

BÖLÜM 7

BARIATRİK CERRAHİ SONRASI GEBELİK YÖNETİMİ

Şebnem KARAGÜN ¹

GİRİŞ

Obezite global bir salgın olarak katlanarak artmaktadır. Dünya Sağlık Örgütü'nün 2016 yılı verilerine göre kadın popülasyonunun %40'ında vücut kitle indeksinin (BMI) 25 ve üzerinde, aşırı kilolu olduğu bildirilmiştir (1). Aynı yılda BMI' in 30 ve üzerinde olması olarak tanımlanan obezite sıklığı kadınlarda %15 olarak raporlanmıştır ki obezite sıklığı erkek cinsiyette %11'dir (1).Yalnızca kozmetik bir problem olmayan obezite, diabetes mellitus, hipertansiyon, aterosklerotik kalp hastalıkları, dislipidemi, nonalkolik yağlı karaciğer, astım ve bazı kanserlerin de aralarında bulunduğu pek çok komorbiditeye neden olmaktadır (2). Üreme çağındaki kadınlarda obezite hipotalama - hipofiz – ovaryan (HHO) aks bozuklukları üzerinden anovulasyona, kronik düşük dereceli inflamasyon oluşturarak implantasyon bozuklukları ile infertilite ve abortusa neden olabilmektedir (3). Gebelik öncesi ve gebelikte artmış BMI, gestasyonel hipertansiyon, gestasyonel diyabet (GDM), preeklampsi, makrozomi, gelişim geriliği (FGR), ölü doğum ve erken doğuma neden olduğu gibi çocukluk çağı obezitesi ile de yakından ilişkili olduğu kanıtlanmıştır (4). Bu bakımdan fertil çağda kadın obezitesi gelecek nesilleri de etkileyen bir problem olarak değerlendirilmeli ve önlem alınmalıdır.

Obezlerde yaşam tarzı değişikliklerinin etkisi çoğu zaman sürdürülebilir değilken, medikal tedavilerinin faydası da yakın geçmişe dek oldukça sınırlıydı. Bu amaçla bariatrik cerrahinin (BC) ilk örnekleri 1950'li yıllarda jejenoileal bypass ile başladı (5). Dr. Viktor Henrikson'ın kilo kaybı amacı ile yaptığı ince barsak rezeksiyonu, başta beklenen kilo kaybını sağlamasa da obezite tedavisinde cerrahi seçenekleri gündeme getirmiştir. Zamanla prosedürler gelişip değişerek, vertikal band gastropласти, laparoskopik gastrik band, Roux-en-Y gastrik bypass (RYGB)

¹ Uzm. Dr., Adana Şehir Eğitim Araştırma Hastanesi, Kadın Hastalıkları ve Doğum AD., Perinatoloji BD., karagunsebnem@gmail.com, ORCID iD 0000-0003-2339-1609

büyümenin yakın takibi, olumsuz perinatal sonuçları önlemede kritik rol oynar. Ayrıca, cerrahi tipine özgü komplikasyonlar (internal herniasyon, bant kayması gibi) konusunda farkındalık yüksek olmalı ve şüphe durumunda hızlı tanı-tedavi süreçleri uygulanmalıdır.

Sonuç olarak, BC sonrası gebeliklerin yönetimi, hem obezitenin olumsuz etkilerini azaltma hem de cerrahiye bağlı potansiyel riskleri minimize etme amacıyla kişiselleştirilmiş ve kanıta dayalı bir yaklaşım gerektirir. Bu süreçte hasta eğitimi, düzenli laboratuvar takipleri ve uygun doğum planlaması ile maternal ve fetal sağlık en üst düzeyde korunabilir. Gelecekte bu alanda yapılacak prospektif çalışmalar, mevcut kılavuzları daha da geliştirerek klinik uygulamaları optimize edecektir.

