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内镜下黏膜切除术治疗胃息肉的疗效及对血清 ProGRP、PGI 水平的影响 *

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摘要 目的:探讨内镜下黏膜切除术治疗胃息肉的疗效及对血清胃泌素释放肽前体(ProGRP)、胃蛋白酶原 I(PGI)水平的影响。**方法:**选取我院 2019 年 8 月到 2022 年 8 月收治的 120 例胃息肉患者作为研究对象,依照手术方式的不同进行分组,其中将选择常规内镜下电凝切除术治疗的 60 例患者分为对照组,选择内镜下黏膜切除术治疗的 60 例患者分为观察组。对比两组患者不良反应发生情况与治疗费用,手术前与手术后血清 ProGRP、PGI 表达水平以及炎症因子表达水平,对比两组患者整体切除率和并发症发生情况。**结果:**两组患者总治疗费用对比无差异($P>0.05$),观察组患者术后不良反应发生率较对照组低($P<0.05$);两组患者手术前血清 ProGRP、PGI 水平对比无差异($P>0.05$),治疗后两组患者均降低,且观察组较对照组低($P<0.05$);两组患者手术前 PCT、CRP、IL-6、IL-2 对比无明显差异($P>0.05$),手术后两组患者 PCT、CRP、IL-6、IL-2 均升高,且观察组低于对照组($P<0.05$);两组患者胃息肉均被完整切除,整体切除率对比无差异;且观察组穿孔、迟发性出血以及感染等并发症发生率虽低于对照组,但比较无差异($P>0.05$)。**结论:**对胃息肉患者采取内镜下黏膜切除术与常规内镜下电凝切除术均能够完整的切除胃息肉,且治疗费用相当。而应用内镜下黏膜切除术能够降低患者 ProGRP、PGI 水平,降低机体炎症因子反应,且并发症发生率较低,值得临床应用推广。

关键词: 内镜下黏膜切除术;胃息肉;胃蛋白酶原 I;胃泌素释放肽前体;炎症因子

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Effect of Endoscopic Mucosal Resection on Gastric Polyps and Serum ProGRP and PGI Levels*

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ABSTRACT Objective: To investigate the efficacy of endoscopic mucosal resection in the treatment of gastric polyps and its effect on the levels of serum gastrin releasing peptide precursor (ProGRP) and pepsinogen I (PGI). **Methods:** 120 patients with gastric polyps admitted in our hospital from August 2019 to August 2022 were selected as the research objects, and were divided into groups according to different surgical methods. Among them, 60 patients who were treated with conventional endoscopic electrocoagulation were divided into the control group, and 60 patients who were treated with endoscopic mucosal resection were divided into the observation group. The occurrence of adverse effects and treatment costs between the two groups, serum ProGRP, PGI expression levels and inflammatory factors expression levels before and after surgery, and the overall resection rate and complications in the two groups were compared. **Results:** There was no difference in the total treatment costs between the two groups ($P>0.05$). The incidence of postoperative adverse effects in the observation group was lower than that in the control group ($P<0.05$); There was no difference in serum ProGRP and PGI levels between the two groups before operation ($P>0.05$). After treatment, the ProGRP and PGI levels of the two groups decreased, and the observation group was lower than the matched group ($P<0.05$); There was no difference in PCT, CRP, IL-6 and IL-2 between the two groups before operation ($P>0.05$). After operation, PCT, CRP, IL-6 and IL-2 of the two groups increased, and the observation group was lower than the matched group ($P<0.05$); The gastric polyps were completely removed in both groups, and the overall resection rate was not different, and the incidence of perforation, delayed bleeding and infection was lower than that of the control group, but the difference was not significant ($P>0.05$). **Conclusion:** Both endoscopic mucosal resection and conventional endoscopic electrocoagulation can completely remove gastric polyps in patients with gastric polyps, and the treatment cost is equivalent. The application of endoscopic mucosal resection can reduce the levels of ProGRP and PGI in patients, reduce the inflammatory reaction of the body, and have a low incidence of complications, which is worthy of clinical application and promotion.

