·疼痛·

微血管减压术与非手术治疗老年原发性三叉神经痛的对比分析

王雷波　刘清军　王金环　翟国岩

【摘要】 **目的**　对比微血管减压术与非手术治疗老年原发性三叉神经痛的有效性和安全性。**方法**　共133例>75岁的老年原发性三叉神经痛患者分别行微血管减压术(MVD组,80例)和非手术治疗(非手术治疗组,53例,包括脉冲射频术38例、立体定向伽马刀放射治疗10例、针灸治疗5例),McGill疼痛问卷(MPQ)评价疼痛缓解程度,世界卫生组织生活质量量表(WHOQoL-100)评价生活质量,并记录术后并发症,包括面部感觉迟钝、头痛、恶心呕吐、肺炎、颅内感染、脑脊液漏、深静脉血栓形成、不完全性面瘫、听力缺失、运动障碍等。**结果**　MVD组患者79例(98.75%)疼痛完全缓解、1例(1.25%)疼痛部分缓解,非手术治疗组8例(15.09%)疼痛完全缓解、33例(62.26%)疼痛部分缓解、12例(22.64%)疼痛无缓解,组间差异有统计学意义($\chi^2=84.241$,$P=0.000$)。随访55.80(35.74,63.48)个月,MVD组复发率低于非手术治疗组[8.75%(7/80)对35.85%(19/53);$\chi^2=16.558$,$P=0.000$],生活质量优于非手术治疗组[WHOQoL-100评分(27.82±2.10)分对(22.19±7.22)分;$t=1.202$,$P=0.039$]。两组患者术后面部感觉迟钝、头痛、恶心呕吐等并发症发生率均较高,肺炎、颅内感染、脑脊液漏、深静脉血栓形成、不完全性面瘫、听力缺失、运动障碍等并发症少见,无一例死亡,其中,MVD组术后面部感觉迟钝发生率低于非手术治疗组[8.75%(7/80)对86.79%(46/53);$\chi^2=81.005$,$P=0.000$]。**结论**　微血管减压术治疗老年原发性三叉神经痛安全、有效,因此建议除非无法耐受全身麻醉,原发性三叉神经痛患者均应首选微血管减压术。

【关键词】 三叉神经痛;　显微外科手术;　老年人

Comparative analysis between microvascular decompression and non-surgical treatment for senile idiopathic trigeminal neuralgia

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【**Abstract**】 **Objective**　To compare the efficacy and safety of microvascular decompression (MVD) and non-surgical treatment for treating senile idiopathic trigeminal neuralgia (ITN). **Methods**　A total of 133 patients older than 75 years with ITN respectively received MVD (N = 80) and non-surgical treatments (N = 53) such as pulse radiofrequency in 38 cases, stereotactic gamma knife radiotherapy in 10 cases, and acupuncture and moxibustion in 5 cases. McGill Pain Questionnaire (MPQ) was used to evaluate the degree of pain improvement. World Health Organization Quality of Life Scale-100 (WHOQoL-100) was used to evaluate life quality. Postoperative complications were recorded, including facial blunt sensation, headache, nausea and vomiting, pneumonia, intracranial infection, cerebrospinal fluid (CSF) leakage, deep venous thrombosis, incomplete facial paralysis, hearing loss and dyskinesia. **Results**　In MVD group, 79 cases (98.75%) had complete pain relief and one case (1.25%) had partial pain relief after operation. There were 8 cases (15.09%) with complete pain relief, 33 cases (62.26%) with partial pain relief, and 12 cases (22.64%) without pain relief in non-surgical treatment group. The difference between 2 groups was statistically significant ($\chi^2=84.241$, $P=0.000$). After 55.80 (35.74, 63.48) months follow-up, the recurrence

