

经验交流

# 腓肠肌内侧头移位重建陈旧性损伤后交叉韧带

广州中医学院附属广东省中医院(510120)

邓晋丰 万豫尧 许树柴

**摘要** 自 1991 年以来,我们利用同侧腓肠肌内侧头的内侧 1/3~1/2 占重建陈旧性损伤的膝后交叉韧带,2 例中度不稳定和 3 例重度不稳定的病例,术后功能明显改善,日常行走、快步行走、上下楼梯均无不稳定症状,仅在跑步急转弯或急停时略有不稳定感觉。

**关键词** 腓肠肌移位 后交叉韧带 膝损伤 外科手术 关节韧带

后交叉韧带断裂后如未修复,会导致膝关节严重不稳定。交叉韧带断裂 2 周后,残端萎缩吸收,直接修复较为困难<sup>[1]</sup>。至今,尚无一种肯定有效的修复方法,后期重建后交叉韧带功能的报道也极少。1991 年以来,我们利用同侧腓肠肌内侧头的内侧 1/3~1/2 修复后交叉韧带陈旧损伤 5 例,疗效良好。

### 临床资料

5 例手术病人中,男 4 例,女 1 例;年龄最大 42 岁,最小 27 岁;手术距损伤时间最长 12 个月,最短 6 个月。应力下抽屉试验时,2 例胫骨髁向后移位 5~10mm,3 例胫骨髁向后移位 >10mm。所有病人快步行走、上下楼梯时均有不稳定感觉。

脉等。切断腓肠肌内侧头的内侧 1/3~1/2,保留较长的肌腱组织,以便于移位。修剪肌腱旁多余的肌纤维及软组织。暴露膝关节后侧关节囊,切断并结扎腘动脉的分支内侧膝上动脉。切开关节囊,探查后交叉韧带。暴露后交叉韧带附着点,自股骨内侧髁内侧面近端向股骨内侧髁外面之后交叉韧带附着点钻孔。并以刮匙将孔扩大,使孔隙与内侧头等大。用带孔克氏针从钻孔中带出缝合在内侧头的丝线,使腓肠肌内侧头的肌腱恰好进入骨孔道,与后交叉韧带方向一致。屈膝 30°,放松腓肠肌,然后拉紧腓肠肌内侧头肌腱,并将其肌腱固定缝合于筋膜上(见图 1,2)。放松止血带,彻底止血,分层缝合,用石膏固定膝关节于屈曲 20°~30°位置,踝关节略跖屈。

### 术后处理

以长腿石膏固定患膝于屈膝 20~30°位共 6 周,在石膏中练习股四头肌。石膏拆除后练习膝关节活动,待膝关节活动恢复到伸屈达 90°左右时负重练习。术后应在医师的督导下学会如何使用移位的肌肉来控制其不稳定。

### 治疗结果

本组 5 例陈旧性后交叉韧带损伤病人术后随访都超于 10 个月。其中有 4 例虽然术后的抽屉试验仍为阳性,但膝关节的稳定性均明显改善,都能自由行走,慢跑及上下楼梯。另 1 例术后术口感染,控制感染植皮后,膝关节的稳定性也明显改善,能慢跑及上下楼梯。

### 讨论

综合文献意见,对陈旧性后交叉韧带损伤的处理,可做两种选择:对年龄较大、症状不严重、股肌萎缩、有膝关节骨关节炎表现者,行保守治疗。对年龄较轻、症状明显且无骨关节炎者手术重建可获良效。根据病人症状的轻重,将交叉韧带损伤者分为轻、中、重三度<sup>[2]</sup>。

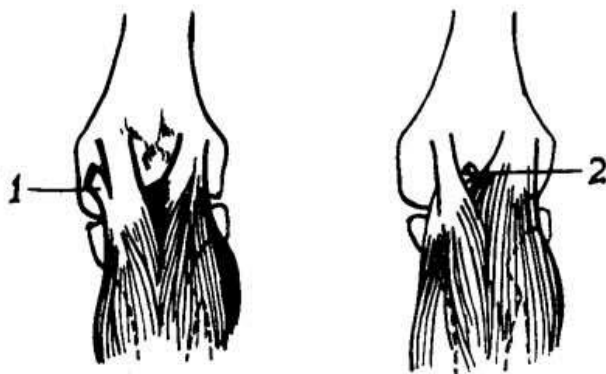


图 1 腓肠肌内侧头内 1/3 已切开

图 2 植入股骨内髁之钻孔内

### 手术方法

于股骨内髁及腓肠肌内侧头后侧作“S”形切口。在切口近侧显示半腱肌和半膜肌。此时微屈膝关节,分离腓肠肌内侧头间隙。然后沿腓肠肌内侧头肌腹向近端游离,切忌向腘窝中线分离,以免损伤胫后神经、腘动

