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股骨近端抗旋髓内钉治疗老年股骨转子下粉碎性骨折的效果分析

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摘要 目的:探讨利用股骨近端抗旋髓内钉治疗老年股骨转子下粉碎性骨折的临床效果,为临床提供参考。**方法:**对我院 2009 年 6 月-2013 年 1 月收治的 38 例老年股骨转子下粉碎性骨折患者行股骨近端抗旋髓内钉法进行手术治疗,分析手术方法、效果及患者的预后效果。**结果:**28 例行闭合复位,7 例行骨折端切开复位,患者术后 7-14d 可下地活动,3 m 内扶拐部分负重行走,31 例(88.6%)获得随访,随访时间 9-24 个月,骨折愈合时间为 3-6 个月,平均 3.7 个月;Harris 髋功能评分标准:优 18 例,良 10 例,中 3 例,优良率 90.32% (28/31)。**结论:**PFNA 是一种治疗老年股骨转子下粉碎性骨折的有效装置,能够减少骨折不愈合、髓内翻畸形愈合及内固定断裂、切割股骨头等并发症,在治疗老年股骨转子下粉碎性骨折时可达到较高的骨愈合率、较快的功能恢复。

关键词:股骨近端抗旋髓内钉;老年;股骨转子下粉碎性骨折

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Clinical Effect of Proximal Femoral Nail Antirotation on the Treatment of Femoral Subtrochanteric Comminuted with Fracture in Elderly Patients

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ABSTRACT Objective: To explore the clinical effect of proximal femoral nail antirotation (PFNA) in treating femoral subtrochanteric comminuted fracture in elderly and provide references for clinical nursing work. **Methods:** PFNA surgery was conducted on 35 cases of femoral subtrochanteric comminuted fracture elder patients admitted in our hospital from June 2009 to Jan 2009. The surgical methods, effect and prognosis were analyzed. **Results:** 28 cases received closed reduction and 7 cases received open reduction at fracture end. All cases went to ground activity 7-14d after the surgery and some could walk with load and a stick in 3m. 31 cases (88.6%) had follow-up and the follow-up time was 9-24 m. The fracture healing time was 3-6m and 3.7m for average. The healing condition was assessed using Harris Hip Score and the results were: 18 for Excellent, 10 for Good and 3 for Medium. The excellence and good rate was 90.32% (28/31). **Conclusions:** PFNA is an effective equipment in treating femoral subtrochanteric comminuted fracture in elderly. It can reduce complications such as nonunion, hip varus malunion, fracture of internal fixation and cutting femoral bone, and achieve higher rate of bone healing and quicker function recovery.

Key words: Proximal femoral nail antirotation (PFNA); Elderly; Femoral subtrochanteric comminuted fracture

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前言

股骨转子下骨折是指发生在股骨小转子与股骨干中段及近端交界处最狭窄段的骨折,其发生率是所有髋部骨折的 10%-34%,多发于 60 岁以上的高龄人群,给患者的身体和生活造成严重的影响^[1-3]。随着我国人口老龄化日渐严重,高龄人群中发生股骨转子下骨折的机率明显上升^[4]。由于股骨转子这一区域特殊的生物力学特点,发生骨折后易出现延迟愈合、不愈合、髓内翻畸形和内固定失败等并发症,导致临床疗效不明显^[5-7]。此外,高龄患者作为特殊群体,其机体形态、各脏器功能等都出现

一定程度的衰退,其代偿能力、适应能力逐渐退化、对疼痛的反应迟钝等使患者手术耐受较差,极易出现术后并发症^[8]。因此,选择一种适于高龄群体的手术方式是至关重要的。股骨近端抗旋髓内钉(proximal femoral nail antirotation, PFNA)是在股骨近端髓内钉(PFN)基础上研制的新型抗旋髓内钉,具有良好的生物力学特点^[9,10]。我们利用 PFNA 法治疗老年股骨转子下骨折取得良好的临床效果,不仅可以有效的固定骨折区域,而且利于患者术后早期活动。为了进一步探讨该方法的优越性,我们对患者的资料进行了回顾分析,现将具体研究汇报如下。

1 资料与方法

1.1 一般资料

自 2010 年 6 月-2013 年 1 月,本院采用 PFNA 治疗股骨转子下粉碎性骨折病例 38 例,男 20 例,女 18 例;年龄 60-76 岁,平均 67.14±5.26 岁。所有患者均为单侧闭合性骨折,致伤

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原因包括交通事故伤 8 例,高处坠落伤 11 例,跌伤 19 例。Seinsheimer 分型:III a 型 15 例、III b 型 10 例、IV 型 8 例、V 型 5 例。合并糖尿病 8 例,高血压病 19 例,慢性支气管炎 13 例。受伤至手术时间间隔为 2-7 d,平均 4.5 d。

