

两种方法治疗桡骨远端骨折的疗效比较研究*

冯建书 付强 闫世杰 张乐明 王江泳 周晓彬 王海涛

(石家庄市第三医院骨科 河北 石家庄 050011)

摘要 目的:比较采用T形钢板内固定和闭合复位石膏外固定这两种方法治疗桡骨远端骨折的疗效研究。方法:选取我院2008年3月至2011年12月间的76例桡骨远端骨折患者,并按照治疗方法不同分为2组,41例患者进行T形钢板内固定,其余35例患者进行复位后石膏外固定。并借助X线对比分析桡骨远端骨折复位前后及临床愈合时桡骨腕关节的掌倾角、尺偏角及桡骨轴向缩短长度变化等数据,并根据改良的Shea评定法对临床疗效进行比较。结果:针对桡骨远端不稳定型骨折的患者,T形钢板内固定组的优良率要优于石膏外固定组的疗效($P<0.05$);而对于稳定性桡骨远端骨折的患者,两组之间的优良率没有明显差异($P>0.05$)。结论:对于桡骨远端不稳定骨折的患者,应优先选择T形钢板内固定手术方法,而对于稳定性骨折患者这两种治疗方法均可采用。

关键词 桡骨远端骨折;T形钢板内固定;石膏外固定

中图分类号 R681.7 文献标识码 A 文章编号 1673-6273(2012)26-5123-03

Comparison Study of the Therapeutic Effects of two Methods for Distal Radial Fractures*

FENG Jian-shu, FU Qiang, YAN Shi-jie, ZHANG Le-ming, WANG Jiang-yong, ZHOU Xiao-bin, WANG Hai-tao

(Department of orthopaedic, The third people's hospital of Shijiazhuang city, Hebei, 050011)

ABSTRACT Objective: To investigate the superiority of the curative effects in treating distal radius fractures by T plate internal fixation and plaster external fixation. **Methods:** 76 cases of distal radius fracture from 2007. 3 to 2011.6 were classified into two groups. There were treated by T plate internal fixation and plaster splint external fixation respectively. The curative effects were detected according to modified Shea assessment measuring the angle of volar deviation, ulnar deviation and the shortened size of radius in axial direction by X-ray before and after treatment. **Results:** For unstable distal radius fractures, it was prefer to be treated by open reduction and T plate internal fixation ($P<0.05$). For stable distal radius fractures, there was no difference between internal fixation by T plate and external fixation by plaster splint ($P>0.05$). **Conclusions:** For unstable distal radius fractures, it was performed to be treated by open reduction and T plate internal fixation. For stable distal radius fractures, both internal fixation by T plate and external fixation by plaster external fixation could be performed.

Key words: Distal radius fracture; T plate Plaster; Plaster external fixation

Chinese Library Classification(CLC): R681.7 **Document code:** A

Article ID:1673-6273(2012)26-5123-03

前言

桡骨远端骨折是临床上最常见的一种骨折多发病,其骨折发生的原因高强度、高能量的损伤或者由于患者本身骨质疏松,从而导致骨折粉碎,常波及关节面^[1-4]。最近,临床研究发现桡骨远端骨折中对远期疗效影响最大的问题是桡骨短缩或腕关节活动的问题。针对这一难题,为了恢复桡骨骨折患者的长度,我们采用了切开复位T形钢板内固定手术治疗,并和改进的闭合复位石膏外固定的疗效进行了比较。

1 资料与方法

1.1 临床资料

T形钢板内固定组(A组)41例,男26例女15例;年龄17-63岁,平均34.4岁。其中左侧14例,右侧27例。按照AO

分型标准 A2型10例, B2型5例, B3型6例, C1型7例, C2型10例, C3型3例。

石膏外固定组(B组)35例,男21例14例;年龄14-73岁,平均44.5岁。其中左侧11例,右侧24例。按照AO分型标准, A2型6例, A3型7例, B1型5例, B2型7例, C1型5例, C2型5例。两组患者均为闭合性损伤(表1)。

1.2 治疗方法

1.2.1 石膏外固定组 在局部麻醉下或臂丛神经阻滞麻醉行骨折闭合复位,依据桡骨远端骨折的移位方向,用石膏夹板固定腕关节成掌屈位或背伸位,2周后根据患者的病情改为中立位或功能位固定,6周左右一般可拆除石膏夹板,并指导患者据骨折愈合情况加强腕关节功能锻炼。

1.2.2 T形钢板内固定组 所有患者使用臂丛神经阻滞麻醉后,根据骨折类型,选用桡掌侧或桡背侧入路,暴露出骨折的断端,

* 基金项目:石家庄市科技局项目(0512038)

作者简介:冯建书,副主任医师,研究方向:肢体创伤与修复、周围神经再生机制, E-mail: fjs_hand@sina.com

(收稿日期:2012-05-05 接受日期:2012-05-28)