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rate of MVD group was significantly lower than that of non-surgical treatment group [8.75% (7/80) vs. 35.85% (19/53); $\chi^2 = 16.558$, $P = 0.000$]. The life quality of MVD group was better than that of non-surgical treatment group [WHOQoL-100 (27.82 ± 2.10) score vs. (22.19 ± 7.22) score; $t = 1.202$, $P = 0.039$]. The occurrence of postoperative complications such as facial blunt sensation, headache, nausea and vomiting were high in both groups, while the occurrence of pneumonia, intracranial infection, CSF leakage, deep venous thrombosis, incomplete facial paralysis, hearing loss and dyskinesia were rare in both groups. No case was dead. The incidence of facial blunt sensation in MVD group was significantly lower than that in non-surgical treatment group [8.75% (7/80) vs. 86.79% (46/53); $\chi^2 = 81.005$, $P = 0.000$]. **Conclusions** MVD is safe and effective in the treatment of senile ITN, so it is suggested that MVD should be the first choice for patients with ITN, unless they cannot tolerate general anesthesia.

【Key words】 Trigeminal neuralgia; Microsurgery; Aged

原发性三叉神经痛是以三叉神经分布区反复发作性、阵发性刺痛或电击样疼痛为特征的一组疾病。随着人口老龄化的加剧，老年原发性三叉神经痛发病率逐渐升高，此类患者越来越受到关注。微血管减压术（MVD）是目前治疗难治性原发性三叉神经痛的首选方法，既往认为，老年原发性三叉神经痛是微血管减压术的禁忌证[1]。考虑到颅后窝外科手术的风险，大多数老年患者采用相对保守的射频热凝术和立体定向伽马刀放射治疗。鉴于此，本研究采用微血管减压术和非手术治疗133例＞75岁的老年原发性三叉神经痛患者，比较两种治疗方法的有效性和安全性。

资料与方法

一、临床资料

1. 病例选择标准 （1）均符合原发性三叉神经痛诊断标准：①疼痛发作持续时间较短（＜2 min）。②至少具备以下疼痛特征中的4项，疼痛分布于三叉神经1个或多个分支；突发性、强烈性、尖锐性、表面性、刺痛性或烧灼性疼痛；剧烈疼痛；发作间期无任何症状。③无神经功能缺损症状与体征。④发病特点在个体中是固定的。⑤排除因病史、体格检查或其他导致的面部疼痛。（2）年龄＞75岁。（3）均行头部MRI检查以排除继发性三叉神经痛和多发性硬化（MS）患者。（4）排除既往曾行微血管减压术或美国麻醉医师协会（ASA）分级3级及以上的患者。（5）本研究经天津市环湖医院道德伦理委员会审核批准，所有患者及其家属均知情同意并签署知情同意书。

2. 一般资料 选择天津市环湖医院神经外科2012年1月1日–2018年1月1日诊断与治疗的老年原发性三叉神经痛患者共133例，男性60例，女性73例；年龄76～90岁，平均（82.31 ± 6.81）岁；病程0.50～30.00年，平均（18.44 ± 9.78）年；左侧三叉神经痛67例（50.38%），右侧疼痛66例（49.62%）；疼痛分布于三叉神经V1支11例（8.27%），三叉神经V2支73例（54.89%），三叉神经V3支14例（10.53%），V1和V2支11例（8.27%），V2和V3支17例（12.78%），V1、V2和V3支7例（5.26%）；ASA分级1级56例（42.11%），2级77例（57.89%）；McGill疼痛问卷（MPQ）评分4～6分，平均（5.30 ± 0.63）分。根据患者意愿分为微血管减压术组（MVD组，80例）和非手术治疗组（53例）。两组一般资料比较，差异均无统计学意义（$P＞0.05$，表1），具有可比性。

二、研究方法

1. 治疗方法 （1）MVD组：采用微血管减压术，患者患侧对侧侧俯卧位，气管插管全身麻醉，采用患侧枕下经乙状窦后锁孔入路，作平外耳道横行切口，长度4～5 cm，逆行切除颅骨约2.50 cm×2.50 cm大小，充分显露乙状窦边缘，尽量暴露横窦边缘，弧形切开硬脑膜，缓慢释放脑脊液，于手术显微镜下切开三叉神经周围蛛网膜，探查自三叉神经入脑桥区（REZ）至Meckel囊全程，松解并游离三叉神经，植入Tefflon垫片将三叉神经与责任血管适当垫离，术中注意保护岩上静脉及其主要分支，其中7例存在难以分离的静脉压迫或无明确责任血管，行三叉神经感觉根部分离断术，依据三叉神经纤维束排列顺序，自外下向内上，切断V3支和V2支部分纤维束。术后严密缝合硬脑膜，还纳骨瓣。（2）非手术治疗组：主要采用脉冲射频术、立体定向伽马刀放射治疗和针灸治疗。