(1)轻度不稳定:日常行走,快步行走无不稳定,上下楼梯也无困难,而在跑步急停或急转弯时,才有不稳定感觉,抽屉试验时,胫骨近端向后移位 $\leq 5\text{mm}$ ;(2)中度不稳定:日常行走无不稳定感觉,上下楼梯时有不稳定感觉,应力下胫骨髁向后移位 $5\sim 10\text{mm}$ ;(3)重度不稳定:日常行走就感不稳定,在应力下抽屉试验时,胫骨髁向后移位 $> 10\text{mm}$ 。轻度不稳定的病例用非手术治疗,股四头肌及腓绳肌锻炼。中度及重度不稳定者则以手术治疗;本文报告的 5 例即属此,经腓肠肌内侧头部分移位重建后交叉韧带,获得良好疗效。

在修复旧的膝关节不定时,应考虑不要造成新的功能缺失。腓肠肌的主要功能是使足跖屈,在站立时固定踝关节防止身体前倾。不论是腓肠肌的内侧头或是外侧头被切除后失去的功能,可由另一头及比目鱼肌代偿。至今文献所报道的病例,尚无严重的并发症<sup>[3]</sup>。用腓肠肌内侧头替代膝关节后交叉韧带,腓肠肌内侧头肌腱的止点虽部分移位,但基本接近原有的解剖排列,腓肠肌内侧头的屈膝功能仍保留。其移位的 $1/3\sim 1/2$ 内侧头的肌腱方向基本接近后交叉韧带方向,这样便代偿了后交叉韧带的功能。

膝关节损伤的程度、操作者的精熟程度与疗效紧密相关。是否作了全面修复以及晚期修复无从达到原

有的位置及功能等都直接影响手术效果。修复韧带固定时位置应适当,尤其应注意缝合时膝关节应处在不前不后的正常位置。术毕石膏固定时体位维持不妥,人为地造成向前或向后移位、术后的锻炼及训练不力、肌力乏弱等,都直接影响疗效。

手术之前需向患者讲明:术后仍会出现阳性体征,而且移位的动力组织只有通过患者自我训练适应,才能学会如何使其发挥作用。

本组 5 例病人术后抽屉试验均仍呈阳性,这是由于试验时膝关节屈曲 $90^\circ$ ,腓肠肌处于松弛状态之故。而在行走时,腓肠肌必然进行收缩活动,膝关节的屈曲程度也变小,腓肠肌替代后交叉韧带的功能就呈现出来。根据我们的随访资料,一般在术后半年后才逐渐感到手术的效果。

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(收稿:1994-10-19)

## 胫骨髁间前嵴撕脱骨折的治疗

河南洛阳铁路医院(471002) 薛玉阳 孙绍文 张松枝

**摘要** 本文报告了胫骨髁间前嵴撕脱骨折 8 例,平均年龄 14 岁。我们将此分为三型;2 例行保守治疗,6 例行切开复位钢丝内固定。随访 8 例均获得了骨性愈合,关节功能基本正常,效果满意。着重介绍了分型及手术方法,并就该手术的优点及早期诊断和损伤机制进行了讨论

**关键词** 胫骨 骨折 手术

胫骨髁间前嵴骨折较少见,现就我们诊治的 8 例报道如下:

#### 临床资料

本组 8 例,均为男性;年龄 $12\sim 16$ 岁;左侧 5 例,右侧 3 例;5 例骑自行车摔伤,2 例从牛背上跌伤,1 例膝部扭伤;本组 I 型和 II 型骨折各 1 例,均采用石膏固定保守治疗,III 型骨折 6 例,采用手术治疗。术中见前交叉韧带附着处撕脱骨片最大的 $3\times 1.5\text{cm}$ ,最小的 $1.5\times 1.0\text{cm}$ ,骨折片厚度 $0.5\sim 1.3\text{cm}$ ,合并内侧半月板前角撕裂者 2 例。

#### 治疗方法

I 型和 II 型骨折各 1 例,先行石膏托固定,抬高患

肢,1 周后更换管型石膏,5 周后去石膏行功能锻炼。III 型骨折 6 例,行切开复位用钢丝作内固定。手术方法:采用硬膜外麻醉,取膝关节前内侧切口入路显露膝关节,将髁骨向外侧牵开,探查交叉韧带,半月板及髁间前嵴撕脱骨块大小,将骨折片试行复位,在胫骨结节内侧 $2\sim 3\text{cm}$ 胫骨内髁处,将自制带钩状克氏针(见图 1)用电钻向上向后对准髁间前嵴骨折片处钻出二条平行的隧道,将钢丝从骨折片二孔穿出,钢丝二端分别用带钩状克氏针从相应隧道引出至胫骨内髁处,将骨折片复位满意,拉紧钢丝固定(见图 2)。术后石膏托外固定 2 周,拆线后更换管型石膏,4 周后去石膏行膝关节功能练习。术后根据 X 光片显示骨折愈合情况,在术后半

## English Abstract

### **Radiographic findings of derangement of atlanto—axial joint**

*Institute of Orthopaedics and Traumatology, China Academy of TCM(100700)*

Based on the radiographic study and analysis of atlanto—axial joint of normal and abnormal, we consider that the derangement of atlanto—axial joint can be diagnosed as: the difference of bilateral distance between the dens and the lateral mass is larger than 1mm, the difference of central sagittal line of dens and atlas is larger than 1mm; there is an abnormal movement of atlanto—axial joint on the X—ray film of open mouth with 15° rotation; and the patient bears the symptoms and signs of cervical spondylosis.