行手法复位,恢复掌倾角和尺偏角,复位成功后,行 T 形钢板内固定,术中要密切注意保护桡动静脉及正中神经,术后 2~3 天开始进行恢复功能锻炼。

1.3 改良的 shea 评定法

根据患者的主诉情况,如腕部的疼痛,手指的感觉,以及关节的活动度及握力等来评分。以 18~20 分为优,15~17 分为良,12~14 分为中,11 分为差^[9]。

1.4 统计学方法

采用 SPSS 15.0 统计学软件,对所有数据进行卡方检验分析, $P<0.05$ 被认为差异有统计学意义。

2 结果

所有患者随访 6-24 个月,平均 13.6 个月。患者骨折情况全部愈合满意。结果显示,石膏外固定组(A)和 T 型钢板内固定组(B)其掌倾角、尺偏角和桡骨轴向缩短长度在复位后及临床愈合时,其恢复变化差异无统计学意义($P>0.05$)(表 2)。

表 1 两组患者的年龄及骨折分型情况
Table 1 Age and fracture type condition in two groups

Group	n	Left	Right	Average year	AO type		
					A	B	C
T plate internal fixation	41	14	27	34.4	10	11	20
Plaster external fixation	35	11	24	44.5	13	12	10

表 2 两组桡骨远端骨折复位质量比较
Table 2 Comparison of reposition quality of distal radius fractures between two groups

	Volar deviation		Ulnar deviation		Shortened size of radius	
	A	B	A	B	A	B
Before reposition	17.36± 18.75	15.48± 16.91	6.25± 4.18	13.54± 6.27	3.54± 2.17	4.56± 2.39
After reposition	9.24± 1.75	8.32± 2.33	17.53± 5.26	18.86± 6.31	3.54± 2.17	0.52± 0.45
Clinical healing	7.84± 2.15	6.22± 2.54	15.33± 4.43	11.03± 4.62	3.27± 1.92	0.45± 0.48

依据改良的 shea 评分法可见 A、B 型骨折患者评分优良率 T 形钢板内固定组和石膏外固定组间无显著性差别($P>0.05$),而 C 型骨折患者评分优良率, T 形钢板内固定组明显优于石膏外固定组,差异有统计学意义($P<0.05$)(表 3)。

表 3 两组桡骨远端骨折治疗后评分比较
Table 3 Comparison of score of distal radius fractures between two groups

Group	AO type	n	Well	Fine	Middle	Difference
Difference	A	10	5	4	1	0
	B	11	4	5	2	0
	C	20	8*	7*	2	1
Plaster splint	A	13	5	5	3	0
External fixation	B	12	4	6	2	1
Group	C	10	2	2	4	2

注:经卡方检验分析,与石膏外固定组比较,* $P<0.05$ 。

Note: After Chi-square analysis, as compared with the plaster fixed group.

3 讨论

桡骨远端骨折是临床上常见的一种多发性骨折,如果治疗方法选择不当,容易导致腕关节发生慢性疼痛和僵硬,从而严重影响手的功能^[6-8]。因此对桡骨远端骨折的方法选择显得尤为重要。目前临床上把桡骨远端骨折一般分为稳定和不稳定两种类型。对桡骨对于稳定桡骨远端骨折一般多采用非手术治疗,如石膏外固定或小夹板固定即可达到预期的结果,但对于不稳定桡骨远端骨折则需要进行治疗,方法包括 T 形钢板内固定等^[9-11]。桡骨远端骨折的治疗主要在于恢复桡骨正常的高

度、掌倾角、尺偏角,保持关节面的平整。本研究结果显示石膏外固定中对掌倾角及尺偏角的维持效果能达到预期的满意结果,与 T 型钢板固定组相比较,差异无统计学意义。

而对于不稳定桡骨远端骨折患者,根据 Cooney 关于不稳定性骨折的分析:(1)桡骨远端骨皮质发生粉碎骨折,(2)掌侧角向背侧倾斜超过 20 至 25 度左右,(3)桡骨短缩长度大于 5mm 时,对于符合这些条件的桡骨远端骨折患者来说,应该尽量采用 T 形钢板内固定方法来治疗^[12-15]。本次研究结果显示,对于 C 型骨折, T 形钢板内固定组其关节评分优良率明显高于石膏外固定组。

总之,我们认为,对于复位后骨折情况稳定的患者,可以运用石膏夹板固定可获得满意效果;对于桡骨远端骨折不稳定者,采用切开复位后T形钢板内固定,不但可以维持桡骨的长度,而且可以提早进行功能锻炼,使得关节功能得以恢复,其恢复时间明显缩短,获得较好的疗效。

参考文献(References)

