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胸顶胸膜部分切除翻转与机械摩擦行胸膜固定应用于胸腔镜肺大疱切除治疗自发性气胸中的对比研究*

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摘要 目的:探讨胸顶胸膜部分切除翻转应用于胸腔镜肺大疱切除治疗自发性气胸中的可行性、安全性以及临床疗效。**方法:**回顾性分析我院自 2014 年 1 月 1 日至 2015 年 9 月 30 日行胸腔镜肺大疱切除治疗自发性气胸同时行胸顶胸膜部分切除翻转或机械摩擦进行胸膜固定的患者 103 例,其中行胸顶胸膜部分切除翻转者 46 例(A 组),行机械摩擦者 57 例(B 组),比较两组患者的手术时间、术中出血量、术后引流量、术后引流时间、住院时间、术后并发症(切口感染/不愈、出血二次手术、神经损伤、漏气>7 天)发生率、术后 1 年内术侧气胸的复发率。**结果:**两组术中出血量、术后引流量、术后引流时间、住院时间、术后并发症(切口感染/不愈、出血二次手术、神经损伤、漏气>7 天)发生率比较差异无统计学意义($p>0.05$),A 组手术时间比 B 组长($p<0.05$),但术后 1 年内术侧气胸的复发率较 B 组低($p<0.05$)。**结论:**胸顶胸膜部分切除翻转应用于 VATS 肺大疱切除治疗自发性气胸安全可行,可有效降低自发性气胸术后复发率。

关键词:胸顶胸膜部分切除翻转;自发性气胸;胸腔镜

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Apical Pleurodesis with Turned-over Parietal Pleura Versus Pleural Abrasion in Addition to Thoracoscopic Bullectomy for Spontaneous Pneumothorax*

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ABSTRACT Objectives: To evaluate the feasibility, safety and efficacy of apical pleurodesis with turned-over parietal pleura in addition to thoracoscopic bullectomy for spontaneous pneumothorax. **Methods:** A retrospective study was performed on 103 cases of patients who were underwent procedures of apical pleurodesis with turned-over parietal pleura or pleural abrasion in addition to thoracoscopic bullectomy for spontaneous pneumothorax from Jan 1st 2014 to Sep 30th 2015. 46 patients underwent apical pleurodesis with turned-over parietal pleura(Group A). 57 patients underwent pleural abrasion(Group B). The operation time, intraoperative bleeding, postoperative drainage volume, postoperative drainage time, hospitalization time, postoperative complications (wound infection /not healing, bleeding lead to surgery again, nerve injury, leakage more than 7 days) and the recurrence rate of operation side pneumothorax in 1 years after procedure were compared between two groups. **Results:** No significance was found in intraoperative bleeding, postoperative drainage volume, postoperative drainage time, hospitalization time, postoperative complications between two groups ($p>0.05$). The operation time of Group A was longer than that of Group B ($P<0.05$), but the recurrence rate of operation side pneumothorax in 1 years after procedure was lower than that in Group A ($P<0.05$). **Conclusion:** Apical pleurodesis with turned-over parietal pleura in addition to thoracoscopic bullectomy for spontaneous pneumothorax was feasible and safe which could effectively reduce the recurrence rate of spontaneous pneumothorax after operation.

Key words: Apical pleurodesis with turned-over parietal pleura; Spontaneous pneumothorax; VATS

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前言

自发性气胸是胸外科常见的一类急诊,大多由于肺大疱破裂致肺漏气,进而破坏胸膜腔的负压导致患侧肺压缩所引起。手术切除肺大疱是治疗自发性气胸且防止其反复发作的首选方法。研究显示胸腔镜手术(video assisted thoracic surgery,

VATS)运用于治疗自发性气胸存在显著优势,但仍存在一定复发率^[1]。多年来,诸多学者均致力于寻找降低其复发率的方法^[2]。多项研究显示 VATS 术中行胸膜固定可显著降低复发率,并且安全可行^[3-5]。然而,采用何种方法来进行胸膜固定仍存在很多争议。本研究旨在探讨胸顶胸膜部分切除翻转行胸膜固定在胸腔镜治疗自发性气胸的安全性及临床疗效。

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1 资料和方法

1.1 临床资料

回顾性分析我院自 2014 年 1 月 1 日至 2015 年 9 月 30 日行胸腔镜肺大泡切除治疗自发性气胸同时行胸顶胸膜部分切除翻转或机械摩擦进行胸膜固定的患者 103 例。其中,行胸顶胸膜部分切除翻转者 46 例(A 组),男 38 例,女 8 例,平均年龄 27.9 岁(12-56 岁),平均 BMI 20.8 ± 2.4 ;行机械摩擦者 57 例(B 组),男 47 例,女 10 例,平均年龄 28.6 岁(14-60 岁),平均 BMI 20.1 ± 3.1 。两组一般资料均无统计学差异($p > 0.05$)。纳入标准:①气胸范围大于 20%;②无结核、广泛肺炎、肺癌、广泛肺气肿形成;③年龄 10-60 周岁;④无严重合并症(如无血液系统疾病、心、肝、肾功能正常等)。

