

### 外固定

# 钳夹加压固定器治疗尺骨鹰嘴骨折

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**摘要** 应用钳夹加压固定器治疗尺骨鹰嘴骨折 210 例,经 3 个月~8 年随访,解剖及近解剖复位率达 97.6%,关节功能恢复优良率达 98.88%。观察认为,该器械可用于各类型尺骨鹰嘴骨折,关键在于根据骨折的不同类型,选取适当固定点。

**关键词** 尺骨鹰嘴骨折 骨折固定术 钳夹加压固定器

我们自 1982 年 6 月至 1993 年 3 月,设计和应用钳夹加压固定器治疗尺骨鹰嘴骨折 210 例,收到满意效果,介绍如下。

#### 临床资料

210 例中男 147 例,女 63 例;年龄 5~65 岁;左侧 117 例,右侧 93 例;横断型 92 例,斜型 75 例,粉碎型 37 例,小块撕脱骨折 6 例(其骨折块分离最小者 0.5cm,最大者 3cm);合并桡骨头脱位 6 例,陈旧性小腿骨折 2 例;伤后至整复时间最短 4 天,最长 22 天;固定时间最短 19 天,最长 47 天,平均 26 天。

#### 固定器介绍

钳夹加压固定器用不锈钢制成,分固定钳与固定钩两部分。根据临床需要制成大、中、小三种型号。

固定钳由环部及柄部组成。柄部长 120~140mm,直径 3~4mm,柄的末端有固定齿和指环。环部最大直径 3mm,向尖端渐细,末端尖锐,环部开口间距 4~6mm。

固定钩可分钩部与滑动部两部分。其钩部最大直径 4mm,向尖端渐细,末端尖锐,在固定器装置后,其末端略长于固定钳环部之末端。滑动部呈扁平型,宽 8mm,厚 2mm,中间有长方形孔,长 60mm,宽 4mm,以使在固定钳旋扭螺丝下前后滑动。其钩端的拉力要求悬挂 4~5kg 重量不变形,即可对抗肱三头肌的拉力,达到固定的目的(图 1)

#### 治疗方法

患者取半侧卧位,患肢在上,伸肘。助手扶

持患侧前臂,肘部常规消毒,分三点局部浸润麻醉。于骨折线下 5~10mm 处先用固定钳经

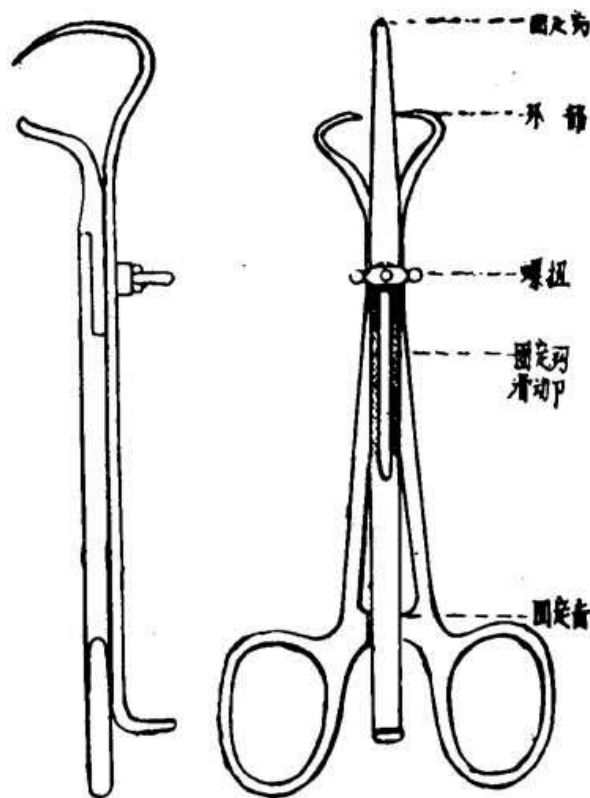


图 1 尺骨鹰嘴骨折钳夹加压固定器

皮固定尺骨。推骨折块复位,再用固定钩经皮透过皮质钩住鹰嘴骨块。而后将滑动部套入固定钳旋扭螺丝,一手推挤鹰嘴,一手拉紧固定钩,触摸骨折片已复位时,将螺帽拧紧,无菌包敷,屈肘 90°,腕颈带吊于胸前。固定后 3 天、7 天、12 天各复查一次,如无不适及骨折分离情况,可维持固定,否则应重新调整。固定后即可开始指、腕关节活动,2 周后即可适当伸屈肘关节,3~4 周局部无压痛及异常,X 线片有骨痂

