

学术探讨

腰₅~骶₁ 椎间盘突出症症状、造影、MRI、CT 及手术分析

中国铁道建筑总公司总医院(北京 100043) 石维强 陆应隆 沈小勤

摘要 本文报道腰椎间盘突出症手术病例 86 例,其中 L₅~S₁ 29 例(33.72%),仅次于 L₄~₅。L₅~S₁ 根性疼痛较为严重,直腿抬高试验 L₅~S₁ 39.66°±18.46°、L₄~₅ 49.90°±21.37°(p<0.0284);非离子水溶性造影剂脊髓造影、MRI、CT 三项检查均有较好的诊断作用,符合率 80.77~94.12%,彼此无显著性差异,但各具特点;手术所见不同间隙髓核突出的类型、程度有显著差异(p<0.013、<0.012),L₅~S₁ 趋向外侧、极外侧并以脱出偏多。作者认为特殊检查以造影首选,疑难者加作 MRI 或 CT 检查;手术探查尤其重视侧隐窝及神经根管。

关键词 腰椎间盘突出症 腰₅~骶₁

腰椎间盘突出症是骨科常见病,作者随机抽出我院 1989 年 1 月~1994 年 6 月手术病例 86 例,试图比较 L₅~S₁ 与 L₄~₅ 间盘突出症在临床表现、影像学诊断及手术所见的异同点,旨在加深认识,提高诊治能力。

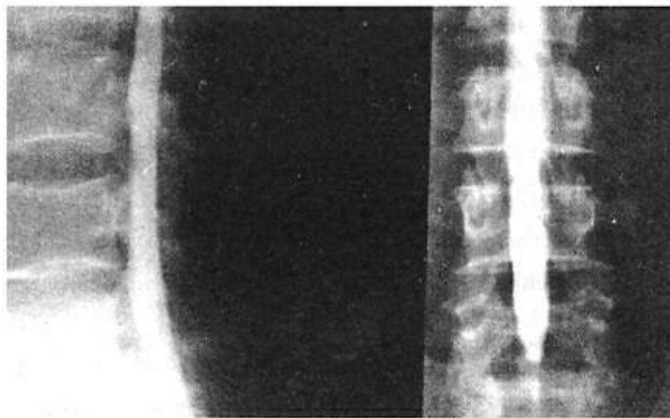


图 1 脊髓造影未见异常

资料与方法

男 55 例,女 31 例;年龄 26~63 岁;突出部位在 L₄~₅ 50 例(58.14%),L₅~S₁ 29 例(33.72%),L₄~₅、L₅~S₁ 双间隙突出 6 例,L₃~₄、L₅~S₁ 双间隙突出 1 例;本组 80 例作脊髓造影(Ommipaque 或 Isovist),摄正侧及双斜位片,37 例作 MRI,β-3000 型永磁机,SE 序列矢状面 T₁T₂ 加权相,横断面 T₁ 加权相;CT 检查 16 例;影像诊断分型参照 Ninomiya 方法^[1]。

手术方法:硬膜外麻醉俯卧位,后正中切口显露两侧椎板,中央开窗常规探查间盘、两侧侧隐窝及神经根管,切除突出物,取净突出的髓核组织,充分减压彻底松解神经根。根据突出的髓核与神经根的关系,分中央型、外侧型、极外侧型。按突出的程度,分为脱出(纤维环全层破裂,髓核组织脱出或带留硬膜外腔)、突出(纤维环仅表面薄层未破,切开表层髓核组织即涌出)、膨出(纤维环内层断裂,局部呈弥漫性隆起)。

结果

为增加可比性,仅对单间隙突出 79 例进行统计学分析(应用 SAS 软件由计算机处理)。

1. 术前直腿抬高试验,L₅~S₁ (29 例)39.66°±18.46°、L₄~₅ (50 例)49.90°±21.37°,两者存在显著性差异(p<0.0284),提示 L₅~S₁ 间盘突出根性疼痛较为严重。