1.2 手术方法

患者均采用全身麻醉,双腔气管插管,健侧单肺通气,不作硬膜外置管。取腋中线第七肋间 1.5 cm 切口作为观察孔(也可充当操作孔),腋前线第 5 肋间 3 cm 切口作为主操作孔,分别采用 30 mm、60 mm 切口保护圈。采用 30 度胸腔镜,先行探查,单肺通气后,观察肺大疱位置,然后注水膨胀,进一步观察漏气点。较大肺大疱及明显漏气处予以直线切割缝合器切除,较小大疱予以结扎。

根据术中采用胸膜固定方法不同分为两组。A 组于第四肋间壁层胸膜处,采用带管头皮针通过操作孔进入胸腔进行壁层胸膜穿刺,尾部注入生理盐水浸润壁层胸膜,使壁层胸膜分离。然后小心切开分离处壁层胸膜,向后至交感神经链前方,向前尽量靠近乳内血管处,逐步向胸顶分离,注意严密止血,防止损伤锁骨下动脉、迷走神经、膈神经、交感神经链。壁层胸膜分离完成后采用钛夹将其固定于纵隔胸膜侧,创面采用氩气刀严密

止血。B 组采用纱球进行机械摩擦,尽可能均匀。如出现活动性出血点,予氩气刀严密止血。均由腋中线第七肋间观察孔放置一根 28 号胸腔引流管至胸顶。关胸前由腔镜直视下嘱麻醉医师鼓肺,确认胸腔引管位置以及肺复张完全(尤其是尖段)。

1.3 术后处理

术后均持续负压吸引(5-10 cm 水柱)。术后给予间断高浓度吸氧(10 L/min)。采用相同镇痛方法。拔除引流管指征:①无明显漏气;②胸腔引流液色清亮, ≤ 200 mL;③双肺呼吸音基本对称后,夹闭引流管 24 小时,复查胸片,肺复张良好。

1.4 观察指标

手术时间、术中出血量、术后引流量、术后引流时间、住院时间、术后并发症(切口感染/不愈、出血二次手术、神经损伤、肺不张)发生率、术后 1 年内术侧气胸的复发率。

1.5 统计学方法

使用 SPSS18.0 进行统计学处理,计量资料的比较采用 t 检验,计数资料的比较采用 χ^2 检验,以 $P < 0.05$ 为差异有统计学意义。

2 结果

本研究纳入患者共计 103 例。A 组 46 例,其中男 38 例,女 8 例,平均年龄 27.9 岁(12-56 岁),平均 BMI 20.8 ± 2.4 ;B 组 57 例,其中男 47 例,女 10 例,平均年龄 28.6 岁(14-60 岁),平均 BMI 20.1 ± 3.1 。两组一般资料差异均无统计学意义($p > 0.05$)。

两组术中出血量、术后引流量、术后引流时间、住院时间、术后并发症人数(切口感染/不愈、出血二次手术、神经损伤、肺不张)发生率比较差异无明显统计学意义($p > 0.05$)。A 组手术时间较 B 组长($p < 0.05$),术后 1 年内气胸的复发率低于 B 组($p < 0.05$)(见表 1)。

表 1 两组术中术后指标的比较

Table 1 Comparison of the intraoperative and postoperative index between group A and group B

	Group A	Group B	P
Operation Time(min)	98.5 $\pm$ 23.1	61.3 $\pm$ 10.8	$p < 0.05$
Intraoperative Bleeding(mL)	43.1 $\pm$ 15.2	40.8 $\pm$ 10.2	$p > 0.05$
Postoperative Drainage(mL)	418.3 $\pm$ 53.1	409.3 $\pm$ 60.8	$p > 0.05$
Duration Of Drainage(d)	3.8 $\pm$ 1.5	3.6 $\pm$ 1.3	$p > 0.05$
Length Of Stay(d)	4.7 $\pm$ 1.6	4.4 $\pm$ 1.1	$p > 0.05$
Wound Infection/Disunion	1(2.2%)	1(1.8%)	$p > 0.05$
Re-operation Caused By Bleeding	0(0%)	0(0%)	$p > 0.05$
Nerve Injury	0(0%)	0(0%)	$p > 0.05$
Complications			
Air Leaks > 7 d	2(4.3%)	3(5.3%)	$p > 0.05$
Recurrence Within 1 Year Post-operation	0(0%)	4(7.0%)	$p < 0.05$