形成,即可去固定。一般儿童固定 3 周,成年人 4 周左右。

### 治疗结果

经上法治疗,210 例中达解剖复位者 137 例,近解剖复位者 68 例,较差者 4 例,失败 1 例。

共随访 179 例,随访时间 3 个月~8 年,平均 2 年 4 个月,参考 1979 年 5 月青岛关节内近关节骨折会议所制定的标准,优者 170 例,良者 7 例,尚可 2 例,优良率 98.88%。

### 病案举例

张某,男,13 岁。于 1982 年 6 月 25 日与人玩耍时摔倒致左肘受伤。当即出现肿胀疼痛,功能障碍,未作何处理,伤后 1 天来诊。检查见左肘部中等度肿胀,肘后较重,压痛明显,并可触摸到骨折间隙,肘关节活动时疼痛加重,桡动脉能触及,手指能伸屈活动。X 线片示左尺骨鹰嘴骨折,折片向上分离 1.5cm。于局麻下手法整复,钳夹加压固定。24 天后去固定,骨折复位良好。随访 6 年,肘关节伸屈活动正常,无任何不适(图 2 见封二)

### 讨 论

1. 应用钳夹加压固定器治疗尺骨鹰嘴骨折,是根据杠杆原理,利用机械产生的纵向拉力和横向压力作用于骨折块上,完成骨折复位和固定的。临床观察表明该法不但能够满足骨折的固定和加压作用,允许肘关节早期活动,有利于骨折愈合和恢复关节功能,而且操作简便,损伤小,适用范围较大,但对于不同类型的骨折应选择适当的固定部位。如横断骨折,固定钳可固定于骨折线下 10mm 处,固定钩则在骨折块的中点部位较好;斜形骨折可根据斜形程度而定,固定钳可夹于骨折线下 5mm 处,固定钩则在骨折块中点略靠下部位;粉碎骨折固定钳夹于骨折线下 10mm 处,固定钩则在骨折块中点略靠上,对粉碎骨折,压力不能过于加大,以免中间小折块被挤出,妨碍复位。总之,如果固定钩过于靠下,会造成折块后倾,

使半月切迹加大;而固定钩过于靠上,会造成骨折块前倾,使半月切迹变小,影响伸屈功能。

因该法对于 3 周以上的骨折治疗有效,故对于严重多发性骨折或肿胀较明显的患者,为便于整复时触摸清晰,易于固定,伤后可先服中药 4~5 天,使肿胀消退后,再整复固定,亦不影响疗效。

钳夹加压固定器治疗尺骨鹰嘴骨折,由于骨折和器械结构特征,骨折端既可获得恒定生理应力,也有间断性生理应力存在。固定器安装后,固定钳和固定钩由旋扭螺丝结合,使上下骨折端成为一体,使产生恒定生理应力,固定后即可开始腕、指关节活动,2 周后即可伸屈肘关节,由于肌肉的收缩和松弛,使骨折端既紧缩又弛张,这样使断端间压力分布时大时小、时有时无地随着活动而变化,这正是临床初期骨折端得到间断性生理应力。由于两种生理应力的反复刺激,从而促使骨痂生长以加速骨折愈合。

钳夹加压固定器治疗尺骨鹰嘴骨折,较小有功能替代。临床前期由于新生骨组织弹性模量小于固定器弹性模量,因而主要承受载荷的是固定器,这对于保持骨折端的稳定是必要的。但由于固定器的杠杆力量,新生骨组织也承受正常功能状态下的受力形式,随着断面愈合程度的增强,载荷将越来越多地被新生骨组织承受。当重建的骨组织接近正常功能状态时,载荷将由修复的骨组织承担。这时固定器的作用已不再是必要的,因而可以去除固定。整个治疗过程中,固定器不存在明显功能替代,故去除固定器后,没有发生再骨折的现象。