Key words: Endoscopic mucosal resection; Gastric polyps; Pepsinogen I; Gastrin releasing peptide precursor; Inflammatory factors

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前言

胃息肉是临床上比较常见的一种消化道疾病,该疾病的发生与幽门螺杆菌感染、遗传、炎症刺激以及饮食等因素有关。胃息肉主要发生机理为,人体胃部受到刺激加剧引发胃粘膜隆起性病变,逐渐向胃腔生长引发胃息肉。该病患者主要症状为消化道出血、腹痛以及食欲下降等^[1]。有研究认为^[2],胃息肉属于癌前疾病的一种,所以一旦患病需要采取有效措施进行治疗,不然会增加癌变几率,对患者生命安全产生不利影响。以往临床上对胃息肉多采取内镜下电凝切除治疗,该手术方式虽然能够有效切除息肉,操作方便,但是对于切除的深度却比较难掌握,多用于治疗山田Ⅲ型和Ⅳ型息肉,对于山田Ⅰ型和Ⅱ型息肉治疗难度较大,极易使病变部位出现穿孔或切除不彻底现象,增加患者复发率^[3,4]。随着临床微创手术技术的快速发展,内镜下黏膜切除术成为了当前胃息肉治疗的新型手段,该手术方式可将黏膜下注射和电凝切除结合,操作简单、创伤性小^[5]。但临床研究发现^[6],内镜下黏膜切除术患者术后依然会出现复发现

象,进而病灶处逐渐恶化。胃泌素释放肽前体(Pro-gastrin-releasing peptide, ProGRP)、胃蛋白酶原 I(Pepsinogen I, PGI)可用于评价胃息肉复发情况,特异度较高^[7]。因此,本研究在分析内镜下黏膜切除术治疗效果基础上,应用 ProGRP、PGI 来评价患者复发情况。

1 资料与方法

1.1 一般资料

选取我院 2019 年 8 月到 2022 年 8 月收治的 120 例胃息肉患者作为研究对象,依照手术方式的不同进行分组,其中将选择常规内镜下电凝切除治疗的 60 例患者分为对照组,选择内镜下黏膜切除术治疗的 60 例患者分为观察组。

纳入标准:患者符合胃息肉临床诊断标准^[8];所有患者对本研究知情并签署同意书。

排除标准:患者心脏、肺、肝肾等重要器官有损伤;患有血液病、免疫性疾病、精神性疾病;不配合研究或中途退出者。两组患者一般资料对比无差异($P>0.05$),如表 1 所示。

表 1 一般资料
Table 1 general information

Category	Observation group(n=60)	Matched group(n=60)	χ^2/t	<i>P</i>
Gender				
Male	36	31	0.783	0.376
Female	24	29		
Age (years)	62.29±4.42	62.30±4.57	0.013	0.990
Lesion location				
Cardia	2	4	1.785	0.182
Fundus of stomach	19	16		
Gastric body	21	20		
Antrum	18	20		
Pathological classification				
Hyperplastic polyp	24	26	0.409	0.522
Fundic gland polyp	20	21		
Inflammatory polyp	11	9		
Adenomatous polyps	5	4		

1.2 方法

所有患者在术前均行胸片、心电图、凝血功能、血常规等常规检查,确定符合手术指征,术前禁食禁水 6 小时。并对所有患者进行全身麻醉处理,并给予指脉氧及心电监护等生命体征监测。

对照组:应用内镜下电凝切除治疗,具体方法为:应用奥林巴斯 290 内镜确定息肉的位置,插入圈套器,圈套钢丝套住息肉底部略上方位置,然后通电紧缩,应用混合电流切除息肉。

观察组:应用内镜下黏膜切除术治疗,具体方法为:应用奥林巴斯 290 内镜确定息肉的位置,随后选择病变基底部边缘作为注射点,在注射过程中针尖需穿入黏膜下层,并在患者息肉底部黏膜下层进行 0.9%氯化钠+靛胭脂注射,依照患者病灶大小调整注射量。待注射之后将黏膜下层分离,抬举息肉基底部,待病灶充分隆起之后可以将注射针拔除。插入圈套器,待完全套住息肉之后通电紧缩,应用混合电流切除息肉。

待切除后如果切除创面出现少量血迹,可以应用去甲肾上腺素进行止血,若创面出血较多需应用钛夹进行夹闭处理。术

后将切除息肉进行病理检查,观察患者实际情况,手术完毕之后将胃内气体吸尽。

1.3 观察指标

(1)观察并记录两组患者术后腹痛、腹胀、恶心、呕吐等不良反应情况,并统计治疗费用。

(2)在手术前与手术后1个月抽取清晨空腹静脉血,离心后应用化学发光法检测 ProGRP、PGI 水平。

(3)炎症因子:在手术前与手术1d后抽取静脉血,采用免疫比浊法检测 C 反应蛋白(C-reactive protein ,CRP),应用化学发光法检测降钙素原(Procalcitonin,PCT)、C 反应蛋白(C-reactive protein ,CRP)、白细胞介素-6(Interleukin-6,IL-6)、白细胞介素-2(Interleukin-2,IL-2)表达水平。