KAYNAKLAR

1. Organization WH. Obesity and overweight World Health Organization. 2020.
2. Falcone V, Stopp T, Feichtinger M, Kiss H, Eppel W, Husslein PW, et al. Pregnancy after bariatric surgery: a narrative literature review and discussion of impact on pregnancy management and outcome. 2018;18(1):1-13.
3. Broughton DE, Moley KHJF, sterility. Obesity and female infertility: potential mediators of obesity's impact. 2017;107(4):840-7.
4. Golab BP, Santos S, Voerman E, Lawlor DA, Jaddoe VW, Gaillard R, et al. Influence of maternal obesity on the association between common pregnancy complications and risk of childhood obesity: an individual participant data meta-analysis. 2018;2(11):812-21.
5. Buchwald H, Buchwald JNJOs. Evolution of operative procedures for the management of morbid obesity 1950-2000. 2002;12(5):705-17.
6. Arterburn DE, Telem DA, Kushner RF, Courcoulas APJJ. Benefits and risks of bariatric surgery in adults: a review. 2020;324(9):879-87.
7. Dixon JB, Zimmet P, Alberti KG, Rubino F, Epidemiology IDFTO, Obesity PJSf, et al. Bariatric surgery: an IDF statement for obese type 2 diabetes. 2011;7(4):433-47.
8. Edison E, Whyte M, van Vlymen J, Jones S, Gatenby P, de Lusignan S, et al. Bariatric surgery in obese women of reproductive age improves conditions that underlie fertility and pregnancy outcomes: retrospective cohort study of UK National Bariatric Surgery Registry (NBSR). 2016;26:2837-42.
9. Khazraei H, Hosseini SV, Amini M, Bananzadeh A, Najibpour N, Ganji F, et al. Effect of weight loss after laparoscopic sleeve gastrectomy on infertility of women in shiraz. 2017;33(2):43-6.
10. Milone M, Sosa Fernandez LM, Sosa Fernandez LV, Manigrasso M, Elmore U, De Palma GD, et al. Does bariatric surgery improve assisted reproductive technology outcomes in obese infertile women? 2017;27:2106-12.
11. Ciangura C, Coupaye M, Deruelle P, Gascoin G, Calabrese D, Cosson E, et al. Clinical practice guidelines for childbearing female candidates for bariatric surgery, pregnancy, and post-partum management after bariatric surgery. 2019;29:3722-34.
12. Parent B, Martopullo I, Weiss NS, Khandelwal S, Fay EE, Rowhani-Rahbar AJJs. Bariatric surgery in women of childbearing age, timing between an operation and birth, and associated perinatal complications. 2017;152(2):128-35.
13. Paolino L, Pravettoni R, Epaul S, Ortala M, Lazzati AJOS. Comparison of surgical activity and scientific publications in bariatric surgery: an epidemiological and bibliometric analysis. 2020;30:3822-30.
14. Kang JH, Le QAJM. Effectiveness of bariatric surgical procedures: a systematic review and

network meta-analysis of randomized controlled trials. 2017;96(46).

15. Madsbad S, Dirksen C, Holst JJTLD, endocrinology. Mechanisms of changes in glucose metabolism and bodyweight after bariatric surgery. 2014;2(2):152-64.
16. Needleman BJ, Happel LCJSCoNA. Bariatric surgery: choosing the optimal procedure. 2008;88(5):991-1007.
17. Chumakova-Orin M, Vanetta C, Moris DP, Guerron ADJWjod. Diabetes remission after bariatric surgery. 2021;12(7):1093.
18. Souteiro P, Belo S, Magalhães D, Pedro J, Neves JS, Oliveira SC, et al. Long-term diabetes outcomes after bariatric surgery—managing medication withdrawal. 2019;43(11):2217-24.
19. Schiavon CA, Bersch-Ferreira AC, Santucci EV, Oliveira JD, Torreglosa CR, Bueno PT, et al. Effects of bariatric surgery in obese patients with hypertension: the GATEWAY randomized trial (gastric bypass to treat obese patients with steady hypertension). 2018;137(11):1132-42.
20. Genua I, Ramos A, Caimari F, Balagué C, Sánchez-Quesada JL, Pérez A, et al. Effects of bariatric surgery on HDL cholesterol. 2020;30:1793-8.
21. Hachem A, Brennan LJOs. Quality of life outcomes of bariatric surgery: a systematic review. 2016;26:395-409.
22. DuCoin C, Moore RL, Provost DAJTAToBS. Indications and contraindications for bariatric surgery. 2020:77-81.
23. Panel CJAIm. Gastrointestinal surgery for severe obesity. 1991;115(12):956-61.
24. Jungheim ES, Moley KH. Current knowledge of obesity's effects in the pre- and periconceptional periods and avenues for future research. Am J Obstet Gynecol. 2010;203(6):525-30.
25. Moran LJ, Norman RJ, Teede HJ. Metabolic risk in PCOS: phenotype and adiposity impact. Trends Endocrinol Metab. 2015;26(3):136-43.
26. Brannian JD, Schmidt SM, Kreger DO, Hansen KA. Baseline non-fasting serum leptin concentration to body mass index ratio is predictive of IVF outcomes. Hum Reprod. 2001;16(9):1819-26.
27. Jungheim ES, Frolova AI, Jiang H, Riley JK. Relationship between serum polyunsaturated fatty acids and pregnancy in women undergoing in vitro fertilization. J Clin Endocrinol Metab. 2013;98(8):E1364-8.
28. Magariños MP, Sánchez-Margalet V, Kotler M, Calvo JC, Varone CL. Leptin promotes cell proliferation and survival of trophoblastic cells. Biol Reprod. 2007;76(2):203-10.
29. Palomba S, de Wilde MA, Falbo A, Koster MP, La Sala GB, Fauser BC. Pregnancy complications in women with polycystic ovary syndrome. Hum Reprod Update. 2015;21(5):575-92.
30. Lopez LM, Bernholm A, Chen M, Grey TW, Otterness C, Westhoff C, et al. Hormonal contraceptives for contraception in overweight or obese women. The Cochrane database of systematic reviews. 2016;2016(8):Cd008452.
31. Ciangura C, Coupaye M, Deruelle P, Gascoin G, Calabrese D, Cosson E, et al. Clinical Practice Guidelines for Childbearing Female Candidates for Bariatric Surgery, Pregnancy, and Post-partum Management After Bariatric Surgery. Obes Surg. 2019;29(11):3722-34.
32. Gerrits EG, Ceulemans R, van Hee R, Hendrickx L, Totté E. Contraceptive treatment after biliopancreatic diversion needs consensus. Obes Surg. 2003;13(3):378-82.
33. Oh C, Keats EC, Bhutta ZA. Vitamin and Mineral Supplementation During Pregnancy on Maternal, Birth, Child Health and Development Outcomes in Low- and Middle-Income Countries: A Systematic Review and Meta-Analysis. Nutrients. 2020;12(2).
34. Parent B, Martopullo I, Weiss NS, Khandelwal S, Fay EE, Rowhani-Rahbar A. Bariatric Surgery in Women of Childbearing Age, Timing Between an Operation and Birth, and Associated Perinatal Complications. JAMA Surg. 2017;152(2):128-35.
35. Mechanick JI, Youdim A, Jones DB, Timothy Garvey W, Hurley DL, Molly McMahon M, 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. Surg Obes Relat Dis. 2013;9(2):159-91.

