

# 老年腰椎间盘突出症诊疗指南

中华医学会骨科学分会骨科康复学组 中国康复医学会脊柱脊髓专业委员会腰椎研究学组

执笔者:王岩<sup>1</sup> 相宏飞<sup>1</sup> 海涌<sup>2</sup> 陈伯华<sup>1</sup>

**【摘要】** 腰椎间盘突出症是一种骨科常见病,随着老龄化社会的到来,老年腰椎间盘突出症患者呈逐渐增多的趋势。鉴于老年腰椎间盘突出症作为一种特殊类型的腰椎间盘突出症类型,有必要对老年腰椎间盘突出症的诊疗方法进行总结和规范其诊疗流程。本指南遵循循证医学的原则,参照2013年北美脊柱外科学会制订的《腰椎间盘突出症伴神经根病诊疗指南》和2020年中华医学会骨科学分会脊柱外科学组和骨科康复学组共同制定的《腰椎间盘突出症诊疗指南》,组建指南制订专家工作组及确定临床问题,根据证据推荐分级的评估、制订与评价工作组相关方法进行检索文献的证据等级和推荐等级评定,形成推荐意见;经专家工作组三轮讨论,最终确定终稿。指南从老年腰椎间盘突出症的定义、病理特点、诊断、保守治疗、手术治疗、手术并发症、加速康复理念的应用7个方面对老年腰椎间盘突出症的诊疗措施进行阐述,为老年腰椎间盘突出症的诊断和治疗提供可靠的临床理论依据。

**【关键词】** 腰椎间盘突出; 老年人; 诊断; 加速康复

**Clinical practice guidelines for diagnosis and treatment of lumbar disc herniation in the elderly** Chinese Orthopaedic Association of Orthopaedic Rehabilitation Group, The Chinese Society for the Study of the Lumbar Spine CSSLS. Byliner: Wang Yan<sup>1</sup>, Xiang Hongfei<sup>1</sup>, Hai Yong<sup>2</sup>, Chen Bohua<sup>1</sup>. <sup>1</sup>Department of Orthopedics, Affiliated Hospital of Qingdao University, Qingdao 266000, China; <sup>2</sup>Department of Orthopedics, Affiliated Beijing Chaoyang Hospital of Capital Medical University, Beijing 100020, China  
Corresponding author: Chen Bohua, Email: bhchen@hotmail.com

**【Abstract】** Lumbar disc herniation is a common orthopaedic disease. With the coming of aging society, the incidence of lumbar disc herniation in the elderly increases gradually. As a special type of lumbar disc herniation, it is necessary to standardize the diagnosis and treatment procedures of lumbar disc herniation in the elderly. Based on the principle of evidence-based medicine, the guidelines were developed according to clinical guidelines of diagnosis and treatment of lumbar disc herniation with radiculopathy developed by North America Spine Society in 2013 and clinical practice guidelines for diagnosis and treatment of lumbar disc herniation by Chinese Orthopaedic Association of Spinal Surgery Group and Chinese Orthopaedic Association of Orthopaedic Rehabilitation Group in 2020. After expert working group development and clinical problem determination, Grading of Recommendations Assessment Development and Evaluation System was used to rate the quality of evidence and determined the strength of recommendations. After three rounds of discussions in expert work group, clinical guidelines for diagnosis and treatment of lumbar disc herniation in the elderly were finally developed. The guidelines defined the screening for definition, pathological characteristics, diagnosis, conservative treatment, surgical treatment, surgical complications, application of enhanced recovery after surgery in lumbar disc herniation in the elderly. The guidelines will provide a reliable clinical basis for the diagnosis and treatment in lumbar disc herniation in the elderly.

