

# 前路减压内固定术治疗胸腰椎骨折合并截瘫

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**摘要** 本文报告了 1993 年 9 月~1996 年 1 月间采用侧前方减压, Kaneda 内固定术治疗胸腰椎骨折合并脊髓或马尾神经损伤 21 例, 除 2 例 A 级无变化外, 余病例均有 1~3 级的改善。认为前路手术在直视下清除致压物, 减压彻底, 不破坏后柱的完整性。对于双椎体爆裂性骨折合并不全截瘫, 采用前路减压, Kaneda 内固定术亦可获得良好的治疗效果。

**关键词** 前路减压 骨折 截瘫 内固定术

我院于 1993 年 9 月~1996 年 1 月采用侧前方减压, Kaneda 内固定治疗胸腰椎骨折合并脊髓或马尾神经损伤 21 例, 取得了良好的效果。

### 临床资料

1. 一般资料: 本组 21 例中男 18 例, 女 3 例; 年龄 19~49 岁; 全部为腰椎爆裂性骨折; 单椎体骨折 19 例 (L<sub>1</sub>10 例, L<sub>2</sub>6 例, L<sub>3</sub>3 例), 双椎体骨折 2 例 (L<sub>1</sub>、L<sub>4</sub> L<sub>2</sub>、L<sub>3</sub> 骨折各一例); 受伤原因: 高处坠落 14 例, 交通事故伤 4 例, 重物压伤 3 例; 入院时脊髓损伤程度按 Frankel 级分类为: A 级 2 例, B 级 5 例, C 级 8 例, D 级 6 例。

2. X 线及 CT 检查所见: 本组病例入院时全部行 X 线及 CT 检查。术前均存在有不同程度的后凸畸形, Cobb 氏后凸角为 6°~24°, 平均为 14°。椎体前缘压缩程度为 12%~67%, 平均 49.6%, 椎体后缘压缩为 0~20%, 平均 12%。骨碎片突入椎管致其前后径缩小为 33%~80%, 平均为 52%。3 例合并有脱位, 4 例合并有横突骨折, 2 例合并有椎板、椎弓根骨折, 均移位较轻。

3. 手术时间: 为伤后 3 小时~20 天, 其中 11 例于伤后 8 小时内手术, 余延迟手术原因绝大部分为合并其它部位严重损伤先行抢救治疗或外院转入。

### 手术方法

采用全麻或硬膜外麻醉。病人右侧卧位, 取左侧肾切口, 按解剖层次逐层切开, 必要时可切除左侧第十二肋, 以利术野显露。结扎伤椎及上、下各一个椎体之椎横动脉, 切除伤椎上下间盘, 用咬骨钳、骨刀、刮匙等将伤椎后方及突向椎管之骨碎片完全清除以达到椎管彻底减压。在伤椎上下椎体上安装椎体钢板, 通过钢板孔在椎体上钻孔, 方向与椎体上下终板平行, 各旋入两枚长度合适之椎体螺钉, 钉尖刚穿出对侧骨皮质。然后用椎体撑开钳置于减压间隙之间撑开, 矫正后凸畸形。

在上位椎体下终板与下位椎体上终板分别凿一浅槽, 植入相应高度之髂骨块, 其前方可放置适量松质骨。然后安装两根螺棒及其螺帽, 前棒适当撑开, 后棒适当压缩, 使植骨块紧密嵌压。分层缝合切口, 常规留置引流管, 术后酌情抗感染, 输血输液等。

### 治疗结果

手术切口均一期愈合, 无大血管、脊髓或神经根损伤。5 例术中出现胸膜损伤, 均予缝合。2 例术后出现尿路感染 (留置导尿管), 1 例出现褥疮, 经治疗后均康复。术后复查 X 光片, 后凸畸形大部分得到矫正, 后凸 Cobb 氏角为 0~8°, 平均 3.5°, 椎体前后缘压缩及 3 例脱位均基本得到纠正。随访 19 例, 随访时间为术后 10~26 个月, 平均 18 个月, B、C 级各失访一例。神经功能恢复情况见表 1, 其中 E 级 12 例中有 8 例已恢复正常生活。

