

食管胃结合部腺癌根治性切除术后 并发症的相关因素

雷天翔 宋武

中山大学附属第一医院胃肠外科, 广州 510080

通信作者: 宋武, Email: songwu@mail.sysu.edu.cn

【摘要】 食管胃结合部腺癌(AEG)因其特殊的解剖部位,其术后的并发症发生率明显高于其他部位的胃癌。胃癌根治术后并发症的发生会显著降低患者术后生活质量和术后生存率。AEG术后并发症的发生受到患者因素(高龄、肥胖、术前营养状况)、手术因素(手术路径、手术方式、切除范围、预防性联合脏器切除等)、肿瘤因素(分期等)等多方面的影响。而优化围手术期的管理,制定合适规范的手术方式,是预防AEG术后并发症的关键所在。所以,在保证肿瘤根治的同时,力求减少术后并发症的发生,才能使AEG患者真正获益。

【关键词】 食管胃结合部腺癌; 手术并发症; 危险因素

基金项目: 国家自然科学基金(81871908)

Related factors of postoperative complications of radical resection for adenocarcinoma of esophagogastric junction

Lei Tianxiang, Song Wu

Department of Gastrointestinal Surgery, The First Affiliated Hospital, Sun Yat-sen University, Guangzhou 510080, China

Corresponding author: Song Wu, Email: songwu@mail.sysu.edu.cn

【Abstract】 Adenocarcinoma of esophagogastric junction (AEG) is at a special anatomic site with obviously higher morbidity of postoperative complication than gastric cancers at other sites. Postoperative quality of life and survival rate are influenced by the occurrence of complications. Moreover, the perioperative complications are associated with multiple factors such as patient factors (advanced age, obesity and preoperative nutritional status), surgical factors (surgical route, surgical procedure, resection range and prophylactic multivisceral resection), tumor factors (size, stage) etc. Optimizing perioperative management and formulating standardized surgical methods are the key points to prevent postoperative complications of AEG. In conclusion, we should strive to ensure the radical resection and reduce the occurrence of postoperative complications in order to truly benefit patients.

【Key words】 Adenocarcinoma of the esophagogastric junction; Complications; Risk factor

Fund program: National Natural Science Foundation of China (81871908)

食管胃结合部腺癌(adenocarcinoma of the esophagogastric junction, AEG)为肿瘤中心位于食管胃交界线上下5 cm以内、并跨越或直接接触食管胃

交界线的腺癌。近年来,在胃癌发病率逐年下降的背景下,AEG发病率却逐年上升^[1-2]。文献报道,胃癌根治术后并发症发生率为11.6%~18.7%^[3-5];相比

DOI: 10.3760/cma.j.cn441530-20211115-00461

收稿日期 2021-11-15 本文编辑 卜建红

引用本文:雷天翔,宋武.食管胃结合部腺癌根治性切除术后并发症的相关因素[J].中华胃肠外科杂志,2022,25(2):131-134. DOI:10.3760/cma.j.cn441530-20211115-00461.



于其他类型胃癌, AEG因其特殊的解剖部位, 术后并发症发生率更高(约33.3%)^[6]。吻合口漏、吻合口狭窄、胃食管反流、乳糜漏等均为AEG术后常见的并发症。因此, 对于术后并发症的预防, 明确其相关危险因素至关重要。

一、AEG术后并发症的患者因素

1. 高龄: 多数研究表明, 高龄(>70岁)是胃癌术后并发症发生的独立危险因素^[7-8]。这可能与老年人免疫能力、机体恢复能力的衰退且常合并多种基础疾病相关。然而, 有研究报道, 年龄并不是影响术后并发症的独立危险因素^[9]。对于AEG患者而言, 高龄不应作为手术的禁忌, 但需进行充分的术前评估, 及时纠正和改善高龄AEG患者的身体状况以及合并疾病。

2. 肥胖: 研究表明, 肥胖是胃癌术后并发症的相关因素^[10-11]。由于AEG解剖部位涉及胸腹腔, 操作空间相对狭小, 其手术难度远大于其他类型胃癌, 而肥胖进一步增加术者手术操作的难度, 导致手术相关并发症的发生风险上升。BMI是衡量肥胖程度的常用指标之一。日本一项多中心前瞻性研究结果表明, 在AEG患者中, 高BMI可能增加吻合口漏的发生风险, 高BMI组经胸路径切除AEG, 术后并发症的发生率为51.4%^[6]。此外, 有研究表明, 对于腹腔镜手术, 肥胖可能延长手术时间, 但不影响并发症发生率与患者存活率^[12-13]。对于肥胖AEG患者而言, 需由经验丰富的胃肠外科医生操作以及制定个体化的手术方式, 以减少术后并发症的发生。

