

支撑喉镜下低温射频等离子手术在早期声门型喉癌术中的应用

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摘要: [目的] 探讨支撑喉镜下低温射频等离子手术在早期声门型喉癌术中的应用效果。[方法] 2012年2月到2016年1月选择在我院诊治的早期声门型喉癌患者132例为研究对象, 根据随机信封抽签原则分为观察组与对照组各66例, 对照组采用支撑喉镜下常规手术进行治疗, 观察组采用支撑喉镜下低温射频等离子手术治疗, 记录两组预后情况。[结果] 两组均顺利完成手术, 术中严重并发症发生, 两组手术时间比较差异无统计学意义($P>0.05$), 观察组术中出血量与术后住院时间明显少于对照组($P<0.001$, $P=0.001$)。观察组术后3个月的呼吸困难、黏膜水肿、发音功能损伤等并发症发生率为4.5%, 对照组为19.7%, 观察组明显低于对照组($\chi^2=4.882$, $P=0.001$)。术后3个月观察组的基频微扰、振幅微扰值分别为 $0.28\%\pm 0.11\%$ 和 $1.43\%\pm 0.64\%$, 均明显低于对照组的 $0.36\%\pm 0.21\%$ 和 $2.18\%\pm 0.19\%$ (P 均 <0.001), 同时两组术后值均明显低于术前(P 均 <0.001)。两组的复发率、生存情况、颈部淋巴结及远处转移情况差异无统计学意义。[结论] 支撑喉镜下低温射频等离子手术在早期声门型喉癌术中的应用具有更好的微创性, 能减少术后并发症的发生, 促进患者发音功能的恢复。

关键词: 支撑喉镜; 低温射频等离子; 声门型喉癌; 并发症; 发音功能

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Application of Support Laryngoscopic Low Temperature Radiofrequency Plasma Surgery for Early Glottic Carcinoma

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Abstract: [Objective] To investigate the efficacy of support laryngoscopic low-temperature radiofrequency plasma surgery for early glottic carcinoma. [Methods] One hundred and thirty two patients with early glottic carcinoma admitted from February 2012 to January 2016 were randomly assigned in two groups with 66 cases in each group: patients in study group received support laryngoscopic low-temperature radiofrequency plasma surgery and those in control group received conventional support laryngoscopic surgery. The efficacy and complications were observed and compared between two groups. [Results] All patients successfully completed surgery and there were no serious complications occurring during the operation. There was no significant difference in operation time between the two groups ($P>0.05$), while the amount of intraoperative blood loss and the length of postoperative hospital stay in study group were significantly less than those in control group ($P<0.001$, $P=0.001$). Three months after surgery, the incidence rate of complications including dyspnea, mucosal edema and vocal function damage in study group was significantly lower than that in control group (4.5% vs. 19.7%, $\chi^2=4.882$, $P=0.001$). The fundamental frequency perturbation and amplitude perturbation values in two groups were significantly lower than the preoperative value (all $P<0.001$), and those in study group were $0.28\%\pm 0.11\%$ and $1.43\%\pm 0.64\%$, which were lower than those in control group ($0.36\%\pm 0.21\%$ and $2.18\%\pm 0.19\%$, all $P<0.001$). There were no significant differences in recurrence rate, survival condition, cervical lymph node and distant metastasis between two groups. [Conclusion] Laryngoscopic low-temperature radiofrequency plasma surgery is an effective minimally invasive procedure for early glottic carcinoma, which can reduce the incidence of postoperative complications, also promote recovery of vocal function for patients.

Subject words: support laryngoscope; low temperature radiofrequency plasma; glottic carcinoma; complications; phonation function

喉癌是喉部最常见的恶性肿瘤, 占头颈肿瘤的15%左右, 占全身恶性肿瘤的2%左右^[1,2]。喉癌在解剖学上分为声门上型、声门型和声门下型, 其中早期

声门型喉癌解剖学上定义为局限侵犯声门区组织, 无淋巴结转移, 无侵袭周围的软骨和肌肉^[3,4]。早期喉癌治疗的目标是既能彻底切除病变又能最大限度地保留喉的功能, 传统手术治疗的创伤比较大, 容易造成创面出血、皮下气肿、咽咽黏膜挫裂伤、舌根会厌及喉水肿等并发症^[5,6]。支撑喉镜的应用能减少患

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者的创伤,具有手术时间及术后愈合时间短等优点。低温射频等离子手术是利用低温射频产生的能量,使病变组织产生低温分解效应及感抗热效应,使组织蛋白质迅速凝固及血管收缩和封闭,达到使组织体积切割、减容的效果^[7,8]。并且其在应用中不需要气管切开,切除病变的同时可消融、止血、吸引,当前应用也比较广泛^[9]。本文探讨支撑喉镜下低温射频等离子手术在早期声门型喉癌术中的应用效果,现报道如下。

