

Bölüm 15

ÖZELLİKLİ HASTA GRUPLARINDA TİROİD KANSERLERİ

Onur ERÇELİK¹

GEBELİKTE TİROİD KANSERİ GİRİŞ

Tiroid nodülleri ve tiroid kanserleri, kadınlarda, özellikle de doğurganlık çağındaki kadınlarda sık görülen endokrinolojik sorunlar arasındadır. Tiroid kanseri, meme kanserinden sonra gebelikte en sık birlikte görülen malignite olarak tanımlanmakta ve doğum yapan her 100.000 kadında yaklaşık 14–27 vakada rastlanmaktadır (1).

Gebelik fizyolojisi, özellikle ilk trimesterde artan insan koryonik gonadotropin (hCG) düzeyleri ve artmış östrojen seviyeleri ile tiroid foliküler hücrelerinde tiroid uyarıcı hormon (TSH) reseptörü üzerinden proliferatif ve fonksiyonel uyarılar yaratır. Bu durum, prekonsepsiyonel dönemde var olan nodüllerin büyümesini veya yeni nodül oluşumunu kolaylaştırabilir (2-4). Bununla birlikte, tiroid hormon gereksinimi artar ve iyot ihtiyacı %50'ye varan oranda yükselir. Bu fizyolojik değişiklikler hem tiroid fonksiyonlarının takibi hem de nodüler lezyonların değerlendirilmesini karmaşıktırır.

Tiroid kanseri vakalarının çoğunluğu iyi diferansiye (papiller ve foliküler) tiroid karinomlarıdır ve bu alt tiplerde sağkalım oranı doğurganlık çağındaki kadınlarda %98'in üzerindedir (5). Ancak tanı zamanı, cerrahi veya radyoaktif iyot tedavilerinin zamanlaması, TSH baskılama tedavisinin gebelikteki etkileri ve izlem stratejileri gibi klinik kararlar hem anne sağlığı hem de fetal gelişim açısından önem arz eder.

¹ Op. Dr., Ankara Eğitim ve Araştırma Hastanesi, KBB Kliniği, onur.ercelik@gmail.com, ORCID iD: 0000-0001-6868-1410
DOI: 10.37609/akya.72.c643

büyüme, gelişme ve uzun dönem yaşam kalitesini olumsuz etkileyebilecek tedavi morbiditelerini en aza indirmeyi hedefleyen hassas bir denge üzerine kurulmalıdır. Total tiroidektomi ve gerektiğinde lenf nodu diseksiyonu tedavinin temelini oluştururken, RAI tedavisi ve TSH süpresyonu gibi ek tedaviler, hastanın nüks riskine göre bireyselleştirilir. Bu hastaların tanı, tedavi ve izlemi, deneyimli bir multidisipliner ekibin yer aldığı uzmanlaşmış merkezlerde yapılmalı ve ömür boyu sürecek dikkatli bir takip planı oluşturulmalıdır.