**【Key words】** Lumbar disc herniation; Aged; Diagnosis; Enhanced recovery after surgery

随着经济的发展和人类寿命的延长,在全世界范围内,人口老龄化正在加速,腰椎退变性疾病增多

严重影响老年人的生活质量,对医疗卫生事业带来的挑战也不容忽视。腰椎间盘突出症是骨科最常见

的疾病之一,随着年龄增长、腰椎退变的进展,老年腰椎间盘突出症患者呈逐渐增多的趋势。老年腰椎间盘突出症患者的临床特点与年轻患者有显著差别,通过合理的诊治、维持脊柱功能是改善老年人生活质量的关键。老年腰椎间盘突出症的规范化治疗对于提高我国老年腰椎间盘突出症的临床诊疗水平,保障老年人群的健康具有重要意义。

2013年北美脊柱外科学会(North American Spine Society, NASS)制订了《腰椎间盘突出症伴神经根病诊疗指南》,提出了腰椎间盘突出症神经根压迫的诊疗流程和方法。2020年中华医学会骨科学分会脊柱外科学组和骨科康复学组共同制定了《腰椎间盘突出症诊疗指南》,对我国一般人群的腰椎间盘突出症的诊断及治疗技术提供了临床依据。作为特殊类型的腰椎间盘突出症,目前仍没有针对老年腰椎间盘突出症的相关的指南。本课题组遵循循证医学的原则,在《腰椎间盘突出症诊疗指南》的基础上,进一步对老年腰椎间盘突出症诊治相关的中英文文献进行系统回顾,提出问题并展开讨论,从而制订了《老年腰椎间盘突出症诊疗指南》,供临床参考。

参照2013年NASS指南的文献检索原则,于万方数据知识服务平台数据库、中国知网(China National Knowledge Infrastructure, CNKI)、中国生物医学文献数据库(China Biology Medicine, CBM)、PubMed数据库中对中英文文献进行检索。以“老年腰椎间盘突出症(腰椎间盘突出(lumbar disc herniation or herniated nucleus pulposus or herniated lumbar disc, LDH)”and“老年(aged or aging or older or geriatric or elderly or aged 60 and over), ALDH)”and“定义(definition)”,“老年腰椎间盘突出症(ALDH)”and“病理(pathology)”,“老年腰椎间盘突出症(ALDH)”and“诊断(diagnosis)(症状(symptom)or体征(sign)or影像学(imaging))”,“老年腰椎间盘突出症(ALDH)”and“保守治疗(conservative therapy)”,“老年腰椎间盘突出症(ALDH)”and“手术治疗(surgical treatment)”,“老年腰椎间盘突出症(ALDH)”and“并发症(complication)”,“老年腰椎间盘突出症(ALDH)”and“加速康复(enhanced recovery after surgery)”为检索式检索2020年11月以前的文献,共检索到英文6 769篇文献,中文659篇文献。

文献排除标准为动物研究、会议摘要、社评、信

件、会议论文及学位论文。文献纳入顺序优先选择系统性综述、荟萃分析、高质量随机对照研究,其次为前瞻性非随机对照研究、回顾性队列研究和病例对照研究,最后为系列病例报告、临床经验、专家委员会意见等。通过阅读文献标题、摘要和原文的方式进行筛选,最终纳入文献105篇,其中中文文献21篇、英文文献84篇。

文献的等级评定采用改良北美脊柱外科学会2013年指南的标准,参照证据推荐分级的评估、制订与评价(Grading of Recommendations Assessment Development and Evaluation, GRADE)工作组相关方法,评估研究证据的质量,结合研究设计和其他证据特征综合判定研究的证据级别。采用3级分类标准,推荐等级与文献等级评定标准对应,推荐强度自1级向3级递减。

1级:①差异有统计学意义的高质量随机对照研究,或虽然差异无统计学意义但可信区间很窄的高质量随机对照研究;②高质量随机对照研究的系统综述(前提是纳入的研究结果具有同质性)。

2级:①质量稍差的随机对照研究(如随访率<80%、非盲法对照、随机化分组不合适);②前瞻性非随机对照研究;③研究结果不同质的1级研究或2级研究的系统综述;④回顾性队列研究;⑤病例对照研究;⑥2级研究的系统综述。

3级:①系列病例报告;②临床经验、描述性研究或专家委员会报告的权威意见。

#### 一、老年腰椎间盘突出症定义

老年腰椎间盘突出症是在老年人群中( $\geq 60$ 岁)<sup>[1-2]</sup>,在腰椎间盘突出病理基础上,由突出的椎间盘组织刺激和(或)压迫神经根、马尾神经所导致的临床综合征,表现为腰痛、下肢放射痛、下肢麻木、下肢无力、大小便功能障碍等<sup>[3-4]</sup>。

