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经皮钢板内固定术治疗肱骨骨折的临床应用研究*

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摘要 目的:观察经皮钢板内固定术对肱骨骨折的临床疗效。**方法:**选取 2005 年 1 月至 2013 年 12 月我院骨科收治的肱骨骨折患者 172 例,随机分为两组,其中对照组 86 例,予传统切开复位钢板内固定治疗;实验组 86 例,采用经皮钢板内固定术治疗。治疗结束后,对比两组患者手术时间、出血量、骨折临床愈合时间、术后并发症及临床疗效。**结果:**实验组手术时间、骨折临床愈合时间及出血量明显少于对照组,差异有统计学意义($P < 0.05$);实验组术后并发症明显少于对照组,差异有统计学意义($P < 0.05$);两组治疗结束后比较临床疗效,实验组临床疗效明显优于对照组,差异有统计学意义($P < 0.05$)。**结论:**经皮钢板内固定术能够明显改善肱骨骨折术后并发症,提高肱骨骨折特别是粉碎性骨折的临床疗效,对临床具有指导意义,值得临床推广。

关键词:经皮钢板内固定术;肱骨骨折;临床疗效

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Percutaneous Plate Fixation in the Treatment of Humerus Fracture Clinical Application Research*

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ABSTRACT Objective: To observe the clinical efficacy of percutaneous plate fixation of humeral fractures. **Methods:** 172 cases with orthopedic fractures who were treated in our hospital from January 2005 to December 2013 were selected and randomly divided into two groups. The patients in the control group were treated with the traditional open reduction and plate fixation, while the patients in the experimental group were treated with the percutaneous plate fixation. Then the operation time, blood loss, fracture healing time, complications and clinical efficacy of the two groups were observed and compared. **Results:** The operation time, fracture healing time and blood loss was significantly less than the control group, and the difference was statistically significant ($P < 0.05$); postoperative complications in the experimental group was significantly less than in the control group, and the difference was statistically significant ($P < 0.05$); comparing the clinical efficacy of the two groups after the end of treatment, the clinical efficacy of the experimental group was significantly better than that of the control group, and the difference was statistically significant ($P < 0.05$). **Conclusion:** Percutaneous plate fixation of humeral fractures can significantly improve postoperative complications, especially comminuted humeral fractures improve clinical efficacy, which is of clinical guiding significance, and is worthy of promotion.

Key words: Percutaneous plate fixation; Humerus fracture; Clinical curative effect

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前言

肱骨骨折是多由于外伤而引起的一种损伤性骨科疾病^[1]。肱骨骨折可有肱骨近端骨折、肱骨干骨折以及肱骨髁上骨折,肱骨近端骨折常常累及外科颈、大小结节、解剖颈以及肱骨头,多有合并肱骨头半脱位,部分患者甚至出现肱骨头粉碎以及臂丛神经损伤^[2]。本病多发于中老年人,无明显性别差异^[3]。据调查统计^[4],我国肱骨骨折患者占全身骨折的 2.5%。随着医疗技术的发展,本病人们更加重视疾病防治及预后,现代医学多采取手术方法予以骨折切开复位内固定,但传统手术耗费时间长,对患者损伤大,并且副作用较多,患者痛苦较大。随着医疗

技术以科学技术的发展,微创经皮手术被逐步应用到肱骨骨折治疗当中。研究发现^[5],经皮钢板内固定术能够提高肱骨骨折的临床疗效,能够减少患者手术时间及术后恢复时间,减少术中出血量以及并发症的发生,为了进一步了解经皮钢板内固定术对肱骨骨折的临床疗效,改善其预后,笔者做了有关研究。通过临床观察经皮钢板内固定术与传统手术对肱骨骨折的手术时间、出血量、骨折临床愈合时间、术后并发症及临床疗效,来探究经皮钢板内固定术对肱骨骨折的治疗效果,现报道如下。

1 资料与方法

1.1 一般资料

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选取 2005 年 1 月至 2013 年 12 月在我院以肱骨骨折为诊断而收入院患者者 172 例,采用随机数字表分为实验组和对照组。实验组 86 例,其中男 40 例,女 46 例,平均年龄(54.3 ± 11.2)岁;对照组 86 例,其中男 38 例,女 48 例,平均年龄(55.6 ± 10.5)岁。两组患者的一般资料相仿,差异无统计学意义($P > 0.05$)。