KAYNAKLAR

1. Cottreau CM, Dashevsky I, Andrade SE, et al. Pregnancy-Associated Cancer: A U.S. Population-Based Study. *J Womens Health (Larchmt)*. Feb 2019;28(2):250-257. doi:10.1089/jwh.2018.6962
2. Glinoe D, Soto MF, Bourdoux P, et al. Pregnancy in patients with mild thyroid abnormalities: maternal and neonatal repercussions. *J Clin Endocrinol Metab*. Aug 1991;73(2):421-7. doi:10.1210/jcem-73-2-421
3. Rowe CW, Paul JW, Gedye C, et al. Targeting the TSH receptor in thyroid cancer. *Endocr Relat Cancer*. Jun 2017;24(6):R191-R202. doi:10.1530/ERC-17-0010
4. Kung AW, Chau MT, Lao TT, Tam SC, Low LC. The effect of pregnancy on thyroid nodule formation. *J Clin Endocrinol Metab*. Mar 2002;87(3):1010-4. doi:10.1210/jcem.87.3.8285
5. Tuttle RM, Haugen B, Perrier ND. Updated American Joint Committee on Cancer/Tumor-Node-Metastasis Staging System for Differentiated and Anaplastic Thyroid Cancer (Eighth Edition): What Changed and Why? *Thyroid*. Jun 2017;27(6):751-756. doi:10.1089/thy.2017.0102
6. Messuti I, Corvisieri S, Bardesono F, et al. Impact of pregnancy on prognosis of differentiated thyroid cancer: clinical and molecular features. *Eur J Endocrinol*. May 2014;170(5):659-66. doi:10.1530/EJE-13-0903
7. Alexander EK, Pearce EN, Brent GA, et al. 2017 Guidelines of the American Thyroid Association for the Diagnosis and Management of Thyroid Disease During Pregnancy and the Postpartum. *Thyroid*. Mar 2017;27(3):315-389. doi:10.1089/thy.2016.0457
8. Struve CW, Haupt S, Ohlen S. Influence of frequency of previous pregnancies on the prevalence of thyroid nodules in women without clinical evidence of thyroid disease. *Thyroid*. Spring 1993;3(1):7-9. doi:10.1089/thy.1993.3.7
9. Song J, Zou SR, Guo CY, et al. Prevalence of Thyroid Nodules and Its Relationship with Iodine Status in Shanghai: a Population-based Study. *Biomed Environ Sci*. Jun 2016;29(6):398-407. doi:10.3967/bes2016.052
10. Delange F. Iodine requirements during pregnancy, lactation and the neonatal period and indicators of optimal iodine nutrition. *Public Health Nutr*. Dec 2007;10(12A):1571-80; discussion 1581-3. doi:10.1017/S1368980007360941
11. Force USPST, Bibbins-Domingo K, Grossman DC, et al. Screening for Thyroid Cancer: US Preventive Services Task Force Recommendation Statement. *JAMA*. May 9 2017;317(18):1882-1887. doi:10.1001/jama.2017.4011
12. Smith LH, Danielsen B, Allen ME, Cress R. Cancer associated with obstetric delivery: results of linkage with the California cancer registry. *Am J Obstet Gynecol*. Oct 2003;189(4):1128-35. doi:10.1067/s0002-9378(03)00537-4
13. Rowe CW, Boelaert K. Thyroid Nodules and Thyroid Cancer Prior To, During, and Following Pregnancy. In: Feingold KR, Ahmed SF, Anawalt B, et al, eds. *Endotext*. 2022.
14. Nieto H, Boelaert K. WOMEN IN CANCER THEMATIC REVIEW: Thyroid-stimulating hormone in thyroid cancer: does it matter? *Endocr Relat Cancer*. Nov 2016;23(11):T109-T121. doi:10.1530/ERC-16-0328
15. Moleti M, Sturniolo G, Di Mauro M, Russo M, Vermiglio F. Female Reproductive Factors and Differentiated Thyroid Cancer. *Front Endocrinol (Lausanne)*. 2017;8:111. doi:10.3389/fendo.2017.00111
16. He JL, Zhang C, Hu MJ, et al. Reproductive and menstrual factors for papillary thyroid cancer risk: A case-control study in Chinese women. *Cancer Epidemiol*. Aug 2021;73:101964. doi:10.1016/j.canep.2021.101964
17. Kim H, Kim KY, Baek JH, Jung J. Are pregnancy, parity, menstruation and breastfeeding risk factors for thyroid cancer? Results from the Korea National Health and Nutrition Examination Survey, 2010-2015. *Clin Endocrinol (Oxf)*. Aug 2018;89(2):233-239. doi:10.1111/cen.13750
18. Yi X, Zhu J, Zhu X, Liu GJ, Wu L. Breastfeeding and thyroid cancer risk in women: A dose-response meta-analysis of epidemiological studies. *Clin Nutr*. Oct 2016;35(5):1039-46. doi:10.1016/j.clnu.2015.12.005

