

镇痛牵引下脊柱推拿疗法对腰 椎间盘突出影响的 B 超分析

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摘要:本文报告 38 例腰椎间盘突出症患者,43 个节段突出,运用镇痛牵引下脊柱推拿疗法治疗后,3~6 个月复查,疗效优良率分别为 71%和 87%;B 超复查显示:有 9 个节段突出物消失,13 个明显缩小,8 个稍缩小,7 个不变,6 个增大($P>0.05$),突出物总体变化虽呈一定的缩小趋势($P<0.05$),但与疗效未呈相关性($P>0.05$)。结果提示:脊柱推拿疗法的疗效机制可能在于使突出物变位(位移)、变形以及由此不同程度地解除突出物对神经根或硬膜囊的病理性影响。突出物能否回纳并不是决定疗效的唯一因素。

关键词 腰椎间盘突出症 脊柱推拿 B 超 疗效机制

本文运用经背侧 B 超探测腰椎管的方法,观察分析了镇痛牵引下脊柱推拿手法治疗椎间盘突出症前后突出物形态学的变化,旨在从影像学角度并结合解剖生理学、病因病理学来探讨其疗效机理。现报告如下。

临床资料

本组腰椎间盘突出症患者 38 例均为住院病人,男 25 例,女 13 例;最小年龄 17 岁,最大年龄 48 岁,平均年龄 34.8 岁;病程最短 30 天,最长 5 年,平均病程 12.3 月。38 例患者经 B 超(34 例还含 CT)检查共 43 个突出部位,按节段分, $L_4\sim S_1$ 27 个, $L_5\sim S_1$ 16 个;按病理分,中央型 19 个,旁侧型 24 个。其中,8 例合并椎管或侧隐窝狭窄,5 例为 2 个节段同时突出。本组患者均处于急性期或发作期。

治疗方法

1. 杜冷丁镇痛:患者仰卧于牵引床,杜冷丁 50mg 溶于 50%GS60ml 中,静脉缓缓推注,年轻力壮者可酌加杜冷丁 50mg 肌注。

2. 机械牵引:使用本院研制的机械转动牵引床,牵引量由轻至重徐徐加大,牵引量为体重的 110%左右。女性和体弱者一般为 50~60kg,男性和体壮者一般为 70~100kg。每次牵引 5 分钟,在牵引状态下完成脊柱前屈位手法,尔后休息 5 分钟,重复 3 次。最后完成侧卧

位、后伸位手法。

3. 脊柱推拿手法:(1)脊柱前屈位(仰卧位)手法:单侧髌膝屈曲法,左右各 15 次。双侧髌膝屈曲法,计 15 次。直腿高举法,角度由小至大,力量由轻加重,循序渐进,左右各 15 次。悬足压膝牵引跟腱法,在直腿高举至 90°时,再使踝部作强烈背屈运动,左右各 5 次。髌膝屈曲旋转骨盆法,蛙式位外展外旋髌膝屈曲摇晃骨盆活动 15 次。

脊柱前屈位手法施法要点:在牵引状态下施行手法时,先简单向病人示范示意推拿手法要点,尔后嘱病人主动活动(或至少是主动能动意识)配合医者手法。医者应柔和、匀速,富有节律性,尽量使主动手法与患者被动活动融于一体。其一可降低患者肌张力,减少手法的阻力,其二可通过患者积极的主动运动与主动意识;启动脑的下行抑制机制以提高痛阈,使手法顺利进行。

(2)脊柱侧卧位手法:斜扳旋腰法,左右各一次。腰髌后伸法,左右各三次。

(3)脊柱后伸位(俯卧法)手法:二助手牵引两下肢,使脊柱过伸并分别作顺、逆时针方向摇晃转动各 6 次,医者双手掌按住病变节段作上下抖动按压手法。

4. 床上练功与反常态运动:手法后卧床半

月,每日作背伸肌锻炼,直腿高举运动,半月后下床作倒走运动。

B 超探测方法

参照马志武等的方法^{[1][2]},使用 EUB—40 型线阵实时超声仪,探头频率 3.5MHZ。取俯卧位,腹部置一软枕。纵切时于棘突旁 1.5cm 处向中线作 15°斜切向棘突基底部椎管区,必要时在椎间隙正中横切扫描。定位方法参考体表骨性标志。记录椎间盘突出位置、大小、周边形态、内部回声;并摄影留底或内存。

结 果

1. 统计方法:采用 t 检验 χ^2 检验。统计显著性定标为 $P < 0.05$ 。

2. 临床疗效分析:由表 1 可见,38 例患者手法后 3 个月时的疗效分析结果显示,优良率为 71%,有效率为 89%;6 个月时优良率为 87%,有效率为 92%。临床上有远期疗效优于近期疗效的倾向。此可能与受损神经根恢复速

