

胸腰椎骨折脱位伴截瘫治疗回顾

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摘要 作者对 43 例胸腰椎骨折脱位伴截瘫进行了治疗回顾。其中全瘫 15 例,不全瘫 28 例。治疗总好转率,全瘫为 26.7%,不全瘫为 71.4%。并对脊柱节段与脊髓神经根的关系、脊髓损伤性质的判定、复位和内固定以及脊髓的减压途径等进行了讨论。

关键词 胸腰椎骨折 胸腰椎脱位 截瘫 中西医结合治疗

我院从 1981 年至 1992 年共收治胸腰椎骨折脱位伴截瘫 58 例,其中病历资料完整者 43 例,报告如下。

临床资料

男 40 例,女 3 例;年龄 19~65 岁。伤因:坠落 23 例,塌方 17 例,车祸 3 例;类型:屈曲压缩型骨折 9 例,爆炸型骨折 17 例,屈曲旋转型骨折脱位 15 例,剪力型脱位 1 例,屈曲牵张骨折(chence 骨折)1 例;时间:新鲜骨折 40 例,陈旧骨折 3 例;全瘫 15 例,不全瘫 28 例;伤段:胸₁₋₁₀ 4 例,胸₁₁~腰₁ 24 例,腰₂~腰₅ 15 例;观察时限:手术减压组术后 60 天,非减压组伤后 60 天。

治疗方法

(1)完全性截瘫:除非判定脊髓横断,都争取早期手术减压以利保存部分传导束。本组最短期者伤后 9 小时,多数亦在一周内。(2)不全截瘫:有明确骨片压迫或关节交锁者应尽早手术,无确切压迫者应观察 3~10 天,仍需手术者多在 2 周内施行。(3)行椎板切除减压术 28 例:7 例术中锤击椎体前壁骨突,18 例再作内

固定(钢板 16 例,骨水泥 1 例,Luque 棒 1 例)。(4)行椎体前方减压术加饶氏椎体钉 1 例,侧前方减压术加横突间融合术 1 例。(5)未手术减压组 13 例:2 例错位严重判定为脊髓横断,分别用脊柱钢板和 Dik 氏钉内固定。11 例垫枕法闭合复位,其后作融合术 4 例,石膏背心 1 例,余 6 例,继续功能疗法。(6)新伤病历均每日用 20%甘露醇 250ml~500ml+地塞米松 20mg~40mg 静脉点滴,连用 5~7 天。

中医药施治:(1)针对感觉运动障碍,常规服用杜氏骨科活络丸^[1],以疏经通络。(2)凡腹胀、便秘、烦躁、苔黄、脉数者用攻下逐瘀法。体实者用杜氏内伤丸或番泻叶泡水代茶饮,体虚者内服麻仁丸缓缓通之。(3)新伤或术后用十枣汤^[2]以峻下利水。(4)尿路感染者用八正散或小蓟饮子内服。(5)骶尾骨突部轻按摩预防褥疮。(6)2~3 周后配合针刺疗法,常用穴位为中极、气海、关元、肾俞、腰俞、风市、阳陵泉、足三里、三阴交等。(7)中后期施行按摩和指导功能锻炼促进康复。

治疗结果

表 1 43 例外伤性截瘫总疗数和分组疗效

部 位	43 例总疗效				28 例椎板减压组疗效				13 例非椎板减压组疗效				
	全瘫 15 例		不全瘫 28 例		全瘫 9 例		不全截瘫 19 例		全瘫 6 例		不全瘫 7 例		
	显效	好转	无效	恶化	显效	好转	无效	恶化	显效	好转	无效	恶化	
胸 ₁₋₁₀ 段	2				1	1			1				
胸 ₁₁ ~腰 ₁	3	7	3	6	4	2	5	3	4	3	1	2	1
腰 ₂₋₅ 段	1	2	7	3	2	1	1	2	3	1	1	1	3
好转率	26.7%(4/15)		71.4%(20/28)		22.2%(2/9)		68.4%(13/19)		33.3%(2/6)		71.4%(5/7)		