19. Wang M, Gong WW, He QF, Hu RY, Yu M. Menstrual, reproductive and hormonal factors and thyroid cancer: a hospital-based case-control study in China. *BMC Womens Health*. Jan 6 2021;21(1):13. doi:10.1186/s12905-020-01160-w
20. Yasmeen S, Cress R, Romano PS, et al. Thyroid cancer in pregnancy. *Int J Gynaecol Obstet*. Oct 2005;91(1):15-20. doi:10.1016/j.ijgo.2005.06.022
21. Uruno T, Shibuya H, Kitagawa W, Nagahama M, Sugino K, Ito K. Optimal timing of surgery for differentiated thyroid cancer in pregnant women. *World J Surg*. Mar 2014;38(3):704-8. doi:10.1007/s00268-013-2334-9
22. Haugen BR, Alexander EK, Bible KC, et al. 2015 American Thyroid Association Management Guidelines for Adult Patients with Thyroid Nodules and Differentiated Thyroid Cancer: The American Thyroid Association Guidelines Task Force on Thyroid Nodules and Differentiated Thyroid Cancer. *Thyroid*. Jan 2016;26(1):1-133. doi:10.1089/thy.2015.0020
23. Kim HO, Lee K, Lee SM, Seo GH. Association Between Pregnancy Outcomes and Radioactive Iodine Treatment After Thyroidectomy Among Women With Thyroid Cancer. *JAMA Intern Med*. Jan 1 2020;180(1):54-61. doi:10.1001/jamainternmed.2019.4644
24. Piek MW, Postma EL, van Leeuwen R, et al. The Effect of Radioactive Iodine Therapy on Ovarian Function and Fertility in Female Thyroid Cancer Patients: A Systematic Review and Meta-Analysis. *Thyroid*. Apr 2021;31(4):658-668. doi:10.1089/thy.2020.0356
25. Wu JX, Young S, Ro K, et al. Reproductive outcomes and nononcologic complications after radioactive iodine ablation for well-differentiated thyroid cancer. *Thyroid*. Jan 2015;25(1):133-8. doi:10.1089/thy.2014.0343
26. Huang N, Zeng L, Yan J, Chi H, Qiao J. Analysis of in vitro fertilization/intracytoplasmic sperm injection outcomes in infertile women with a history of thyroid cancer: a retrospective study. *Reprod Biol Endocrinol*. Jun 4 2021;19(1):82. doi:10.1186/s12958-021-00763-8
27. Minakata M, Ito M, Kishi T, et al. The magnitude of increased Levothyroxine dose during pregnancy in patients on thyroid-stimulating hormone (TSH) suppression treatment after total thyroidectomy for papillary carcinoma. *Endocr J*. Feb 28 2022;69(2):165-172. doi:10.1507/endocrj.EJ21-0109
28. American Thyroid Association Guidelines Task F, Kloos RT, Eng C, et al. Medullary thyroid cancer: management guidelines of the American Thyroid Association. *Thyroid*. Jun 2009;19(6):565-612. doi:10.1089/thy.2008.0403
29. Francis GL, Waguespack SG, Bauer AJ, et al. Management Guidelines for Children with Thyroid Nodules and Differentiated Thyroid Cancer. *Thyroid*. Jul 2015;25(7):716-59. doi:10.1089/thy.2014.0460
30. Hogan AR, Zhuge Y, Perez EA, Koniaris LG, Lew JI, Sola JE. Pediatric thyroid carcinoma: incidence and outcomes in 1753 patients. *J Surg Res*. Sep 2009;156(1):167-72. doi:10.1016/j.jss.2009.03.098
31. Childhood Thyroid Cancer Treatment (PDQ(R)): Health Professional Version. *PDQ Cancer Information Summaries*. 2002.
32. Golpanian S, Perez EA, Tashiro J, Lew JI, Sola JE, Hogan AR. Pediatric papillary thyroid carcinoma: outcomes and survival predictors in 2504 surgical patients. *Pediatr Surg Int*. Mar 2016;32(3):201-8. doi:10.1007/s00383-015-3855-0
33. Vergamini LB, Frazier AL, Abrantes FL, Ribeiro KB, Rodriguez-Galindo C. Increase in the incidence of differentiated thyroid carcinoma in children, adolescents, and young adults: a population-based study. *J Pediatr*. Jun 2014;164(6):1481-5. doi:10.1016/j.jpeds.2014.01.059
34. Wells SA, Jr., Asa SL, Dralle H, et al. Revised American Thyroid Association guidelines for the management of medullary thyroid carcinoma. *Thyroid*. Jun 2015;25(6):567-610. doi:10.1089/thy.2014.0335
35. Smallridge RC, Copland JA. Anaplastic thyroid carcinoma: pathogenesis and emerging therapies. *Clin Oncol (R Coll Radiol)*. Aug 2010;22(6):486-97. doi:10.1016/j.clon.2010.03.013
36. Dijkstra B, Prichard RS, Lee A, et al. Changing patterns of thyroid carcinoma. *Ir J Med Sci*. Jul-Sep 2007;176(2):87-90. doi:10.1007/s11845-007-0041-y
37. Lubin JH, Adams MJ, Shore R, et al. Thyroid Cancer Following Childhood Low-Dose Radiation Exposure: A Pooled Analysis of Nine Cohorts. *J Clin Endocrinol Metab*. Jul 1 2017;102(7):2575-2583. doi:10.1210/jc.2016-3529
38. Iglesias ML, Schmidt A, Ghuzlan AA, et al. Radiation exposure and thyroid cancer: a review. *Arch Endocrinol Metab*. Mar-Apr 2017;61(2):180-187. doi:10.1590/2359-3997000000257
39. Keefe G, Culbreath K, Cherella CE, et al. Autoimmune Thyroiditis and Risk of Malignancy in Children with Thyroid Nodules. *Thyroid*. Sep 2022;32(9):1109-1117. doi:10.1089/thy.2022.0241
40. Acquaviva G, Visani M, Repaci A, et al. Molecular pathology of thyroid tumours of follicular cells: a review of genetic alterations and their clinicopathological relevance. *Histopathology*. Jan 2018;72(1):6-31. doi:10.1111/his.13380