肘关节的功能,主要是屈和伸、旋前和旋后以及肘的稳定性,而这些运动,尺骨鹰嘴在其中起着重要的作用,至于尺骨鹰嘴骨折在治疗过程中必须克服肱三头肌的拉力。使用钳夹加压固定器治疗,即能起到对抗肌力的作用,所以在治疗过程中能收到较理想的疗效。

## Abstract of Original Articles

### Experimental study on Gu Bao Wan in treating rachitis

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In this article, changes of serum calcium, phosphorus, alkaline phosphatase, 25-hydroxy-vitamin D<sub>3</sub>, bone tissue morphology and bone metrology were observed in treating rachitic rats with Chinese medicine Gu Bao Wan pre- and post-treatment and they were compared with Vitamin D<sub>3</sub>. The results indicated that Gu Bao Wan is effective in the prevention and treatment of rachitis, especially it has prominent effects in the elevation of serum calcium, phosphorus, and decreasing of serum alkaline phosphatase and in the promotion of mineralization of osteoid. But it is different from the mechanism of Vitamin D<sub>3</sub>.

**Key Words** Rachitis Gu Bao Wan Prevention and treatment

(Original article on page 5)

### Laboratory study of rotatory manipulation in the treatment of lumbar intervertebral disc protrusion

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The stress changes on posterior lateral edges of  $L_{4-5}$ ,  $L_5 - S_1$  discs and the positional alternates of articular processes of lumbar facet joints were measured while mimicing rotatory manipulations were performed on three spinal specimens from fresh cadavers. The study showed that rotatory manipulation with anterior and lateral flexion allowed a greater range of motion between articular processes of lumbar facet joints than straight rotatory manipulation. There was a sliding movement between articular processes while the spine was rotated. The interarticular space of the right facet joint was increased when the spine rotated to the left and vice versa. The sliding movement between the articular processes can adjust the position of lumbar vertebra. The pressure was increased at the left posterior lateral site of the disc and was decreased at the right posterior lateral site of the disc while the spinal specimen was rotated during flexion to the left, and vice versa. Negative pressure would be changed to positive at the end stage of rotatory manipulation. Such kind of repeated changes of pressure will change the position and shape of the protruded nucleus, and modification of the pressure on the nerve root would be happened.

**Key Words** Lumbar intervertebral disc protrusion Manipulation therapy Biomchanics

(Original article on page 7)

**Experimental study on the influence of anti-bending force of the femur of senile rats with Fu Fang Wu Ming Yi Chong Ji**

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Thirty-two twelve months old senile rats were divided randomly into four groups with eight in each group. Subjects in the experimental group were feeded with food and Fu Fang Wu Ming Yi Chong Ji (pyrolusite diluent, Chong Ji). The subjects in control group were feeded with food only. All of them were sacrificed at 18-month old. Bending destroyed load and thickness of femoral cortex were measured. The results indicated that the bending destroyed load of both sex of the rats and average cortex thickness were prominently higher than the control group ( $p < 0.05 - 0.01$ ). In both experimental and control group, the bending destroyed load of male rats was prominently higher than that of female ones ( $p < 0.01$ ). This indicates that Chong Ji bears the action of prevention and delaying onset and developing of osteoporosis. In the same age group, bone loss of female rats are relatively evidently than that of male ones.

**Key Words** Osteoporosis Wu Ming Yi Chong Ji Biomechanics

(Original article on page 10)

**Integration of traditional Chinese and modern medicine and intramedullary treatment of fracture of femoral shaft**

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Three hundred and sixty five cases of fracture of femoral shaft were treated with integration of traditional Chinese and modern medicine. A comparative analysis and exploration of these two methods were carried on in order to better application in the treatment of fracture of femoral shaft.

**Key Words** Fracture of femoral shaft Traditional Chinese medicinal therapy

Fixation of fracture, intramedullary

(Original article on page 12)

**Enhanced clamp fixator in the treatment of fracture of olecranon**

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Two hundred and ten cases of fracture of olecranon were treated with enhanced clamp fixator. There were a rate of anatomical or near anatomical reduction of 97.6% after a follow-up period from three months to eight years. It is realized that the instrument can be used in any type of fracture of olecranon, the key point is to select suitable fixating point based on different types of fracture.

**Key Words** Fracture of olecranon Enhanced clamp fixator Fracture fixator

(Original article on page 21)