疗效评定依照 1986 年全国外伤性脊髓损伤专题座谈会推荐的试行方案⁽³⁾。凡神经功能改善 1 级为好转;改善 2 级或更多为显效;降低 1 级或更多为恶化。治疗效果见(附表 1)

讨 论

1. 脊柱稳定性的三柱概念:在 CT 应用的基础上,Denis—McAfee 提出了脊柱结构的三柱概念(前柱、中柱、后柱),对认识脊柱的稳定性,分析脊髓神经压迫因素的来源,选择适当的减压手术等,均具有重要的指导意义⁽⁴⁾。对爆裂骨折,由于其中柱受损,均有不同程度的骨片后移和椎管狭窄。凡椎管狭窄超过 50%,截瘫发生率明显增高。

2. 脊柱节段与脊髓神经根的关系:由于脊髓和马尾神经的解剖位置,当发生脊柱骨折脱位时,在胸₁~胸₁₀椎节段,只伤及脊髓;在胸₁₁~腰₁段时既累及腰骶髓又累及腰骶神经根;而腰₂椎以下只伤及马尾神经。

和脊髓相反,神经根损伤后恢复的希望却较大⁽⁵⁾。要积极挽救挫伤或受压的马尾神经,以提高恢复率。本文各节段好转率,因胸₁~₁₀段标本太少(仅 4 例),其显著性差异无法显示出来。

3. 脊髓损伤性质的判定:反复的神经系统全面体检(感觉、运动、反射)很重要。趾屈趾伸的随意运动,可能是不全瘫的唯一证据;会阴部感觉的存在,或许是不全截瘫者仅有的证候。不全瘫者常有压迫因素存在,通过适当的手术减压,神经功能恢复的可能性很大。此点与全瘫患者的低恢复率形成鲜明的对此。

胥少订氏⁽⁶⁾指出:完全性截瘫者,20%为脊髓横断,不可能有恢复,余 80%为脊髓严重受损,若能早期(6~12 小时内)手术减压,可望保存部分皮质脊髓束(白质),使肢体恢复自控功能。

许多学者认为:伤后立即出现的完全性截瘫,48 小时后已有肛门反射,球海绵体肌反射出现(表明脊髓休克期已开始过去),而瘫痪平面以下仍然没有一点感觉和运动的恢复,则不会再有神经功能的恢复。

4. 复位的内固定:截瘫的发生通常是表明脊柱的不稳定。复位和固定是重要的治疗原则。复位使椎管恢复到最大管径,也就减少了对神经组织的压迫,复位本身就是一种减压方法。近年来更主张复位后用坚强的内固定(Harinton 氏棒、Luque 氏棒、椎体钉、Dick 氏钉),使病人早期下床,早期开始康复活动。

5. 关于脊髓减压途径:CT 推广后,许多学者都发现:脊髓受压主要来自前方;屈曲压缩骨折来自椎体后上角;爆炸性骨折来自膨出的椎体后缘;还有后移的椎间盘。椎板切除术其减压重点在后方,最多只算是间接减压。部分病例虽也在术中锤击椎体后缘骨突,其前方减压作用也有限。只有当椎板,关节突骨折折片从后方压迫脊髓时,椎板切除的减压作用,才是直接的和显著的。

而椎板的大量切除,特别是切除了三个以上,严重破坏了脊柱的稳定性。传统的脊柱钢板固定作用有限。结果是反而加重了脊髓——神经根的损害,妨碍了神经的恢复⁽⁷⁾。

近年来截瘫治疗最重要的进展,是前方或前外侧减压术的开展⁽⁸⁾。因其减压的目标都对准前方的压迫因素(骨折块,椎间盘),而大大提高了恢复率。我院也作了两例:一例直视下椎管前方减压加椎体钉内固定术,一例经椎板关节突切除加侧前方减压术,术后瘫痪都有明显好转。