36. ACOG practice bulletin no. 105: bariatric surgery and pregnancy. *Obstet Gynecol.* 2009;113(6):1405-13.
37. Thereaux J, Lesuffleur T, Païta M, Czernichow S, Basdevant A, Msika S, et al. Long-term follow-up after bariatric surgery in a national cohort. *Br J Surg.* 2017;104(10):1362-71.
38. Busetto L, Dicker D, Azran C, Batterham RL, Farpour-Lambert N, Fried M, et al. Practical Recommendations of the Obesity Management Task Force of the European Association for the Study of Obesity for the Post-Bariatric Surgery Medical Management. *Obes Facts.* 2017;10(6):597-632.
39. Parrott J, Frank L, Rabena R, Craggs-Dino L, Isom KA, Greiman L. American Society for Metabolic and Bariatric Surgery Integrated Health Nutritional Guidelines for the Surgical Weight Loss Patient 2016 Update: Micronutrients. *Surg Obes Relat Dis.* 2017;13(5):727-41.
40. Aasheim ET, Björkman S, Søvik TT, Engström M, Hanvold SE, Mala T, et al. Vitamin status after bariatric surgery: a randomized study of gastric bypass and duodenal switch. *Am J Clin Nutr.* 2009;90(1):15-22.
41. Boots C, Stephenson MD. Does obesity increase the risk of miscarriage in spontaneous conception: a systematic review. *Semin Reprod Med.* 2011;29(6):507-13.
42. Marceau P, Kaufman D, Biron S, Hould FS, Lebel S, Marceau S, et al. Outcome of pregnancies after biliopancreatic diversion. *Obes Surg.* 2004;14(3):318-24.
43. Clark AM, Thornley B, Tomlinson L, Galletley C, Norman RJ. Weight loss in obese infertile women results in improvement in reproductive outcome for all forms of fertility treatment. *Hum Reprod.* 1998;13(6):1502-5.
44. Kwong W, Tomlinson G, Feig DS. Maternal and neonatal outcomes after bariatric surgery; a systematic review and meta-analysis: do the benefits outweigh the risks? *Am J Obstet Gynecol.* 2018;218(6):573-80.
45. Rives-Lange C, Poghossyan T, Phan A, Van Straaten A, Girardeau Y, Nizard J, et al. Risk-Benefit Balance Associated With Obstetric, Neonatal, and Child Outcomes After Metabolic and Bariatric Surgery. *JAMA Surg.* 2023;158(1):36-44.
46. Lesko J, Peaceman A. Pregnancy outcomes in women after bariatric surgery compared with obese and morbidly obese controls. *Obstet Gynecol.* 2012;119(3):547-54.
47. Andrade HF, Pedrosa W, Diniz Mde F, Passos VM. Adverse effects during the oral glucose tolerance test in post-bariatric surgery patients. *Arch Endocrinol Metab.* 2016;60(4):307-13.
48. Dirksen C, Jørgensen NB, Bojsen-Møller KN, Jacobsen SH, Hansen DL, Worm D, et al. Mechanisms of improved glycaemic control after Roux-en-Y gastric bypass. *Diabetologia.* 2012;55(7):1890-901.
49. Adami GF, Murelli F, Briatore L, Scopinaro N. Pregnancy in formerly type 2 diabetes obese women following biliopancreatic diversion for obesity. *Obes Surg.* 2008;18(9):1109-11.
50. Getahun D, Fassett MJ, Jacobsen SJ, Sacks DA, Murali SB, Peltier MR, et al. Perinatal outcomes after bariatric surgery. *Am J Obstet Gynecol.* 2022;226(1):121.e1-.e16.
51. Johansson K, Wikström AK, Söderling J, Näslund I, Ottosson J, Neovius M, et al. Risk of pre-eclampsia after gastric bypass: a matched cohort study. *Bjog.* 2022;129(3):461-71.
52. Stephansson O, Johansson K, Näslund I, Neovius M. Bariatric Surgery and Preterm Birth. *N Engl J Med.* 2016;375(8):805-6.
53. Chevrot A, Kayem G, Coupaye M, Lesage N, Msika S, Mandelbrot L. Impact of bariatric surgery on fetal growth restriction: experience of a perinatal and bariatric surgery center. *Am J Obstet Gynecol.* 2016;214(5):655.e1-7.
54. Auger N, Bilodeau-Bertrand M, Tith RM, Arbour L. Bariatric surgery and the risk of congenital anomalies in subsequent pregnancies. *Am J Clin Nutr.* 2019;110(5):1168-74.
55. Xanthakos SA. Nutritional deficiencies in obesity and after bariatric surgery. *Pediatr Clin North Am.* 2009;56(5):1105-21.
56. Ramakrishnan U, Grant F, Goldenberg T, Zongrone A, Martorell R. Effect of women's nutrition before and during early pregnancy on maternal and infant outcomes: a systematic review. *Paediatr Perinat Epidemiol.* 2012;26 Suppl 1:285-301.

