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HALS 与 LAP 用于直肠癌根治术患者的临床疗效及其对血清炎性因子水平的影响 *

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摘要 目的:探讨手辅助腹腔镜手术(hand-assisted laparoscopic surgery, HALS)与全腹腔镜手术(laparoscopic surgery, LAP)用于直肠癌根治术患者的临床疗效及其对血清炎性因子水平的影响。**方法:**选取 2013 年 3 月~2018 年 3 月在我院行直肠癌根治术的患者 61 例进行回顾性分析,按照手术方式不同分为手辅助腹腔镜手术组(HALS 组)和全腹腔镜手术组(LAP 组)。比较两组患者的手术相关指标、术后恢复指标和治疗前后血清炎性因子水平的变化。**结果:**HALS 组的手术时间、术中出血量和副损伤显著低于 LAP 组($P<0.05$),两组中转开腹率相比无统计学差异($P>0.05$);两组患者术后肠功能恢复时间、进食时间、下床时间和住院时间比较均无显著性差异($P>0.05$);两组患者术后 1 h 和术后 1 d 血清白细胞介素-10(interleukin-10, IL-10)、C-反应蛋白(C reactive protein, CRP)和 α 肿瘤坏死因子(Tumor Necrosis Factor- α , TNF- α)水平均较术前显著升高,且 HALS 组显著低于 LAP 组($P<0.05$),术后 1 w 血清 IL-10、CRP 和 TNF- α 水平与术前相比无统计学差异($P>0.05$)。**结论:**HALS 直肠癌根治术对患者的手术创伤小,炎症反应轻,且不影响患者的预后,利于患者的康复。

关键词:手辅助腹腔镜手术;全腹腔镜手术;腹腔镜直肠癌根治术;疗效;炎性因子

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Effect of HALS and LAP on the Efficacy and Serum Inflammatory Factors Levels in Patients Undergoing Laparoscopic Radical Resection of Rectal Cancer*

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ABSTRACT Objective: To investigate the effects of hand-assisted laparoscopic surgery (HALS) and laparoscopic surgery (LAP) on the inflammatory factors in patients undergoing laparoscopic radical resection of rectal cancer. **Methods:** 61 patients with rectal cancer who underwent radical resection in our hospital from March 2013 to March 2018 were retrospectively analyzed. They were divided into hand-assisted laparoscopic surgery group (HALS group) and total laparoscopic surgery group (LAP group). The operation related index, postoperative recovery index and inflammatory factor level of the two groups were compared. **Results:** The operation time, intraoperative bleeding volume and side injury in HALS group were significantly lower than those in LAP group ($P<0.05$), and there was no significant difference in the conversion rate between the two groups ($P>0.05$). There was no significant difference in bowel function recovery time, food intake time, out of bed time and hospitalization time between the two groups ($P>0.05$). The levels of interleukin-10 (IL-10), C reactive protein(CRP) and Tumor Necrosis Factor- α (TNF- α) in HALS group were significantly higher than those in LAP group at 1 hour and 1 day after operation($P<0.05$). There was no significant difference in serum IL-10, CRP and TNF- α at 1 week after operation between the two groups ($P>0.05$). **Conclusion:** HALS radical resection of rectal cancer has less trauma, mild inflammatory reaction, and does not affect the prognosis of patients, is conducive to the rehabilitation of patients.

Key words: Hand-assisted laparoscopic surgery; Laparoscopic surgery; Laparoscopic radical resection of rectal cancer; Curative effect; Inflammatory factors

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前言

直肠癌一种是临床常见的消化道恶性肿瘤。随着人们生活质量的提高、饮食习惯的改变以及生活环境的变化,近年来直

肠癌的发病率逐年升高,且呈现低龄化的趋势^[1]。目前,手术是治疗直肠癌的首选方法,可延长患者的生存期。开腹手术具有较好的临床效果,但由于手术创伤大且对患者的生理机能要求较高,在临床实际应用中受到了一定的限制^[2-4]。随着微创技术

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的发展,腹腔镜手术已经广泛应用于结直肠肿瘤的根治术中,与传统开腹手术相比具有同样的临床效果,而在近期康复方面具有显著优势,包括创伤小、疼痛轻、术后并发症少等^[5-7]。然而,腹腔镜手术对手术医师的要求较高,需要积累丰富的经验,熟练掌握腹腔镜操作技术并协调团队配合,其学习曲线较长,团队培养困难,使得临床广泛应用受到了限制^[8]。

