疗的10例(11眼)轻中度甲状腺相关眼病患者。所有患者在术前均给予眼眶水平位、冠状位和矢状位CT检查,测量视力、眼球突出度、复视情况,检查眼外观进行眼前段照相等。将手术前、后眼球突出度,视力以及复视的改善情况作为效果评价指标,对相关数据进行统计和分析。**结果** 本组11眼术前眼球突出度为 (18.94 ± 1.40) mm,术后 (15.22 ± 1.46) mm;术后与术前比较,眼球突出度降低 (3.72 ± 0.64) mm,差异有统计学意义($t = 18.379, P < 0.001$)。术前视力为 0.53 ± 0.29 ,术后为 0.62 ± 0.32 ;术后与术前比较,视力提高 0.08 ± 0.10 ,差异有统计学意义($t = -2.733, P = 0.021$)。术前复视2例;术后新发生复视2例,均为轻度复视。术前已存在复视的患者,术后复视程度无加重。**结论** 改良结膜入路眼眶内下壁减压术能有效改善甲状腺相关眼病患者的眼球突出度与视力,术后复视发生概率低,手术切口隐蔽美观,是一种可靠且有效的眶减压术式。

【关键词】 结膜入路内下壁眶减压术;甲状腺相关眼病;眼球突出度;矫正

【中图分类号】 R777.5

甲状腺相关眼病(thyroid-associated ophthalmology, TAO)是一种自身免疫性疾病,既可以发生在甲状腺功能亢进的患者,也可以发生在甲状腺功能正常或减退的患者^[1]。TAO通常病情较轻且具有自愈性,但有3%~5%的患者病情较重,视力受到威胁甚至失明。目前,欧洲甲状腺眼病专家组认为此类患者需要进行眶减压手术治疗^[2]。本研究受到眼眶爆裂性骨折后眼球内陷的启发,模拟眼眶爆裂性骨折,通过下睑板下缘结膜切口入路,移除眼眶内下壁部分骨壁及骨膜,即改良结膜入路眼眶内下壁减压术,以改善轻中度TAO患者的症状,现将效果报告如下。

1 资料与方法

1.1 一般资料 回顾性分析2017年1月至2018年8月在云南省第二人民医院行改良结膜入路眼眶内下壁减压术治疗的10例轻中度TAO病例,其中男2例,女8例,年龄(40.98±9.68)岁。单眼手术9例,双眼手术1例,共11眼。所有患者均由同一术者完成手术。

1.2 纳入及排除标准 纳入标准:(1)眼眶CT提示眼外肌肌肉增粗;(2)病程处于非活动期且甲状腺功能正常3个月以上;(3)眼球突出度>16~22mm,要求行手术整形者。排除标准:(1)患者心、肺功能异常,不能耐受全身麻醉;或者甲状腺功能控制不良,不能耐受手术;(2)伴有暴露性角膜病变。

1.3 检测指标和手术方法

1.3.1 检测指标 所有患者在术前均给予眼眶水平位、冠状位和矢状位CT检查,测量视力、眼球突出度、复视情况,检查眼外观,行眼前段照相等。术后检查同术前。视力:采用标准对数视力表,距离患者5m处测量患者单眼视力,记录术前检查结果,并且对照术后最后一次复查结果,对比视力变化情况。眼球突出度:采用Bingham等^[3]的眼位中轴线测量法,通过测量患者眼眶CT水平位图像窗,将晶状体最厚的图像窗确定为轴心图,然后在轴心图中从前眶缘的左侧顶点至右侧顶点作一条直线作为参照线^[4],再作角膜最前端至参照线的连接线,使该连接线垂直于参照线,连接线的长度即为眼球突出度。复视:测量患者术前与术后最后一次复诊第一、第二、第三眼位的复视情况。

1.3.2 手术方法 患者在全身麻醉下,分离下睑板下缘结膜,用脑压板将内下方的眼眶软组织托起,沿骨膜表面向眶内侧壁深部分离,在眼球后极打开眶内侧壁,咬除内侧壁中下1/2骨膜、骨壁,去除部分脂肪组织,向上可至筛骨顶部,深至视神经管开口处,保留筛骨-上颌窦支撑结构,向下延伸至眶下侧壁,用脑压板将眼球及其下方的脂肪托起,将眶下壁骨壁及骨膜1/3一并咬出,内至筛骨-上颌窦支撑结构,深至眶下壁终点。最后咬除筛窦气房间隔及黏膜组织,提高内壁减压效果,降低眶压,并矫正眼球突出度(图1)。