3. 术前营养状况: 韩国一项回顾性研究表明, 术前合并症可能是胃癌患者术后出现并发症的危险因素之一^[14]; 韩国另一项研究表明, 患有心脏病或慢性肝病的患者, 在接受胃癌根治术后, 发生术后并发症的风险较高^[15]。另外, AEG患者因肿瘤消耗、摄入不足等, 术前往往往存在贫血和营养状况欠佳。Bartlett等^[7]发现, 术前营养情况欠佳(白蛋白<30 g/L)也是术后并发症发生的独立危险因素。对于AEG患者而言, 积极改善术前合并症与营养状况(白蛋白>35 g/L)可能减少术后并发症的发生率。

二、AEG术后并发症的手术因素

1. 手术路径: 目前, 外科治疗AEG可选的手术路径包括经上腹右胸路径、经腹膈肌食管裂孔径路等。不同的手术路径, 可能导致术后并发症的发生率各异。JCOG-9502随机对照试验结果表明,

Siewert II、III型AEG病例, 经左胸腹联合切口径路与经腹膈肌食管裂孔径路相比, 术后并发症风险增高^[16-17]。故对于高龄、肥胖、有术前合并症等风险的AEG患者, 需谨慎选择胸腹联合路径。

2. 切除范围: AEG根据Siewert分型不同, 切除范围也是不同的。全胃切除、近端胃大部切除、经胸食管切除加近端胃大部切除均为常用术式。侵犯食管比较高的AEG, 需要经胸入路, 术后乳糜漏或乳糜胸时有发生。欧洲的一项研究报道, 对于AEG患者, 联合胸腔镜手术患者术后出现并发症的发生率较高^[18]。日本的一项研究报道, 在行近端胃大部切除术患者中, 反流性食管炎、吻合口狭窄发生率高于全胃切除术者^[19]。虽然衍生出众多抗反流吻合方式, 但各种术式操作难易程度、抗反流效果报道不一, 仍需要高质量的临床证据。

3. 联合脏器切除: 在AEG根治性切除术中, 为了达到R₀切除, 有时需联合切除肿瘤侵犯的邻近组织, 如胰腺、脾脏、横结肠及系膜等; 而在清扫脾血管周围淋巴组织时, 有时也需要联合脾的切除。联合其他器官切除无疑加大了手术的创伤, 对患者的恢复及术后并发症的发生产生影响。欧洲的一项Meta分析结果显示, 对于胃上部癌患者, 联合脾脏切除会增加患者术后并发症发生率而并无生存获益^[20]。此外, 日本的一项研究提示, 联合胰体尾加脾切除并不能改善患者预后, 反而会增加严重并发症的风险^[21]。因此, 联合器官切除是AEG术后并发症发生的相关因素, 须严格掌握其适应证, 不推荐预防性联合器官切除。

4. 手术方式: 随着腹腔镜微创技术的日趋成熟, 微创理念也逐步运用于治疗AEG中。英国的一项研究表明, 对于可切除的AEG, 与混合切除术(如Ivor-Lewis手术)相比, 全腹腔镜切除术的术后并发症较少^[22]。其他研究同样表明, 胸腹腔镜微创可能减少AEG术后并发症发生率, 而其远期疗效不低於、甚至可能优于开放手术^[23]。我国的CLASS-01研究表明, 腹腔镜与开腹手术组相比, 两组术中并发症发生率(4.8%比3.5%)和术后总体并发症发生率(15.2%比12.9%)相当, 但腹腔镜手术组术后恢复过程显著优于开腹手术组^[5]。故在严格掌握微创手术适应证的前提下, 微创手术将有益于AEG患者的术后恢复, 减少术后并发症的发生。

三、AEG术后并发症的肿瘤因素

研究表明, pTNM分期是术后并发症的独立危

险因素^[24]。晚期 AEG 患者常出现贫血、体质量减轻和低蛋白血症,全身情况的恶化可能导致术后并发症的发生。分期较晚的 AEG 往往发生严重的肿瘤浸润,手术视野难以暴露,解剖结构不清晰,这些因素可能会增加术者的操作难度。一些研究结果表明,对于晚期胃癌患者,手术切除需要更复杂的手术过程和更长的手术时间,这可能会增加术后并发症的发生率^[25-26]。

四、结论

胃癌根治术后并发症的发生会显著降低患者术后生存率^[27]。因此,对 AEG 术后并发症的防治至关重要。AEG 术后并发症的发生受到患者因素、手术因素、肿瘤因素等多方面的影响。对于 AEG 并发症的防治,既要遵循“个体化”、“规范化”以及“精准化”的手术原则,又要秉持加速康复外科的理念,以降低术后并发症发生率。在保证肿瘤根治的同时,也需同时最大限度兼顾患者术后生活质量、减少 AEG 并发症的发生,两者的最大化才符合当前“精准医学”的要求,使 AEG 患者真正获益。

