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改良微血管减压术治疗复发性三叉神经痛的疗效及安全性分析

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摘要 目的:探讨改良微血管减压术(MVD)治疗复发性三叉神经痛的疗效及安全性。**方法:**回顾性分析 2010 年至 2015 年收治的 50 例复发性三叉神经痛患者,2012 年前采取常规 MVD 手术方法 (MVD 组,n=22),2012 年后采取改良 MVD 的手术方法 (改良 MVD 组,n=28)。MVD 组采用传统 MVD 对三叉神经根进行全程减压,即沿首次切口入路,依次切开皮下、肌筋膜,充分分离骨窗边缘的瘢痕组织,适当扩大骨窗直至硬脑膜充分暴露。切开硬膜,锐性分离蛛网膜后探查 Meckel 腔至神经出脑区(REZ),仔细探查三叉神经全段,分离压迫神经的责任血管以及首次手术置入的 Teflon 垫棉,对三叉神经进行全程减压。改良 MVD 组在此基础上,探查三叉神经颅内段及其周围结构,解剖三叉神经脑干延伸段,垫开小脑上动脉对三叉神经脑干延伸段的压迫。比较两组术后缓解率、并发症、复发情况。**结果:**改良 MVD 组术后缓解率为 100.0%,显著高于 MVD 组 72.7% ($P<0.05$);两组术后并发症的发生率比较差异无统计学意义($P>0.05$);改良 MVD 组术后 1 年复发率为 0%,显著低于 MVD 组 22.7% ($P<0.05$)。**结论:**MVD 术中三叉神经根全程减压联合脑干延伸段减压治疗复发性三叉神经痛患者可有效缓解疼痛,降低术后复发风险,且不增加术后并发症。

关键词:复发性三叉神经痛;微血管减压术;全程减压;脑干延伸段

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Analysis of the Clinical Effect and Safety of Modified Microvascular Decompression on the Recurrent Trigeminal Neuralgia

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ABSTRACT Objective: To explore the clinical effect and safety of modified microvascular decompression (MVD) on the recurrent trigeminal neuralgia. **Methods:** 50 patients with recurrent trigeminal neuralgia from 2010 to 2015 in the Center of Cranial Nerve of Shanghai Jiaotong University (including Shanghai Tongren Hospital and Xinhua Hospital) were retrospectively analyzed, patients before 2012 were given regular MVD (MVD group, n=22), patients after 2012 were given improved MVD (modified MVD group, n=28). MVD group was given trigeminal nerve root decompression by traditional MVD, the method was described as follows: the skin, myofascial was cutted in turn along the first incision, the scar tissue on the edge of bone window was separated, and the bone window was appropriately expanded until the dura mater was fully exposed. Then dura mater was cutted open to sharply dissect the arachnoid, Meckel cavity was probed up to neurological brain regions (REZ), the trigeminal nerve segment was closely examined to separate the responsible blood vessels of oppressive nerve and the Teflon pad of cotton imbedding at the first operation. Modified MVD group was given detection of intracranial trigeminal nerve and its surrounding structures, dissection of brainstem extended segment of trigeminal neuralgia, and the compression of superior cerebellar artery to brainstem extended segment of trigeminal neuralgia was fended off. The postoperative remission rate, recurrence and complications between two groups were compared. **Results:** The postoperative remission rate in modified MVD group was 100.0%, which was significantly higher than that of the MVD group ($P<0.05$). There was no statistical significance in the incidence of postoperative complications between two groups ($P>0.05$). The recurrence rate at 1 year after surgery in modified MVD group was 0%, which was significantly lower than that of the MVD group (22.7%, $P<0.05$). **Conclusions:** Decompression of trigeminal nerve root combined with brainstem extended segment of trigeminal neuralgia in MVD for recurrent trigeminal neuralgia could effectively relieve the pain, reduce the risk of postoperative recurrence, and wouldn't increase the postoperative complications.