#### 二、老年腰椎间盘突出症病理特点

##### (一)腰椎间盘突出与年龄的相关性

随着年龄增长,腰椎椎间盘退变逐渐加重,椎间盘膨出、纤维环裂隙、椎间盘突出发生率逐渐增加<sup>[5-8]</sup>;与老年男性随年龄的增长、退变逐渐加重不同,女性在绝经后,腰椎椎间盘退变更快<sup>[9-13]</sup>;腰椎间盘的退变程度与腰椎间盘突出的发生率呈明显相关性<sup>[14]</sup>;无症状的椎间盘退变包括椎间盘突出的发生率随年龄增长而逐渐增加<sup>[15,15]</sup>。[2级推荐]

##### (二)老年腰椎间盘突出症的病理类型

老年腰椎间盘突出症患者更容易发生非包容性

椎间盘突出<sup>[16-19]</sup>;与年轻腰椎间盘突出症患者以髓核和纤维环为主的突出类型不同,老年腰椎间盘突出症呈一种特殊类型的椎间盘突出,即椎间盘内层纤维环逆行排列、伴有软骨终板的以纤维环成分为主的突出,且容易合并钙化,肉芽形成和血管增生等炎症反应较轻<sup>[20-23]</sup>;突出椎间盘重吸收发生率低<sup>[24]</sup>。**[2级推荐]**

### (三)老年腰椎间盘突出症的节段分布

腰椎间盘突出症的节段分布随年龄增长呈现出一种由尾端向头端逐渐进展的趋势<sup>[25-26]</sup>,这种趋势在非包容性椎间盘突出中更加明显<sup>[16]</sup>;年轻患者的非包容性腰椎间盘突出常见于L<sub>5</sub>/S<sub>1</sub>节段,而老年患者最常见于L<sub>4/5</sub>节段<sup>[16]</sup>。**[2级推荐]**

## 三、老年腰椎间盘突出症的诊断

### (一)临床特点

腰椎间盘突出症发病年龄的高峰期为40岁左右,之后逐渐下降;老年腰椎间盘突出症发病率低于年轻患者<sup>[16,27-28]</sup>。老年患者中L<sub>4/5</sub>节段腰椎间盘突出症发生率高于年轻患者;L<sub>5</sub>/S<sub>1</sub>节段腰椎间盘突出症发生率低于年轻患者<sup>[16,26]</sup>。老年腰椎间盘突出症更容易累及高位节段(L<sub>1/2</sub>、L<sub>2/3</sub>、L<sub>3/4</sub>),随年龄增长,突出节段分布呈现由尾端向头端逐渐进展的特点,且容易发生在尾端退变较轻的节段<sup>[16,25,26,29-36]</sup>。老年腰椎间盘突出症常合并多节段椎间盘突出、腰椎管狭窄,更容易发生极外侧椎间盘突出,而且极外侧椎间盘突出在高位节段更明显<sup>[17,30,32-33,35,37-44]</sup>。**[2级推荐]**

老年腰椎间盘突出症患者吸烟比例低<sup>[45-48]</sup>。老年腰椎间盘突出症患者合并症多、美国麻醉医师协会(American society of anesthesiologists, ASA)分级更高<sup>[26,28-29,46-47,49]</sup>。**[2级推荐]**

### (二)症状

老年腰椎间盘突出症症状不典型,常合并间歇性跛行,更容易出现马尾综合征;随年龄增加,行走功能受限的发生率逐渐增加,老年腰椎间盘突出症的症状逐步向腰椎管狭窄症过渡<sup>[18,26,34,35,50-52]</sup>。