(4)观察并记录两组患者整体切除率与穿孔、迟发性出血以及感染等并发症发生率。

1.4 统计学方法

采取统计学软件 SPSS 23.0 分析,计数资料以(n/%)表示,进行 χ^2 检验;计量资料用($\bar{x}\pm s$)表示,采用 t 检验;以 $P<0.05$ 为差异有统计学意义。

2 结果

2.1 治疗费用及不良反应发生率对比

两组患者总治疗费用对比无差异($P>0.05$),观察组患者术后不良反应发生率较对照组低($P<0.05$),如表2所示。

表2 治疗费用及不良反应发生率对比($\bar{x}\pm s$)

Table 2 Comparison of perioperative and postoperative recovery($\bar{x}\pm s$)

Groups	n	Total treatment cost (yuan)	Postoperative adverse reactions (n, %)				
			Abdominal pain	Abdominal distention	Nausea	Vomiting	Total
Observation group	60	6252.15±223.26	1	0	2	0	3(5.00)
Matched group	60	6223.24±287.37	3	1	4	2	10(16.67)
<i>t</i>	-	0.615	-	-	-	-	4.227
<i>P</i>	-	0.540	-	-	-	-	0.040

2.2 血清 ProGRP、PGI 水平对比

两组患者手术前血清 ProGRP、PGI 水平对比无差异($P>$

0.05),治疗后均降低,且观察组较对照组低($P<0.05$),如表3所示。

表3 血清 ProGRP、PGI 水平比较($\bar{x}\pm s$)

Table 3 Comparison of serum ProGRP and PGI levels($\bar{x}\pm s$)

Groups	n	ProGRP(pg/mL)		PGI(ng/mL)	
		Before operation	After operation	Before operation	After operation
Observation group	60	112.52±21.95	81.85±18.54*	127.95±27.02	96.50±17.14*
Matched group	60	113.67±20.02	94.75±21.23*	126.25±31.95	104.60±21.86*
<i>t</i>	-	0.373	3.545	0.747	6.457
<i>P</i>	-	0.711	0.001	0.459	0.001

Note: Compared with that before surgery between the same groups, * $P<0.05$, the same below.

2.3 炎症因子水平对比

两组患者手术前 PCT、CRP、IL-6、IL-2 对比无明显差异

($P>0.05$),手术后两组患者 PCT、CRP、IL-6、IL-2 均升高,且观察组低于对照组($P<0.05$),如表4所示。

表4 炎症因子水平对比($\bar{x}\pm s$)

Table 4 Comparison of inflammatory factor levels($\bar{x}\pm s$)

Groups	n	PCT(pg/mL)		CRP(mg/L)		IL-6(pg/mL)		IL-2(pg/mL)	
		Before operation	After operation	Before operation	After operation	Before operation	After operation	Before operation	After operation
Observation group	60	0.31±0.08	0.46±0.12*	5.37±1.02	34.09±6.54*	3.02±0.50	4.49±0.39*	3.44±0.49	6.39±1.24*
Matched group	60	0.33±0.09	0.81±0.15*	5.13±1.87	48.59±8.40*	3.21±0.48	6.68±0.62*	3.32±0.61	9.12±1.64*
<i>t</i>	-	1.287	14.113	0.083	2.757	0.413	6.057	0.382	2.676
<i>P</i>	-	0.201	<0.001	0.934	0.008	0.681	0.001	0.703	0.010

2.4 切除情况与并发症对比

两组患者胃息肉均被完整切除,整体切除率对比无差异;

且观察组穿孔、迟发性出血以及感染等并发症发生率较对照组低,但比较无差异($P>0.05$),如表5所示。

表5 切除及并发症的比较(n,%)

Table 5 Comparison of resection and complications(n, %)

Groups	n	Overall resection rate	Complication			
			Perforation	Delayed hemorrhage	Infected	Total incidence
Observation group	60	59(98.33%)	0	1	1	2(3.33%)
Matched group	60	58(96.67%)	0	1	3	4(6.67%)
χ^2	-	0.342	-	-	-	0.702
P	-	0.559	-	-	-	0.679