2. 评价指标 （1）有效性评价：采用MPQ问卷评价疼痛缓解程度以及世界卫生组织生活质量量表（WHOQoL-100）评价生活质量。①MPQ问卷，0～

表1　两组患者一般资料的比较

Table 1.　Comparison of general data between 2 groups

Item	MVD (N = 80)	Non-surgical treatment (N = 53)	χ^2 or t value	P value
Sex [case (%)]			0.553	0.457
Male	34 (42.50)	26 (49.06)		
Female	46 (57.50)	27 (50.94)		
Age ($\bar{x} \pm s$, year)	81.19 ± 6.77	82.81 ± 6.91	1.728	0.229
Duration ($\bar{x} \pm s$, year)	16.48 ± 10.29	19.22 ± 9.82	2.101	0.281
Side of pain [case (%)]			0.011	0.915
Left	40 (50.00)	27 (50.94)		
Right	40 (50.00)	26 (49.06)		
Distribution of pain [case (%)]			2.101	0.491
V1	7 (8.75)	4 (7.55)		
V2	42 (52.50)	31 (58.49)		
V3	8 (10.00)	6 (11.32)		
V1 and V2	9 (11.25)	2 (3.77)		
V2 and V3	11 (13.75)	6 (11.32)		
V1, V2 and V3	3 (3.75)	4 (7.55)		
Offending vessel [case (%)]			2.783	0.103
Artery	70 (87.50)	44 (83.02)		
Vein	4 (5.00)	3 (5.66)		
Artery and vein	3 (3.75)	3 (5.66)		
No compression	3 (3.75)	3 (5.66)		
ASA [case (%)]			0.365	0.546
Stage 1	32 (40.00)	24 (45.28)		
Stage 2	48 (60.00)	29 (54.72)		
MPQ ($\bar{x} \pm s$, score)	5.11 ± 0.78	5.32 ± 0.67	1.782	0.290

Two-independent-sample t test for comparison of age, duration and MPQ, and χ^2 test for comparison of others。MVD, microvascular decompression, 微血管减压术; ASA, American Society of Anesthesiologists, 美国麻醉医师协会; MPQ, McGill Pain Questionnaire, McGill疼痛问卷

1分，完全缓解；2～4分，部分缓解；5～6分，无缓解。“复发”定义为术后疼痛完全缓解（MPQ评分0～1分）患者随访期间MPQ评分≥2分。终点事件为三叉神经痛复发或死亡。②WHOQoL-100量表，截取量表中健康状况、生活质量、是否依靠医疗帮助、身体不适的妨碍程度、生活乐趣、生活意义共6项医疗相关内容，每项评分0～5分，总评分30分，评分越高、生活质量越佳。（2）安全性评价：记录术后并发症，包括面部感觉迟钝、头痛、恶心呕吐、肺炎、颅内感染、脑脊液漏、深静脉血栓形成、不完全性面瘫、听力缺失、运动障碍等。

3. 统计分析方法　采用SPSS 17.0统计软件进行数据处理与分析。计数资料以相对数构成比（%）或率（%）表示，采用χ^2检验；呈正态分布的计量资料以均数±标准差（$\bar{x} \pm s$）表示，行两独立样本的t检验。以$P \leqslant 0.05$为差异具有统计学意义。

结　果

MVD组患者均顺利完成微血管减压术，手术成功率100%；79例（98.75%）疼痛完全缓解，其中7例行三叉神经感觉根部分离断术，术后口周遗留部分麻木感；1例（1.25%）疼痛部分缓解，可能与临床症状不典型、术前多次进行各种治疗有关。非手术治疗组38例行脉冲射频术，10例行立体定向伽马刀放射治疗，5例行针灸治疗；8例（15.09%）疼痛完全缓解，33例（62.26%）疼痛部分缓解，12例（22.64%）疼痛无缓解。两组患者预后比较，差异有统计学意义（$P = 0.000$，表2）。所有患者均采用电话或门诊随访，随访时间6～72个月、中位时间55.80（35.74，63.48）个月，MVD组仅7例（8.75%）复发，非手术治疗组19例（35.85%）复发，组间差异有统计学意义（$P = 0.000$，表2）。