6. 中医辨证施治:从经络学说的观点看,外伤性截瘫是督脉损伤。《难经·二十八难》云:“督脉者,起于下极之俞,并于脊里,上至风府,入于脑。”手足三阳经均与督脉交会。所以本病与督脉受损、经络阻塞不通有关。应分期辨证施治,活络通督为主要疗法。

杜氏骨科活络丸为马钱子制剂,所含土的宁碱和马钱子碱,小剂量服用时对脊髓神经有兴奋和强壮作用,有利于神经功能的恢复。脊髓损伤后发生充血水肿和椎管腔压力升高,督脉瘀阻,出现大小便不通,烦躁满闷等三焦水道失调的证候。用攻下逐瘀和利水法可收到降低椎管腔压力的功效,类似于脱水剂。

针刺,按摩,功能锻炼,只要医患配合持之以恒,对病员的康复也是大有裨益的。

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肘关节脱位合并血管神经损伤一例

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冯×,女,35岁,农民。1993年3月15日因攀树从约2m高处侧身坠落,右肘关节伸直位手掌触地,即感右肘剧痛,肘部皮肤破裂,血流如注,骨端外露,肘关节活动丧失。半小时后就诊。查体:右肘呈半屈曲位弹性固定,靴状畸形。肘前内侧约7cm斜形伤口,肱骨滑车面完全暴露在伤口外,未见搏动性出血。肢端冷,皮肤紫绀,桡尺动脉搏动消失。拇指对掌功能及屈指功能障碍,正中神经分布区感觉消失。X片示:右肘关节后外侧脱位,上尺桡关节未分离,未见骨折。诊断为右肘关节开放性后脱位合并肱动脉、正中神经损伤。立即在臂丛麻醉下行清创探查复位术。术中见正中神经跨过肱骨下端并被其挤压致扁,部分断裂之神经外膜挫伤,神经绷紧如弦状。肱动、静脉断裂,断端退缩栓塞。肱二头肌腱膜及部分肌腹断裂。因无血管吻合条件,故清创复位无菌包扎后转院。

讨 论

由传达暴力所致肘关节闭合性脱位临床上常见,即使合并有血管神经症状,也多为骨端移位压迫所致,经复位后即可缓解。而由传达暴力致肘关节开

放性脱位合并血管神经断裂,临床上少见,文献报道不多。本病例合并血管神经断裂,为移位之肱骨下端钝挫伤所致,而非骨折断端或锐器直接作用,术前易误认为血管神经被移位的骨端挤压,而作简单的清创复位、忽略对血管神经的检查处理。

本病例受伤姿势符合肘关节后脱位机理。由于从高处坠落,产生的冲击力大,地面的反作用力使鹰嘴尖端急骤撞击鹰嘴窝,产生强大杠杆力,迫使肱骨下端冲破肘关节前内侧关节囊及肱前肌而脱位,身体的重力沿着脱位方向继续作用,使肱骨下端继续下移而冲破肘前内侧全层皮肤,形成开放性脱位。肱动、静脉及正中神经正好从肱骨下端前内侧跨过,这种突发暴力致肱骨下端严重移位,足以造成该神经血管的断裂。

因此,临床上遇到这类损伤病人,我们可以根据其损伤暴力大、移位程度重、桡尺动脉搏动消失,正中神经支配区感觉运动障碍,可诊断为血管神经断裂,有血管的吻合条件的应立即进行探查、血管神经吻合。基层或无条件的医院应尽早将伤者转院,而无需再行清创复位观察,以免延误治疗。另外,更不要不经清创而复位,将污染带入关节深部,增加感染机会。

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Abstract of Original Articles

Study on pathogenesis of derangement of lumbar posterior intervertebral facet joint and biomechanics of manipulative treatment

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A microsensor was embedded to detect the displacement and receiving forces from lumbar posterior intervertebral facet joints with various postures. The results indicates that the degree and direction of displacement is influenced by morphology of the articular process, during motion of the spine, the intra-pressure of facet joints is concentrated on the superior and inferior ends of the facet joint. During instability of certain segment of the joint, there will be an increasing of around 8 times of intra-pressure within the facet joints. Results of measurement of mimic rotatory manipulative reduction indicate that there are undulant changes within the intra-pressure of posterior facet joints. All-round direction movements of the inferior facet joint toward upward - forward - downward - backward have been found. Based on the viewpoint of bio-mechanics, the pathogenesis of derangement of lumbar posterior intervertebral facet joint and principle of manipulative treatment are explored by authors.