1.2 诊断标准

参照临床常用标准^[6]:有不同程度的外伤史;受损肩肿痛以及活动受限;患肩出现肿胀、触痛、压痛以及叩击痛;主动和(或)被动运动时疼痛加剧,甚至可出现骨擦感;局部有瘀血斑;影像学检查显示肱骨连续性被破坏,严重者可呈粉碎性,CT 及三维重建检查可以精确受损部位以及损伤程度。

1.3 纳入标准

符合诊断标准;年龄在 20-70 岁之间;肱骨骨折后未采取治疗;可耐受手术治疗;伤前患肩功能正常;患者自愿参与本实验,并签署知情同意书。

1.4 排除标准

不符合诊断标准;年龄在 20 岁以下,在 70 岁以上;心脏、肝、胆严重疾病;恶性肿瘤;不耐受手术;神志异常;偏瘫、重症肌无力或其他可能影响患肢功能康复锻炼者。

1.5 治疗方法

对照组:患者取仰卧位,上半身高于手术台平面,垫高患肩,内旋患肢,采用臂丛神经阻滞麻醉,必要时采用气静复合麻醉,采用三角肌、胸大肌间沟入路,逐层切开皮肤、皮下组织,找到头静脉,避免损伤头静脉。根据需要向外侧牵开三角肌,露出受损肱骨部位,予以牵引复位,运用骨撬撬拨复位肱骨头大碎块,然后采用手法(牵引、收展、旋转肱骨远端)复位,尽最大可能恢复肱骨头的完整性及正常生理曲度,同时需注意避免追求解剖复位而过多损伤软组织。根据患者骨质、肱骨长度及受损程度选用合适的钢板(肱骨近端解剖锁定钢板,Philos),进行固定,根据骨折情况,采用合适数量的锁定螺钉固定,螺钉的固定

在确保把持力的同时,更应该防止螺钉损伤关节。破裂的肩袖在钢板的缝合孔上进行固定。内固定位置适当,骨折复位程度满意良,被动活动肩关节时,固定的骨折部位未发生松动,冲洗切口,放置负压引流,分层缝合,无菌敷料包扎。术后处理:可予以追加一剂抗生素预防感染,24-36 h 后拔除引流管。术后第 2 天开始适当的进行功能锻炼。术后随访 6 个月。记录手术时间、松开止血后出血量、骨折临床愈合时间及术后并发症发生情况,疗效进行评定。对照组采用传统手术的方法下,采用钢板固定术。治疗及随访后分别观察手术时间、出血量、骨折临床愈合时间、术后并发症及临床疗效指标。

1.6 观察指标及疗效判定

详细记录每位患者的手术时间及出血量。根据术后观察及临床随访情况,详细记录患者的骨折临床愈合时间及术后并发症发生情况。参照临床症状、骨折临床愈合^[7](局部无压痛及叩击痛;局部活动正常;影像学检查示骨折线模糊,肱骨存在有连续性;患肢能够前平举 1 kg 重量的情况下持续达 1 分钟;连续 2 周骨折无变形)以及 Neer 疗效评分系统(根据患者疼痛、功能、运动范围以及解剖四个方面进行综合评分)^[8]进行判定,其中显效:Neer 疗效评分为 90-100 分;骨折临床愈合;功能活动基本正常。有效:Neer 疗效评分 70-89 分;骨折开始临床愈合;功能活动恢复一部分。无效:Neer 疗效评分 70 分以下;骨折未临床愈合;功能活动基本受限。

1.7 统计学方法

采用统计学软件 SPSS19.0 进行统计学分析,计量资料采用 t 检验,计数资料采用卡方检验处理,以 $P < 0.05$ 为有显著性差异。

2 结果

2.1 手术时间及出血量比较

手术后比较两组手术时间及出血量,实验组手术时间及出血量明显少于对照组,差异有统计学意义($P < 0.05$),如表 1。

表 1 手术后两组患者手术时间及出血量比较情况

Table 1 Comparison of operation time and hemorrhage after operation

Group	Operation time (min)	The amount of bleeding(mL)
Experimental group	70.1 ± 10.2	357.8 ± 52.4
Control group	$42.1 \pm 1.6^{\Delta}$	$203.6 \pm 48.9^{\Delta}$

Note: $\Delta P < 0.05$, compared with the control group after operation.