治疗后MVD组患者WHOQoL-100评分为25～30分、平均（27.82 ± 2.10）分，非手术治疗组患者WHOQoL-100评分16～29分、平均（22.19 ± 7.22）分，组间差异有统计学意义（$t = 1.202$，$P = 0.039$），表明微血管减压术对患者生活质量的改善优于非手术治疗。

两组患者术后面部感觉迟钝、头痛、恶心呕吐等并发症发生率均较高，其中，MVD组术后出现面部感觉迟钝7例（8.75%）、非手术治疗组46例（86.79%），组间差异有统计学意义（$P = 0.000$）；MVD组术后出现严重头痛14例（17.50%）、非手术治疗组10例（18.87%），MVD组术后出现严重恶心呕吐8例（10%）、非手术治疗组5例（9.43%），组间差异均无统计学意义（$P > 0.05$，表3）。其余少见并发症包括肺炎、颅内感染、脑脊液漏、深静脉血栓形成、不完全性面瘫等，其中，MVD组术后出现颅内感染4例（5%）、非手术治疗组0例，MVD组术后出现脑脊液漏3例（3.75%）、非手术治疗组0例，MVD组术后出现肺炎5例（6.25%）、非手术治疗组3例（5.66%），MVD组术后出现深静脉血栓形成1例（1.25%）、非手术治疗组1例（1.89%），MVD组术后出现不完全性面瘫1例（1.25%）、非手术治疗组1例（1.89%），组间差异均无统计学意义（$P > 0.05$，表3）。两组均无死亡病例。

表2 两组患者预后和复发率的比较[例(%)]

Table 2. Comparison of prognosis and recurrence of patients between 2 groups [case (%)]

Item	MVD (N = 80)	Non-surgical treatment (N = 53)	χ^2 value	*P* value
Prognosis			84.241	0.000
Complete pain relief	79 (98.75)	8 (15.09)		
Partial pain relief	1 (1.25)	33 (62.26)		
Recurrence	7 (8.75)	19 (35.85)	16.558	0.000

表3 两组患者术后并发症的比较[例(%)]

Table 3. Comparison of postoperative complications of patients between 2 groups [case (%)]

Item	MVD (N = 80)	Non-surgical treatment (N = 53)	χ^2 value	*P* value
Facial blunt sensation	7 (8.75)	46 (86.79)	81.005	0.000
Headache	14 (17.50)	10 (18.87)	0.040	0.841
Nausea and vomiting	8 (10.00)	5 (9.43)	0.012	0.914
Pneumonia	5 (6.25)	3 (5.66)	0.000*	1.000
Intracranial infection	4 (5.00)	0 (0.00)	1.287*	0.257
CSF leakage	3 (3.75)	0 (0.00)	0.688*	0.407
Deep venous thrombosis	1 (1.25)	1 (1.89)	0.000*	1.000
Incomplete facial paralysis	1 (1.25)	1 (1.89)	0.000*	1.000