Key words: Recurrent trigeminal neuralgia; Microvascular decompression; Whole journey decompression; Extended segment of brainstem

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前言

三叉神经痛是临床常见的脑神经疾病,责任血管的压迫是其发作的主要原因,表现为面部三叉神经区域反复发作的阵发性剧痛^[1,2]。三叉神经痛临床诊断相对容易,但仍缺乏彻底有效的治疗方法。微血管减压术(MVD)是治疗三叉神经痛的首选治疗术式,并取得显著的效果,其术后早期治愈率高达 80%以上,但术后很大比例患者可出现疼痛复发,复发率约为 20%~40%^[3-5]。研究发现,三叉神经颅内段具有较长的无髓鞘部分,极易受周围血管压迫,从而导致 MVD 手术失败或术后复发^[6]。此外,MVD 实施的方式不同,其疗效也各不相同。如何有效缓解术后疼痛与复发,一直是临床研究的热门问题^[7]。本院对复发性三叉神经痛患者尝试采用改良 MVD 手术治疗,旨在探讨其临床疗效与安全性。

1 资料与方法

1.1 一般资料

回顾性分析上海交大颅神经诊治中心(包括上海市同仁医院及新华医院)2010 年至 2015 年诊治的 50 例的复发性三叉神经痛患者。入组标准:① 均符合国际头痛协会(IHS)制定的三叉神经痛诊断标准^[8],并经影像学检查排除颅内占位性病变等;② 既往行手术治疗后复发;③ 排除继发性三叉神经痛、前期治疗资料不详及合并严重器官病变者。其中男 22 例,女 28 例;年龄 31~78(48.2±3.6)岁;病程 3 个月~12 年(4.6±2.1)年;疼痛部位:第 I 支 5 例,第 II 支 8 例,第 III 支 16 例,II+III 支 11 例,I+II+III 支同时累及 10 例。2012 年前采取常规 MVD 手术方法(MVD 组,n=22),2012 年后改进采取改良 MVD 的手术方法(改良 MVD 组,n=28)。两组年龄、性别、疼痛分布及病程等比较,差异均无统计学意义($P>0.05$),具有可比性。

1.2 治疗方法

所有患者均取侧卧位,患侧朝上,沿首次切口入路,依次切开皮下、肌筋膜,充分分离骨窗边缘的瘢痕组织,利用磨钻适当扩大骨窗直至硬脑膜充分暴露。切开硬膜,锐性分离蛛网膜后探查 Meckel 腔至神经出脑区(REZ),仔细探查三叉神经全段,分离压迫神经的责任血管以及首次手术置入的 Teflon 垫棉,对三叉神经进行全程减压。复发者均为新血管压迫、垫棉移位、脱落造成责任血管压迫神经,行 MVD。改良 MVD 组在此基础上,探查三叉神经颅内段及其周围结构,并解剖三叉神经脑干

延伸段,垫开小脑上动脉对三叉神经脑干延伸段的压迫。见图1。

1.2 观察项目

比较两组患者术后疼痛缓解情况、并发症发生情况,随访 1 年,记录两组患者复发情况。

1.3 统计分析方法

采用 SPSS 17.0 版软件包进行数据分析,计量资料以均数±标准差表示,比较采用 t 检验,计数资料以率或例数表示,比较采用 χ^2 检验, $P<0.05$ 视为差异有统计学意义。

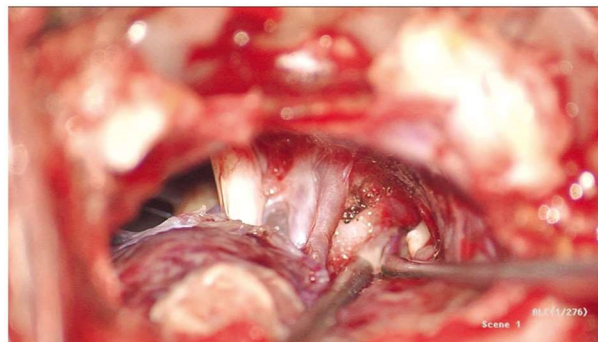


图 1 MVD 术中解剖三叉神经脑干延伸段探查小脑上动脉

Fig.1 Detection of superior cerebellar artery by dissection of brainstem extended segment of trigeminal neuralgia in MVD

2 结果

2.1 两组术后疗效比较

改良 MVD 组术后缓解率为 100.0%,显著高于 MVD 组 72.7%,差异有统计学意义($P<0.05$)。见表 1。

表 1 两组术后疗效比较[n(%)]

Table 1 Comparison of postoperative clinical effect between two groups

Groups	N	Postoperative remission rate
MVD group	22	16(72.7)
Modified MVD group	28	28(100.0)
P		<0.05

