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微创手术与传统开放手术在胸腰段脊柱骨折治疗中的应用效果

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摘要 目的:分析微创手术与传统开放手术在胸腰段脊柱骨折治疗中的应用效果观察。**方法:**回顾性抽取我院手术治疗的 130 例胸腰段脊柱骨折病患信息,将应用微创手术治疗的 65 例病患归为微创组,将接受传统开放手术治疗的 65 例病患归为开放组,对比分析手术前后椎体高度、Cobb 角度以及生活质量评分的变化,同时比较两组手术相关指标以及手术相关并发症的差异。**结果:**①与手术前相比,两组手术后的伤椎高度、伤椎 Cobb 角度以及生活质量评分显著升高($P<0.05$),两组间伤椎高度、Cobb 角度相仿,但微创组生活质量评分显著高于开放组($P<0.05$);②微创组手术时间显著高于开放组,但术中出血、术后住院时间以及术后并发症显著低于开放组($P<0.05$)。**结论:**微创手术治疗胸腰椎骨折不仅对于伤椎复位效果与传统开放手术相仿,而且在生活质量改善、手术恢复时间、手术安全性方面具有显著优势。

关键词:微创手术;传统开放手术;胸腰椎骨折;疗效观察

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Clinical Effect of Minimally Invasive Surgery and Traditional Open Surgery in the Treatment of Thoracolumbar Spine Fractures

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ABSTRACT Objective: To analyze the effect of minimally invasive surgery and the traditional open surgery in the treatment of thoracolumbar spine fractures. **Methods:** 130 cases with thoracolumbar spine fracture who were treated in our hospital were selected and their clinical data were taken for retrospective analysis. 65 patients with minimally invasive surgery were classified as the minimally invasive group, and 65 cases of patients with traditional open surgery were open group. The changes of vertebral height, Cobb angle and quality of life scores before and after surgery were compared. The differences of surgery-related indicators and complications between the two groups were also compared. **Results:** ① Compared with before operation, the vertebral height, vertebral Cobb angle and quality of life in the two groups after surgery were significantly higher ($P<0.05$), the vertebral height, Cobb angle between the two groups was similar, but quality of life score of minimally invasive group was significantly higher than open group ($P<0.05$). ② The operation time of minimally invasive group was significantly higher than that of the open group, while blood loss, hospitalization and postoperative complications were significantly lower than those of the open group ($P<0.05$). **Conclusion:** Minimally invasive surgery in the treatment of thoracolumbar vertebral fracture not only is similar for resetting effect with traditional open surgery, but also has significant advantages in improving the quality of life, surgery recovery time and security operation.

Key words: Percutaneous vertebroplasty; Vertebral compression fractures; Traditional open surgery; Clinical observation

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前言

胸腰段脊柱骨折作为发病率极高的脊柱损伤类型,内固定手术治疗是其首选治疗方式^[1-3],因此,合理选择内固定手术方式对于病患预后极为重要。本实验通过对比不同手术在胸腰段脊柱骨折治疗中作用效果的差异,旨在为科学选择术式提供借鉴,现报道如下:

1 资料与方法

1.1 研究资料

回顾选取分析我院在 2012 年 1 月-2016 年 2 月确诊并接受内固定手术的胸腰段脊柱骨折病患,根据内固定术式分为微创组和开放组各 65 例,选择标准^[4-6]:① CT、X 线片显示胸腰段脊柱单节段骨折;② 未见神经损伤或脊髓压迫症状;③ 符合内固定手术指征,自愿接受内固定治疗;④ 自愿加入实验;⑤ 损伤时间未超过 1 周。排除标准^[7-8]:① 合并明显神经、脊髓损伤,需要椎管减压治疗;② 合并肝肾功能障碍、心脑血管疾病、恶性肿瘤、骨结核等其他疾病者;③ 存在手术和药物使用禁忌;④ 病理性骨折;⑤ 资料缺失。

