

早期胃癌患者内镜黏膜下剥离术后无胃管留置的临床效果

张凌云¹ 张宏岩² 吕亚青³ 孟丹¹ 李晓宇¹ 刘庆伟² 荆雪¹
(青岛大学附属医院, 山东 青岛 266003 1 消化内科; 2 护理部; 3 门诊部)

[摘要] **目的** 探讨早期胃癌患者内镜黏膜下剥离术(ESD)后无胃管留置的临床效果。**方法** 选取 2021 年 1 月—2023 年 12 月在青岛大学附属医院内镜中心行 ESD 术的 300 例早期胃癌患者,根据术后是否留置胃管分为对照组(胃管留置)和试验组(无胃管留置),每组各 150 例。收集并比较两组患者的术前往院时长、术后住院时长、总住院时长、舒适度视觉模拟量表(VAS)评分、胃管留置时长和总引流量以及术后并发症发生情况。**结果** 时间、组别及时间与组别的交互作用对两组患者 VAS 评分均有显著影响($F_{\text{时间}}=240.345, F_{\text{组别}}=206.252, F_{\text{时间} \times \text{组别}}=682.609, P<0.05$),试验组患者各时间点 VAS 评分比较差异无显著性($P>0.05$),对照组患者随着时间的延长 VAS 评分逐渐降低($F=273.746, P<0.05$);试验组患者各时间点 VAS 评分均显著低于对照组($F=4.917 \sim 41.463, P<0.05$)。与对照组相比,试验组术后住院时长、总住院时长、并发症发生比例均显著减少($t=4.252, 2.133, \chi^2=7.485, P<0.05$);对照组胃管留置时长为(2.16 ± 1.20)d,总引流量为(225.40 ± 230.04)mL,胃管留置时长 ≤ 2 d 者占比 68%。**结论** 早期胃癌患者 ESD 术后无胃管留置可显著提高患者舒适度,降低术后并发症,缩短患者术后住院时长及总住院时长,符合当前的术后加速康复外科理念,值得在临床应用推广。

[关键词] 胃肿瘤;内镜黏膜切除术;导管,留置;恢复期;住院时长;术后加速康复
[中图分类号] R735.2 **[文献标志码]** A

Clinical effect of absence of nasogastric tube after endoscopic submucosal dissection in patients with early gastric cancer ZHANG Lingyun, ZHANG Hongyan, LYU Yaqing, MENG Dan, LI Xiaoyu, LIU Qingwei, JING Xue (Department of Gastroenterology, The Affiliated Hospital of Qingdao University, Qingdao 266003, China)

[ABSTRACT] **Objective** To investigate the clinical effect of absence of nasogastric tube after endoscopic submucosal dissection (ESD) in patients with early gastric cancer. **Methods** A total of 300 patients with early gastric cancer who underwent ESD at Endoscopy Center of The Affiliated Hospital of Qingdao University from January 2021 to December 2023 were enrolled, and according to the presence or absence of nasogastric tube after surgery, they were divided into control group (with the presence of nasogastric tube) and test group (without nasogastric tube), with 150 patients in each group. Related data were collected and compared between the two groups, including preoperative duration, postoperative duration, total length of hospital stay, Visual Analogue Scale (VAS) comfort score, duration of nasogastric tube indwelling, total drainage volume, and postoperative complications. **Results** Time, group, and the interaction between time and group had a significant impact on the VAS score of patients in both groups ($F_{\text{time}}=240.345, F_{\text{group}}=206.252, F_{\text{time} \times \text{group}}=682.609, P<0.05$). The test group showed no significant change in VAS score at various time points ($P>0.05$), while in the control group, VAS score gradually decreased over time ($F=273.746, P<0.05$), and the test group had a significantly lower VAS score than the control group at all time points ($F=4.917 \sim 41.463, P<0.05$). Compared with the control group, the test group had significantly shorter postoperative duration and total length of hospital stay and a significantly lower proportion of patients with complications ($t=4.252, 2.133, \chi^2=7.485, P<0.05$). In the control group, the duration of nasogastric tube indwelling was (2.16 ± 1.20)d, the total drainage volume was (225.40 ± 230.04)mL, and the patients with nasogastric tube indwelling for ≤ 2 d accounted for 68%. **Conclusion** Absence of nasogastric tube after ESD can significantly improve the degree of comfort in patients with early gastric cancer, reduce postoperative complications, and shorten postoperative duration and total length of hospital stay, which aligns with the concept of enhanced recovery after surgery, and therefore, it holds promise for clinical application.