度较慢,部份患者神经根累及体症(如感觉异常)的消失需有一段时间有关。

3. 脊柱推拿前后突出物 B 超探测的改变

本组 38 例、43 个突出部位手法前后突出物 B 超动态探测对比分析显示,治疗后(复查时间 2~3 个月)有 9 个节段消失,13 个明显缩小,8 个稍缩小,7 个不变,6 个增大等不同变化 ($P < 0.05$),突出物截面积(前后经 X 横径),总体统计上呈明显缩小趋势 ($P > 0.05$),但突出物的大小变化与临床疗效的优劣,未显示出有相关关系 ($P > 0.05$)。见表 2、3。本组患者突出物形态(目前多分成完整光团、缺损光团、片状模糊三型^[1])手法前 38/43(88%)为完整光团型,手法后除消失改变之外,2 例由完整光团型变成片状模糊型,另 1 例由缺损光团型变成完整光团型,余均在原有形态上发生大小改变或无改变。此表明脊柱推拿手法对突出物有回纳、部份回纳、变位、变形等不同程度的影响。

表 1 脊柱推拿后突出物的 B 超复查情况

病理分类	h	消失	明显宿小	稍缩小	不变	增大
中央型	19	2(10%)	5(26%)	5(26%)	5(26%)	2(10%)
旁侧型	24	7(29%)	8(33%)	3(12%)	2(8%)	4(16%)

表 2 脊柱推拿前后突出物的 B 超测量比较 ($\bar{X} \pm SD, \text{cm}^2$)

类别	n	治疗前	治疗后	t	P
病 中央	19	1.25 ± 0.51	0.96 ± 0.56	2.21	<0.05
理 旁侧	24	0.95 ± 0.37	0.68 ± 0.42	2.55	<0.02
节 L _{4,5}	27	0.95 ± 0.34	0.79 ± 0.32	2.06	<0.05
段 L ₅ , S ₁	16	0.94 ± 0.43	0.60 ± 0.60	2.13	>0.05

讨 论

1. 关于 B 超诊断腰椎间盘突出症的探讨

1978 年 Porter 报道了经背侧 B 超探测腰椎管的研究以后,对于 B 超诊断腰突症的临床价值,多数学者都予以不同程度的肯定。一组研究表明,以手术结果为对照,B 超术前的确诊率达 76~93%^[2~6]。尽管 CT、MRI 检查优于 B 超,但价格昂贵,难以普及。相比之下,B 超无创伤,费用低,可多次重复^[5],故在目前用其作为诊断辅助依据或评定非手术疗法对突出物的影响,有着相当的实用性和科学性。随着检

测仪器的更新、检测技术的改进,B 超探测在一定程度上可显示突出物的位置、大小、形态,并根据形态和回声差异,估计椎间盘破裂与粘连程度。

2. 镇痛牵引下脊柱推拿手法对突出物的影响。

究其回纳途径,我们认为可能与以下二个环节有关。一是牵引下脊柱推拿手法的生理与生物力学作用,二是与椎间盘突出后回纳通道存在与否及其通畅程度有关。在生理状态下,椎间盘的厚度与高度随着人体的各种姿势变

化而不断变化,髓核在椎间盘内始终处于一定的变动状态,外力作用可使髓核产生相应的蠕变。因此,回纳通道主要受椎间盘的内压、纤维环破裂程度、时间等因素影响。当回纳通道未完全闭锁时,在牵引(负压)镇痛状态下进行脊柱推拿手法,通过人体软性结构与硬性结构的系统协调作用,可以促进突出物逆行回纳或部分回纳。当回纳通道完全闭锁时,则突出物在三维空间的位移、变形可能较大,此可看作和骨折或脱位的移位与复位机制类似。

本文 43 个椎间盘突出牵引推拿后有 21 个没有回纳或反而变大,然这些患者中的相当一部份,其临床症状和体征也仍有不同程度的改善甚至完全消失,此提示突出物能否回纳虽是影响疗效的重要因素,但不是关键的因素。镇痛牵引下脊柱推拿手法还有可能在难以回纳突出物的情况下,使其在椎管三维空间内发生程度不一的变位、变形,后者解除了突出物与神经根或硬膜囊的病理关系,增加了神经根、硬膜囊在三维空间内的相对生理活动范围,也就是起到了某种程度上神经根的减压效应,同样达到了某种治疗效应。

3. 镇痛牵引下脊柱推拿手法方法学分析

我们在数千例腰麻下牵引推拿治疗腰突症研究之基础上,通过反复比较与研究,易腰

麻为杜冷丁静脉给药镇痛,可以避免静脉麻醉、椎管内麻醉之副作用。其镇痛方法尽管不具备完全的镇痛效应与肌松效应,但其最大特点在于安全、手法中病人配合好、副损伤及副反应小。至于镇痛与肌松不完全部分,可由手法中医患之间的“指导合用”、“共同参与”这一新颖医疗模式所弥补。手法与众不同的关键在于:1. 强调病人作主动运动(或至少是主动意识)配合手法。2. 强调在牵引状态下完成脊柱前屈位、后伸位手法。3. 注重手法中的节律性(节奏性)。4. 注重手法后循序渐进的床上练功活动。