2. 特殊影像检查,结果提示非离子水溶性造影剂脊髓造影或 MRI 检查均有较高诊断符合率,两者无显著差异。本组 CT 检查例数较少未作统计处理。



2 MRI 提示 L₅~S₁ 髓核脱出,与手术所见相符

3. 手术所见,髓核突出的类型:L₅~S₁ 中央型 6.90%、外侧型 82.76%、极外侧型 10.34%,L₄~₅ 中央型 34%、外侧型 56%、极外侧型 10%;突出的程度:L₅~S₁ 脱出 41.38%、突出 55.17%、膨出 3.45%,L₄~₅ 脱出 12%、突出 84%、膨出 4%。两者无论在突出的类型

或程度上都有显著性差异($p < 0.013, p < 0.012$)。

讨论

1. 临床特点:本组腰椎间盘突出症病例以 L_{4-5} 居首位, $L_5 \sim S_1$ 次之,与文献相似^[2]。 $L_5 \sim S_1$ 与 L_{4-5} 产生的临床症状,除受累神经支配区域的不同外,根性刺激症状以 $L_5 \sim S_1$ 为重,有的患者终日处于强迫弯腰位以减轻疼痛。追溯原因,其一 L_4, L_5, S_1 神经根移动度逐根递增,直腿抬高 70° 时后者的移动度为前者两倍或更多。在相同程度突出物压迫下,移动度大的神经根其紧张度亦必然高;其二本组资料提示 $L_5 \sim S_1$ 髓核突出以外侧及极外侧脱出偏多,该部侧隐窝最为窄小,椎间孔相对较小,神经根又相对较粗,这就加剧了突出物对硬膜囊、神经根的压迫^[3]。

2. 特殊影像学检查:非离子水溶性造影剂脊髓造影,清晰显示硬膜囊、神经根袖,反映突出物与其关系,能动态观察造影剂流动充盈的整体情况,被肯定为有效检查方法之一^[4]。MRI 对椎间盘变性很敏感,能描绘多方位断层图像。虽然,两种方法在诊断符合率上无显著差异,但具体影像在不同间隙各有特点。由于 $L_5 \sim S_1$ 囊前间隙宽大,部分患者尽管有间盘突出,但硬膜腔无变形时脊髓造影难以发现,本组 5 例假阴性经 MRI 或 CT 确诊(图 1、2)。另 1 例双间隙突出,造影只显示 $L_3 \sim 4$ 突出,起初症状体征与高位腰椎间盘突出相符,术后原症状即消失,却出现 $L_5 \sim S_1$ 突出的表现, MRI 提示再次手术证实为 $L_5 \sim S_1$ 极外侧型突出。因此,观察造影要特别注意微小改变, L_{4-5} 侧位片硬膜囊前缘压迹超过 3mm 才具临床意义;而 $L_5 \sim S_1$ 则不然,有时仅斜位片神经根袖稍变形或正位片硬膜囊边缘僵直不对称,术中探查髓核突出就很明显。一般而言,术中所见较造影显示明显,这与 L_{4-5} 的情形不同。MRI 对间盘变性敏感而骨化物表现为低倍号或无信号,可出现假阴性。1 例 MRI 诊断椎间盘突出,造影提示腰骶神经根异常,手术结果与造影一致^[5]。对椎管狭窄症、后纵韧带骨化, MRI 的诊断作用不如造影或 CT^[6]。CT 检查亦是有价值的方法,不过它较难从组织密度判断间盘的

突出与膨出,不易区分突出的髓核与椎管内容,且 $L_5 \sim S_1$ 倾斜度较大有时超过 CT 所允许的倾斜范围,可出现假阴性^[7]。我们认为特殊检查以非离子水溶性造影剂脊髓造影为首选,对疑难病例再加作 MRI 或 CT 检查,有助提高术前诊断准确率,指导制定手术方案。

3. 手术应注意的问题: $L_5 \sim S_1$ 间盘突出伴先天性脊椎变异并不少见,术前美兰棘突定位,有助避免术中间隙判断错误。此处椎板间隙较大,囊后间隙小,这种病例多伴有不同程度黄韧带增生肥厚及粘连,操作时易损伤硬膜,咬除或切除黄韧带时先用神经探子仔细分离并保护硬膜,切忌强力撕拉;若粘连严重,用小骨凿凿去椎板部分下缘,找出间隙后再处理黄韧带。本组资料显示 $L_5 \sim S_1$ 髓核突出多为外侧或极外侧,中央型则为巨大突出,鉴于这种情形,应强调手术探查不仅注意中央椎管,更要重视侧隐窝及神经根管部位,予充分减压彻底松解神经根才能获得理想的疗效。

