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中心静脉导管引流对单孔胸腔镜肺癌根治术患者术后胸腔引流的应用分析*

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摘要 目的: 探讨中心静脉导管引流对单孔胸腔镜肺癌根治术患者术后胸腔引流的应用效果。**方法:** 回顾性选取 2019 年 1 月至 2019 年 12 月期间我院收治的行单孔胸腔镜肺癌根治术患者 80 例的临床资料,根据引流方式的不同分为 A 组(n=40,传统引流)和 B 组(n=40,中心静脉导管引流),对比两组患者临床指标、生活质量、炎症因子及并发症发生情况。**结果:** B 组引流操作时间、术后住院时间短于 A 组($P<0.05$)。两组术后 3 个月生活质量简表(SF-36)各维度评分均较术前升高,且 B 组高于 A 组($P<0.05$)。两组术前、术后 3d、术后 7d 白介素-6(IL-6)、C 反应蛋白(CRP)、肿瘤坏死因子- α (TNF- α)呈先升高后下降趋势,且术后 3d、术后 7d B 组以上指标低于 A 组($P<0.05$)。两组术后并发症发生率比较无差异($P>0.05$)。**结论:** 与传统引流相比,单孔胸腔镜肺癌根治术患者术后采用中心静脉导管引流,效果显著,可减少炎症刺激,安全可靠,有效改善患者术后生活质量。

关键词: 中心静脉导管引流;传统引流;单孔胸腔镜肺癌根治术;胸腔引流

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Application of Central Venous Catheter Drainage in Postoperative Thoracic Drainage of Lung Cancer Patients Undergoing Single Hole Thoracoscopic Surgery*

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ABSTRACT Objective: To investigate the effect of central venous catheter drainage on postoperative thoracic drainage in patients with lung cancer undergoing single hole thoracoscopic surgery. **Methods:** The clinical data of 80 patients with lung cancer who were treated by single hole thoracoscopic radical surgery from January 2019 to December 2019 were retrospectively selected. According to the different drainage methods, they were divided into group A (n=40, traditional drainage) and group B (n=40, central venous catheter drainage). The clinical indicators, quality of life, inflammatory factors and complications of the two groups were compared. **Results:** The operation time and postoperative hospitalization time of group B were shorter than that of group A ($P<0.05$). The scores of quality of life (SF-36) in the two groups were higher than those before operation at 3 months after operation, and those in group B were higher than those in group A ($P<0.05$). The levels of interleukin-6 (IL-6), C-reactive protein (CRP), tumor necrosis factor- α (TNF- α) in the two groups increased first and then decreased at 3d and 7d after operation, and the group B were lower than those in the group A ($P<0.05$). There was no difference in the incidence of postoperative complications between the two groups ($P>0.05$). **Conclusion:** Compared with the traditional drainage, the central venous catheter drainage can reduce the inflammatory stimulation and improve the quality of life.

Key words: Central venous catheter drainage; Traditional drainage; Single hole thoracoscopic radical surgery for lung cancer; Thoracic drainage

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前言

原发性肺癌是指起源于肺部支气管黏膜或腺体的恶性肿瘤,是我国最常见的恶性肿瘤之一^[1]。胸腔镜肺癌根治术是治疗

原发性肺癌的主要术式,随着腔镜器械的发展,手术技巧的不断提升,单孔操作已在临床广泛应用^[2,3]。由于单孔胸腔镜肺癌根治术多选择腋前线第 4 或第 5 肋间,作为唯一的胸部切口,术后引流管的放置方式若选取不当会不利于患者术后恢复,使

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得单孔胸腔镜肺癌根治术的优势无法充分体现^[4,5]。单孔胸腔镜引流使用原引流口,术后疼痛及创伤增加,影响患者术后恢复^[6,7]。中心静脉导管引流在胸腔引流中的应用虽偶有报道,但其安全性及效果尚需进一步的实验以证实^[8,9]。鉴于此,本研究通过对比单孔胸腔镜肺癌根治术患者术后采用传统引流管引流、中心静脉导管引流的应用效果,为临床单孔胸腔镜肺癌根治术患者术后胸腔引流的引流方式选择提供参考,现报道如下。

1 资料与方法

1.1 基础资料

回顾性选取 2019 年 1 月至 2019 年 12 月期间我院收治的行单孔胸腔镜肺癌根治术患者 80 例的临床资料。纳入标准:(1)均确诊为肺癌,符合手术指征,择期行单孔胸腔镜肺癌根治术者;(2)临床资料完整;(3)手术操作由同一组医师完成。排除标准:(1)合并精神疾患,无法正常沟通交流者;(2)合并其他恶性肿瘤者;(3)术中中转开胸或增加辅助孔者;(4)合并心肝肾等重要脏器功能障碍者;(5)合并免疫缺陷、急慢性感染者。上述患者根据引流方式的不同分为 A 组($n=40$,传统引流)和 B 组($n=40$,中心静脉导管引流),其中 A 组男 25 例,女 15 例,年龄 38~64 岁,平均(45.91 ± 5.27)岁。B 组男 23 例,女 17 例,年龄 37~66 岁,平均(45.16 ± 4.96)岁。两组患者一般资料对比未见统计学差异($P>0.05$),具有可比性。