表 1 19 例治疗前后恢复情况

	术前 例数	术后恢复情况				
		A	B	C	D	E
A	2	2				
B	4			2	1	1
C	7				2	5
D	6					6

### 讨 论

对于腰椎爆裂性骨折合并脊髓或马尾神经损伤的病人, 手术治疗的目的是整复骨折脱位, 恢复椎管正常内径、解除对脊髓或马尾神经的压迫、重建脊柱的稳定性。由于胸腰椎爆裂性骨折主要波及脊柱的前柱及中柱, 脊髓或马尾受压的原因大多是由于骨折块或间盘碎片向后突入椎管而引起的。采用前路手术在直视下清除致压物, 减压彻底、可靠, 且不破坏后柱的完整, 所以前路手术减压较为合理。又由于脊柱各节段的运

动中心位于椎体中部, Kaneda 内固定器正好固定运动节段的负重部分, 承载能力较好, 固定牢靠, 螺纹棒间横向连接器在抗旋转及屈伸不稳定性方面有着非常重要的作用<sup>[1]</sup>, 因而符合脊柱的生物力学原则。不少文献报道采用前路减压治疗胸腰椎爆裂性骨折合并不完全性截瘫, 神经功能均有一级以上的改善<sup>[2,3]</sup>。本组病例 Cobb 氏后凸角由术前平均 14° 降至术后 3.5°, 椎体压缩及脱位均基本纠正, 神经功能除 2 例 A 级外, 均有 1~3 级的改善, 说明应用 Kaneda 内固定器可获得良好的畸形矫正及骨愈合, 为截瘫的恢复创造了有利的条件。

本组急症手术的病例, 术前均给予激素及脱水剂治疗, 以改善损伤后脊髓血液和微循环灌注, 降低脊髓组织水肿, 提高神经细胞对损伤的耐受能力, 从而有利于术后神经功能的恢复。一般给予甲基强的松龙 20~30mg/kg, 一次性静脉滴入, 术后可再用 1~2 天。前路手术损伤大, 术中出血较多。本组病例术中出血为 600~1800ml, 平均 1180ml。为防止大量失血, 术中应仔细结扎伤椎及其上下椎的节段血管, 尽量缩短切除伤椎后半部的手术时间。另外, 为防止腹膜后大血管及脊髓或神经根的损伤, 术中应清楚显露椎体前后缘及椎弓根, 小心、仔细地清除伤椎后半部和突入椎管的骨碎片、间盘组织、后纵韧带等。椎体螺钉应长短适宜, 由椎体侧方横穿椎体中心, 与椎体上、下终板平行, 后侧钉还可前倾 10°~15°。由于切口渗血较多, 术中常规留置引流管, 以防术后切口内积血, 减少切口感染的机会。

对于损伤超过两周以上的陈旧性脊柱骨折并脊髓损伤, 如表现为不全性截瘫, 说明脊髓损伤较轻, 未完全坏死退变, 此时仍适于行前路减压手术。本组有 3 例伤后 15~20 天始行手术治疗, 术后神经功能均有一级以上改善。但对于完全截瘫的病人, 虽有前方压迫, 减压后亦无效果, 我们主张行较为简单的后路手术为宜。

本组有 2 例双椎体骨折, 一例为 L<sub>1</sub>、L<sub>4</sub> 一例为 L<sub>2</sub>、L<sub>3</sub> 骨折, 术前 Frunkel 分级分别为 C 级和 D 级。2 例 CT 检查双椎体骨折均有碎骨块突入椎管, 手术时均行二个平面的减压、植骨, 前者行双 Kaneda 固定, 后者行加长 Kaneda 固定(加长螺纹杆), 术后神经功能恢复均达到 E 级。因此, 我们认为对多椎体爆裂性骨折采用前路减压、Kaneda 内固定术亦可获得良好的治疗效果。

### 参考文献

1. 金田清志. 金田前方脊柱固定器械用于胸腰部脊柱重建的适应证、手术方法及结果. 中国脊柱脊髓杂志 1994; 3: 132.
2. Kaneda K, et al. Burst fractures with neurologic deficits of the thoracolumbar-lumbar spine. Results of anterior decompression and stabilization with anterior instrumentation. Spine 1984; 9: 788.
3. McAfee, Bohlman, Ohio, et al. Anterior decompression of traumatic thoracolumbar fractures with incomplete neurological deficit using a retroperitoneal approach. J Bone Joint Surg (Am) 1985; 67: 89

