

靶点射频消融联合神经阻滞治疗高龄患者 退行性腰椎管狭窄症的疗效观察

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[摘要] **目的:**探讨靶点射频消融联合神经阻滞治疗高龄患者退行性腰椎管狭窄症的临床效果。**方法:**回顾性分析 2020 年 7 月至 2023 年 1 月采用靶点射频消融联合神经阻滞治疗的 19 例高龄患者退行性腰椎管狭窄症。**结果:**本组手术时间为 15~36 min,平均为 20 min。无穿刺伤口感染、神经根损伤及椎管内出血等并发症。术前腰痛视觉模拟量表(VAS)评分为 0~5 分,平均为 1.2 分;下肢痛 VAS 评分为 5~9 分,平均为 7.6 分。术后即刻腰痛 VAS 评分为 0~3 分,平均为 0.5 分;下肢痛 VAS 评分为 2~5 分,平均为 3.1 分。术后 3 个月腰痛 VAS 评分为 0~3 分,平均为 1 分;下肢痛 VAS 评分为 2~6 分,平均为 3.8 分。19 例均获随访,随访时间为 3~7 个月,平均为 4.2 个月。术后 3 个月采用改良 MacNab 疗效评定标准评价结果:优 11 例,良 6 例,可 1 例,差 1 例,优良率为 89.47%。评定为可、差的 2 例患者最终接受椎间孔镜治疗,症状缓解。**结论:**靶点射频消融联合神经阻滞治疗高龄患者退行性腰椎管狭窄症,具有创伤小、近期疗效满意等优点。

[关键词] 退行性腰椎管狭窄症;靶点射频消融;神经阻滞;高龄患者

[中图分类号] R681.5 **[文献标志码]** B **[文章编号]** 1005-0205(2024)09-0083-03

DOI:10.20085/j.cnki.issn1005-0205.240917

Efficacy Observation of Target Radiofrequency Ablation Combined with Nerve Block in the Treatment of Elderly Degenerative Lumbar Spinal Stenosis

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Abstract **Objective:** To investigate the clinical efficacy of target radiofrequency ablation combined with nerve block in the treatment of elderly degenerative lumbar spinal stenosis. **Methods:** From July 2020 to January 2023, 19 elderly patients with degenerative lumbar spinal stenosis who were treated with target radiofrequency ablation combined with nerve block were retrospectively analyzed. **Results:** The operation time was 15–36 min, with an average of 20 min. There were no complications such as puncture wound infection, nerve root injury and intramural bleeding. Preoperative visual analogue scale (VAS) scores of low back pain were 0–5 points, with an average of 1.2 points, and VAS score of lower extremity pain was 5–9 points, with an average of 7.6 points. The VAS scores of immediate postoperative low back pain were 0–3 points, with an average of 0.5 points, and the VAS scores of lower extremity pain were 2–5 points, with an average of 3.1 points. Three months after surgery, the VAS scores of low back pain were 0–3 points, with an average of 1 points, and the VAS scores of lower extremity pain were 2–6 points, with an average of 3.8 points. All 19 cases were followed up from 3 to 7 months, with an average of 4.2 months. Three months after operation, the modified MacNab efficacy evaluation criteria were adopted: excellent 11 cases, good 6 cases, fair 1 case, poor 1 case, the excellent and good rate of 89.47%. Two

patients rated fair or poor were eventually treated with foraminoscopy and their symptoms were relieved. **Conclusion:** Target radiofrequency ablation combined with nerve block in the treatment of elderly degenerative lumbar spinal stenosis has the advantages of less trauma and satisfactory

基金项目:武汉中西医结合骨科医院院级科研项目(HGY202201)

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short-term efficacy.