Key Words Derangement of lumbar posterior intervertebral facet joint Microsensor
Biomechanics Principle of manipulative treatment

(Original article on page 5)

A retrospective study on the fracture and dislocation of the thoracic and lumbar spine complicated with paraplegia

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Forty three cases of fracture and dislocation of the thoracic and lumbar spine complicated with paraplegia was studied retrospectively by authors. Among them, 15 were complete paraplegia; 28, incomplete paraplegia. The rate of improvement was 26.7% in the former, and 71.4% in the latter. A comment among the relationship of segment of spine, spinal cord and nerve root, determination the nature of spinal cord injury and reduction of internal fixation and route of decompression of the cord were discussed.

Key Words Fracture of thoracic and lumbar spine Dislocation of thoracic and lumbar spine
Paraplegia Integration of traditional Chinese and modern medicinal therapy

(Original article on page 9)

Experimental study and clinical observation on ankylosing spondylitis treated with Chinese drug Feng Shi Ling

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Animal experiments mimic as ankylosing spondylitis treated with Chinese drug Feng Shi Ling showed that there is an anti-inflammatory action on edematous foot induced by Irish moss glue, and prominent inhibitory action of the allergic inflammatory reaction and inhibiting

hemolysin and reaction with increasing weight of the spleen and thymus produced by late allergic reaction as well. Among 38 cases of patients, the therapeutic results indicated that 10 were alleviated; 17, markedly improved; 9, improved; 2, in effective.

Key Words Feng Shi Ling Ankylosing spondylitis Traditional Chinese medicinal therapy

(Original article on page 12)

A study on stress adaptability of fracture healing

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A sliding mechanical loading controller with strong physiological adaptability was designed without stress shading of the fracture site. The muscle force and body weight exerted on the extremity thus were treated as the dynamic source of the mechanical loading. The force condition of the fracture site during functionally moving and over whole healing progress of the rabbits were recorded with force transducers and related amplifiers etc. The experiments indicated that the compressive force of the fracture site changed in relation with the muscle contraction and moving of the gait, the mean load increased along with the time prolonged, and the loading on the sliding mechanical loading controller gradually decreased from 2.4 kg in average on the day of operation to that of 0.78 kg till 5 weeks on the fractured tibia during healing process. On the other hand, under anatomical microscopic observation, the original fracture site is thoroughly enrolled by external callus, thus it is realized that the force changed on the fracture site indicating functional recovery of the extremity, and a reflection of compressive loading sustained by the callus on the fracture site. It is suggested that the muscle contract during functional training in time and body weight bearing after fixation of the fracture may offer an optimized mechanical environment, a physiological stress condition.

Key Words Fracture healing Biomechanics

(Original article on page 16)

Preliminary study of fracture healing detected by B ultrasonic histogram

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More than 90 tests of 33 places of fracture in 20 patients with B ultrasonic histogram were detected. Echo and morphological changes with various period of bone-healing could be revealed with B ultrasonic examination. Quantitative measurements were undertaken via histogram. The color parameter of early stage of bone healing is processed with international statistical analytical system(SAS) to analyze multivariate and principal component analysis. The results showed that the method provide a scientific quantitative index in bone healing clinically, and it is earlier than X ray and without radiating hazard. It widens B ultrasonic application in the field of orthopaedics.

Key Words B ultrasonic Histogram Bone healing

(Original article on page 37)