[KEY WORDS] Stomach neoplasms; Endoscopic mucosal resection; Catheters, indwelling; Convalescence; Length of stay; Enhanced recovery after surgery

胃癌是全球人群中癌症相关死亡的第三大原因,年新发病例大约有 100 万。内镜黏膜下剥离术(ESD)凭借其微创的优势,是目前临床治疗早期胃癌的主要手段^[1-4]。术中于麻醉未清醒时置入胃管是 ESD 的常规操作,旨在减轻手术后胃腔内压力并促进恢复^[5-7],但留置胃管也可能引起患者不适并延长住院时长^[8]。因此关于早期胃癌患者 ESD 术后

[收稿日期] 2025-09-27; [修订日期] 2026-01-22
[基金项目] 国家自然科学基金项目(81802777)
[通信作者] 荆雪, Email: jx7607@sina.com

是否应留置胃管,目前仍存在较大争议,且缺乏统一共识与指南。本研究通过分析青岛大学附属医院内镜中心行ESD治疗的早期胃癌患者的临床资料,探讨术后无胃管留置对患者舒适度、并发症及住院时长的影响,以期为临床制定个性化、精准化的术后管理方案提供参考。

1 资料与方法

选取2021年1月1日—2023年12月31日于青岛大学附属医院内镜中心行ESD治疗的早期胃癌患者300例。纳入标准:①术前经白光胃镜、放大内镜、窄带成像内镜及超声内镜检查评估为早期胃癌,且CT检查无淋巴结转移者;②内镜活检病理结果提示为胃黏膜中高级别上皮内瘤变、无溃疡分化型黏膜内癌或有溃疡但病灶直径≤3 cm的分化型黏膜内癌者;③年ESD手术量超过200例医生实施手术者。排除标准:ESD手术并发穿孔者。根据术后是否留置胃管将患者分为对照组(胃管留置)和试验组(无胃管留置),每组各150例。收集患者的年龄、性别、病变位置等一般临床资料。收集所有患者手术后第1~5天的舒适度视觉模拟量表(VAS)评分,手术当日为第1天,已出院患者第5天评分沿用第4天结果;记录所有患者ESD术前往院时长、手术时长、术后住院时长及总住院时长(术前往院时长指从患者入院日至手术前1日,术后住院时长指手术日至出院日)。记录对照组患者的胃管留置时长(手术结束至胃管拔除的时长)及总引流量。统计所有患者住院期间的并发症发生情况,包括手术部位出血、感染以及心肺并发症等。

采用SPSS 27.0 软件对数据进行统计学处理。计量资料以 $\bar{x} \pm s$ 表示,组间比较采用 t 检验,多时间点的比较采用重复测量设计的方差分析,进一步两两比较采用S-N-K法;计数资料以例(率)表示,组间比较采用 χ^2 检验。以 $P < 0.05$ 为差异有统计学意义。

2 结 果

2.1 两组患者一般临床资料比较

对照组年龄为(62.09±8.01)岁,其中男79例,女71例;试验组年龄为(60.77±9.19)岁,男72例,女78例。两组在年龄、性别、病变位置方面差异无显著性($P > 0.05$),见表1。对照组胃管留置时长为(2.16±1.20)d,总引流量为(225.40±230.04)mL;胃管留置时长≤2 d者占比68%。