1.2 手术方法

1.2.1 术前准备 积极完善心电图、胸片、血尿常规等术前检查,利用 X 线透视影像技术明确伤椎位置并标记。所有患者均

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接受气管内插管下全身麻醉,手术取俯卧位,并垫高胸髂部。

1.2.2 开放性手术 在脊柱后侧的正中作为手术入路位置,将伤椎棘突作为手术切口中心,切开皮肤逐层分离至将伤椎结构充分暴露后,将椎弓根钉在伤椎上下椎各植入 2 枚,将连接棒安装在两椎弓根钉上,利用撑开器完成伤椎复位,透视观察复位完全后拧紧螺帽,对伤口进行冲洗、引流,留置引流管,查无异常,缝合切口。

1.2.3 微创手术 X 线透视明确伤椎上下椎椎弓根体表投影,依据体表标记作直径约 0.5 cm 纵行小切口,切开皮肤钝性分离相关组织后到达伤椎上下椎椎弓根,分别于伤椎上下椎各植入 2 枚椎弓根钉,通过经皮下隧道,依次连接固定棒(依据需要完成预弯),利用撑开器完成伤椎复位,透视观察复位完全后拧紧螺帽,冲洗伤口,依次缝合组织和皮肤。

1.2.4 术后处理 所有患者在术后接受切口换药、抗生素抗感染、早期功能锻炼等基础治疗。

1.3 评价指标

分别于手术前(术前 12 h)、术后 1 个月以及术后 6 个月时分别测量伤椎高度和 Cobb 角度,并对生活质量进行评价,同时详细记录手术时间、出血、术后住院等手术相关信息和 6 个月

内手术相关并发症情况。

1.3.1 测定椎体高度和 Cobb 角度 根据报道^[9-11]对伤椎摄取 X 线侧位片后,将塌陷最重位置作为椎体高度检测点,将上位椎体上缘垂直线与下位椎体下缘垂直线形成的夹角(即 Cobb 角)作为脊柱侧弯评价指标。

1.3.2 生活质量评价 应用 GQOLI-74 量表^[12-14]对病患的生活质量进行客观全面的评价,该量表评价内容涵盖了物质、躯体、社会、心理 4 个维度内容,分数越高,生活质量越高。

1.4 统计学分析

选取 SPSS.18.0 软件分析组间数据,两组计量资料选取 t 检验对比,组间百分率选取 χ^2 检验比较,重复测量资料符合方差齐性,选取单因素重复测量方差分析,统计结果显示 $P < 0.05$,说明数据间有统计学差异。

2 结果

2.1 两组间一般资料分析

两组病患在男女比例、受伤至手术间隔期(即病程)、年龄分布、伤椎分布位置等基础资料未见统计学差异($P > 0.05$),组间资料有高度可比性。见表 1。

表 1 两组间一般资料对比

Table 1 Comparison of general information between the two groups

Indexes		Minimally invasive group	Open group	Statistics	P
Gender (n)	F	24(36.92%)	25(38.46%)	0.635	>0.05
	M	41(63.08%)	40(61.54%)	0.661	>0.05
Age (years)		57.62± 4.58	62.47± 4.51	0.894	>0.05
Disease course (day)		4.1± 1.1	4.2± 1.0	0.953	>0.05
Position of injured vertebral	T ₅ -T ₁₂	46(55.38%)	45(53.85%)	0.781	>0.05
	L ₁ -L ₄	19(44.62%)	20(46.15%)	0.697	>0.05

2.2 两组间伤椎高度以及 Cobb 角度数变化比较

与手术前相比,手术后两组的伤椎高度显著升高,Cobb 角

度明显下降,术后相同检测点,两组伤椎高度、Cobb 角度相仿($P > 0.05$),组间无明显差异。见表 2。

表 2 两组间伤椎高度以及 Cobb 角变化对比

Table 2 Comparison of changes in injured vertebral height and Cobb angles in two groups