3 讨论

1803 年,Itard 最早提出了气胸一词^[6],认为气胸是肺尖部病变(如结核等)所引起,但同时也发现某些病例并无明确的原发病,当时称之为简单气胸(pneumothorax simple)。直到 1932 年,Kjaergard 第一次明确地提出了原发性自发性气胸的概念

^[7]。其好发于 15-40 岁青年男性^[8],男女比例大约为 5:1。美国的流行性病学调查显示^[9] 男性原发性自发性气胸的发病率为 7.4-18/10 万人,女性为 1.2-6/10 万人,英国的发病率较美国略高一些,男性的发病率约为 24/10 万人,女性发病率约为 10/10 万人^[10]。虽然目前自发性气胸在我国尚无确切的流行病学数据,但是在我们的胸外科的日常工作中,自发性气胸是最为常见

的一类急诊。自发性气胸的治疗包括保守治疗和手术治疗两大类。多数患者经过胸腔穿刺抽气、胸腔闭式引流等保守治疗手段能够获得较为满意的治疗效果,但是恢复时间较长,尤其是较高的复发率为医患双方所无法接受。有文献报道^[11]自发性气胸患者经保守治疗后2年内复发率达到25%,二次发作后复发率更是高达50-80%。因此,越来越多的患者选择行手术治疗。

20世纪八十年代末九十年代初,腔镜技术被引入于胸外科,到本世纪初更是得到迅猛的发展。与开放手术相比,VATS拥有创伤小、术后疼痛轻、术后住院时间短等优势,被广大患者及胸外科医师所接受。VATS肺大疱切除治疗自发性气胸广泛地应用于临床,并且逐渐成为一种标准术式^[12],但是仍然存在一定的复发率(3.5-9.4%)^[13,13,14]。较大样本的研究如Pierre-Benoit^[11]等回顾了分析了7396例手术治疗自发性气胸患者,其中6419例行VATS,246例出现气胸复发,复发率达到3.8%,中位复发时间为3个月。因此,如何能够降低术后复发率成为众多施行VATS术者所关注的问题。Gossot D等^[3]研究表明机械摩擦行胸膜固定应用于VATS肺大疱切除切实有效并安全可行,术后气胸复发率为3.6%,无需再次手术治疗。国内学者^[15]也积极探索了VATS术中采用碘伏法治疗自发性气胸57例,随访一年,未出现复发情况。但Chang YC^[4]等则认为胸膜部分切除行胸膜固定效果好于单纯采用机械摩擦行胸膜固定者。2014年,Masatsugu Hamaji^[9]介绍了VATS术中胸顶胸膜部分切除翻转行胸膜固定应用于治疗自发性气胸患者18例。Jean-Philippe Delpy^[16]等认为VATS术后出现复发率高的原因在于术中未行积极的胸膜固定。

结合临床实际工作,VATS切除肺大疱治疗自发性气胸术后复发的主要原因及经验总结如下几个方面:①肺大疱的再生或残留,尤其对于肺内型肺大疱,如果手术切除病变组织不够,将导致肺大疱残留,气胸复发。因此,术前行HRCT可明确手术靶区,指导术中切除范围^[17]。②术后胸顶残气也是增加复发的一个重要因素^[18],注意手术最后由腔镜直视下嘱麻醉医师鼓肺,将胸引管置于胸顶,确认术侧肺复张完全,尤其是胸顶处。术后可间断给予高浓度吸氧,其可迅速提高血中的氧分压,降低血氮分压,增加胸膜腔与血液间的氮分压差,促使胸膜腔内的氮气向血液转移,从而可以加快胸腔内气体的吸收^[19]。③胸膜腔粘连不充分,尤其是胸顶及纵隔面。本研究所采用的术式,顾及胸顶壁层胸膜处的同时,更对一般术式无法顾及的胸顶纵隔胸膜侧做到了一定胸膜腔的固定。④有研究^[16]认为肺漏气还可能存在于肺大疱肺气肿样改变以外的区域,与胸膜多孔相关,这可能是部分患者术后复发的原因,但本组未出现病理呈胸膜多孔的变化。⑤VATS术者的成长曲线也是术后复发的一个因素^[20]。

综上所述,胸顶胸膜部分切除翻转应用于VATS肺大疱切除治疗自发性气胸安全有效。与机械摩擦胸膜固定相比,手术时间较长,但术中出血量、术后引流量、术后引流时间、住院时间、术后并发症发生率均无明显差异,可有效降低气胸复发率。目前我院由于各方面原因所限,采取此术式病例数有限,可能存在一定局限性,期待今后更大的临床数据支持。

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