2.2 两组患者的术后VAS评分比较

时间、组别及时间与组别交互作用对VAS评分均具有显著影响($F_{\text{时间}} = 240.345, F_{\text{组别}} = 206.252, F_{\text{时间} \times \text{组别}} = 682.609, P < 0.05$);试验组各时间点的VAS评分差异无显著性($P > 0.05$);对照组第1天与第2天VAS评分差异无显著性($P > 0.05$),之后随时间延长评分逐渐下降($F = 273.746, P < 0.05$);试验组患者各时间点VAS评分比较均显著低于对照组($F = 4.917 \sim 41.463, P < 0.05$)。见表2。

2.3 两组患者手术时长及住院时长比较

试验组患者术后住院时长及总住院时长均显著短于对照组($t = 4.252, 2.133, P < 0.05$),见表3。

表 1 两组患者的病变位置比较[例(χ/%),n=150]

组别	胃窦	胃角	胃体	胃底贍门
对照组	75(50.00)	29(19.33)	39(26.00)	7(4.67)
试验组	77(51.33)	25(16.67)	41(27.33)	7(4.67)

表 2 两组患者不同时间点VAS评分比较(分,n=150,x±s)

组别	手术第1天	手术第2天	手术第3天	手术第4天	手术第5天
对照组	5.09±1.11	5.09±1.11	3.47±2.56	1.82±2.48	0.74±1.84
试验组	0.17±1.06	0.13±0.95	0.08±0.69	0.01±0.08	0.00±0.00

表 3 两组患者手术时长及住院时长比较(n=150,x±s)

组别	术前往院时长(t/d)	手术时长(t/min)	术后住院时长(t/d)	总住院时长(t/d)
对照组	2.70±1.22	62.15±45.24	4.57±1.60	7.27±1.90
试验组	2.78±0.89	58.71±36.08	3.93±1.27	6.70±1.49

2.4 两组患者术后并发症比较

对照组术后发热56例,试验组35例,差异有统计学意义($\chi^2 = 7.485, P < 0.05$);两组术后手术部位出血各1例,差异无显著性($P > 0.05$);两组均未发生皮下气肿及心肺并发症。

3 讨 论

ESD作为早期胃癌的微创治疗方法,其安全性及疗效已获广泛认可。传统观点认为,胃癌术后留置胃管可降低消化道压力,减少积液积气,有助于预防肠麻痹并促进康复^[9]。然而留置胃管也可能导致鼻腔、咽喉、食管及胃黏膜的压力性损伤^[10-14]。研究显示,约20%~60%的患者因难以耐受而提前拔管,较高的脱管率也反映出胃管留置会带来显著不适^[15]。这不仅加重患者心理负担,还可能会因自行拔管增加不良事件及医疗纠纷发生的风险。本研究分析结果显示,在术后第1~5天各时间点,试验组患

者 VAS 评分均显著低于对照组,且试验组患者术后各时间点评分均低于 1 分,表明无胃管留置可显著提升患者的舒适度。对照组患者胃管留置时长为 (2.16 ± 1.20) d,68%的患者于术后第 2 天拔管,拔管后患者的 VAS 评分明显下降,进一步证实胃管拔除有助于改善患者的舒适度。无胃管留置避免了消化道持续刺激,减少了术后不适,与既往研究结果一致^[16-17]。

本研究还发现,试验组患者术后住院时长及总住院时长均短于对照组。胃管的机械性刺激可导致黏膜医源性损伤,延缓康复和延长住院时长。此外,对照组患者术后发热发生率显著高于试验组,提示 ESD 术后留置胃管不仅可能造成局部损伤,还可能限制呼吸运动,增加感染风险。研究显示,避免胃管留置有助于促进患者的胃肠功能恢复,并降低肺部感染、肺不张等心肺并发症的发生率,从而加速患者的康复进程^[18-20]。ESD 术后无胃管留置与目前临床中的术后加速康复外科理念高度契合^[21-23],通过优化围手术期管理,可减轻患者手术应激反应,促进早期康复,同时减轻患者经济负担,提高医疗资源利用率^[24-25]。