Indexes	Groups	Before operation	1 month after operation	6 months after operation	F	P
Injured vertebral height (cm)	Minimally invasive group	1.41± 0.37	1.71± 0.31 ^a	1.81± 0.4 ^a	22.587	<0.05
	Open group	1.42± 0.35	1.73± 0.32 ^a	1.83± 0.5 ^a	23.545	<0.05
	t	0.591	0.452	0.357		
	P	>0.05	>0.05	>0.05		
Cobb angle (°)	Minimally invasive group	27.43± 4.01	18.53± 4.2 ^a	17.09± 4.28 ^a	19.063	<0.05
	Open group	27.45± 4.03	18.61± 4.2 ^a	17.08± 4.26 ^a	13.011	<0.05
	t	0.671	0.508	0.319		
	P	>0.05	>0.05	>0.05		

Note: compared with before operation, ^a $P < 0.05$.

2.3 两组生活质量评分比较

与手术前相比,两组的生活质量评分明显提升,且微创组的生活质量评分明显高于开放组,组间数据有统计学意义($P < 0.05$)。见表 3。

2.4 两组手术指标比较

微创组的手术时间明显长于开放组,且术中出血量、术后

恢复用时和并发症显著低于开放组,组间差异显著($P < 0.05$)。见表 4。

3 讨论

胸腰段脊柱椎骨折早期接受内固定手术不仅有利于脊柱畸形得到快速矫正,而且能够重建脊柱解剖结构、促进生理功

表 3 两组间生活质量评分对比($\bar{x} \pm s$, 分)
Table 3 Comparison of life quality between the two groups ($\bar{x} \pm s$, 分)

Groups	Before operation	1 month after operation	6 months after operation	F	P
Minimally invasive group	44.28± 5.69	61.93± 5.53 ^a	65.34± 4.87 ^a	13.597	<0.05
Open group	44.37± 5.72	50.63± 5.31 ^a	55.36± 4.92 ^a	14.538	<0.05
t	0.638	31.528	24.987		
P	>0.05	<0.05	<0.05		

Note: compared with before operation, ^aP<0.05.

表 4 两组手术指标比较
Table 4 Comparison of operation indexes between the two groups

Groups	Operation time (min)	Intraoperative blood loss(ml)	Postoperative hospital stay(d)	Complication		
				Incisional wound infection	Pedicle wall injury	Total incidence rate
Minimally invasive group	93.65± 11.83	53.06± 10.57	9.03± 1.15	2	1	3(4.62%)
Open group	85.64± 10.97	185.68± 15.62	14.32± 2.57	4	7	11(16.92%)
Statistics	18.351	18.654	54.053			9.537
P	<0.05	<0.01	<0.01	<0.05	<0.05	<0.01

能恢复。随着内固定技术的发展,内固定手术方式不断增多,不同术式各有优势,治疗效果也不完全相同,因此,关于如何选择胸腰段脊柱骨折内固定手术方式临床有诸多争议。传统开放性内固定手术作为临床应用最早、最广的治疗方法,其对于脊柱骨折复位效果是毋庸置疑的,但是由于手术损伤较大,安全性急需提升,本实验将其作为对照组,充分保障了研究的实践价值。经皮微创手术作为近年来备受关注的新型内固定手术方案,被证实^[15-17]对于胸腰段骨折具有显著治疗效果。本实验结果显示微创组和开放组手术前后伤椎高度和 Cobb 角度变化相仿,说明两种手术对于骨折脊柱解剖复位效果相仿。进一步对病患生活质量和手术相关指标进行分析,结果发现微创组的手术时间更长,但是其生活质量评分、术后住院时间、并发症情况显著优于开放组,说明微创手术虽然更耗费时间,但是其治疗的安全性和对患者生活质量的提升更具积极意义,考虑这与微创手术损伤小、术后更容易恢复有关。实验中由于条件、病例数限制,未对远期疗效和脊柱功能进行评价,实验内容仍不够全面,需要跟进一步补充。

综上所述,经皮微创内固定术和传统开放手术均能够满足胸腰段脊柱骨折复位治疗要求,但是与开放手术比较,微创手术的安全性更高、创伤更小、术后恢复更快,在严格把握手术适应症的情况,建议优先选用微创手术治疗胸腰段脊柱骨折。

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