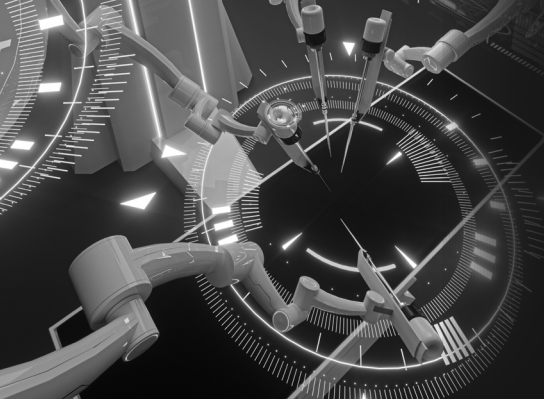




Bölüm

6

LAPAROSKOPIK MİDE CERRAHİSİ

Ahmet BAŞKENT¹

LAPAROSKOPIK SLEEVE GASTREKTOMİ

GİRİŞ

Bariatrik cerrahi, şiddetli obezite için en etkili uzun süreli tedavi yöntemi olarak kabul edilmiştir. Çeşitli bariatrik prosedürler arasında, laparoskopik sleeve gastrektomi (LSG) hızla popülerlik kazanmış ve dünya çapında en sık uygulanan prosedür olmuştur.^(1,2)

LSG, midenin küçük kurvaturuna paralel ve dikey olarak yönlendirilen bir hattan büyük kurvaturün ve fundusun rezeke edilmesini içeren yani bir kısmi gastrektomi prosedürüdür. İlk olarak 1990’larda “Magenstrasse ve Mill Prosedürü” olarak tanımlanmıştır. Tüp mide; “Magenstrasse”den yani Almanca “midenin sokağı” anlamına gelen kelimedenden türetilmiştir. LSG başlangıçta tamamen kısıtlayıcı bir prosedür olarak görülse de artık mide fundusunda yer alan ghrelin üreten hücrelerin çoğunluğunun çıkarılması yoluyla anoreksiyayı indükleyerek kilo kaybını da desteklediği bilinmektedir.⁽³⁾

Genel olarak, LSG tekniğin basitliği ve normal anatomiyi kısmi olarak değiştirmesi nedeniyle laparoskopik Roux-en-Y gastrik bypass gibi diğer bazı bariatrik operasyonlardan daha az morbiditeye sahiptir.⁽⁴⁾

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Roux urve ölçülür ve bir Endo GIA stapler ile yan yana bir jejunojunostomi oluşturulur. Bunun distalinde, genellikle cerrahın tercihinine göre bir besleme jejunostomi tüpü yerleştirilir.

Laparoskopik distal gastrektomi: Benzer portlar ile laparoskopik distal gastrektomi yapılır.

Postoperatif Bakım

LG'nin ardından, daha yoğun izleme gerekmedikçe hastalar normal cerrahi servise alınır. Erken mobilizasyon ve narkotik olmayan analjezi tercih edilir.^(62,63)

Total gastrektomiyi takiben profilaktik nazogastrik tüp dekompresyonunu rutin olarak kullanmak gerekir ancak distal gastrektomiyi takiben rutin olarak kullanmak operatöre göre değişir.

Diyet tipik olarak, distal gastrektomiyi takiben postoperatif 1. veya 2. günde ve total gastrektomi geçirenler için kaçak testi yaptıktan sonra başlanır.

Sonuçlar

Doğu ülkelerinde çoklu randomize çalışmalarda LG ile açık gastrektomi (OG) karşılaştırılmıştır. 2000'den fazla hastayı içeren bu tür 14 çalışmanın 2016 sistematik incelemesi ve meta-analizi şu sonuca varmıştır:⁽⁶⁴⁾

- LG daha az kan kaybı, daha erken ilk gaz çıkışı, erken mobilizasyon ve erken oral alma, azaltılmış analjezik uygulama sıklığı, daha kısa hastanede kalış ve genel postoperatif morbiditeyi azalttığı görülmüştür.
- LG ve OG arasında alınan lenf nodu sayısı, mortalite, nüks, uzun süreli genel sağ kalım ve hastalıksız sağ kalım açısından fark görülmemiş.
- LG, daha yüksek hasta memnuniyeti ve yaşam kalitesi ile ilişkilendirilmiş.