综上所述,术后无胃管留置显著提升了患者的舒适度,降低了患者术后发热比例,缩短了术后恢复时间和总住院时长,与术后加速康复外科理念一致。同时,早期胃癌患者 ESD 术后无留置胃管并未增加手术部位出血等并发症的发生比例。因此,早期胃癌患者 ESD 术后无胃管留置在临床工作中具有较高的可行性,建议推广应用。然而,本研究为回顾性设计,可能存在数据偏倚,未来仍需开展多中心、大样本的前瞻性研究,以更全面评估患者术后无胃管留置的效果与安全性。

伦理批准和知情同意:本研究涉及的所有试验均已通过青岛大学附属医院医学伦理委员会审核批准(文件号 QYFYWZLL28632)。所有试验过程均遵照《赫尔辛基宣言》的条例进行。受试对象或其亲属已经签署知情同意书。

作者声明:张凌云、荆雪、张宏岩、李晓宇参与了研究设计;张凌云、吕亚青、刘庆伟、孟丹参与了论文的写作和修改。所有作者均阅读并同意发表该论文,且均声明不存在利益冲突。

[参考文献]

[1] 诸炎,付佩尧,李全林,等.《早期胃癌内镜黏膜下剥离术和内镜黏膜切除术治疗指南(第二版)》的更新与解读[J]. 中华消化内镜杂志, 2021,38(5):361-367.

[2] WANG F H, ZHANG X T, TANG L, et al. The Chinese Society of Clinical Oncology (CSCO): Clinical guidelines for the

diagnosis and treatment of gastric cancer, 2023[J]. Cancer Commun (Lond), 2024,44(1):127-172.

[3] GUAN W L, HE Y, XU R H. Gastric cancer treatment: Recent progress and future perspectives[J]. J Hematol Oncol, 2023,16(1):57.

[4] PIMENTEL-NUNES P, LIBÂNIO D, BASTIAANSEN B A J, et al. Endoscopic submucosal dissection for superficial gastrointestinal lesions: European Society of Gastrointestinal Endoscopy (ESGE) Guideline—Update 2022[J]. Endoscopy, 2022,54(6):591-622.

[5] KIRTANIA J, GHOSE T, GARAI D, et al. Esophageal guidewire-assisted nasogastric tube insertion in anesthetized and intubated patients: A prospective randomized controlled study[J]. Anesth Analg, 2012,114(2):343-348.

[6] 姚晓丽,任玲. 舒适护理对内镜黏膜下剥离术后留置胃管患者生理干扰的影响研究[J]. 护士进修杂志, 2016,31(22):2031-2034.

[7] 国家消化内镜专业质控中心,国家消化系统疾病临床医学研究中心(上海),国家消化道早癌防治中心联盟,等. 中国内镜黏膜下剥离术相关不良事件防治专家共识意见(2020,无锡)[J]. 中华消化内镜杂志, 2020,37(6):390-403.

[8] 李相林,杨鹏程,朱跃,等. 内镜黏膜下剥离术后置入胃管导致穿孔 2 例[J]. 现代消化及介入诊疗, 2022,27(1):4-6.

[9] 丛琳. 胃癌手术后胃肠减压的临床应用及研究进展[J]. 中国医药指南, 2018,16(16):45-46.

[10] 孟祥宁. 腹腔镜辅助胃癌根治术不留置胃管对缩短术后住院时间及降低肺部并发症发生率影响研究[J]. 中国全科医学, 2021,24(S1):46-48.