Keywords: degenerative lumbar spinal stenosis; target radiofrequency ablation; nerve block; elderly patients

退行性腰椎管狭窄症是一类以间歇性跛行伴或不伴腰痛为主症的病症,是老年人腰腿痛的常见原因。以后路切开椎管减压+椎间融合+椎弓根钉为代表的传统开放手术,因麻醉要求高、创伤大,高龄患者尚不能接受。目前以椎间孔镜、单侧双通道脊柱内镜等为代表的微创手术,具有疗效确切、麻醉要求低、创伤小等优点,越来越得到医患的认可和接受^[1-3]。即便如此,仍有部分高龄患者因为严重的内科疾病或自身惧怕手术,拒绝行椎间孔镜等微创手术治疗。笔者2020年7月至2023年1月通过精准穿刺靶点射频消融联合神经阻滞治疗高龄患者退行性腰椎管狭窄症,取得较好疗效,现报告如下。

1 临床资料

1.1 一般资料

本组共19例患者,男7例,女12例;年龄为75~88岁,平均为79岁;责任节段均为单节段,L_{4/5}节段9例,L₅S₁节段6例,L_{3/4}节段4例。随访时间为3~7个月,平均为4.2个月。病程为0.4~1.5年,平均为0.8年。

1.2 纳入标准

所有患者均以间歇性跛行为主症,伴或不伴腰痛,腰椎正侧位片及腰椎过伸过屈位片、腰椎CT和MR检查,符合腰椎管狭窄影像学表现,且排除腰椎不稳引起的椎管骨性狭窄、马尾综合征、肿瘤等。保守治疗3个月疗效不满意,不能耐受手术或不接受手术。

2 方法

通过查体结合影像学资料明确责任节段,并制定穿刺计划。俯卧于“腰桥垫”上,腰椎前屈,腹部镂空,使椎间孔间隙增大的同时避免腹压过高增加穿刺过程中出血风险。根据术前穿刺计划,选择症状重的一侧,透视标记穿刺点,常规消毒铺单后1%利多卡因局部麻醉,距棘突中线10~13 cm处,穿刺针与冠状位成角25°~30°,轴位与椎间隙成角5°~15°。逐层穿刺到达病灶后,拔出针芯,插入射频电极(射频控温热凝器,北琪R-2000BA2),行运动及感觉测试无异常后,开始射频65℃,60 s;75℃,60 s;85℃,120 s;然后拔出射频电极。将针尖退至椎间孔,正位位于不超过椎弓根内缘,侧位位于椎间孔内,回抽无血后予注射0.9%氯化钠注射液5 mL、盐酸利多卡因注射液(5 mL:0.1 g,河北天成药业)3 mL、复方倍他米松注射液(1 mL:7 mg,重庆华邦制药)1 mL、维生素B₁₂注射液(1 mL:0.25 mg,哈药集团三精制药)1 mL混合液。拔出穿刺针,常规消毒针眼,无菌敷贴覆盖。平车转送

至病床,卧床2 h后佩戴腰围下地活动。1个月内避免弯腰持重活动。

3 结果

本组手术时间为15~36 min,平均为20 min。无穿刺伤口感染、神经根损伤及椎管内出血等并发症。术前腰痛视觉模拟量表(VAS)评分为0~5分,平均为1.2分;下肢痛VAS评分为5~9分,平均为7.6分。术后即刻腰痛VAS评分为0~3分,平均为0.5分;下肢痛VAS评分为2~5分,平均为3.1分。术后3个月腰痛VAS评分为0~3分,平均为1分;下肢痛VAS评分为2~6分,平均为3.8分。19例患者均获随访,随访时间为3~7个月,平均为4.2个月。术后3个月采用改良MacNab疗效评定标准评价结果:优11例,良6例,可1例,差1例,优良率为89.47%。评定为可、差的2例患者最终接受椎间孔镜治疗,症状缓解。