1.2 方法

两组患者均予以单孔胸腔镜肺癌根治术,A 组患者给予手术切口传统引流管引流,常规安置胸腔引流管,固定胸腔引流管缝合关闭切口,B 组患者给予中心静脉导管引流,用中心

静脉导管系统穿刺针穿刺胸膜腔,持导丝沿着针管后孔缓慢进入 12 cm 左右置入导丝,抽出穿刺针,置入中心静脉导管,固定胸壁。

1.3 观察指标

(1)记录两组患者围术期指标情况:引流操作时间、术后住院时间。(2)术后采用门诊复查的方式随访 3 个月,于术前、术后 3 个月采用生活质量简表(Study36-ItemShort-FormHealth-Survey,SF-36)^[10]对患者生活质量进行评价。SF-36 包括活力、躯体疼痛、生理职能、生理功能、情感职能、社会功能、总体健康、精神健康这 8 个维度,分数越高,生活质量越好,每个维度最高分为 100 分。(3)于术前、术后 3d、术后 7d 抽取患者 4 mL 空腹肘静脉血,经常规离心处理分离上清液,置于 -40°C 冰箱中待测。参考试剂盒(天津赛尔生物技术有限公司)说明书步骤,采用酶联免疫吸附试验检测白介素 -6(Interleukin-6,IL-6)、C 反应蛋白(C-Reactive Protein,CRP)、肿瘤坏死因子- α (Tumour necrosis factor- α ,TNF- α)水平。(4)记录两组术后并发症发生情况。

1.4 统计学方法

采用 SPSS20.0 进行数据分析。计数资料以例数及率的形式表示,组间比较行卡方检验。计量资料以均值 $\pm$ 标准差的形式表示,行 t 检验。检验标准设置为 $\alpha=0.05$ 。

2 结果

2.1 两组围术期指标比较

B 组引流操作时间、术后住院时间短于 A 组($P<0.05$);详见表 1。

表 1 两组围术期指标比较($\bar{x}\pm s$)
Table 1 Comparison of perioperative indexes in the two groups($\bar{x}\pm s$)

Groups	Drainage operation time(min)	Postoperative hospital stay(d)
Group A($n=40$)	5.16 ± 2.32	10.16 ± 1.25
Group B($n=40$)	2.72 ± 1.37	7.21 ± 1.28
t	34.107	10.428
P	0.000	0.000

2.2 两组生活质量比较

两组术前 SF-36 各维度评分比较无差异($P>0.05$);两组术后 3 个月 SF-36 各维度评分均较术前升高,且 B 组高于 A 组($P<0.05$);详见表 2。

2.3 两组炎症因子水平比较

两组术前 IL-6、CRP、TNF- α 比较无统计学差异($P>0.05$);两组术前、术后 3d、术后 7dIL-6、CRP、TNF- α 呈先升高后下降趋势,且术后 3d、术后 7d B 组以上指标低于 A 组($P<0.05$);详见表 3。

2.4 两组并发症发生率比较

随访期间无失访病例,A 组发生 1 例胸膜粘连包裹、2 例皮下气肿、2 例堵管,并发症发生率为 12.50%(5/40)。而 B 组发生 1 例胸膜粘连包裹、1 例皮下气肿、1 例堵管,并发症发生率为 7.50%(3/40)。两组术后并发症发生率比较无差异($\chi^2=0$ 。

556, $P=0.456$)。

3 讨论

近年来随着环境污染的加重、我国人口老龄化的加剧以及生活结构的改变,肺癌的发病率呈逐年递增趋势^[11-13]。胸腔镜肺癌根治术因其具有创伤小、术后恢复快等优点在临床中广泛应用^[14,15]。其中单孔胸腔镜肺癌根治术可进一步降低手术创伤,促进患者早日恢复。由于肺癌患者多年龄偏大、心肺功能不全,故术后如何改善其胸腔引流管引流效果及缩短拔管时间越来越受到重视,以期提高患者耐受性。术后引流可有效排出胸腔内的液体及气体,但术后引流方式不当可增加并发症发生风险^[16]。传统的引流方式是在胸腔内置入 1、2 根引流管,但随着舒适医疗的大力普及,此类引流方式的不足已愈发明显,患者长期置管术后疼痛剧烈,引起机体强烈的应激反应,但过早拔