利益冲突 作者声明不存在利益冲突

参 考 文 献

- [1] Liu K, Yang K, Zhang W, et al. Changes of esophagogastric junctional adenocarcinoma and gastroesophageal reflux disease among surgical patients during 1988-2012: a single-institution, high-volume experience in China [J]. *Ann Surg*, 2016, 263(1): 88-95. DOI:10.1097/SLA.0000000000001148.
- [2] Buas MF, Vaughan TL. Epidemiology and risk factors for gastroesophageal junction tumors: understanding the rising incidence of this disease [J]. *Semin Radiat Oncol*, 2013, 23(1): 3-9. DOI:10.1016/j.semradonc.2012.09.008.
- [3] Kim HH, Hyung WJ, Cho GS, et al. Morbidity and mortality of laparoscopic gastrectomy versus open gastrectomy for gastric cancer: an interim report--a phase III multicenter, prospective, randomized Trial (KLASS Trial) [J]. *Ann Surg*, 2010, 251(3): 417-420. DOI:10.1097/SLA.0b013e3181cc8f6b.
- [4] Yasunaga H, Horiguchi H, Kuwabara K, et al. Outcomes after laparoscopic or open distal gastrectomy for early-stage gastric cancer: a propensity-matched analysis [J]. *Ann Surg*, 2013, 257(4):640-646. DOI:10.1097/SLA.0b013e31826fd541.
- [5] Hu Y, Huang C, Sun Y, et al. Morbidity and mortality of laparoscopic versus open D2 distal gastrectomy for advanced gastric cancer: a randomized controlled trial [J]. *J Clin Oncol*, 2016, 34(12):1350-1357. DOI:10.1200/JCO.2015.63.7215.
- [6] Mine S, Kurokawa Y, Takeuchi H, et al. Postoperative complications after a transthoracic esophagectomy or a transhiatal gastrectomy in patients with esophagogastric junctional cancers: a prospective nationwide multicenter study [J]. *Gastric Cancer*, 2021. DOI:10.1007/s10120-021-01255-9.
- [7] Bartlett EK, Roses RE, Kelz RR, et al. Morbidity and mortality after total gastrectomy for gastric malignancy using the American College of Surgeons National Surgical Quality Improvement Program Database [J]. *Surgery*, 2014, 156(2):298-304. DOI:10.1016/j.surg.2014.03.022.
- [8] Kim MG, Kim HS, Kim BS, et al. The impact of old age on surgical outcomes of totally laparoscopic gastrectomy for gastric cancer [J]. *Surg Endosc*, 2013, 27(11):3990-3997. DOI:10.1007/s00464-013-3073-6.
- [9] Jeong O, Park YK, Ryu SY, et al. Effect of age on surgical outcomes of extended gastrectomy with D2 lymph node dissection in gastric carcinoma: prospective cohort study [J]. *Ann Surg Oncol*, 2010, 17(6):1589-1596. DOI:10.1245/s10434-010-0916-4.
- [10] Kikuchi H, Miyata H, Konno H, et al. Development and external validation of preoperative risk models for operative morbidities after total gastrectomy using a Japanese web-based nationwide registry [J]. *Gastric cancer*, 2017, 20(6):987-997. DOI:10.1007/s10120-017-0706-9.
- [11] Kunisaki C, Miyata H, Konno H, et al. Modeling preoperative risk factors for potentially lethal morbidities using a nationwide Japanese web-based database of patients undergoing distal gastrectomy for gastric cancer [J]. *Gastric cancer*, 2017, 20(3):496-507. DOI:10.1007/s10120-016-0634-0.
- [12] Wang Z, Zhang X, Liang J, et al. Short-term outcomes for laparoscopy-assisted distal gastrectomy for body mass index ≥ 30 patients with gastric cancer [J]. *J Surg Res*, 2015, 195(1):83-88. DOI:10.1016/j.jss.2014.12.044.
- [13] Jung JH, Ryu SY, Jung MR, et al. Laparoscopic distal gastrectomy for gastric cancer in morbidly obese patients in South Korea [J]. *J Gastric Cancer*, 2014, 14(3):187-195. DOI:10.5230/jgc.2014.14.3.187.
- [14] Kim SH, Son SY, Park YS, et al. Risk factors for anastomotic leakage: a retrospective cohort study in a single gastric surgical unit [J]. *J Gastric cancer*, 2015, 15(3):167-175. DOI:10.5230/jgc.2015.15.3.167.
- [15] Jeong SH, Ahn HS, Yoo MW, et al. Increased morbidity rates in patients with heart disease or chronic liver disease following radical gastric surgery [J]. *J Surg Oncol*, 2010, 101(3):200-204. DOI:10.1002/jso.21467.
- [16] Kurokawa Y, Sasako M, Sano T, et al. Ten-year follow-up results of a randomized clinical trial comparing left thoracoabdominal and abdominal transhiatal approaches to total gastrectomy for adenocarcinoma of the oesophagogastric junction or gastric cardia [J]. *Br J Surg*, 2015, 102(4):341-348. DOI:10.1002/bjs.9764.
- [17] Sasako M, Sano T, Yamamoto S, et al. Left thoracoabdominal approach versus abdominal-transhiatal approach for gastric cancer of the cardia or subcardia: a randomised controlled trial