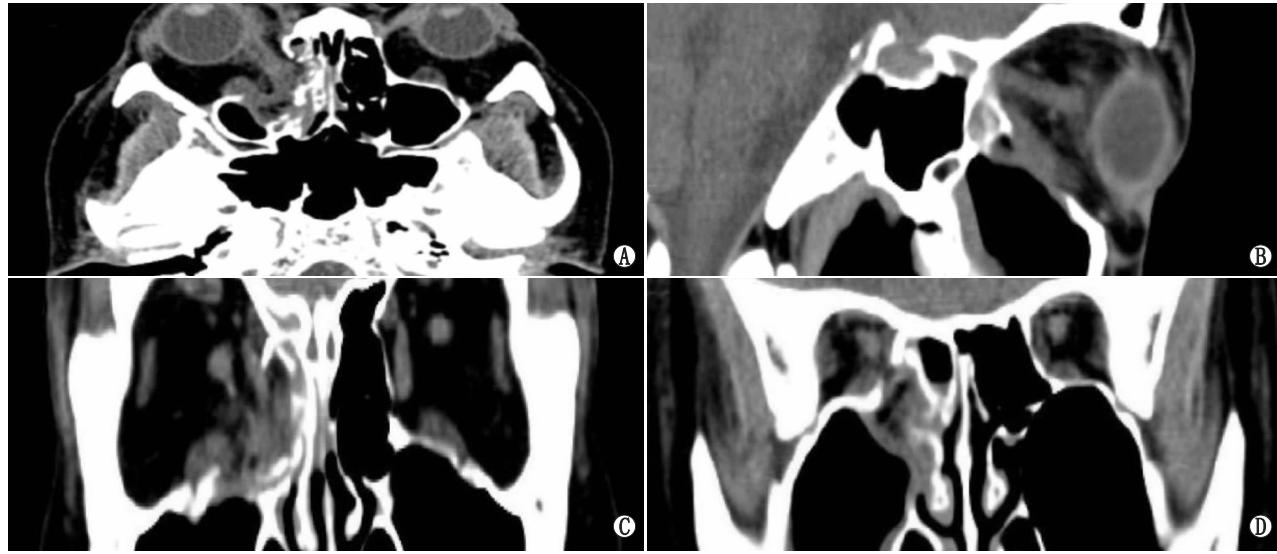


图1 模拟眼眶爆裂性骨折进行内下壁眶减压术后CT改变。A:右眼眶模拟爆裂性骨折眶减压术后筛骨纸板骨膜与骨壁大部分被取出;B:右眼矢状位保留筛骨顶板以及筛骨-上颌窦支撑结构;C:冠状位右眼内下壁约2/3以及下内壁1/3被咬除;D:同冠状位,手术咬除范围深至视神经管旁

1.4 统计学分析 将手术前、术后眼球突出度、视力以及复视的改善情况作为效果评价指标,对相关数据进行统计和分析。采用SPSS 24.0进行统计描述和统计推断,术前及术后眼球突出度、视力变化等计数资

料的比较采用配对t检验。检验水准: $\alpha=0.05$ 。

2 结果

2.1 眼球突出度改善情况 本组11眼术前眼球突

出度为 (18.94 ± 1.40) mm, 术后为 (15.22 ± 1.46) mm; 术后与术前比较, 眼球突出度降低 (3.72 ± 0.64) mm, 差异有统计学意义 ($t = 18.379, P < 0.001$)。术后眼球突出度典型好转病例效果见图2。



图2 眼球突出度典型好转病例术前与术后的外观照片。A:术前右眼突出且下睑退缩明显;B:术后3 d,右眼突出情况较术前有明显改善,下睑退缩较术前好转,除球结膜充血外未见其他异常

2.2 视力改善情况 术前视力为 0.53 ± 0.29 , 术后为 0.62 ± 0.32 ; 术后与术前比较, 视力提高 0.08 ± 0.10 , 差异有统计学意义 ($t = -2.733, P = 0.021$)。