[11] 陈煌,邓小玲,李秋燕,等. 住院病人非计划性拔管风险评估体系的构建[J]. 护理研究, 2019,33(14):2404-2409.

[12] BARAKAT-JOHNSON M, LAI M, WAND T, et al. The incidence and prevalence of medical device-related pressure ulcers in intensive care: A systematic review[J]. J Wound Care, 2019,28(8):512-521.

[13] CHOI B K, KIM M S, KIM S H. Risk prediction models for the development of oral-mucosal pressure injuries in intubated patients in intensive care units: A prospective observational study[J]. J Tissue Viability, 2020,29(4):252-257.

[14] LYU Y, HUANG Y L, LI Z Y, et al. Interventions and strategies to prevent medical device-related pressure injury in adult patients: A systematic review[J]. J Clin Nurs, 2023,32(19-20):6863-6878.

[15] 吴觅之,余红梅,潘红英,等. 住院患者胃管非计划拔管的数据挖掘及防范对策分析[J]. 中华急危重症护理杂志, 2022,3(4):360-364.

[16] ALRASHEED R F, LARADHI A S, ALQAHTANI R S, et al. Early vs. late oral feeding after surgery for patients with esophageal malignancy: A systematic review and meta-analysis of postoperative clinical outcomes and quality of life[J]. J Pers Med, 2025,15(7):317.

(下转第 178 页)

- ment of large (>10 mm) vertebral artery dissecting aneurysms[J]. *Acta Neurochir*, 2022,164(5):1247-1254.
- [15] MAZUR M D, KILBURG C, WANG V, et al. Pipeline embolization device for the treatment of vertebral artery aneurysms: The fate of covered branch vessels[J]. *J NeuroIntervent Surg*, 2016,8(10):1041-1047.
- [16] KIYOFUJI S, GRAFFEO C S, PERRY A, et al. Meta-analysis of treatment outcomes of posterior circulation non-saccular aneurysms by flow diverters[J]. *J Neurointerv Surg*, 2018,10(5):493-499.
- [17] BRINJIKJI W, MURAD M H, LANZINO G, et al. Endovascular treatment of intracranial aneurysms with flow diverters: A meta-analysis[J]. *Stroke*, 2013,44(2):442-447.
- [18] 叶耿帆,张萌,邓林,等. Pipeline 血流导向装置治疗颅内动脉瘤的 Meta 分析[J]. *中华神经外科杂志*, 2016,32(3):287-293.
- [19] ZHANG T F, ZHONG W Y, ZHOU D L, et al. Treatment of unruptured intracranial vertebral artery dissection aneurysms with Flow Diverter compared with conventional stent-assisted coiling—A single-center study[J]. *Acta Neurochir*, 2024, 166(1):506.
- [20] LIANG F, ZHANG Y P, YAN P, et al. Outcomes and complications after the use of the pipeline embolization device in the treatment of intracranial aneurysms of the posterior circulation: A systematic review and meta-analysis[J]. *World Neurosurg*, 2019,127:e888-e895.
- [21] LIANG F, ZHANG Y P, YAN P, et al. Predictors of periprocedural complications and angiographic outcomes of endovascular therapy for large and giant intracranial posterior circulation aneurysms[J]. *World Neurosurg*, 2019,125:e378-e384.
- [22] HOU K, QU L, YU J L. Therapeutic dilemmas regarding giant aneurysms of the intracranial vertebral artery causing medulla oblongata compression[J]. *Neuroradiol J*, 2022, 35(2):137-151.
- [23] GUI S M, CHEN X H, WEI D C, et al. Long-term outcomes and dynamic changes of in-stent stenosis after Pipeline embolization device treatment of intracranial aneurysms[J]. *J Neurointerv Surg*, 2023,15(12):1187-1193.
- [24] SWEID A, STARKE R M, HERIAL N, et al. Predictors of complications, functional outcome, and morbidity in a large cohort treated with flow diversion[J]. *Neurosurgery*, 2020,87(4):730-743.
- [25] CATAPANO J S, DUCRUET A F, CADIGAN M S, et al. Endovascular treatment of vertebral artery dissecting aneurysms: A 20-year institutional experience[J]. *J NeuroIntervent Surg*, 2022,14(3):257-261.
- [26] 宋稳鹏,白京岳,孟庆斌,等. 血流导向装置与传统血管内重建治疗椎动脉夹层动脉瘤对比研究[J]. *介入放射学杂志*, 2022, 31(6):545-549.
- [27] GRIESENNAUER C J, OGILVY C S, ADEEB N, et al. Pipeline embolization of posterior circulation aneurysms: A multicenter study of 131 aneurysms[J]. *J Neurosurg*, 2019, 130(3):923-935.
- [28] TAKIGAWA K, FUKUI Y, MARUYAMA K, et al. Treatment outcomes and effectiveness of FRED for fusiform vertebral artery aneurysms [J]. *Interv Neuroradiol*, 2025: 15910199251330719.
- [29] HAN J L, LI X B, NIU H, et al. Risk factors for the persistence of unruptured intracranial vertebral artery dissecting aneurysms treated with flow diverters[J]. *Sci Rep*, 2025, 15(1):13677.
- [30] ZHANG H Y, ZHANG H Q, LIU J M, et al. Pipeline embolization device for small and medium vertebral artery aneurysms: A multicenter study[J]. *Neurosurgery*, 2023,92(5): 971-978.
- [31] KIM B M, SHIN Y S, KIM S H, et al. Incidence and risk factors of recurrence after endovascular treatment of intracranial vertebrobasilar dissecting aneurysms[J]. *Stroke*, 2011,42(9): 2425-2430.