老年腰椎间盘突出症患者症状更重,术前卧床甚至致残的比例较年轻患者高<sup>[45]</sup>;通过腰痛和腿痛的视觉模拟评分(visual analogue scale, VAS)、SF-36评分(the short form 36 health survey)、Oswestry功能障碍指数(Oswestry disability index, ODI)等进行评估,腰椎间盘突出症对老年患者生活质量和功能的影响更明显<sup>[26,45]</sup>;老年功能依赖发生率更高,出院后更需要院外护理,老年女性更明显<sup>[46,51-55]</sup>。**[2级推荐]**

老年腰椎间盘突出症患者腰痛和坐骨神经痛的严重程度与患者文化水平、生活方式、全身合并疾病、自身健康评估状况有关<sup>[56-57]</sup>。**[2级推荐]**

### (三)体征

老年腰椎间盘突出症中神经根牵拉试验阳性发生率低;严重受限的神经根牵拉试验(<30°)阳性发生率随年龄增加逐渐降低<sup>[44,48,50-52]</sup>。在老年腰椎间盘突出症中,跟腱反射减弱在老年腰椎间盘突出症中的诊断价值低<sup>[16]</sup>;足背身肌力下降在诊断老年L<sub>4/5</sub>椎间盘突出症中的准确性更高<sup>[16]</sup>;老年腰椎间盘突出症患者中没有神经损伤体征的发生率低于年轻患者,但在L<sub>4/5</sub>节段高于年轻患者<sup>[16]</sup>。**[2级推荐]**

### (四)辅助检查

MRI(Magnetic Resonance Imaging)为老年腰椎间盘突出症首选的影像学检查手段<sup>[3,4]</sup> **[1级推荐]**;CT(Computer Tomography)与MRI相比可更好的观察腰椎的骨性结构,但对椎间盘和软组织的分辨较差<sup>[3,4]</sup> **[1级推荐]**;X线不能直接显示椎间盘突出,主要用于观察腰椎骨结构及序列变化<sup>[3]</sup> **[3级推荐]**;脊髓造影和椎间盘造影、选择性神经根阻滞在影像学症状体征不符时责任节段的确定、腰椎手术失败后治疗计划的制定等方面具有一定优势<sup>[3]</sup> **[2级推荐]**;神经电生理检查可以在影像学证据的基础上进一步证实神经根损害的存在<sup>[3,4]</sup> **[2级推荐]**。

老年腰椎间盘突出症患者中脊髓造影假阳性率更高<sup>[16]</sup>;影像学检查椎间盘退变程度更重,常合并椎管狭窄、终板硬化<sup>[30,51,52,54]</sup>。**[2级推荐]**

## 四、保守治疗

目前老年腰椎间盘突出症患者保守治疗相关的研究较少;大多数针对坐骨神经痛药物治疗研究的对象均除外了老年人<sup>[58]</sup>。老年患者应减少药物剂量避免其副作用,在合并症多的患者中注意调整治疗方案,同时应注意药物之间的相互作用以及药物对全身重要脏器功能的影响,而不是单纯的参照适用于普通人群的指南或共识,避免多重用药和处方级联反应的发生<sup>[58-59]</sup>。**[2级推荐]**

1.对乙酰氨基酚:美国老年学会推荐对乙酰氨基酚作为老年患者的一线镇痛药,能有效缓解肌肉骨骼疼痛,包括骨关节炎和腰背痛<sup>[60]</sup>,但严重肝肾功能不全者禁用,需定期监测肝肾功,总量不宜超过2 g/d<sup>[61-62]</sup>。**[2级推荐]**

2.非甾体类抗炎药(nonsteroidal anti-inflammatory drugs, NSAIDs):NSAIDs可缓解慢性腰背痛并

改善功能状态,但对坐骨神经痛的改善并不明确<sup>[63-64]</sup>。NSAIDs会增加胃肠道、心血管等相关风险,而且在老年人群中相关风险增加<sup>[60,65]</sup>,建议选用最小剂量并短期使用<sup>[62]</sup>。[2级推荐]

3.阿片类药物:美国老年学会、美国疼痛医师学会等相关指南推荐中重度慢性疼痛、功能障碍、其他治疗无效的老年患者使用阿片类药物,远期疗效及安全性仍不明确,同时应关注药物长期使用的副反应及药物依赖<sup>[60,62,66]</sup>。[2级推荐]