57. Shawe J, Ceulemans D, Akhter Z, Neff K, Hart K, Heslehurst N, et al. Pregnancy after bariatric surgery: Consensus recommendations for periconception, antenatal and postnatal care. *Obes Rev.* 2019;20(11):1507-22.
58. Lapolla A, Marangon M, Dalfrà MG, Segato G, De Luca M, Fedele D, et al. Pregnancy outcome in morbidly obese women before and after laparoscopic gastric banding. *Obes Surg.* 2010;20(9):1251-7.
59. Stentebjerg LL, Andersen LLT, Renault K, Støving RK, Jensen DM. Pregnancy and perinatal outcomes according to surgery to conception interval and gestational weight gain in women with previous gastric bypass. *J Matern Fetal Neonatal Med.* 2017;30(10):1182-8.
60. Jasaitis Y, Sergent F, Bridoux V, Paquet M, Marpeau L, Tênière P. [Management of pregnancies after adjustable gastric banding]. *J Gynecol Obstet Biol Reprod (Paris).* 2007;36(8):764-9.
61. Ostlund MP, Backman O, Marsk R, Stockeld D, Lagergren J, Rasmussen F, et al. Increased admission for alcohol dependence after gastric bypass surgery compared with restrictive bariatric surgery. *JAMA Surg.* 2013;148(4):374-7.
62. Adams TD, Gress RE, Smith SC, Halverson RC, Simper SC, Rosamond WD, et al. Long-term mortality after gastric bypass surgery. *N Engl J Med.* 2007;357(8):753-61.
63. Jans G, Matthys C, Bogaerts A, Ameye L, Delaere F, Roelens K, et al. Depression and Anxiety: Lack of Associations with an Inadequate Diet in a Sample of Pregnant Women with a History of Bariatric Surgery-a Multicenter Prospective Controlled Cohort Study. *Obes Surg.* 2018;28(6):1629-35.
64. Petersen L, Lauenborg J, Svare J, Nilas L. The Impact of Upper Abdominal Pain During Pregnancy Following a Gastric Bypass. *Obes Surg.* 2017;27(3):688-93.
65. Carelli AM, Ren CJ, Youn HA, Friedman EB, Finger AE, Lok BH, et al. Impact of laparoscopic adjustable gastric banding on pregnancy, maternal weight, and neonatal health. *Obes Surg.* 2011;21(10):1552-8.
66. Pinnam BSM, Ojemolon PE, Fatima S, Abougergi MS, Popov V. Impact of Prior Bariatric Surgery on Labor and Delivery-Related Outcomes: A Nationwide Study. *Obes Surg.* 2025;35(4):1387-95.
67. Stephansson O, Johansson K, Söderling J, Näslund I, Neovius M. Delivery outcomes in term births after bariatric surgery: Population-based matched cohort study. *PLoS Med.* 2018;15(9):e1002656.