**Key words** Atlanto—axial joint Derangement of atlanto—axial joint X—ray film

(original article page 3)

### **Tension band and circular fixation in treating patellar fracture**

*Second Affiliated Hospital Of Xian University of Medical Science(710004)*

Sixty five cases of fracture of patella were treated with tension band, circular fixation with stainless steel and circular fixation with silk thread, the average rate of excellent and good being 91.52%. In the excellent group, the tension band group was 80%, and the stainless steel and silk thread group being 56% and 56.5% respectively. Due to internal fixation with tension band do not need external fixation with plaster of paris, so it facilitates early knee joint exercise and rehabilitation. The therapeutic efficacy is superior than the other two methods ( $P < 0.05$ ). It requires accurate and fine manipulation during operation. As compared with stainless steel circular fixation, silk thread circular fixation bears the advantage of avoiding another operation for withdrawing of the wire, though their therapeutic effect was in similarity.

**Key words** Fracture of patella Internal fixation

(original article page 5)

### **Clinical observation and animal experimental study on influence of electric effect in**

### **bone remodelling**

*Academy of Science, Hubei Province (050081)*

There is different explanation for the mechanism of the influence of electric effect in bone remodelling. Experimental study was carried on in observation of magnetic field in the influence of bone healing and electric current in bone remodelling. Through clinical observation and animal experiment, it indicates that electric effect can influence bone remodelling and promote bone healing.

**Key words** Electric effect Bone Bone remodelling

(original article page 8)

### **Transplantation of medial head of gastrocnemius muscle in treating old injury of posterior cruciate ligament**

*Guangdong Hospital of TCM, Guangdong College of TCM(510120)*

since 1991, five cases (2 moderate instability, 3 severe instability) of old traumatic posterior cruciate ligament injury were treated with medial 1/3 to 1/2 of medial head of gastrocnemius muscle of the same side. Marked improvement of function (walking, quick working, going upstairs and downstairs, no instability) was found postoperatively, except there was a little bit sensation of instability (during rapid turning round or rapid stopping).

**Key words** Disposition of gastrocnemius muscle posterior cruciate ligament Injury of knee surgical operation Joint ligament

(original article page 10)

### **Treatment of avulsion fracture of tibial spine Luoyang Railway Hospital, Hunan province(471002)**

In this article, 8 cases with an average of 14 years of age suffering avulsion fracture of tibial spine were reported. they were classified into 3 types, two of them were treated with conservative therapy; 6 of them, internal fixation with steel wire. Bony healing nearly normal joint function and satisfactory results were found in

all of these 8 followup cases. Classification and method of operation were introduced. Advantage of the operation, early diagnosis and mechanism of injury were discussed.

**Key words** Tibia Fracture peration  
(original article page 11)

**Improved Stimson's method in treating hip joint dislocation**

*Second College of Medical Science, Xi'an University of Medical Science(710004)*

Seventy four cases of traumatic posterior dislocation of hip joint were reported in this article. Satisfactory clinical results were obtained after treatment with self--designed modified stimson manore duction. Method of reduction was introduced in detail, advantage of it was discussed.

**Key words** Traumatic posterior dislocation of hip joint Modified stimson's method  
(original article page 12)

**Characteristics of protrusion of L5S1 intervertebral disc (An analysis of 86 cases with symptoms and signs, myelogram, MRI, CT scanning**

**and operative findings)**

*General Hospital of Railway Construction Corporation of China(100043)*

Eighty six operated cases of protrusion of lumbar intervertebral disc were reported. Among them, 29 cases (33.72%) were L5S1 level, next to L4, 5. The results show that the lower back pain in L5S1 level is more severe; for Laseque's sign, L5S1 level being  $39.66^{\circ} \pm 18.46^{\circ}$ ; L4, 5,  $49.90^{\circ} \pm 21.37^{\circ}$  ( $P < 0.0284$ ). water soluble myelogram, MRI and CT scanning bear better diagnostic action though there were no difference statistically. But each examination bear their own benefit. There was significant difference between type and degree of two intervertebral disc space ( $P < 0.013$ ,  $P < 0.012$ ) being found in the operation. Lateral or extreme lateral position were found more in cases in level L5S1. It is realized that myelogram is the first choice, MRI or CT scanning should be added in doubtful cases. Lateral recess and nerve root canal should be carefully explored during operation.

**Key words** Protrusion of lumbar intervertebral disc L5S1 level  
(original article page 29)

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主编 尚天裕

**主办单位**

中国中西医结合学会

中国中医研究院

**承办单位**

中国中医研究院骨伤科研究所

**协办单位**

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