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## 快速牵引法治疗胫腓骨下 1/3 不稳定骨折

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我院自 1991 年起用快速牵引法治疗胫腓骨下 1/3 不稳定骨折 32 例, 疗效满意。现报告如下。

**临床资料** 本组 32 例中男 25 例, 女 7 例; 年龄 20~55 岁; 斜形骨折 15 例, 螺旋型骨折 12 例, 蝶形骨折 5 例; 随访半年, 骨折均愈合, 关节活动正常。

**治疗方法** 常规消毒后行局麻, 在骨折近端和骨折远端或跟骨处经胫骨各打入斯氏针一枚, 然后在 X 光透视下, 骨折近远端的斯氏针作快速对抗牵引, 配以手法复位, 矫正短缩、旋转、成角畸形, 维持位置后, 以膝上管形石膏外固定, 斯氏针即包埋在石膏中。石膏

固定一个半月后拆除改用小夹板固定。

**讨 论** 在闭合整复胫腓骨下 1/3 不稳定骨折时, 往往遇到的问题是骨折短缩和旋转不易矫正, 即使矫正后单纯石膏或夹板固定也难以维持位置。本法在石膏固定中配合斯氏针牵引, 能较容易地矫正骨折短缩和旋转, 待石膏干燥后可部分持重, 而维持骨折复位后的位置, 达到治疗的目的。本法简便, 快速, 经济, 安全, 固定可靠。

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18 New Zealand white rabbits were divided randomly into three groups, i. e. group of manipulative treatment, group of fenestration treatment, and the control. Models of intra — osseous high pressure were established by ligating the femoral and inferior gluteal veins. The intraosseous pressure was determined before and after modelling and before specimen was taken, and color Doppler bloodflow detection was made before and after manipulation. The results showed that persistent intraosseous high pressure could efficiently produced by ligation of veins, and the manipulation could decrease the intraosseous high pressure, the resistance index of the distal end of the femoral artery, but increase the systolic peak velocity, the mean velocity and acceleration of blood flow, thus the local hemodynamic condition was improved.

**Key words** Manipulation Knee joint Hemodynamics

(Original article on page 13)

**The Primary Repair of Traumatic Skin Defect in Multiple Fingers Treated with Pedicle Skin Flaps of Opposite Upper Arm**

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32 cases (69 fingers) of traumatic skin defect in multiple fingers with exposed arteries, nerves, tendons, bones or joints had been treated by using the pedicle skin flaps of the opposite upper arm from 1983 to 1994. Among 32 cases, the incised wound was happened in 8 cases, the avulsed wound in 10 cases, and the lacerated wound in 14 cases; two fingers were wounded in 27 cases and three fingers in 5 cases. All of them were emergent cases and the pedicle skin flaps were all alive. Thus the writer considered that this method may be used in emergent case. The earliest time for cutting the pedicle of skin flap was discussed.

**Key words** Pedicle skin flap Multiple fingers Skin defect

(Original article on page 16)

**The Treatment of Fracture of Thoracolumbar**

**Spine with Paraplegia by Anterior Decompression and Internal Fixation**

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21 cases of fracture of thoracolumbar spine with injury of spinal cord or cauda equina had been treated by anterolateral decompression and Kaneda's internal fixation from 1993 to 1996. The results showed that, in addition to 2 cases without change at injury grade A, 19 cases had been improved in the range of 1—3 grades. It is considered that the operation in anterior route can clear away the compressive material under direct vision, and thus the sufficient decompression can be obtained and the integrity of posterior column can not be destroyed. As to the bursting fracture of double vertebral body, the administration of anterior decompression and Kaneda's internal fixation can also obtain a good therapeutic effect.

**Key words** Anterior decompression Internal fixation Fracture Paraplegia

(Original article on page 20)

**Correction of Angular Deformity at Fracture of Tibia and Fibula by Wedging of Cast (A Report of 50 Cases)**

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520 cases of unstable fracture of tibia and fibula had been treated in our hospital during last 5 years. The most of them were healed by closed reduction. Through treatment we found that about 10% patients with fracture of tibia and fibula had angular deformities in various degrees after of cast. The traditional method the wedging of cast was used to correct the angular deformities in 50 cases. The result showed that the angular deformities were corrected better, the redisplacements were prevented, and the satisfactory functions were obtained.

**Key words** Fracture of tibia and fibula Angular deformity Correction of wedging

(Original article on page 25)