2.2 骨折临床愈合时间及术后并发症比较

治疗后两组患者均骨折临床愈合,与对照组比较,实验组骨折临床愈合时间明显较短,且术后并发症明显较少,差异有统计学意义($P < 0.05$),如表 2。

2.3 临床疗效比较

治疗后两组临床症状均有所改善,与对照组比较,实验组临床疗效明显改善,差异有统计学意义($P < 0.05$),如表 3。

表 2 治疗后两组患者骨折临床愈合时间及术后并发症比较情况

Table 2 Comparison of clinical healing time of fracture and postoperative complications after treatment

Group	Healing of fracture (week)	Postoperative complications(n)
Experimental group	$13.5 \pm 1.6^{\#}$	0 [#]
Control group	16.7 ± 2.3	6

Note: $^{\#}P < 0.05$, compared with the control group.

表 3 治疗后两组患者临床疗效比较情况(%)

Table 3 Comparison of the clinical efficacy after treatment(%)

Group	Excellent	Effective	Invalid	Efficiency(%)
Experimental group	28	14	1	97.7%*
Control group	21	19	4	90.7%

Note: *P<0.05, compared with control group.

3 讨论

肱骨近端骨折是临床上常见的,但最难处理的骨科疾病^[9]。肱骨骨折除了肱骨自身不同位置的损伤,往往哪个累及周围血管神经组织。由于本病多发于中老年人,传统的手术方式对患者的损伤较大,所需时间较长,并且不可避免并发症的出现,需要病人的难受能力强,在此条件下,很多患者在发生肱骨骨折是不能进行及时的手术治疗,导致不能进一步治疗或是不能及时治疗。随着医疗技术发展及生活条件,患者越来越重视疾病预后生活质量的改变及治疗过程风险的降低。微创技术的出现,能够避免传统手术的较大切口,减少周围健康组织的损伤,是患者更快的恢复^[10]。

经皮钢板内固定术手术是在微创的条件下,对患者受伤肱骨运用钢板进行固定,被逐步应用到肱骨骨折治疗当中。研究发现^[11,12],经皮钢板内固定术能够提高肱骨骨折的临床疗效,能够减少患者手术时间及术后恢复时间,减少术中出血量以并发症的发生。为了进一步了解经皮钢板内固定术对肱骨骨折的临床疗效,改善其预后,笔者做了有关研究^[13,14]。通过临床观察经皮钢板内固定术与传统手术对肱骨骨折的手术时间、出血量、骨折临床愈合时间、术后并发症及临床疗效,来探究经皮钢板内固定术对肱骨骨折的治疗效果,现报到如下。长期临床统计资料显示^[15,16],肱骨骨折部位(骨干、外科颈及大小结节)、性质(断裂或粉碎性)及累及组织(血管、神经)多有不同,因此很多因素影响如何治疗肱骨骨折。经皮钢板内固定术士采用新型的微创锁定接骨板技术固定受损肱骨,其优点是创伤较小、固定较为坚强、更利于早期功能恢复锻炼^[17,18]。相较于传统的手术,经皮钢板内固定术的创伤(无论是刀口本身还是对周边健康组织)明显较小、然则经皮钢板内固定术根据骨折情况,采用合适数量的锁定螺钉固定,螺钉的固定在确保把持力的同时,更应该防止螺钉损伤关节。破裂的肩袖在钢板的缝合孔上进行固定。因此钢板固定更稳固,避免钢板的突出或松动或相对肱骨发生位移,导致进一步损伤^[19,20]。

综上所述,经皮钢板内固定术能够明显缩短手术时间及骨折临床愈合时间,降低肱骨骨折术后并发症,提高肱骨骨折临床疗效,对临床具有指导意义,值得临床推广。

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