KAYNAKLAR

1. Ponce J, DeMaria EJ, Nguyen NT, et al. American Society for Metabolic and Bariatric Surgery estimation of bariatric surgery procedures in 2015 and surgeon workforce in the United States. Surg Obes Relat Dis 2016; 12:1637.
2. Buchwald H, Oien DM. Metabolic/bariatric surgery worldwide 2011. Obes Surg 2013; 23:427.
3. Abdemur A, Slone J, Berho M, et al. Morphology, localization, and patterns of ghrelin-producing cells in stomachs of a morbidly obese population. Surg Laparosc Endosc Percutan Tech 2014; 24:122.
4. Rosenthal RJ, International Sleeve Gastrectomy Expert Panel, Diaz AA, et al. International Sleeve Gastrectomy Expert Panel Consensus Statement: best practice guidelines based on experience of >12,000 cases. Surg Obes Relat Dis 2012; 8:8.
5. Ali M, El Chaar M, Ghiassi S, et al. American Society for Metabolic and Bariatric Surgery updated position statement on sleeve gastrectomy as a bariatric procedure. Surg Obes Relat Dis 2017; 13:1652.
6. Yehoshua RT, Eidelman LA, Stein M, et al. Laparoscopic sleeve gastrectomy--volume and

- pressure assessment. *Obes Surg* 2008; 18:1083.
7. Ionut V, Burch M, Youdim A, Bergman RN. Gastrointestinal hormones and bariatric surgery-induced weight loss. *Obesity* (Silver Spring) 2013; 21:1093.
 8. Korner J, Leibel RL. To eat or not to eat - how the gut talks to the brain. *N Engl J Med* 2003; 349:926.
 9. Berrington de Gonzalez A, Hartge P, Cerhan JR, et al. Body-mass index and mortality among 1.46 million white adults. *N Engl J Med* 2010; 363:2211.
 10. Mechanick JI, Youdim A, Jones DB, et al. Clinical practice guidelines for the perioperative nutritional, metabolic, and nonsurgical support of the bariatric surgery patient--2013 update: cosponsored by American Association of Clinical Endocrinologists, The Obesity Society, and American Society for Metabolic & Bariatric Surgery. *Obesity* (Silver Spring) 2013; 21 Suppl 1:S1.
 11. Gagner M, Hutchinson C, Rosenthal R. Fifth International Consensus Conference: current status of sleeve gastrectomy. *Surg Obes Relat Dis* 2016; 12:750.
 12. Li VK, Pulido N, Fajnwaks P, et al. Predictors of gallstone formation after bariatric surgery: a multivariate analysis of risk factors comparing gastric bypass, gastric banding, and sleeve gastrectomy. *Surg Endosc* 2009; 23:1640.
 13. Adil MT, Aminian A, Bhasker AG, et al. Perioperative Practices Concerning Sleeve Gastrectomy - a Survey of 863 Surgeons with a Cumulative Experience of 520,230 Procedures. *Obes Surg* 2020; 30:483.
 14. Bhandari M, Fobi MAL, Buchwald JN, Bariatric Metabolic Surgery Standardization (BMSS) Working Group:. Standardization of Bariatric Metabolic Procedures: World Consensus Meeting Statement. *Obes Surg* 2019; 29:309.
 15. Telem DA, Majid SF, Powers K, et al. Assessing national provision of care: variability in bariatric clinical care pathways. *Surg Obes Relat Dis* 2017; 13:281.
 16. Telem DA, Gould J, Pesta C, et al. American Society for Metabolic and Bariatric Surgery: care pathway for laparoscopic sleeve gastrectomy. *Surg Obes Relat Dis* 2017; 13:742.
 17. Fridman A, Moon R, Cozacov Y, et al. Procedure-related morbidity in bariatric surgery: a retrospective short- and mid-term follow-up of a single institution of the American College of Surgeons Bariatric Surgery Centers of Excellence. *J Am Coll Surg* 2013; 217:614.
 18. Hutter MM, Schirmer BD, Jones DB, et al. First report from the American College of Surgeons Bariatric Surgery Center Network: laparoscopic sleeve gastrectomy has morbidity and effectiveness positioned between the band and the bypass. *Ann Surg* 2011; 254:410.
 19. Juodeikis Ž, Brimas G. Long-term results after sleeve gastrectomy: A systematic review. *Surg Obes Relat Dis* 2016.
 20. Boza C, Daroch D, Barros D, et al. Long-term outcomes of laparoscopic sleeve gastrectomy as a primary bariatric procedure. *Surg Obes Relat Dis* 2014; 10:1129.
 21. Ferri FA, Frieder JS, Blanco DG, et al. Short-term multiorgan metabolic benefits of rapid weight loss after sleeve gastrectomy in severely obese patients. *Surg Obes Relat Dis* 2021; 17:284.
 22. Gill RS, Birch DW, Shi X, et al. Sleeve gastrectomy and type 2 diabetes mellitus: a systematic review. *Surg Obes Relat Dis* 2010; 6:707.
 23. Mocanu V, Dang J, Ladak F, et al. Predictors and outcomes of bleed after sleeve gastrectomy: an analysis of the MBSAQIP data registry. *Surg Obes Relat Dis* 2019; 15:1675.
 24. Braghetto I, Korn O, Valladares H, et al. Laparoscopic sleeve gastrectomy: surgical technique, indications and clinical results. *Obes Surg* 2007; 17:1442.
 25. Shah SS, Todkar JS, Shah PS. Buttressing the staple line: a randomized comparison between staple-line reinforcement versus no reinforcement during sleeve gastrectomy. *Obes Surg* 2014; 24:2014.
 26. Aurora AR, Khaitan L, Saber AA. Sleeve gastrectomy and the risk of leak: a systematic analysis of 4,888 patients. *Surg Endosc* 2012; 26:1509.
 27. Gagner M, Buchwald JN. Comparison of laparoscopic sleeve gastrectomy leak rates in four