3 讨论

胃息肉是由间质或上皮成分增生导致的良性肿瘤,临床研究将其分为增生与炎性两种形态,且不同类型的病变其癌变率也有所不同^[9]。研究发现^[10],部分增生性息肉癌变发生率为1.5%到20%,属于高发疾病的一种,而且随着患者年龄增长,其发病率也在不断上升。临床上对胃息肉的治疗方法比较多,其中包括射频治疗、高频电刀等,依照胃息肉的大小、形态和数量以及患者自身情况所选择的治疗方法也有很大区别^[11,12]。内镜下黏膜切除术是一种择期诊断性或治疗性手术^[13]。研究发现^[14],内镜下黏膜切除术能够更完整的切除息肉组织,从而降低患者远期复发率。因此,为了提升我院胃息肉的治疗效果,选择对胃息肉患者采取内镜下黏膜切除术治疗,旨在为临床提供参考。

本研究结果表明,两组患者总治疗费用对比无差异($P>0.05$),观察组患者术后不良反应发生率较对照组低($P<0.05$),与Rameshshanker R等^[15]研究结果相符。Rameshshanker R等研究结果显示,采取内镜下黏膜切除术治疗胃肠息肉患者术中出血量较少,创伤性较低,因此术后患者黑便等不良反应较少,更有利于患者术后恢复。观察组患者术后腹痛、腹胀、恶心和呕吐不良反应的发生率低于对照组($P<0.05$)。这是因为,内镜下黏膜切除术与常规电凝切除相比,能够更直观、清晰的观察病变部位,进而减少对周围组织造成的损伤,有利于术后患者胃肠功能恢复^[16-18]。虽然内镜下黏膜切除术由于需要在患者息肉底部黏膜下层进行注射标记,所以内镜下黏膜切除术费用高于电凝切除术,但本研究中两组患者总治疗费用对比无差异,主要是因为,内镜下黏膜切除术对患者周围组织创伤性较小,更有利于患者术后恢复,住院时间较少,因此降低了总体治疗费用。

两组患者手术前血清ProGRP、PGI水平对比无差异($P>0.05$),治疗后均降低,且观察组较对照组低($P<0.05$)。由此证明,应用内镜下黏膜切除术能够降低患者术后复发率。ProGRP属于胃泌素释放肽基因的一种编码产物,属于分泌性细胞因子的一种,分布在肺组织、呼吸道及胃肠道中。ProGRP半衰期较短,由胃窦G细胞分泌,进而合成胃泌素,促使胃酸产生,继而增加黏膜上皮细胞增殖,抑制细胞凋亡,维护胃粘膜完整性^[19,20]。而PGI主要由主细胞和胃底腺黏液细胞合成,合成之后进入到

胃内部,在胃酸作用下水解食物中的蛋白,少量PGI穿过胃粘膜后进入到血液循环之中,表现胃粘膜的分泌状况和形态^[21,22]。因此,ProGRP、PGI可用于评价胃息肉术后复发情况^[23]。本研究中观察组患者ProGRP、PGI水平降低也证明了内镜下黏膜切除术治疗胃息肉的复发性较低,与李玲玲等^[24]研究相符。两组患者手术前PCT、CRP、IL-6、IL-2对比无明显差异($P>0.05$),手术后两组患者PCT、CRP、IL-6、IL-2均升高,且观察组低于对照组($P<0.05$),与Hallgren T等^[25]研究相似,Hallgren T等研究发现,内镜下黏膜切除术能够减少对患者带来的损伤,进而降低患者术后炎症因子反应。这主要是因为,内镜下黏膜切除术对患者消化道黏膜损伤较小,并未产生大量炎症因子水平激活信号通路,因此无大量炎症因子进入到血液循环中^[26,27]。

两组患者胃息肉均被完整切除,整体切除率对比无差异,且观察组穿孔、迟发性出血以及感染等并发症发生率较对照组低,但比较无差异($P>0.05$)。由此证明,内镜下黏膜切除术与常规内镜下电凝切除术均能够完整性切除胃息肉,与Zheng J C等^[28]研究不符,Zheng J C等研究发现,内镜下黏膜切除术对胃息肉切除完整性更好。出现此差异性结果可能是由于样本量过少。而本研究发现,内镜下黏膜切除术患者并发症发生率较低,与谭丽、李永超等^[29,30]研究相似,由此也证明了内镜下黏膜切除术治疗胃息肉的安全性。

综上所述,对胃息肉患者采取内镜下黏膜切除术与常规内镜下电凝切除术均能够完整的切除胃息肉,且治疗费用相当。而应用内镜下黏膜切除术能够降低患者ProGRP、PGI水平,降低机体炎症因子反应,且并发症发生率较低,值得临床应用推广。

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