4.抗抑郁药:适用于慢性腰背痛合并焦虑、抑郁状态,便秘、口干等不良反应呈剂量依赖性,推荐低剂量起始,逐渐增加到有效剂量并维持<sup>[62]</sup>。[2级推荐]

5.肌肉松弛剂:可用于缓解腰背痛的症状,应注意存在肝肾功能损害可能,注意四肢无力、困倦、恶心呕吐等不良反应<sup>[62,67]</sup>。[2级推荐]

6.其他药物:目前尚无足够证据支持麻醉镇静药、抗癫痫药等对老年腰椎间盘突出症患者的疗效。

除药物治疗之外的其他措施,如卧床休息、硬膜外注射、运动疗法、心理干预、疼痛自我管理、腰椎牵引、手法治疗、中医中药等可作为老年腰椎间盘突出症患者的补充或替代治疗方案<sup>[58,62]</sup>,同时应注意卧床休息、腰椎牵引和手法治疗的并发症及副作用,避免长期卧床、大重量和长时间牵引以及不当的手法治疗<sup>[68-69]</sup>。在合并骨质疏松症的老年患者中建议同时进行抗骨质疏松治疗,包括充足的钙剂和维生素D的基础治疗,同时根据患者情况加用抗骨质疏松症的药物治疗<sup>[2,70]</sup>。[2级推荐]

## 五、手术治疗

### (一)手术适应证

腰椎间盘突出症病史超过6~12 w,经系统保守治疗无效或保守治疗过程中症状加重或反复发作;腰椎间盘突出症疼痛剧烈,严重影响工作或生活;出现单根神经麻痹或马尾神经麻痹,表现为肌肉瘫痪或出现直肠、膀胱症状等<sup>[3,71]</sup> [1级推荐]。腰椎间盘突出症合并其他原因所致的腰椎管狭窄<sup>[29,43,54]</sup> [2级推荐]。

### (二)手术方式

老年腰椎间盘突出症的手术治疗应遵循有限手术的原则,尽量减少对脊柱稳定性的破坏<sup>[43,72]</sup>;手术治疗方案的选择时应遵循个体化原则,开放手术、微创手术、融合手术在老年患者中均可取得良好的疗效<sup>[43,73-75]</sup>;老年腰椎间盘突出症常合并腰椎管狭窄,术中需同时减压<sup>[18,29,54]</sup>;是否选择内固定

应根据患者是否合并腰椎畸形、慢性腰背痛以及术前稳定性评估和术中减压情况等进行判断<sup>[43,72,76]</sup>。

### [2级推荐]

### (三)手术效果

老年腰椎间盘突出症的手术治疗可获得良好的效果,但症状和功能的改善程度较年轻患者低,手术满意率低于年轻患者<sup>[16,26,29,51-52,54,77-78]</sup>。老年男性和老年女性的手术满意度类似,但老年女性在腰腿痛、行走功能、需使用止痛药物、生活质量改善方面差于老年男性患者<sup>[55]</sup>。术前下肢疼痛的症状重、术前下肢疼痛病程长(大于1年)、术前抑郁状态、合并糖尿病等与老年腰椎间盘突出症预后不良有关<sup>[52,77-79]</sup>。[2级推荐]

在不同的腰椎间盘突出症手术方式中,年龄的高低对复发率的影响不同。经典的后路腰椎突出椎间盘组织摘除术和显微腰椎间盘突出切除术,年轻患者术后复发率和再手术率高<sup>[27,80-84]</sup>;在显微内镜和经皮内镜椎间盘切除术术后,老年患者术后复发率和再手术率有高于年轻患者的趋势<sup>[78,85-88]</sup>。[2级推荐]

### (四)手术疗效评估

老年腰椎间盘突出症常用的手术疗效评价指标包括VAS评分、ODI指数、SF-36评分、EuroQol健康指数量表EQ5D、日本骨科学会(Japanese Orthopaedic Association, JOA)腰背痛手术治疗评分标准等<sup>[26,29,43,77]</sup>。[2级推荐]