- staple-line reinforcement options: a systematic review. *Surg Obes Relat Dis* 2014; 10:713.
28. <https://asmbs.org/resources/prevention-and-detection-of-gastrointestinal-leak> (Accessed on February 21, 2017).
 29. Alvarenga ES, Lo Menzo E, Szomstein S, Rosenthal RJ. Safety and efficacy of 1020 consecutive laparoscopic sleeve gastrectomies performed as a primary treatment modality for morbid obesity. A single-center experience from the metabolic and bariatric surgical accreditation quality and improvement program. *Surg Endosc* 2016; 30:2673.
 30. Wittgrove AC, Clark GW, Tremblay LJ. Laparoscopic Gastric Bypass, Roux-en-Y: Preliminary Report of Five Cases. *Obes Surg* 1994; 4:353.
 31. Fredheim JM, Rollheim J, Sandbu R, et al. Obstructive sleep apnea after weight loss: a clinical trial comparing gastric bypass and intensive lifestyle intervention. *J Clin Sleep Med* 2013; 9:427.
 32. Madalosso CA, Gurski RR, Callegari-Jacques SM, et al. The Impact of Gastric Bypass on Gastroesophageal Reflux Disease in Morbidly Obese Patients. *Ann Surg* 2016; 263:110.
 33. Nelson DW, Blair KS, Martin MJ. Analysis of obesity-related outcomes and bariatric failure rates with the duodenal switch vs gastric bypass for morbid obesity. *Arch Surg* 2012; 147:847.
 34. le Roux CW, Welbourn R, Werling M, et al. Gut hormones as mediators of appetite and weight loss after Roux-en-Y gastric bypass. *Ann Surg* 2007; 246:780.
 35. American Society for Metabolic & Bariatric Surgery (ASMBS). ASMBS Updated position statement on bariatric surgery in class I obesity. Available at: <https://asmbs.org/resources/asmbs-updated-position-statement-on-bariatric-surgery-in-class-i-obesity?/resources/bariatric-surgery-in-class-i-obesity> (Accessed on February 02, 2017).
 36. Aminian A, Brethauer SA, Andalib A, et al. Can Sleeve Gastrectomy “Cure” Diabetes? Long-term Metabolic Effects of Sleeve Gastrectomy in Patients With Type 2 Diabetes. *Ann Surg* 2016; 264:674.
 37. Aminian A, Andalib A, Ver MR, et al. Outcomes of Bariatric Surgery in Patients with Inflammatory Bowel Disease. *Obes Surg* 2016; 26:1186.
 38. Heshmati K, Lo T, Tavakkoli A, Sheu E. Short-Term Outcomes of Inflammatory Bowel Disease after Roux-en-Y Gastric Bypass vs Sleeve Gastrectomy. *J Am Coll Surg* 2019; 228:893.
 39. Edholm D, Kullberg J, Karlsson FA, et al. Changes in liver volume and body composition during 4 weeks of low calorie diet before laparoscopic gastric bypass. *Surg Obes Relat Dis* 2015; 11:602.
 40. Zhou J, Du R, Wang L, et al. The Application of Enhanced Recovery After Surgery (ERAS) for Patients Undergoing Bariatric Surgery: a Systematic Review and Meta-analysis. *Obes Surg* 2021; 31:1321.
 41. Parisi A, Desiderio J, Cirocchi R, Trastulli S. Enhanced Recovery after Surgery (ERAS): a Systematic Review of Randomised Controlled Trials (RCTs) in Bariatric Surgery. *Obes Surg* 2020; 30:5071.
 42. Yoong W, Saxena S, Mittal M, et al. The pressure profile test is more sensitive and specific than Palmer’s test in predicting correct placement of the Veress needle. *Eur J Obstet Gynecol Reprod Biol* 2010; 152:210.
 43. Jamal M, Wegner R, Heitshusen D, et al. Resolution of hyperlipidemia follows surgical weight loss in patients undergoing Roux-en-Y gastric bypass surgery: a 6-year analysis of data. *Surg Obes Relat Dis* 2011; 7:473.
 44. American Society of Metabolic and Bariatric Surgery. Estimate of bariatric surgery numbers. Available at: <http://asmbs.org/resources/estimate-of-bariatric-surgery-numbers> (Accessed on February 03, 2017).
 45. Maciejewski ML, Arterburn DE, Van Scoyoc L, et al. Bariatric Surgery and Long-term Durability of Weight Loss. *JAMA Surg* 2016; 151:1046.
 46. Morino M, Toppino M, Forestieri P, et al. Mortality after bariatric surgery: analysis of 13,871 morbidly obese patients from a national registry. *Ann Surg* 2007; 246:1002.