参考文献

1. Ninomiya M, Muro T. Pathoanatomy of lumbar disc herniation as demonstrated by computed tomography/discography. Spine, 1992, 17:1316.
2. 张稔生, 陆裕朴, 王全平, 等. 1741 例腰椎间盘突出症和腰椎管狭窄症的手术疗效. 中华骨科杂志, 1993, 13:179.
3. Avrahami E, Erishman E, Fridman Z, et al. Spina bifida occulta of S1 is not an innocent finding. Spine, 1994, 19:12.
4. 程洋, 张允长, 赵应龙, 等. 腰椎间盘突出症的 X 线诊断(附 115 例 X 线平片、造影及手术对照). 实用放射学杂志, 1993, 9:279.
5. 石维强, 陆应隆, 周建, 等. 腰骶神经根异常 1 例报告. 中华骨科杂志, 1994, 14:244.
6. 贾连顺, 董力军. 磁共振成像(MRI)与椎管造影的比较研究(附 78 例腰椎疾患手术治疗). 中华骨科杂志 1991. 11:25
7. 陈新民, 王乾兴, 吴世稚. 关于腰椎间盘突出症的误诊病例回顾. 临床误诊误治, 1992, 5:52.

(收稿 1994-09-24 修回 1995-03-26)

试论藺道人用药治伤的特点

广西中医学院(530001) 周 军 方素萍 指导 韦贵康 李桂文

藺道人,是唐代著名的骨伤科医家,撰写了我国医学史上第一部骨伤专著《仙授理伤续断秘方》。该书不但为我们留下了宝贵的接骨理伤手法,而且用更大的篇幅

记载了丰富的方药治伤经验。兹就其用药治伤的特点,略作探讨,不妥之处,敬请指正。

English Abstract

Radiographic findings of derangement of atlanto-axial joint

Institute of Orthopaedics and Traumatology, China Academy of TCM(100700)

Based on the radiographic study and analysis of atlanto-axial joint of normal and abnormal, we consider that the derangement of atlanto-axial joint can be diagnosed as: the difference of bilateral distance between the dens and the lateral mass is larger than 1mm, the difference of central sagittal line of dens and atlas is larger than 1mm; there is an abnormal movement of atlanto-axial joint on the X-ray film of open mouth with 15° rotation; and the patient bears the symptoms and signs of cervical spondylosis.

Key words Atlanto-axial joint Derangement of atlanto-axial joint X-ray film

(original article page 3)

Tension band and circular fixation in treating patellar fracture

Second Affiliated Hospital Of Xian University of Medical Science(710004)

Sixty five cases of fracture of patella were treated with tension band, circular fixation with stainless steel and circular fixation with silk thread, the average rate of excellent and good being 91.52%. In the excellent group, the tension band group was 80%, and the stainless steel and silk thread group being 56% and 56.5% respectively. Due to internal fixation with tension band do not need external fixation with plaster of paris, so it facilitates early knee joint exercise and rehabilitation. The therapeutic efficacy is superior than the other two methods ($P < 0.05$). It requires accurate and fine manipulation during operation. As compared with stainless steel circular fixation, silk thread circular fixation bears the advantage of avoiding another operation for withdrawing of the wire, though their therapeutic effect was in similarity.

Key words Fracture of patella Internal fixation

(original article page 5)

Clinical observation and animal experimental study on influence of electric effect in

bone remodelling

Academy of Science, Hubei Province (050081)

There is different explanation for the mechanism of the influence of electric effect in bone remodelling. Experimental study was carried on in observation of magnetic field in the influence of bone healing and electric current in bone remodelling. Through clinical observation and animal experiment, it indicates that electric effect can influence bone remodelling and promote bone healing.