41. Cancer Genome Atlas Research N. Integrated genomic characterization of papillary thyroid carcinoma. *Cell*. Oct 23 2014;159(3):676-90. doi:10.1016/j.cell.2014.09.050
42. Blauel ER, Laetsch TW. The promise of TRK inhibitors in pediatric cancers with NTRK fusions. *Cancer Genet*. Apr 2022;262-263:71-79. doi:10.1016/j.cancergen.2022.01.004
43. Lebbink CA, Links TP, Czarniecka A, et al. 2022 European Thyroid Association Guidelines for the management of pediatric thyroid nodules and differentiated thyroid carcinoma. *Eur Thyroid J*. Dec 1 2022;11(6) doi:10.1530/ETJ-22-0146
44. Lebbink CA, van den Broek MFM, Kwast ABG, et al. Opposite Incidence Trends for Differentiated and Medullary Thyroid Cancer in Young Dutch Patients over a 30-Year Time Span. *Cancers (Basel)*. Oct 12 2021;13(20)doi:10.3390/cancers13205104
45. Machens A, Elwerr M, Thanh PN, Lorenz K, Schneider R, Dralle H. Impact of central node dissection on postoperative morbidity in pediatric patients with suspected or proven thyroid cancer. *Surgery*. Aug 2016;160(2):484-92. doi:10.1016/j.surg.2016.03.007
46. Schmidt Jensen J, Gronhoj C, Mirian C, et al. Incidence and Survival of Thyroid Cancer in Children, Adolescents, and Young Adults in Denmark: A Nationwide Study from 1980 to 2014. *Thyroid*. Sep 2018;28(9):1128-1133. doi:10.1089/thy.2018.0067