全腹腔镜低位直肠癌手术由于手术本身复杂性以及骨盆解剖困难,并未像其他部位腹腔镜复制手术开展迅速。手辅助腹腔镜手术是将腹腔镜手术的安全性、与开腹手术的操作便利相结合,具有手术视野暴露好,牵引组织轻柔,局部解剖细致等特点。近年来,手辅助腹腔镜手术逐渐应用于临床,而对于手辅助腹腔镜手术和全腹腔镜手术在直肠癌患者根治术的手术效果比较,尤其是对于其炎症因子水平的比较,临床报道较少。因此,本研究探讨了手辅助腹腔镜手术(hand-assisted laparoscopic surgery, HALS)与全腹腔镜手术(laparoscopic surgery, LAP)对腹腔镜直肠癌根治术患者的疗效及炎症因子的影响。

1 资料与方法

1.1 一般资料

选取2013年3月~2018年3月在我院行直肠癌根治术的患者61例进行回顾性分析,按照手术方式不同分为手辅助腹腔镜手术组(HALS组)和全腹腔镜手术组(LAP组)。HALS组30例,男18例,女12例;年龄29~70岁,平均 50.21 ± 8.65 岁;其中腺癌25例,粘液腺癌5例;TNM分期:I期8例,II期10例,III期12例。LAP组31例,男20例,女11例;年龄31~72岁,平均 52.11 ± 8.85 岁;其中腺癌25例,粘液腺癌6例;TNM分期:I期7例,II期11例,III期13例。两组患者一般资料相比无统计学差异($P > 0.05$),具有可比性。

1.2 入选标准

纳入标准:①术前经肠镜和病理检查诊断为直肠癌;②术前未发现远端转移;③首次接受直肠癌根治术;④术后病理TNM分期为I期、II期和III期;⑤临床病例资料完整。

排除标准:①合并直肠其他疾病或其他恶性肿瘤者;②合并严重心肺疾病、脑血管疾病者;③术前有放疗化疗病史者;④合并急慢性感染者。

1.3 手术方法

HALS组:气管插管全麻,绕脐作6 cm左右切口,安装手术器,建立CO₂气腹,进行常规探查。在耻骨上做腹腔镜孔,重新建立气腹,右下腹壁相应位置为操作孔。手辅助下游离肿瘤部位,行直肠切除术和淋巴结清扫术,遵循全系膜切除原则进行切除。切断闭合远端直肠,通过蓝蝶取出近端肠腔,在体外切除,腹腔内吻合。

LAP组:插管全麻,取截石位,建立CO₂气腹,采用五孔法置入腹腔镜进行操作,分离病灶周围血管并进行淋巴结清扫,严格遵循全系膜切除原则进行切除。之后操作同HALS组。

1.4 观察指标

①记录两组患者手术中的相关指标:手术时间、术中出血量、中转开腹率和副损伤。②观察两组患者术后恢复情况,包括肠功能恢复时间、进食时间、下床时间、胃管留置时间和住院时间。③比较两组患者的炎症因子水平,分别于术前、术后1 h、术后1 d和术后1 w抽取静脉血5 mL,采用ELISA法测定白细胞介素-10(interleukin-10, IL-10)、C反应蛋白(C reactive protein, CRP)、肿瘤坏死因子- α (Tumor Necrosis Factor- α , TNF- α)水平,试剂盒由Biosource公司提供。

1.5 统计学分析

采用SPSS 20.0软件进行数据分析,计量资料以($\bar{x} \pm s$)表示,组间比较行t检验;计数资料采用率或%表示,组间比较行 χ^2 检验,以 $P < 0.05$ 为差异有统计学意义。

2 结果

2.1 两组手术相关指标的比较

HALS组的手术时间和术中出血量均低于LAP组($P < 0.05$),两组中转开腹率相比差异无统计学意义($P > 0.05$),见表1。

表1 两组患者手术相关指标的比较

Table 1 Comparison of the operation related indicators between two groups of patients

Groups	n	Operation time (min)	Intraoperative blood loss (mL)	Rate of converting to laparotomy (%)	Subsidiary-injury
HALS group	30	106.32 $\pm$ 30.65	98.85 $\pm$ 25.33	3(10.00)	2(6.67)
LAP group	31	302.52 $\pm$ 75.58	118.52 $\pm$ 30.49	5(16.13)	9(29.03)
t/ χ^2	-	-13.363	-2.736	0.503	5.16
P	-	<0.001	0.008	0.707	0.023

2.2 两组患者术后恢复情况的比较

两组患者术后肠功能恢复时间、进食时间、下床时间、胃管留置时间和住院时间比较差异均无统计学意义($P > 0.05$),见表2。

2.3 两组患者治疗前后血清炎症因子水平的比较

两组患者术前血清IL-10、CRP和TNF- α 水平比较差异均无统计学意义($P > 0.05$),术后1 h和术后1 d均较术前显著升高,HALS组显著低于LAP组($P < 0.05$),两种术后1 w下降至术前水平,与术前相比差异无统计学意义($P > 0.05$),见表3。

