外固定

骨折复位固定器治疗股骨干骨折畸形愈合

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摘要 本文介绍了在股骨干骨折畸形愈合的治疗中应用不同的截骨方法矫正不同类型的股骨干畸形,再以股骨骨折复位固定器给予固定的独特的治疗方法。自 1987～1991 年共收治股骨干骨折畸形愈合 23 例,其中骨折最大成角 50°,患肢短缩最长 6cm。治疗中平均固定时间 10 周,治疗后肢体长度及髋、膝关节功能均恢复满意。本文亦讨论了这种治疗方法的优点。

关键词 骨折复位固定器 股骨干骨折 畸形愈合

我们在治疗 23 例股骨干骨折畸形愈合中根据不同的畸形情况采取了不同的截骨方法以求纠正畸形。并应用骨折复位固定器来维持固定,取得了较好的临床效果,特介绍如下。

临床资料

自 1987～1991 年共收治股骨干骨折畸形愈合 23 例。其中男 17 例,女 6 例;年龄最小 22 岁,最大 61 岁,平均 35.5 岁;骨折时间最短为 5 个月,最长 3 年 5 个月;患肢短缩,最少 3cm,最长 6cm;骨折最大成角,向前 55°,向外 50°,向内 15°,向后 10°。

治疗方法

截骨方法:分离截骨术:适用于伤后半年以上,骨折端呈重迭移位,临床及 X 线检查骨折已愈合较坚固者。截骨方法是将骨折端重迭部分沿骨干皮质方向凿断,并保留两端的骨痂。然后穿针安装复位固定器。利用器械进行牵引,逐渐恢复骨的长度,最后达到对位对线。

"V"形截骨术:适用于单纯成角的畸形愈合。有时在有内固定物如钢板、髓内针存在的情况下,在取出内固定物的同时做截骨术。截骨方法是,在成角的凸侧做"V"形截骨,将凹侧骨痂保留在近折段,在畸形矫正后,骨痂也随之贴近远折段。从而可起到"骨挡"和植骨的作用。有利于骨折端的稳定及骨的愈合。在直视下安装复位固定器,一次性使骨折端对位对线。(图 1)

长舌形瓣截骨术:适用于成角畸形严重,已达骨性愈合,且骨折端形成粗大的梭形骨痂患者。截骨方法是在骨折成角部位做冠状面的大斜面截骨,这样可使骨折远段外展以纠正成角畸形。然后在远近骨折段的舌形瓣中心相对处钻一骨孔,用粗丝线穿过骨孔系紧固定。安装复位固定器使骨折端维持对位对线。(图 2)

图 1 "V"形截骨

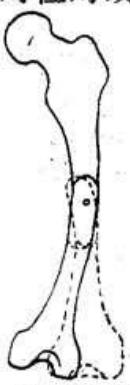

图 2 长舌形瓣截骨

骨折复位固定器的操作方法:患者平卧位,硬膜外麻醉,常规皮肤消毒。首先穿入近端针。穿针部位:取髂前上棘至股骨内髁内收肌结节的连线,于此连线的外侧缘向着股骨干进针即为安全点。远端穿针部位:在髌骨上缘 1～2cm 处自外向内与膝关节面平行穿针即可。

按两针的距离先大致调整好支撑杆上两半环托板之距离,将固定器装于患肢上,将两端克氏针插入针固定座,紧固。旋转两侧支撑杆上的可调螺母进行牵引,等重迭畸形纠正后,根据骨折平面及骨折端移位方向用端、挤、提、按等手法整复骨折的成角如侧方移位。在相应位置上安装具有径向固定作用的弧形压板用以防止断端的成角及侧方移位。

治疗效果

本组病人平均固定 10 周。肢体长度均恢

复到与健肢等长。成角畸形完全纠正，髋、膝关节完全恢复及大部分恢复者占 95.6%。

典型病例

张××，男，36 岁，工人。1985 年被机器砸伤，左股骨干骨折，经当地医院治疗后，骨折畸形愈合 3 年，向外侧成角 30°，左下肢短缩 3cm。于 1987 年 10 月入院，后在硬膜外麻醉下行长舌形骨瓣截骨术，直视下骨折端对位对线满意，以复位固定器固定。4 周后下地持双拐进行功能锻炼，13 周骨折达临床愈合，拆除复位固定器。（图 3、4、5）

图 3　股骨干骨折畸形愈合

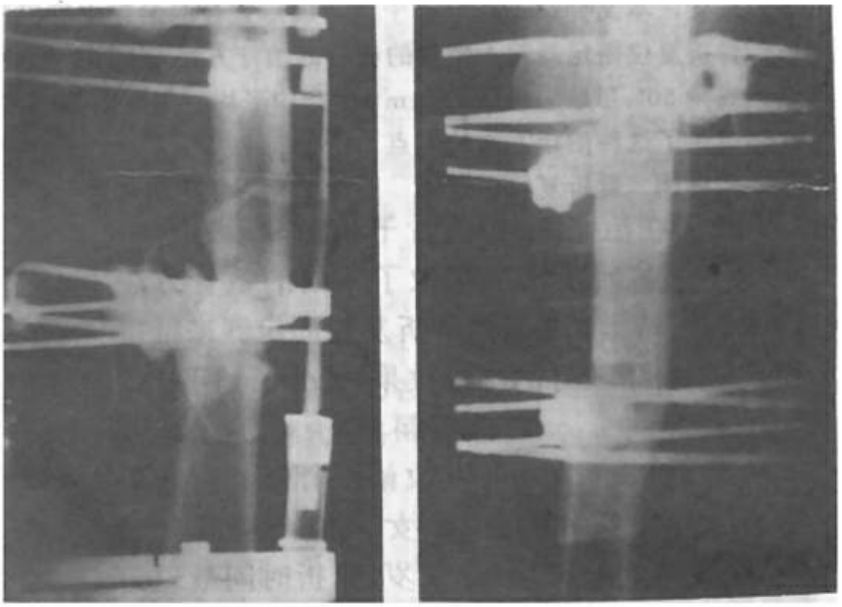

图 4　截骨后以复位固定器固定

图 5　骨折愈合

讨　论

利用骨折复位固定器固定，可有效地对抗肌肉的收缩力；配合弧形压板横向推顶作用，容易使截骨后的骨折端维持在良好的位置上。并且利用患者可早期进行关节的功能锻炼活动，骨愈合后关节功能不受影响。对于重迭移位过多的畸形愈合患者，应用复位固定器可使重迭逐渐牵伸延长，以防一次牵伸过多引起血管神经反应。

截骨的原则是切口只要求暴露骨折畸形愈合部位，尽量减少软组织的损伤和骨膜的剥离。截骨部位要位于畸形最大处，不得做横行截骨。

在行“V”形截骨时，对凸侧行截骨矫正可不必暴露对侧骨质，要保留对侧骨痂，也要部分地保留对侧骨皮质。因此类畸形愈合之病例凹侧面多有较为丰富的骨痂，此种骨痂有些尚有一定柔韧性。由于保留了大部分骨痂，因而可使截骨端起到相对稳定作用，也可看作是近端带蒂植骨，可以大大缩短截骨面的愈合时间。

长舌形骨瓣截骨方法对于成角大并伴有巨大梭形骨痂的病例显示出独特优点。因采用冠状面的大斜面截骨，可使截骨端接触面大，从而增加稳定性利于骨愈合。通过截骨远段的外展可最大限度地纠正成角畸形而不出现肢体的短缩。

China J Orthop & Trauma 7(4).1994

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 canipulative therapy of the ailmint were explored based on the neuro—anatomical and physiological data.

Key words Derangment 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)