4 讨论

射频消融属于物理治疗方法,其工作原理为射频电极形成射频电场,促使局部水分子共振产生热效应,使髓核变性、坏死、凝固,亦可通过毁损靶点区内神经,破坏神经传导通路,使疼痛程度减轻甚至消失。2002年首次报道应用于腰椎间盘突出性疾病^[4],之后无论是应用于腰椎还是颈椎均疗效确切^[5-7]。而Kvarstein等^[8]随机双盲12个月随访研究发现,Oswestry功能障碍指数(ODI)及健康状况调查简表(SF-36)评分差异无统计学意义,因此并不推荐使用射频消融术。不仅如此,并发症也不容忽视,例如使原有腰背疼痛加重,新发下肢针刺、麻木感,但不影响下肢功能,考虑为椎间盘后外侧的神经纤维受到激惹所致^[9]。射频刺激可上调促进组织愈合的细胞因子,损伤部位肉芽组织过度增生,形成硬膜外纤维化^[10]。低颅压、脑脊液漏可能与热辐射损伤硬脊膜有关^[11],偶有出现射频针头断裂、残留体内^[12]。此外,在颈椎治疗应用中还可见血管损伤,例如损伤甲状腺下动脉^[13]和感染^[14],其中最常见的并发症是腰椎管狭窄症复发或再手术。Cuellar等^[15]报告,32%的患者在接受射频消融术治疗1年后出现椎间盘退变加速,髓核成形术并没有改变椎间盘的病理形态。Klessinger^[16-17]报告射频消融术治疗颈椎间盘突出后,19.5%的患者术后1个月再次手术;在应用于腰椎间盘突出时,18.7%的患者需要再次手术,包括椎间盘切除、椎管减压、椎间融合术等,50.5%的患者再手术时间在射频消融术后3个月内。

靶点穿刺与常规穿刺的区别在于常规穿刺射频针头侧位位于椎体后缘 1/3~1/4 处,正位位于椎弓根内缘到棘突中线,行盘内射频。靶点穿刺则根据椎间盘突出部位,术前采用 X 线片、CT 及 MR 测量进针角度及深度,将穿刺针穿刺到突出椎间盘内,尽可能接近受压的神经根。穿刺时正侧位片上以穿刺目标点(靶点)为 B 点,以下位椎体上关节底部和尖部区域为 A 点,两点确定穿刺路线,正侧位片上两线的交点为皮肤进针点,穿刺过程中到达 A 点时透视,可通过调整针尾角度,使针尖滑过上关节突外缘到达 B 点,即可做精准穿刺。常规进行感觉及运动支测试,无异常反应后开始射频,可从 65℃ 开始,患者腰部可能出现可耐受的酸胀不适感,随着射频温度的升高或射频时间的持续,酸胀感增加可继续进针,调整射频电极,远离神经根,再次射频。也可由远到近射频,在穿刺针到达术前设计的靶点后,继续进针 0.5~1.0 cm,常规进行感觉及运动支测试,无异常反应后开始射频,可从 65℃ 开始,依次射频 65℃,60 s;75℃,60 s;85℃,120 s。再将针尖退至靶点处,再次射频,方法同前,若射频中出现腰部酸胀难忍或下肢麻木疼痛等症状,则立即终止射频。此外,也可在神经根附近行脉冲治疗,脉冲射频电流在间隙期会自动降温,电极尖端温度不超过 42℃,射频电流仅在针尖旁或附近的组织形成高电压,可取得镇痛效果并且不出现神经热离断效应,术后不会出现感觉减退、酸痛或者灼痛,更不会破坏运动神经功能。

笔者认为适应证的选择及穿刺技术是保证疗效的关键因素。本组病例病程相对较短,选择病例上避免选择椎间盘钙化及小关节内聚骨性狭窄者,加之医者有丰富的椎间孔镜及选择性神经根阻滞腰椎穿刺经验,可以保证靶点穿刺的顺利完成。综上所述,靶点射频消融+经椎间孔神经阻滞治疗高龄患者退行性腰椎管狭窄症,具有创伤小、安全性高等优点,且近期疗效满意。

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(收稿日期:2024-03-08)