2.2 两组术后并发症的发生情况比较

两组术后的并发症主要为面部麻木或面瘫、口周疱疹、听力下降、复视等,两组均未见脑干受损或其他永久性并发症。两组各并发症的发生率比较差异均无统计学意义($P>0.05$)。见表2。

表 2 两组术后并发症发生情况比较【例(%)】

Table 2 Comparison of the incidence of postoperative complication between two groups[n(%)]

Groups	N	Facial numbness or facioplegia	Perioral herpes	Dysaudia	Diplopia
MVD group	22	5(27.2)	0(0)	4(18.2)	3(13.6)
Modified MVD group	28	8(28.6)	4(14.2)	8(28.6)	6(21.4)
P		>0.05	>0.05	>0.05	>0.05

2.3 两组术后复发率比较

术后均随访 1 年,改良 MVD 组未见复发病例,MVD 组复

发 5 例(22.7%),改良 MVD 组复发率显著低于 MVD 组,差异有统计学意义($P<0.05$)。见表 3。

表 3 两组术后复发率比较【例(%)】

Table 3 Comparison of the postoperative recurrence rate between two groups[n(%)]

Groups	N	6 months	12 months
MVD group	22	2(9.1)	5(22.7)
Modified MVD group	28	0(0)	0(0)
P		>0.05	<0.05

3 讨论

三叉神经痛患者由于三叉神经入根区存在血管压迫或被增厚的蛛网膜包裹,造成脱髓鞘病变而出现异常放电,伴有阵发性、单边性、撕裂样疼痛,严重影响患者的工作和生活。MVD 作为三叉神经痛的有效治疗方法,术后复发一直是困扰临床医师的难点问题,其中复发病例中 5%左右发生在术后 1 年,而绝大多数发生在术后 2 年^[9,10]。复发性三叉神经痛的治疗远比原发性棘手,一次手术失败以及疾病的症状将会对患者造成严重的心理及生理影响。因此,二次手术的疗效及安全性则显得尤为重要。目前,临床上普遍主张采用原切口入路进行二次手术,同时为避免第一次手术所致粘连,对于明确为血管压迫的患者应尽早行二次手术^[11-13]。

研究显示 MVD 术后复发率与手术方式、责任血管减压是否彻底密切相关,减压不完全或遗漏责任血管是导致复发的最重要原因之一^[14,15]。从解剖学上来看,三叉神经作为最大颅神经分为三个部分,其中进入脑桥前、位于脑池内的部分称为神经根进入区(REZ),该部分最易受血管压迫^[16]。术中需对 REZ 区域充分暴露。但有研究显示仅对 REZ 区的责任血管进行探查与分离是不够的,仍需仔细探查其他部位或原因不明的责任血管^[17,18]。三叉神经颅内段的无髓鞘部分较长,其抵御周围血管压迫能力差,其神经根的任何部位均有可能发生神经血管压迫,任何与三叉神经后根存在解剖接触的血管都可能是责任血管。因此,行 MVD 时要暴露该神经根的颅内段全长。此外,三叉神经运动支含有感觉纤维,其一旦受血管压迫,累及第 3 支疼痛,减压运动支后疼痛完全缓解。部分复发性三叉神经痛患者 MVD 术中已行全程减压,但疼痛仍无法缓解或者缓解后再次复发。

本研究尝试探查三叉神经颅内段及其周围结构,解剖三叉神经脑干延伸段,垫开小脑上动脉对三叉神经脑干延伸段的压迫,有效规避了上述几种情况。研究结果显示改良 MVD 组所有患者术后疼痛均完全缓解,明显优于 MVD 组,说明对脑干延伸段的减压有助于更好缓解疼痛,考虑三叉神经根全程减压仍可能不足,三叉神经脑干延伸段被血压迫也可能导致三叉神经痛。并发症方面,两组均未见脑干受损或其他永久性并发症。随访 1 年后,改良 MVD 组复发率较 MVD 组显著降低,说明解剖并减压三叉神经脑干段可彻底消除复发危险因素,降低术后复发风险,且并未增加术后并发症。

综上所述,MVD 术中三叉神经根全程减压联合脑干延伸段减压安全有效,能够缓解疼痛,降低术后复发风险,适用于复发性三叉神经痛患者。鉴于本研究样本量较小,随访时间不足

2 年,其远期疗效与安全性尚待积累病例进一步研究。但随着临床对三叉神经理论研究的不断深入以及显微技术的发展,MVD 必将有更大的发展空间。

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