*adjusted χ^2 value，校正χ^2值。CSF，cerebrospinal fluid，脑脊液

讨 论

原发性三叉神经痛是最难以忍受的疼痛性疾病之一。目前，对于>75岁的原发性三叉神经痛患者推荐多种CT引导下经皮穿刺技术如射频热凝术、球囊压迫、甘油注射术等，这些方法临床应用广泛，较颅后窝探查术更无创、更安全。然而，有相当多的研究显示，神经血管压迫在原发性三叉神经痛的发病机制中发挥重要作用，并认为微血管减压术是唯一可能治愈的外科方法，可以直接解决原发性三叉神经痛的假定病因[1-3]。微血管减压术于1962年由Gardner[2]率先开展，随后，Jannetta[3]利用显微外科技术进一步推广该术式，此种治疗方法疼痛缓解持续时间最长，面部异常感觉和角膜反射功能障碍发生最少。1996年，Barker等[4]采用微血管减压术治疗1024例三叉神经痛患者，平均随访6.20年，82.23%(842/1024)术后疼痛明显缓解。Sindou等[5]采用微血管减压术治疗330例三叉神经痛患者，平均随访8.20年，80%(264/330)疼痛完全缓解。然而，很多患者甚至临床医师惧怕手术风险，为老年患者提供经皮射频热凝术、气囊压迫和甘油注射术等治疗方式。Tronnier等[6]比较225例行微血管减压术的三叉神经痛患者与206例行经皮射频热凝术患者的远期疗效，微血管减压术组术后2年疼痛完全缓解率为76.44%(172/225)、经皮射频热凝术组为50%(103/206)，尽管经皮射频热凝术组有24.76%(51/206)的患者术后4.50年疼痛完全缓解，但微血管减压术组有63.11%的患者(142/225)术后20年疼痛仍完全缓解。Jawahar等[7]为期18个月的随访研究显示，仅42.59%的行放射治疗的三叉神经痛患者(46/108)疼痛完全缓解。Javadpour等[8]采用微血管减压术治疗44例>70岁的三叉神经痛患者，证实微血管减压术治疗老年三叉神经痛有效，且与青年患者相比，不会造成更高的发病率和病死率。术中最常见的责任血管为单纯小脑上动脉和(或)静脉。在本研究中，MVD组和非手术治疗组分别有100%(80/80)和77.36%(41/53)患者治疗后疼痛缓解(完全缓解和部分缓解)；随访55.80(35.74，63.48)个月，MVD组疼痛缓解率为91.25%(73/80)，非手术治疗组为41.51%(22/53)。目前尚无证据表明年龄是预后不良和出现术后严重并发症的危险因素。面部感觉迟钝、头痛、恶心呕吐是最常见的术后并发症，其他还包括听力缺失、面神经麻痹、感染、小脑梗死和(或)出血、脑脊液漏和深静脉血栓形成。为减少深静脉血栓形成和肺炎的发生，应鼓励老年患者术后尽早下床活动。

原发性三叉神经痛影响患者日常活动、情绪、工作和社会关系，降低其生活质量，长期疼痛甚至引起营养不足或高血压。>1/3的在职患者认为原发性三叉神经痛对其工作状态造成负面影响，如工时减少、残疾或提前退休。相当比例的患者存在高血压、糖尿病和心血管病等共患病，应引起重视和妥善处理。

术前应准确评估全身状况和全身麻醉的危险性，麻醉科会诊对指导患者开展麻醉合作是十分必要的。由于不熟悉颅后窝探查术，患者常担心微血管减压术的有效性和安全性。充分和客观地介绍微血管减压术是十分必要的。临床医师应关注老年患者的解剖学特征。由于小脑萎缩和蓄水池变宽，给老年人更多手术操作的空间，显露和探查更加容易。应减少小脑半球和脑神经的牵拉损伤。错误和过度回缩可以损害小脑和神经，引起水肿、脑挫裂伤或血肿，均可以导致小脑和脑神经损伤。老年患者动脉更加脆弱，探查过程应非常温和，尽

量避免对供应脑干的小穿支动脉造成损害。亦应强调保护静脉系统的重要性。手术过程中岩上静脉主干损伤可以导致严重并发症甚至死亡。本研究无死亡患者。Kalkanis等[9]采用微血管减压术治疗1590例三叉神经痛患者,病死率为0.30%(477/1590)。随着麻醉技术和显微外科技术的发展,神经外科医师对内镜下手术越来越有信心。与此同时,高分辨力MRI可以精确定位和明确神经与血管的位置关系和性质,有助于神经外科医师完善术前准备和进行术前评估。最重要的是,应选择能够耐受全身麻醉的患者。

结 论

微血管减压术是老年原发性三叉神经痛的有效治疗方法,且术后并发症发生率较低。微血管减压术可以直接治疗假定病因,并能达到最佳的短期和长期疼痛缓解效果。老年原发性三叉神经痛患者均应有机会选择微血管减压术,全身状况耐受全身麻醉是影响治疗选择的主要标准。

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