3 讨论

HALS综合了传统开腹手术和腹腔镜手术的优点,既可运用腹腔镜的微创技术,又可通过手辅助装置允许手术医师将手伸入腹腔内以开腹手术技巧协助手术进行^[9-11]。其恢复了手术医师的触觉和三维感觉,可充分发挥医师在手术过程中积累的经验,且在腹腔镜放大的视野下操作,降低了操作难度,并提高手术的安全性,还可缩短HALS的学习曲线,更易于操作和推广^[12]。

表 2 两组术后恢复情况的比较($\bar{x} \pm s, d$)Table 2 Comparison of the postoperative recovery between two groups($\bar{x} \pm s, d$)

Groups	n	Intestines function recovery time	Meal time	Time to get out of bed	Length of stay
HALS group	30	2.85 $\pm$ 0.56	5.12 $\pm$ 1.65	1.88 $\pm$ 0.45	11.02 $\pm$ 3.21
LAP group	31	2.63 $\pm$ 0.46	4.85 $\pm$ 1.03	1.68 $\pm$ 0.34	10.87 $\pm$ 2.98
t	-	1.679	0.764	1.963	0.189
P	-	0.098	0.449	0.054	0.851

表 3 两组术前和术后血清炎症因子水平的比较($\bar{x} \pm s$)

Table 3 Comparison of the serum inflammatory factors between two groups before and after treatment

Groups	n	Time	IL-10(ng/mL)	CRP(mg/dL)	TNF- α (pg/mL)
HALS group	30	Preoperation	15.12 $\pm$ 4.23	1.05 $\pm$ 0.26	84.65 $\pm$ 20.36
		At 1h postoperation	20.32 $\pm$ 5.46*	4.15 $\pm$ 0.51*	143.65 $\pm$ 32.15*
		At 1d postoperation	20.56 $\pm$ 5.01*	9.85 $\pm$ 2.14*	102.33 $\pm$ 21.52*
		At 1w postoperation	16.77 $\pm$ 4.98	1.07 $\pm$ 0.25	85.67 $\pm$ 21.04
LAP group	31	Preoperation	15.02 $\pm$ 4.03	1.09 $\pm$ 0.32	84.66 $\pm$ 20.13
		At 1h postoperation	24.02 $\pm$ 6.89**	6.21 $\pm$ 0.56**	165.85 $\pm$ 35.62**
		At 1d postoperation	24.22 $\pm$ 6.91**	12.33 $\pm$ 3.21**	144.52 $\pm$ 33.21**
		At 1w postoperation	16.35 $\pm$ 4.85	1.08 $\pm$ 0.21	86.77 $\pm$ 21.42

Note: compared with before treatment, *P<0.05; compared with the HALS group, **P<0.05.

本研究结果显示两组患者的手术时间、术中出血量和手术副损伤存在显著差异,HALS 具有更大的优势,可能是由于腹腔镜手术操作难度较大,对手术医师要求较高,尤其是对于存在腹腔粘连或转移的手术,需要的时间更较长,出现副损伤的几率增高^[13-16]。长时间手术和副损伤的情况使得患者的出血量增大。而两组患者的中转开腹率无显著性差异,提示 HALS 虽然切口较大,但由于手术时间短、副损伤小、出血量少,对患者的损伤较小^[17-20]。本研究中,两组患者的短期恢复情况无显著性差异,提示两种手术对患者的术后恢复情况相当,两组手术遵循相同的操作原则可让患者获得相近的早期效果,较早的恢复各项功能。且腹腔镜手术可能由于切口较小,操作过程中对内脏的牵拉和干扰小,从而抵消了长时间麻醉和手术中血流量的影响,从而取得了较好的术后恢复效果^[21-24]。此外,两组患者由于手术创伤,术后 1 h 和术后 1 d 炎症因子均显著升高,术后 1 w 均恢复至术前水平,且 HALS 组患者的炎症水平显著低于 LAP 组,提示 HALS 患者术后炎症反应较轻,利于患者的康复。从实验室指标方面证实了 LAP 的微创性,其原因可能与 HALS 组的手术时间短,出血少,副损伤小等有关^[26-28]。

HALS 手术与 LAP 相比具有一定的优势,使得复杂的腹腔镜手术变的相对简单,缩短学习曲线,可准确分离直肠周围的解剖结构,减少因分辨不清导致的副损伤。另外,由于触觉的恢复充分发挥了手术医师的经验,节省手术时间,还能够保证肠系膜切除的彻底性和完整性^[29]。但其也存在一些不足,包括 HALS 术中手的移动对手术视野产生一定的影响,加大术后肠粘连和腹腔组织渗血的可能等,但这些不足可通过对手术医师的严格培训和规范操作得到有效的改善,还可通过经验的积累

和手术团队的密切配合以及辅助设备的发展进一步明确其手术效果且为广大医师所接受,在微创直肠癌手术治疗中起到重要的作用^[30]。

综上所述,HALS 直肠癌根治术对患者的手术创伤小,炎症反应轻,且不影响患者的预后,利于患者的康复。

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