

感染性长骨假关节的治疗

白求恩医科大学第三临床医学院 (长春 130031)

杨清江 臧虎 李柱田

摘要 本文报告 34 例感染性长骨假关节的治疗。治疗方法是在控制感染的条件下,分期清除病灶,局部筋膜蒂皮瓣、肌皮瓣或动脉皮瓣转移,自体髂骨植骨,术后结合坚强的外固定。其中 32 例平均随访 1.7 年,植骨在 4~6 个月全部融合,骨髓炎无一例复发,关节功能恢复良好。作者认为此方法简便、有效、可靠,是临床首选方法。

关键词 感染性假关节 清除病灶 皮瓣 植骨

四肢长骨干骨折伴感染 6 个月以上尚有异常活动者称为感染性假关节。虽然骨折治疗技术不断提高,但若治疗不及时或治疗不当,则可能发生感染性假关节。文献报导仍有一定发生率, Muller 等^[1]报告 24 例,胫骨 13 例,股骨 8 例,肱骨 2 例,尺桡骨 1 例。蔡汝宾^[2]报导尺桡骨感染性假关节 17 例。赵德田^[3]等报导 9 例,胫骨 8 例,股骨 1 例。我院 1985~1995 年共收治感染性假关节 34 例全部采用分期清除病灶和植骨治疗,除 2 例失访,29 例治愈,3 例好转。现报导如下。

临床资料

本组 34 例中,男 30 例,女 4 例。继发于开放性骨折 30 例,闭合性骨折术后发生 4 例。发生部位胫腓骨 28 例,股骨 4 例,尺桡骨 2 例。曾行植骨术 4 例,植骨来源髂骨 1 例,腓骨 3 例。

治疗方法

治疗原则:首先控制感染,其次是促进骨连接。在应用有效抗生素条件下,手术方法如下:

1. 清除病灶 手术彻底清除病灶,清除死骨、肉芽、异物,特别是金属内固定物必须清除。术后石膏托固定,然后行局部持续灌流冲洗疗法。

2. 局部皮瓣转移术 病灶清除后,待创面肉芽新鲜时行皮瓣转移术。可选择筋膜蒂皮瓣、肌皮瓣或动脉皮瓣转移手术。根据创面的大小、范围及周围皮肤条件选择合适方法。本组 34 例

中,采用筋膜蒂皮瓣转移术 28 例,阔筋膜张肌皮瓣 2 例,胫后动脉皮瓣 4 例。

3. 植骨 控制感染、改善局部情况 6 个月后即可行植骨术。植骨来源:本组 34 例全部采用自体髂骨松质骨。植骨方法:首先将硬化骨切除、钻通髓腔,然后将硬化骨端凿成槽状,把修整后的髂骨块嵌入骨槽,周边植入松质骨碎骨条。

4. 植骨后处理 由于骨折端硬化及局部血运差,伤口缝合后多放置引流条,必要时可行灌洗术,配合有效抗生素,以避免感染。

5. 固定方法 本组 34 例中,采用石膏固定 28 例,外固定架固定 6 例。

治疗结果

除 2 例失访,余 32 例术后全部随访,平均随访时间 1.7 年。复查 X 线片,植骨都在 4~6 个月融合,平均时间 4.8 个月。骨髓炎无 1 例复发。关节功能恢复结果如下:优:膝关节屈曲度差 20° 以内,踝关节、腕关节伸屈度差 10° 以内,本组共 20 例,占 62.5%;良:膝关节屈曲度差 $21^{\circ}\sim 35^{\circ}$,踝、腕关节伸屈度差 $10^{\circ}\sim 15^{\circ}$,本组共 9 例,占 28.1%;差:大于上述标准,本组 3 例,占 9.4%。

讨论

1. 本资料表明感染性假关节多继发于开放性骨折。本组共 30 例,占 88.2%。继发于闭合性骨折切开复位术后 4 例,占 11.8%。从而说明对开放性骨折未能早期处理或处理不当是引起感染性假关节的主要因素,其次是对闭

合性骨折治疗不当。因此，对开放性骨折要及时处理，彻底清创，切开复位要严格掌握无菌技术。同时，对闭合性骨折手术指征要严格把握，才能降低发病率。

2. 感染性假关节的治疗，首要的就是控制感染。只有控制感染，才能进一步治疗。其方法主要是分期清除病灶、局部持续灌流冲洗、有效抗生素治疗。必要时可做创面脓汁细菌培养以选择合适抗生素。本组 34 例的细菌培养中，绿脓杆菌 23 例、大肠杆菌 7 例、金黄色葡萄球菌 3 例、表皮葡萄球菌 1 例，可作参考。

3. 感染性假关节的治疗，皮瓣转移术也十分重要。由于感染性假关节大部分伴有皮肤缺损、溃疡面、窦道、瘢痕、骨外露，局部血运差，愈合能力低，抗感染能力弱而影响创面、骨折愈合。皮瓣转移术可以覆盖创面，增加局部血运，提高组织愈合、抗感染能力，为植骨治疗打下基础^[4]。