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生理功能。

我们认为腰神经后内侧支的节段分布特点有着十分重要的临床意义。当某一节段小关节错位或病变时,往往出现邻近椎间关节的疼痛,后内侧支所支配区域的肌肉出现反射性的痉挛,附近的棘上韧带和皮肤也可产生痛觉敏感现象。因而在疼痛定位上易导致模糊不清,但在同一水平有一个主要压痛点(主痛点),远隔部位的压痛可能较轻(副痛点),其周围的痛

区为反射性疼痛区,但不超过膝关节。

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Abstract of Original Articles

Clinical and experimental studies on relation between derangement of lumbar posterior facet joints and posteromedial branch of lumbar spinal nerve

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Via analysis of 53 cases of derangement of lumbar posterior facet joints, and based on the cause of lumbago, they were grouped into periarticular and intraarticular two types. Through microanatomical observation of 100 posterior medial branch of lumbar spinal nerve from 10 cadavers, it was proved that the posterior facet joints were chiefly innervated by posteromedial branch. They were compressed by multiple factors along their course and passage. The pathogenesis and principle of manipulative therapy of the ailment were explored based on the neuro-anatomical and physiological data.

Key words Derangement of lumbar posterior facet joint
Lumbar posteromedial spinal nerve
Manipulative therapy Experimental study

(Original article on page5)

B ultrasonic analysis on influence of spinal Tuina therapy under analgesic traction in treating protrusion of lumbar intervertebral disc

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Forty three segments of 38 cases of protrusion of lumbar intervertebral disc were reported. After treated with spinal Tuina therapy under analgesic traction 3 to 6 months the therapeutic results of rate of good and fair were 71% and 87% respectively. The B ultrasonic examination revealed that there were disappearance of the protruded mass in 9 segments, markedly shrinkage in 13, slight shrinkage in 8, no change in 7, enlarged in 6 ($p > 0.05$). Though there was a tendency of shrinkage of the protruded mass as a whole ($P < 0.05$), there was no correlation as compared with the therapeutic effects ($P > 0.05$). The results indicated that the mechanism of the therapy might be due to displacement and changing of the shape of the protruded mass and removing the pathological factor of the protruded mass exerting on the nerve root or dural sac in various degrees. Whether the protruded mass could return to its original place is not decisive factor in the therapeutic effect.

Key words Protrusion of lumbar intervertebral disc
Spinal Tuina B ultrasonic examination
Mechanism of the therapeutic effect

(Original article on page8)

A comparison on the effectiveness among fibrin binder, ZT gum and suture of the interrupted peripheral nerve

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Forty five rats were divided into 3 groups at random and their right sciatic nerve were cut by the authors. They were connected with fibrin binder in the first group, the epineurium were adhered with ZT gum in the second group, thread of 90 was used in the suture of the epineurium routinely in the third group. Five animals of each group were tested one, two and three months postoperatively. Effects of these three groups were evaluated with electrophysiological, histological and ultramicroscopic observations. The results indicated that there were no prominent difference among the three methods. The first two measures bear the advantages of simple, save time and easy to be applied, no nerve injury and accurate in end-to-end anastomosis, so they are valuable in clinical application.

Key words Tissue binder Peripheral nerve injury

(Original article on page11)

Malunion of the femoral shaft treated by external fixator

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Various methods of osteotomy in correction of different kinds of malunion of the femoral shaft and fixed with extrnal fixator were applied. From 1987 to 1991, 23 cases were treated, among them the largest angulation was 50°, shortening of the affected limb being 6cm. During treatment, the average fixation time was 10 weeks. After treatment, the length of limb and function of the hip and knee joint were restored satisfactorily. The advantages of the therapeutic measure were discussed.

Key words External fixator
Fracture of the femoral shaft
Malunion

(Original article on page19)

A report on 88 cases of homotransplantation of decalcified bone

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Eighty eight cases of homotransplantation of decalcified bone were used in treating benign bone tumor, non-union, chronic osteomyelitis, TB of bone and joints etc. After follow-up of the 55 cases, the results were satisfactory. The author realized that the result of X-ray changes were closely related with the interval of follow-up. The rate of complete restoration and basic restoration could elevate prominently along with the prolongation of the interval. So, decalcified bone powder is a good biological bone transplanting material. It is worthwhile to introduce to our colleagues.

Key words Decalcified bone powder
Induced to bone formation
Bone defect

(Original atricle on page24)