1 资料与方法

1.1 一般资料

2012年2月到2016年1月选择在我院诊治的早期声门型喉癌患者132例作为研究对象,纳入标准:病理确诊为早期声门型喉癌患者(T₁期/T₂期);均为男性鳞状细胞癌;年龄20~80岁;愿意接受本研究;研究得到医院伦理委员会的批准。排除标准:有颈淋巴结转移和/或远处转移的患者;合并严重的呼吸道感染者;未控制的高血压、糖尿病患者;不能耐受全身麻醉的患者;严重肝肾功能不全或合并有出血性疾病者。根据随机信封抽签原则分为观察组与对照组各66例,两组患者的年龄、临床分期、病程、分化类型、病变位置、体质指数等比较差异无统计学意义($P>0.05$)。见Table 1。

1.2 治疗方法

对照组:采用支撑喉镜下常规手术进行治疗,患者取仰卧位,气管插管全麻。根据病灶位置和显露的

难易程度,选择合适型号的支撑喉镜,充分暴露病灶,置入手术器械,其中喉刀沿病灶边缘1mm外切开黏膜,用咬钳或剪刀切除病变,压迫止血或者电刀电凝止血。

观察组:采用支撑喉镜下低温射频等离子手术,患者仰卧位,气管插管全麻。根据病灶位置和显露的难易程度,选择合适型号的支撑喉镜,充分暴露病灶。以等离子刀沿病灶周边1mm处切开黏膜,喉钳牵引下用等离子刀完整切除病灶。

1.3 观察指标

(1)围手术期指标:记录与观察两组的手术时间、术中出血量与术后住院时间。

(2)并发症:记录两组术后3个月出现的呼吸困难、黏膜水肿、发音功能损伤等情况。

(3)嗓音分析:在术前与术后3个月应用德国艾克松公司的DIVAS嗓音分析系统进行嗓音声学检测,环境噪声40dB,测定参数为基频微扰、振幅微扰,测定3次取平均值。

(4)观察两组患者复发率及生存情况,颈部淋巴结及远处转移情况。

1.4 统计学处理

采用SPSS19.00软件进行分析,计量资料采用均数±标准差($\bar{x}\pm s$)表示,计数资料采用构成比表示,行 χ^2 检验分析或独立分组 t 检验、配对设计 t 检验, $P<0.05$ 为差异有统计学意义。

2 结果

2.1 围手术期指标对比

两组都顺利完成手术,无术中严重并发症发生,两组手术时间对比差异无统计学意义($P>0.05$);观察组的术中出血量与术后住院时间明显少于对照组($P<0.05$)。见Table 2。

2.2 术后并发症发生情况对比

观察组术后3个月的呼吸困难、黏膜水肿、发音功能损伤等并发症发生率为4.5%,对照组为19.7%,观察组术后并发症发生率明显低于对照组($\chi^2=4.882, P=0.001$)。见Table 3。

2.3 嗓音声学参数变化对比

术后3个月观察组的基频微扰、振

Table 1 Comparison of the general data between the two groups

Index	Observation group	Control group	t/χ^2	P
Age(years)	53.11±2.59	53.00±3.19	0.089	0.854
Clinical stage			0.332	0.542
T ₁	43	40		
T ₂	23	26		
Differentiated types			0.241	0.741
High differentiation	54	52		
Moderately differentiation	8	8		
Low differentiation	4	6		
Lesion location			0.311	0.551
Unilateral	56	58		
Bilateral	10	8		
BMI(kg/m ²)	23.11±2.49	23.00±1.92	0.104	0.798
Disease course(years)	1.76±0.42	1.72±0.55	0.098	0.841

Table 2 Comparison of the operation indexes between the two groups at perioperative period

Groups	Operation time(min)	Peroperative bleeding (ml)	Post operation hospitalization duration (d)
Observation group	31.94±3.19	22.42±3.45	4.82±1.03
Control group	32.22±4.22	26.30±4.13	5.63±1.45
<i>t</i>	0.422	4.225	3.995
<i>P</i>	0.651	<0.001	0.001

Table 3 Comparison the complications between the two groups after surgery

Groups	Dyspnea	Mucosal edema	Articulations	Total (%)
Observation group	1	0	2	3(4.5)
Control group	3	3	7	13(19.7)

Table 4 Comparison of the noise acoustic parameters change between the two groups before and after surgery