Key words Electric effect Bone Bone remodelling

(original article page 8)

Transplantation of medial head of gastrocnemius muscle in treating old injury of posterior cruciate ligament

Guangdong Hospital of TCM, Guangdong College of TCM(510120)

since 1991, five cases (2 moderate instability, 3 severe instability) of old traumatic posterior cruciate ligament injury were treated with medial 1/3 to 1/2 of medial head of gastrocnemius muscle of the same side. Marked improvement of function (walking, quick working, going upstairs and downstairs, no instability) was found postoperatively, except there was a little bit sensation of instability (during rapid turning round or rapid stopping).

Key words Disposition of gastrocnemius muscle posterior cruciate ligament Injury of knee surgical operation Joint ligament

(original article page 10)

Treatment of avulsion fracture of tibial spine Luoyang Railway Hospital, Hunan province(471002)

In this article, 8 cases with an average of 14 years of age suffering avulsion fracture of tibial spine were reported. they were classified into 3 types, two of them were treated with conservative therapy; 6 of them, internal fixation with steel wire. Bony healing nearly normal joint function and satisfactory results were found in

all of these 8 followup cases. Classification and method of operation were introduced. Advantage of the operation, early diagnosis and mechanism of injury were discussed.

Key words Tibia Fracture peration
(original article page 11)

Improved Stimson's method in treating hip joint dislocation

Second College of Medical Science, Xi'an University of Medical Science(710004)

Seventy four cases of traumatic posterior dislocation of hip joint were reported in this article. Satisfactory clinical results were obtained after treatment with self--designed modified stimson manore duction. Method of reduction was introduced in detail, advantage of it was discussed.

Key words Traumatic posterior dislocation of hip joint Modified stimson's method
(original article page 12)

Characteristics of protrusion of L5S1 intervertebral disc (An analysis of 86 cases with symptoms and signs, myelogram, MRI, CT scanning

and operative findings)

General Hospital of Railway Construction Corporation of China(100043)

Eighty six operated cases of protrusion of lumbar intervertebral disc were reported. Among them, 29 cases (33.72%) were L5S1 level, next to L4, 5. The results show that the lower back pain in L5S1 level is more severe; for Laseque's sign, L5S1 level being $39.66^{\circ} \pm 18.46^{\circ}$; L4, 5, $49.90^{\circ} \pm 21.37^{\circ}$ ($P < 0.0284$). water soluble myelogram, MRI and CT scanning bear better diagnostic action though there were no difference statistically. But each examination bear their own benefit. There was significant difference between type and degree of two intervertebral disc space ($P < 0.013$, $P < 0.012$) being found in the operation. Lateral or extreme lateral position were found more in cases in level L5S1. It is realized that myelogram is the first choice, MRI or CT scanning should be added in doubtful cases. Lateral recess and nerve root canal should be carefully explored during operation.

Key words Protrusion of lumbar intervertebral disc L5S1 level
(original article page 29)

Zhongguo Gushang
China Journal of Orthopaedics
and Traumatology
(Bimonthly)
Chief Editor: Shang Tian-yu
Editorial Board 18 Beixincang
Dongzhimen, Beijing China
Subscriptions:
Domestic Local Post Offices
Overseas China International
Book Trading Corporation
(P. O. Box 399, Beijing)

中 国 骨 伤

(双月刊)

主编 尚天裕

主办单位

中国中西医结合学会

中国中医研究院

承办单位

中国中医研究院骨伤科研究所

协办单位

凤阳门皇汉中医诊所

山西省介休市正骨专科医院

编辑出版者

中国骨伤杂志编辑部

地址:北京东直门北新仓18号

邮政编码:100700

发 行 者

国内总发行:北京报刊发行局

订 购 处:全国各地邮局

国外总发行:中国国际图书贸易

总公司(北京 399 信箱)

印刷装订者

北京黄作印刷厂

ISSN1003-0034 第9卷第2期 1996年3月25日出 本刊代号:国内82-393 国外BM-587 广告经营许可证:京东0094号

CN11-2483 Vol. 9N. 2 publication date, Mar 25, 1996

国内定价:全年24.00元 每期4.00元