### 六、手术并发症

老年腰椎间盘突出症患者手术并发症的发生率高于年轻患者<sup>[26,29,47]</sup>,最常见的并发症为硬膜损伤和泌尿系统感染<sup>[26]</sup>,其中年龄增大和合并腰椎管狭窄是硬膜损伤的危险因素<sup>[89]</sup>。老年患者腰椎融合手术后更容易发生邻近节段退变和邻近节段退变性疾病<sup>[90-92]</sup>。[2级推荐]

老年腰椎间盘突出症患者术后住院时间长,女性更加明显<sup>[53-54,93]</sup>;80岁以上患者中,ASA3级和ASA4级与术后30天死亡率增加有关<sup>[47]</sup>。[2级推荐]

老年患者腰椎术后谵妄发生率较年轻患者高<sup>[94-96]</sup>;与年轻患者相比,老年患者术后谵妄危险因素包括认知损害(如术前存在痴呆、抑郁等)、系统功能减退(如社交、活动能力减退)和/或虚弱、营养不良(如低蛋白血症)和感觉障碍(如视力或者听力障碍)等<sup>[94,97-98]</sup>。术后谵妄与住院时间延长、医疗费增加、术后死亡率升高、出院后需专业护理明显相关<sup>[94,96,99]</sup>。[2级推荐]

## 七、加速康复理念在老年腰椎间盘突出症中的应用

鉴于老年腰椎间盘突出症患者自身的病理生理特点,应用加速康复外科理念优化老年患者腰椎手术的围手术期管理,有利于缓解术后疼痛,改善认知功能、降低术后谵妄的发生率,同时能够缩短住院时间、降低住院费用,促进老年患者的康复<sup>[100-105]</sup>。[2级推荐]

## 公告和免责声明

本指南仅仅包括基于专家临床经验和多中心研究结果的观测建议,不是制定医疗实践决定的唯一准则,本指南不应被用作惩戒医师的法规依据。本指南的全部陈述和建议主要基于部分专家的意见,并非全部为科学证实的资料。本指南不包含未表达或隐含的内容,同时本指南也不保证适用于各种特殊目的。本指南所涉及内容不承担医患双方及任何第三方依据本指南制定及履行过程中的任何决定所产生的任何损失的赔偿责任。本指南也不赋予医患双方依据本指南提供的医疗建议所引发的使用者与患者或使用者与任何其他入构成医患法律纠纷处理的法律地位。

指南制定成员(按姓氏拼音排序)

陈仲强(北京大学第三医院骨科)、陈伯华(青岛大学附属医院骨科)、丁文元(河北医科大学第三医院脊柱外科)、郭柱(青岛大学附属医院骨科)、郝定均(西安交通大学医学院附属红会医院脊柱外科)、贺宝荣(西安交通大学医学院附属红会医院脊柱外科)、胡有谷(青岛大学附属医院骨科)、海涌(首都医科大学附属北京朝阳医院骨科)、蒋电明(重庆医科大学第三医院骨科)、姜建元(复旦大学附属华山医院骨科)、刘斌(内蒙古医科大学附属医院骨科)、李锋(华中科技大学附属同济医院骨科)、鲁世保(首都医科大学宣武医院骨科)、刘少喻(中山大学第一附属医院脊柱外科)、李危石(北京大学第三医院骨科)、马信龙(天津医院骨科)、孙垂国(北京大学第三医院骨科)、孙常太(北京医院骨科)、舒钧(昆明医科大学第二附属医院创伤外科)、申勇(河北医科大学第三医院脊柱外科)、王欢(中国医科大学附属盛京医院脊柱外科)、王岩(青岛大学附属医院骨科)、吴晓淋(青岛大学附属医院骨科)、相宏飞(青岛大学附属医院骨科)、殷国勇(南京医科大学第一附属医院

骨科)、闫景龙(哈尔滨医科大学附属第二医院骨科)、赵凤东(浙大医学院附属邵逸夫医院骨科)、张国庆(青岛大学附属医院骨科)、赵杰(上海交通大学医学院附属第九人民医院骨科)、朱庆三(吉林大学中日联谊医院脊柱外科)

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