Groups	Itter(%)				Himmer(%)			
	Before surgery	After surgery	<i>t</i>	<i>P</i>	Before surgery	After surgery	<i>t</i>	<i>P</i>
Observation group	0.58±0.19	0.28±0.11	9.544	<0.001	3.67±0.63	1.43±0.64	10.595	<0.001
Control group	0.59±0.24	0.36±0.21	5.298	<0.001	3.61±0.51	2.18±0.19	5.882	<0.001
<i>t</i>	0.078	4.294	—	—	0.241	4.996	—	—
<i>P</i>	0.914	<0.001	—	—	0.741	<0.001	—	—

幅微扰值明显低于对照组($P<0.05$),同时两组术后值都明显低于术前($P<0.05$)。见 Table 4。

2.4 复发率及生存情况、颈部淋巴结及远处转移情况对比

出院后 3 个月,两组患者均行喉镜复查,所有患者均出现创面白膜脱落,观察组中 3 例患者肉芽增生已消退,4 例患者前联合部分粘连,但不影响呼吸;对照组组中 4 例患者肉芽增生已消退,5 例患者前联合部分粘连,但不影响呼吸。出院后第 5 个月及第 7 个月,观察组及对照组各有 1 例表现声嘶加重,活检为鳞状细胞癌,但未发现淋巴结转移,再次入院行喉裂开下喉部分切除,目前随访最短 15 个月,最长 60 个月,两组均无淋巴转移及远处转移。除以上 2 例复发患者外,其余未见复发,无死亡病例。

3 讨 论

喉癌是耳鼻喉科常见的恶性肿瘤,当前我国的发病人数呈逐年上升趋势,严重影响了患者的生活质量^[10]。早期声门型喉癌为喉癌的主要类型,其治

疗原则是保护和恢复喉功能,在彻底清除病灶的同时尽可能保存喉部正常解剖和组织结构^[11,12]。

传统手术治疗喉癌的成功率较高,但是对于患者的创伤较大^[13]。低温射频等离子手术具有安全、简单、易行等优势,能使电解液变成低温等离子态,在低温下使组织凝固、坏死,去除病变组织而不引起周围正常组织的不可逆损伤^[14]。本研究显示两组都顺利完成手术,无术中严重并发症发生,两组手术时间差异无统计学意义($P>0.05$),但观察组的术中出血量与术后住院时间明显少于对照组($P<0.05$)。主要在于低温射频等离子系统是消融、止血及吸引于一体的设备,可以使得术野清楚暴露,其凝血作用可以

止血充分,使得术中出血量减少^[15]。同时低温射频等离子系统对周围组织的热损伤小,切除范围容易控制,能避免肿瘤汽化播散于空气中,从而促进患者康复^[16]。

声门型喉癌容易早期发现,并由于声门区

淋巴较少,颈部转移发生较晚,为此采用手术治疗也能取得较好的效果。低温射频等离子系统能够利用双极射频所产生的能量将刀头与组织中的电解液形成离子蒸汽层,达到切割或减少组织体积的效果^[17];并且低温射频等离子系统可以从多角度切割病灶,更加利于病灶的彻底移除^[18]。本研究显示观察组术后 3 个月的呼吸困难、黏膜水肿、发音功能损伤等并发症发生率为 4.5%,对照组为 19.7%,观察组术后并发症发生率明显低于对照组($P<0.05$),并发症的发生多数与术源性损伤有关,如软腭及咽部黏膜损伤、切除较多周围组织等。而低温射频等离子系统在手术过程中可随时止血,组织层次辨识度高,术野一直保持清晰状态,能将术源性损伤降到较低水平,从而减少术后并发症的发生^[19]。

术后声音功能的恢复是患者关注的重要问题之一,声学异常将影响患者与外界的交流能力和日常生活质量。声带在解剖学上分为声带肌、(深中浅)三层固有层及黏膜层,嗓音的质量主要取决于谐波的丰富程度、声带振动的幅度、声门噪声、共振峰频率、声带发出声音时振动的基本频率,病态嗓音的声学

特征表现为振幅扰动及频率增加^[20,21]。本研究显示术后3个月观察组的基频微扰、振幅微扰值分别为 $0.28\% \pm 0.11\%$ 和 $1.43\% \pm 0.64\%$,都明显低于对照组的 $0.36\% \pm 0.21\%$ 和 $2.18\% \pm 0.19\%$ ($P < 0.05$),同时两组术后值都明显低于术前 ($P < 0.05$),表明低温射频等离子系统的应用能促进患者发音功能的恢复,利于保护喉功能。

总之,支撑喉镜下低温射频等离子手术在早期声门型喉癌术中的应用具有更好的微创性,能减少术后并发症的发生,促进患者发音功能的恢复,有很好的应用价值。

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