2.3 复视发生情况 术前复视2例; 术后新发生复视2例, 均为轻度复视。术前已存在复视的患者, 术后复视程度未见加重。

3 讨论

TAO是Graves病最常见也是最复杂的甲状腺外症状^[5-6]。大多数TAO的病理改变为发生在眼眶内的炎症过程, 表现为肌纤维增粗、肥大, 肌纤维间黏多糖类物质堆积, 纤维结缔组织增生、炎症细胞浸润, 造成组织肿胀, 眶内压增高, 这些病理改变会导致眼球外突和眼球活动受限等^[7]。所以, 在病情较重的病例中, 为了避免患者的视觉功能损害, 经常通过眶减压手术扩大眶内容积^[8]。

眼眶爆裂性骨折由眼眶钝挫伤引起, 常发生于眼眶壁最薄弱的筛骨纸板(眶内侧壁)以及眶下壁^[9], 其主要临床症状为眼球内陷以及复视^[10]。Burm等^[11]与Eun等^[12]发现眼眶内壁和下壁同时骨折时, 复视的发生率分别为80.9%与82.0%, 如果无眼外肌嵌入, 常只表现为眼球内陷^[13]。目前, 经结膜切口修复眼眶爆裂性骨折从而矫正眼球内陷以及复视的手术方式使用的频率越来越高^[14], 该手术方式保证了患者外形美观; Kothari等^[15]证明这一手术方式与其他手术方式相比术后并发症更少。本研究我们模拟眼眶爆裂性骨折原理, 通过保留眶内下壁以及筛骨-上颌窦支撑的前1/2骨质结构, 从眼球后极部后部开始咬除骨膜及骨壁, 扩大眼眶内容积。术后患者眼球突出度均有所改善, 退缩了 (3.72 ± 0.64) mm, 这与既往研究通过内下壁眶减压让眼球后退4~6 mm的结果稍有差距^[16-20]; 原因是术者在手术中借鉴了O'Malley等^[21]保留筛骨-上颌窦支撑结构的内下壁眶减压术, 以降低肌椎移位的风险, 最大限度地防止术后复视的产生, 但是眼球回退效果也会减弱。此外, 这样的术式不留下任何的可见瘢痕, 保护了患者容颜, 适合年轻爱美的患者。

本组患者术后视力均得到了提升, 这与Wang

等^[13]采用内下壁眶减压术后视力无改善不同。考虑其原因与本组患者术后都接受了激素冲击治疗有关, 激素减轻了眼部炎症, 一定程度提升了视力, 但是激素是否能长期改善视力还需要深入研究。另外, Wang等^[13]排除了压迫性视神经病变(compressive optic neuropathy, CON)的患者, 但是本组病例纳入了CON患者, 也是产生差异的原因之一。大量研究证明, 在CON患者中给予不同类型的眶减压手术, 75%~95%的患者视力都有所改善^[22-30]。

本研究中8例术前无复视的患者, 术后2例出现了轻度复视, 这与Cubuk等^[8]的研究一致。根据既往文献^[22,31-34]的报道, 内下壁眶减压术后复视的发生率为13%~84%。Burm等^[11]与Eun等^[12]认为由外伤所致的眼眶内下壁骨折后复视的发生率可达80%以上, 所以该术式模拟眼眶爆裂性骨折治疗TAO诱发复视的风险远远低于真正的眼眶爆裂性骨折。产生复视的原因可能是在术中过多地破坏了筛骨-上颌窦支撑, 这一结论与O'Malley等^[21]的研究相似。Paridaens等^[35]与Bailey等^[36]也强调保护筛骨-上颌窦支撑——也就是眼眶下内侧支撑的重要性, 通过保留这一骨质结构不仅避免了眼眶下移, 还降低了发生医源性复视的风险。另外, CON本身也可能导致复视, McKeag等^[37]与Neigel等^[38]发现, 眼球运动障碍通常发生在CON的患者; 由于本组纳入了CON患者, 导致与Neigel等^[38]的结果存在差异。

本研究是回顾性研究, 无法避免各种因素所致的偏倚, 所以结论还存在一些局限。总的来说, 改良结膜入路内下壁眶减压术治疗轻中度TAO的疗效确切, 患者术后视力提高, 眼球突出度减轻明显。后续还需要更多前瞻性的随机分组临床试验来比较新方法与其他传统方法的差异, 论证其安全性和有效性。

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