- [1] Waters PM, Mintzer CM, Hipp JA, et al. Noninvasivedistal radius instability[J]. J Hand Surg Am, 1997, 22(12): 572-579
- [2] 荣绍远, 苏敏, 高正言, 等. 桡骨远端骨折治疗的选择 [J]. 现代生物医学进展, 2011, 11(4):764-767
- Rong Sao-yuan, Su Min, Gao Zheng-yan, et al. Proximal Humeral Internal Locking System for Humeral Proximal Fractures of Elderly Patients[J]. Progress in Modern Biomedicine, 2011, 11(4):764-767
- [3] Dumont C, Fuchs M, Folwaczny EK, et al. Results of palmar T plate osteosynthesis in unstable fractures of the distal radius [J]. Chirurg, 2003, 74(9):827-833
- [4] Letsch R, Infanger M, Schmidt J, et al. Surgical treatment of fractures of the distal radius with plates: a comparison of palmar and dorsal plate position[J]. Arch Orthop Trauma Surg, 2003, 123(7):333-339
- [5] shea KS, Fernandez DL, Jupiter JB. et al. Corrective osteotomy for malunited displaced fracture of the distal end of the radius [J]. J Bone Joint Surg Am, 1997, 79(12):1816-1826
- [6] 熊学华, 许月莲, 王克刚, 等. 桡骨远端骨折不同治疗方法临床疗效比较[J]. 中国矫形外科杂志, 2007, 15(16):1221-1223
- Xiong Xue-hua, Xu Yue-lian, Wang Ke-gang, et al. Effect comparison on the fracture of distal radius by three different fixations [J]. Orthopedic Journal of China, 2007, 15(16):1221-1223
- [7] 姜新. 桡骨远端骨折T形钢板内固定与石膏夹板外固定疗效比较 [J]. 中国中医骨伤科杂志, 2006, 14(2): 27-29
- Jiang Xin. Comparison on curative effects in treating distal radius fractures by T plate and Plaster splint[J]. Chinese Journal of Orthopaedics and Traumatology, 2006, 14(2):27-29
- [8] 周成洪, 龙亨国, 马一平. 夹板固定与石膏固定治疗桡骨远端关节外骨折的疗效比较[J]. 中国骨伤, 2007, 20(7): 474-475
- Zhou Cheng-hong, Long Heng-guo, Ma Yi-ping. Comparison of therapeutic effect between splint and plaster fixation in treating extra-articular distal radial fractures[J]. Chinese Journal of Orthopaedics and Traumatology, 2007, 20(7): 474-475
- [9] 姜保国, 张殿英, 傅中国, 等. 老年桡骨远端骨折的治疗方法 [J]. 中华骨科杂志, 2004, 24(11):645-648
- Jiang Bao-guo, Zhang Dian-ying, Fu Zhong-guo, et al. The treatment of distal radius fractures in aged patients [J]. Chinese Journal of Orthopaedics, 2004, 24(11):645-648
- [10] 任继鑫, 刘智, 孙天胜, 等. 锁定加压钢板内固定治疗中老年女性桡骨远端粉碎性骨折[J]. 中华创伤骨科杂志, 2006, 8(3):229-232
- Ren Ji-xin, Liu Zhi, Sun Tian-sheng, et al. Treatment of comminuted distal radius fractures of elderly women with locking compression plate [J]. Chinese Journal of Orthopaedic Trauma, 2006, 8(3): 229-232
- [11] Furia JP, Alioto RJ, Marquardt JD. The efficacy and safety of the hematoma block for fracture reduction in closed isolated fractures [J]. Orthop, 1997, 20(5):423-426
- [12] Leung F, Zhu L, Ho H, et al. Palmar plate fixation of AO type C2 fracture of distal radius using a locking compression plate: a biomechanical study in a cadaveric model [J]. J Hand Surg(Br), 2003, 28(3): 263-266
- [13] Cooney WP. Fracture of the distal radius: A modern treatment-based classification[J]. Orthop clin North Am, 1993, 24:211-216
- [14] 李文壮, 蔡湘波, 白卫东, 等. 两种方法治疗桡骨远端不稳定骨折的疗效比较[J]. 实用手外科杂志, 2008, 22(3):152-154
- Li Wen-zhuang, Cai Xiang-bo, Bai Wei-dong, et al. Comparison study for treatment of unstable distal radius fractures with two methods [J]. Journal of practical hand surgery, 2008, 22(3):152-154
- [15] 胡方清, 毛坤祥, 裴谊波, 等. 闭合复位经皮克氏针内固定治疗桡骨远端骨折的临床观察 [J]. 现代生物医学进展, 2009, 9(23): 4516-4517
- Hu Fang-qing, Mao Kun-xiang, Pei Yi-bo, et al. Clinical research of closed reduction and internal fixation with Kirschner wires treating distal radial fracture[J]. Progress in Modern Biomedicine, 2009, 9(23): 4516-4517

(上接第 5119 页)

- [19] Lee EA, Cho HI, Kim SS, et al. Comparison of magnetic resonance imaging in subtypes of multiple system atrophy[J]. Parkinson and Rel Disord, 2004, 10(6): 363-368
- [20] Lee PH, An YS, Yong SW, et al. Cortical metabolic changes in the cerebellar variant of multiple system atrophy: a voxel-based FDG-PET study in 41 patients[J]. Neuroimage, 2008, 40(2):796-801
- [21] Lyoo CH, Jeong Y, Ryu YH, et al. Effects of disease duration on the clinical features and brain glucose metabolism in patients with mixed type multiple system atrophy[J]. Brain, 2008, 131(Pt 2):438-446