47. DeMaria EJ, Pate V, Warthen M, Winegar DA. Baseline data from American Society for Metabolic and Bariatric Surgery-designated Bariatric Surgery Centers of Excellence using the Bariatric Outcomes Longitudinal Database. *Surg Obes Relat Dis* 2010; 6:347.
48. Al Harakeh AB, Kallies KJ, Borgert AJ, Kothari SN. Bowel obstruction rates in antecolic/antegastric versus retrocolic/retrogastric Roux limb gastric bypass: a meta-analysis. *Surg Obes Relat Dis* 2016; 12:194.
49. Elms L, Moon RC, Varnadore S, et al. Causes of small bowel obstruction after Roux-en-Y gastric bypass: a review of 2,395 cases at a single institution. *Surg Endosc* 2014; 28:1624.
50. Kitano S, Iso Y, Moriyama M, Sugimachi K. Laparoscopy-assisted Billroth I gastrectomy. *Surg Laparosc Endosc* 1994; 4:146.
51. Li Z, Shan F, Wang Y, et al. Laparoscopic versus open distal gastrectomy for locally advanced gastric cancer after neoadjuvant chemotherapy: safety and short-term oncologic results. *Surg Endosc* 2016; 30:4265.
52. Greenleaf EK, Sun SX, Hollenbeak CS, Wong J. Minimally invasive surgery for gastric cancer: the American experience. *Gastric Cancer* 2017; 20:368.
53. Abdikarim I, Cao XY, Li SZ, et al. Enhanced recovery after surgery with laparoscopic radical gastrectomy for stomach carcinomas. *World J Gastroenterol* 2015; 21:13339.
54. Wong-Chong N, Kehlet H, Grantcharov TP. Outcomes From an Enhanced Recovery Program for Laparoscopic Gastric Surgery. *Surg Laparosc Endosc Percutan Tech* 2016; 26:e50.
55. Li HZ, Chen JX, Zheng Y, Zhu XN. Laparoscopic-assisted versus open radical gastrectomy for resectable gastric cancer: Systematic review, meta-analysis, and trial sequential analysis of randomized controlled trials. *J Surg Oncol* 2016; 113:756.
56. Kim HG, Park JH, Jeong SH, et al. Totally laparoscopic distal gastrectomy after learning curve completion: comparison with laparoscopy-assisted distal gastrectomy. *J Gastric Cancer* 2013; 13:26.
57. Moon JS, Park MS, Kim JH, et al. Lessons learned from a comparative analysis of surgical outcomes of and learning curves for laparoscopy-assisted distal gastrectomy. *J Gastric Cancer* 2015; 15:29.
58. Kim HH, Han SU, Kim MC, et al. Long-term results of laparoscopic gastrectomy for gastric cancer: a large-scale case-control and case-matched Korean multicenter study. *J Clin Oncol* 2014; 32:627.
59. Jung DH, Son SY, Park YS, et al. The learning curve associated with laparoscopic total gastrectomy. *Gastric Cancer* 2016; 19:264.
60. Jeong O, Ryu SY, Choi WY, et al. Risk factors and learning curve associated with postoperative morbidity of laparoscopic total gastrectomy for gastric carcinoma. *Ann Surg Oncol* 2014; 21:2994.
61. 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 Surg Res* 2015; 195:83.
62. Sugimoto M, Kinoshita T, Shibasaki H, et al. Short-term outcome of total laparoscopic distal gastrectomy for overweight and obese patients with gastric cancer. *Surg Endosc* 2013; 27:4291.
63. Son SY, Jung DH, Lee CM, et al. Laparoscopic gastrectomy versus open gastrectomy for gastric cancer in patients with body mass index of 30 kg/m² or more. *Surg Endosc* 2015; 29:2126.
64. Nunobe S, Hiki N, Fukunaga T, et al. Previous laparotomy is not a contraindication to laparoscopy-assisted gastrectomy for early gastric cancer. *World J Surg* 2008; 32:1466.