(本文编辑 李京蔓)

(上接第 173 页)

- [17] MOHAJERI L, DAGHAYEGHI R, ROSTAMI N, et al. Early oral feeding after laparoscopic total gastrectomy in gastric cancer patients: A meta-analysis of randomized controlled trials and cohort studies[J]. *BMC Gastroenterol*, 2025,25(1): 709.
- [18] LU S Y, WEI F, LI G L. The evolution of the concept of stress and the framework of the stress system[J]. *Cell Stress*, 2021,5(6):76-85.
- [19] GILLIS C, LJUNGQVIST O, CARLI F. Prehabilitation, enhanced recovery after surgery, or both A narrative review[J]. *Br J Anaesth*, 2022,128(3):434-448.
- [20] 国家消化系统疾病临床医学研究中心,中华医学会消化内镜学分会,中国医师协会消化医师分会. 胃内镜黏膜下剥离术围术期指南[J].*中国实用内科杂志*, 2017, 37(12):1055-1068.
- [21] RAO W S, ZHANG X, ZHANG J, et al. The role of nasogastric tube in decompression after elective colon and rectum surgery: A meta-analysis[J]. *Int J Colorectal Dis*, 2011,26(4): 423-429.
- [22] PALECZNY S, FATIMA R, AMADOR Y, et al. Should nasogastric tube be used routinely in patients undergoing cardiac surgery A narrative review[J]. *J Card Surg*, 2022, 37(12): 5300-5306.
- [23] WEN Z J, ZHANG X, LIU Y F, et al. Is routine nasogastric decompression after hepatic surgery necessary A systematic review and meta-analysis [J]. *Int J Nurs Stud*, 2019, 100: 103406.
- [24] GUIMARD P, BAULIER C, GOUEL-CHÉRON A. Critical care challenges after gastrointestinal surgery[J]. *Curr Opin Crit Care*, 2025,31(6):743-749.
- [25] HARDY K, LEUNG C, SETO J, et al. Enhanced Recovery After Surgery and next-day discharge after laparoscopic Roux-en-Y gastric bypass[J]. *Cjs*, 2025,68(4):E274-E280.

(本文编辑 耿波)