- [J]. *Lancet Oncol*, 2006, 7(8): 644-651. DOI: 10.1016/S1470-2045(06)70766-5.
- [18] Straatman J, van der Wielen N, Cuesta MA, et al. Minimally invasive versus open esophageal resection: three-year follow-up of the previously reported randomized controlled trial: the TIME trial[J]. *Ann Surg*, 2017, 266(2): 232-236. DOI: 10.1097/SLA.0000000000002171.
- [19] Ushimaru Y, Fujiwara Y, Shishido Y, et al. Clinical outcomes of gastric cancer patients who underwent proximal or total gastrectomy: a propensity score-matched analysis [J]. *World J Surg*, 2018, 42(5): 1477-1484. DOI: 10.1007/s00268-017-4306-y.
- [20] Marano L, Rondelli F, Bartoli A, et al. Oncologic effectiveness and safety of splenectomy in total gastrectomy for proximal gastric carcinoma: meta-analysis of randomized controlled trials [J]. *Anticancer Res*, 2018, 38(6): 3609-3617. DOI: 10.21873/anticancer.12635.
- [21] Kasakura Y, Fujii M, Mochizuki F, et al. Is there a benefit of pancreaticosplenectomy with gastrectomy for advanced gastric cancer? [J]. *Am J Surg*, 2000, 179(3): 237-242. DOI: 10.1016/s0002-9610(00)00293-2.
- [22] Patel K, Abbassi O, Tang CB, et al. Completely minimally invasive esophagectomy versus hybrid esophagectomy for esophageal and gastroesophageal junctional cancer: clinical and short-term oncological outcomes[J]. *Ann Surg Oncol*, 2021, 28(2): 702-711. DOI: 10.1245/s10434-020-08826-7.
- [23] Palazzo F, Rosato EL, Chaudhary A, et al. Minimally invasive esophagectomy provides significant survival advantage compared with open or hybrid esophagectomy for patients with cancers of the esophagus and gastroesophageal junction[J]. *J Am Coll Surg*, 2015, 220(4): 672-679. DOI: 10.1016/j.jamcollsurg.2014.12.023.
- [24] Wang WJ, Li HT, Yu JP, et al. Severity and incidence of complications assessed by the Clavien - Dindo classification following robotic and laparoscopic gastrectomy for advanced gastric cancer: a retrospective and propensity score - matched study[J]. *Surg Endosc*, 2019, 33(10): 3341-3354. DOI: 10.1007/s00464-018-06624-7.
- [25] Tu RH, Lin JX, Zheng CH, et al. Complications and failure to rescue following laparoscopic or open gastrectomy for gastric cancer: a propensity-matched analysis [J]. *Surg Endosc*, 2017, 31(5): 2325-2337. DOI: 10.1007/s00464-016-5235-9.
- [26] Kim DJ, Seo SH, Kim KH, et al. Comparisons of clinicopathologic factors and survival rates between laparoscopic and open gastrectomy in gastric cancer [J]. *Int J Surg*, 2016, 34: 161-168. DOI: 10.1016/j.ijso.2016.08.020.
- [27] Kubota T, Hiki N, Sano T, et al. Prognostic significance of complications after curative surgery for gastric cancer [J]. *Ann Surg Oncol*, 2014, 21(3): 891-898. DOI: 10.1245/s10434-013-3384-9.

·读者·作者·编者·

本刊“特别推荐论著”栏目征稿

根据国际惯例(参考《向生物医学期刊投稿的统一要求》)和中华医学会杂志社“关于论文二次发表的声明”,为了让更多的读者了解我国的一些高质量的研究成果,我刊的“特别推荐论著”栏目,鼓励已在国外高水平期刊(影响因子3分以上)发表论文的二次发表,或有望在国外期刊发表论文的国内抢先发表。前者无须再进行同行评议,来稿请注明“二次发表”,并提供首次发表的论文复印件;后者来稿请注明“国内发表”,我刊亦会安排快速审稿。由于我刊系PubMed收录期刊,所以该栏目文章不会附以英文摘要,因而不会影响该研究成果今后在国外期刊的发表。欢迎广大作者踊跃投稿,与国内同道尽早分享自己的研究成果。