4. 感染性假关节的第三步治疗就是植骨。我们认为最佳时机是控制感染后 6 个月。因为清除病灶、局部皮瓣转移术后，局部环境才能改善，植骨才有成活基础。植骨来源应以髂骨为主，骨缺损较大病例可应用腓骨皮瓣或吻合血管游离腓骨移植，避免应用单纯游离腓骨段。本组中曾行植骨术失败的 4 例，其中游离腓骨段植骨 3 例，术中见腓骨段均未成活，改为自体髂骨移植全部治愈。有文献报导在控制感染

的条件下，可先植骨后植皮，术后保持通畅引流和可靠的固定。Brown 认为：只要局部血运好，代谢正常，骨折可在开放的创口下愈合^[5]。我们认为植骨手术应绝对无菌，皮肤最好保持完整。

5. 我们认为本疗法简单、有效，是临床首选方法之一。但由于分期处理，一般要行三次手术，存在治疗时间长、病人痛苦大、费用高、部分病人关节功能差等不足。最近有文献报导应用外固定架一期修复胫腓骨开放性骨折并骨感染外露、骨不连、骨缺损，取得一定效果^[6]。这给我们提供一个方向，为更有效治疗疾病做进一步的探讨和研究。

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Abstract of original Articles

Contracture of Gluteal Muscles *Ou Liangshu, Liu Dechun, Zhang Xuiguang. The Second Affiliated Hospital, Anhui College of Traditional Chinese Medicine, Hefei (230061)*

18 patients with contracture of gluteal muscles were reported in this paper. Among them, unilateral in 6 cases and bilateral in 12 cases; 5 cases without history of intragluteal injection and 13 cases with history of intragluteal injection in different extent. All cases were treated with operation, and only 4 cases occurred keloid after operation. The pathological changes were muscular degeneration, atrophy and fibrosis, resulting in contracture. It was considered that, in addition to injection, there might be a special pathogenic factor for gluteal muscle contracture, similar with that of congenital myogenic torticollis and quadriceps contracture.

Key words Contracture of gluteal muscles
Diagnosis and treatment

(Original article on page 3)

Treatment of Infected Pseudoarthrosis of Long Bone *Yang Qingjiang, Zang Hu, Li Zhutian. The Third Teaching Hospital, N. Bethune University of Medical Sciences, Changchun (130031)*

Infected pseudoarthrosis of long bone in 34 patients had been treated in our hospital from 1985 to 1995. The therapeutic methods used were the control of infection, the staged debridement, the transposition of fasciocutaneous flap, musculocutaneous flap or arterial skin flap, the bone grafting with autogenous ilium, and the rigid external fixation. 32 cases were followed—up for 1.7 years in average. It was found that all of the grafted bones were healed in 4 to 6 months, noosteomyelitis was recurred in any case, and the function of joints was satisfactory. It was considered that this method is an effective, reliable and simple one for treating infected pseudoarthrosis and thus it is a method of first choice in clinic.

Key words Infected pseudoarthrosis
Debridement Skin flap Bone grafting

(Original article on page 5)

The Biomechanical Assay and Clinical Application of Unilateral Polyfunctional External Fixation Frame for Treating Femoral Neck Fracture *Liu Anqing, Wang Kunzheng, Zhang Kaifang, et al. The Second Teaching Hospital of Xi'an Medical University, Xi'an (710004)*

The unilateral polyfunctional external fixation frame, designed for treating femoral neck fracture, was biomechanically assayed with 20 femoral samples from cadavers and applied to treat 128 patients with femoral neck fracture. The clinical data, followed—up for 4 months to 3 years, showed that the fractures were healed within 3 to 9 months in most cases, and nonunion or delayed union in 9 cases (7%) and femoral head necrosis in 19 cases (15%) were happened. The writers considered that a closed steel frame system is formed through fixating the fractured femoral neck and the femoral stem to the external fixation frame with three 4 mm Steinman's pins and screws. The large fixation range improves the ability of fixation and restricts the movement of screw. It converts shearing force into compression force. In addition, closed reduction and percutaneous pinning external fixation are easy to perform and receptive.

Key words Femoral neck fracture Percutaneous pinning external fixation Biomechanics

(Original article on page 7)

Experimental Research on the Mechanism of Jing Zhui Tong for Treating Cervical Spondylopathy *Zhao Jukai, Chen Qingping, Yan Rong, et al. The 157 Military Hospital, Guangzhou (510510)*

Jing Zhui Tong, with the effect of promoting blood circulation and eliminating stasis, has been applied in this experiment to find out the mechanism in treating cervical spondylopathy. This experiment was performed on rats' hemorheology (A), volume of rabbits' isolated aorta (B), blood flow volume of rabbits' internal carotid artery (C) and dogs' vertebral artery (D), and microcirculation of rats' mesentery (E). The effect of Jing Zhui Tong was compared with that of Jing Fu Kang and Fufang Danshen. The results showed that the