1.2 手术方法

患者取仰卧位,全身气管插管麻醉,健肢外展,患肢稍内收,患肢牵引复位,维持良好对位对线,C 臂机透视正侧位,对于复位困难者需于骨折端外侧或前外侧予以顶棒支撑复位骨折端,必要时骨折端行有限切开直接复位,点状复位钳、骨钩等临时固定;复位满意后,自大转子顶点近端约 3-5 cm 的沿股骨干方向向上做纵切口长约 4-5 cm,分开臀中肌,触及大转子顶点或稍偏外侧作为导针进针点,插入导针;沿导针充分扩髓后将 PFNA 主钉旋入,调整主钉的深度使螺旋刀片位于股骨颈的中下部;于股骨颈内钉入螺旋刀片并锁定于远端锁定孔,固定螺钉;行正位、蛙式位 X 线确定螺钉位置,然后在髓内钉近端拧入主钉尾帽;冲洗伤口,留置引流片,缝合切口。

1.3 术后处理

术后预防性使用抗生素 24 h,术后 1 d 拔除引流片,嘱患者行下肢肌肉等长收缩训练及髋关节的屈伸活动,术后使用低分子肝素钠 7 d 预防深静脉血栓形成。一般术后 7-14 d 可不负重下地活动,根据患者全身状况、骨折粉碎程度及骨痂的形成情况等决定下地负重时间。术后定期随访复查 X 线片。

1.4 随访及评价标准

术后第 1、3、6、9、12、24 月进行随访,所有患者行股骨中上段正侧位 X 线复查。采用 Harris 法^[11]对髋关节功能进行评分。

2 结果

本组 28 例行闭合复位,10 例行骨折端切开复位。手术时间 50-120 min,平均 75 min。术中出血量 100-350 mL,平均 160 mL,均未输血。患者术后 7-14 d 可下地活动,3 m 内扶拐部分负重行走,未出现螺旋刀片切割股骨头、继发骨折、断钉、感染及骨不连等并发症;3 例出现髓内翻,其中 1 例肢体短缩,骨折愈合后因肢体短缩增加、髓内侧疼痛、旋转部分受限影响功能。本组 35 例获得随访,随访率为 92.11%;随访时间 9-24 个月,骨折愈合时间为 3-6 个月,平均 3.7 个月;Harris 髋关节功能评分:优 18 例,良 15 例,中 2 例,优良率为 94.29% (33/35)。

3 讨论

据流行病学调查显示,有 7%-34% 的髋部骨折累及转子下区域^[12]。股骨转子下区域是应力高度集中的部位,内侧骨皮质受到巨大的压应力,外侧骨皮质则受到张应力,且该区域是松质骨移行于股骨干皮质的关键部位,受到外力时容易发生骨折,且多为粉碎性骨折,甚至导致内侧骨皮质缺损,不利于预后^[13]。良好的复位,纠正短缩、旋转畸形,恢复足够的外展肌力,最大限度恢复行走能力是股骨转子下骨折的治疗原则^[14]。目前股骨近端骨折以采用内固定治疗为“金标准”,术后要求患者早期进行功能锻炼,从而达到有效的内固定、早期功能锻炼的目的^[15]。

PFNA 是在 PFN 的基础上设计的股骨髓内交锁螺钉,具有加压和抗旋转两种作用的。在螺旋刀片打入过程中可以同时完

成抗旋转及稳定支撑的双重作用,不但能够保证股骨头内骨质最大程度的填压力及较好的锚和力,同时打入螺旋刀片时不会发生股骨头和股骨颈分离;既增加了与周围骨质的接触面积,也增强了把持力,有效的避免了可能发生的螺钉松动或“Z”字效应致锁钉退出,此项优点尤其适于伴有老年性骨质疏松的患者^[16]。此外,PFNA 抗拔出稳定性、抗旋转稳定性和抗内翻畸形能力比传统的螺钉系统高,使用 PFNA 只需置入 1 枚螺旋刀片,避免术中反复调整螺钉的位置,螺旋刀片的外侧具有加压锁定功能,能够有效控制刀片及股骨头旋转,使骨折间隙进一步复位^[17]。PFNA 主钉远端与锁钉孔的距离较长,能够有效的分散应力,提高了髓内主钉抗疲劳能力^[18]。

PFNA 进钉点为大转子顶点,主钉具有 6° 外偏角,无须放入防旋钉等,避免了对骨折端软组织和骨膜的剥离,能够充分保护骨折端血供,提高骨折愈合率,减少了术后并发症的发生^[19]。本研究中,我们对患肢进行充分牵引,使股骨长度得到恢复,并纠正旋转,随即进行骨折端复位穿钉固定,骨折端不需要过分追求解剖复位,在最大程度上减少对骨折端血运的干扰;同时,首先纠正骨折近段的移位,在插入主钉前必须纠正骨折远端内翻畸形,否则会造成穿钉困难和骨折端再移位^[20]。在本研究中,大多数患者均取得满意的临床疗效。可见,对于老年性股骨转子下粉碎性骨折患者,应用 PFNA 内固定是安全有效的。

总之,PFNA 具有固定强度高、恢复快、生物力学特性好等优点,能够减少骨折不愈合、髓内翻畸形愈合及内固定断裂、切割股骨头等并发症,在治疗老年股骨转子下粉碎性骨折时可达较高的骨愈合率、较快的功能恢复。

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