表 2 两组生活质量比较($\bar{x} \pm s$, 分)Table 2 Comparison of quality of life in the two groups($\bar{x} \pm s$, scores)

Groups	Time	Somatic pain	Role-physical	Physiological function	Emotional function	General health	Social function	Mental health	Vitality
Group A (n=40)	Before operation	51.56±6.24	53.15±6.27	54.29±5.37	53.27±5.53	52.49±7.27	52.17±6.38	58.65±7.28	59.42±5.19
	3 months after operation	76.02±8.28 ^a	75.08±7.15 ^a	72.68±6.41 ^a	77.72±6.16 ^a	78.53±6.64 ^a	78.26±7.04 ^a	79.06±6.27 ^a	79.91±6.26 ^a
	Before operation	51.67±5.36	52.82±5.63	54.47±5.41	52.96±4.53	52.08±5.46	52.54±7.29	58.25±4.23	59.12±5.31
Group B (n=40)	3 months after operation	84.13±6.39 ^{ab}	83.97±6.54 ^{ab}	85.98±6.33 ^{ab}	86.24±5.47 ^{ab}	87.67±6.52 ^{ab}	88.73±6.28 ^{ab}	86.78±5.29 ^{ab}	85.64±6.33 ^{ab}

Notes: compared with before operation, ^a $P < 0.05$; compared with group A, ^b $P < 0.05$.表 3 两组炎症因子水平比较($\bar{x} \pm s$)Table 3 Comparison of inflammatory factors in the two groups($\bar{x} \pm s$)

Groups	Time	IL-6($\mu\text{g/L}$)	CRP(mg/L)	TNF- α (pg/mL)
Group A(n=40)	Before operation	52.21±6.28	19.31±3.36	22.51±3.39
	3d after operation	125.24±7.22 ^a	34.29±3.25 ^a	57.06±3.29 ^a
	7d after operation	84.39±6.53 ^{ab}	27.37±2.82 ^{ab}	38.62±2.84 ^{ab}
Group B(n=40)	Before operation	51.97±8.52	18.89±2.53	22.94±3.79
	3d after operation	96.32±7.92 ^{ac}	28.83±3.34 ^{ac}	45.13±4.38 ^{ac}
	7d after operation	70.17±8.65 ^{abc}	22.74±3.12 ^{abc}	29.21±3.97 ^{abc}

Notes: compared with before operation, ^a $P < 0.05$; compared with 3d after operation, ^b $P < 0.05$; compared with group A, ^c $P < 0.05$.

除胸腔引流管,又存在术后胸腔再次积液导致需要行胸腔穿刺引流的风险^[17-19]。传统的引流方式既不利于患者的早期活动,也不利于患者术后肺复张,降低患者生活质量。中心静脉导管引流的导管材质主要为硅胶和 PU 材料,管径较细,不易刺激或压迫肋间神经引起患者疼痛。但此类引流方式也存在引流气体不畅的可能^[20,21]。基于以上理念和研究,本研究通过设置对照,以明确两种引流方式的具体应用价值。

本次研究结果表明,单孔胸腔镜肺癌根治术患者术后采用中心静脉导管引流,可有效缩短引流操作时间、术后住院时间,改善患者生活质量。这可能与中心静脉导管引流具有以下几个优势有关:中心静脉导管引流穿刺和置管可由一个人在几分钟内完成,有效缩短操作时间,安全可靠;中心静脉导管引流可充分引流,同时方便注入化疗药物进行治疗;中心静脉导管引流使用的导管材质柔软,局部刺激性比较小,且患者在插入后不会感到不适,利于患者早期恢复,尽早投入正常的日常工作及生活中,提高其生活质量^[22-24]。而传统的引流需要作皮肤切口引流,增加手术创伤,且传统的引流导管材料较为粗糙,易导致伤口受刺激,增加感染风险,减缓患者术后恢复进程,反复引流不方便,注药也不方便,降低其治疗效果^[25-27]。本次研究结果还显示,两组患者术后均有不同程度的炎症应激反应,但中心静脉导管引流的患者炎症应激反应明显更轻。这可能是因为中心静脉导管引流导管尖端柔软,组织相容性好,对胸膜腔刺激小,对肺及心脏无刺激和损伤,可有效缓解机体应激反应^[28-30]。另两组术

后并发症发生率比较无差异,可见中心静脉导管引流安全可靠。本研究仅纳入了 80 例患者的临床资料,存在样本量较少的不足,今后的研究中将通过多中心扩大样本量的方式弥补该不足,以期获得更为精确的数据。

综上所述,单孔胸腔镜肺癌根治术患者术后采用中心静脉导管引流,效果显著,可减少炎性刺激,安全可靠,有效改善患者术后生活质量。

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