

Bölüm 6

GÖRÜNTÜLEME VE TANI YÖNTEMLERİ

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1. MEME KANSERİ EPİDEMİYOLOJİSİ

Kanser vakalarının %23'ünü ve kansere bağlı ölümlerin %14'ünü oluşturan meme kanseri, tüm gelişmelere rağmen önemli bir halk sağlığı sorunu olarak yerini korumaktadır (1). Amerika Kanser Derneği'nin verilerine göre, Amerika'da 2020 yılı için 276.480 kadının yeni meme kanseri tanısı alması ve 42.170 kadının bu hastalığa bağlı ölmesi beklenmektedir (2). İnsidanstaki artışa rağmen, geliştirilmiş tarama programları sayesinde meme kanserine bağlı ölüm oranlarında düşüş görülmüştür (3).

Meme kanserlerinin büyük çoğunluğu anormal mamografik bulgular neticesinde tanı alır ancak her mamografik anormallik kanser anlamına gelmemelidir. Bu nedenle mamografik taramalarda anormal bulgulara sahip olan kadınlar spot kompresyon mamografisi, spot tomosentez görüntüleri ya da ultrasonografik inceleme gibi ek görüntülemelerle değerlendirilmeli ve doku örneklemesi ya da biyopsinin gerekliliği ortaya konulmalıdır. Öte yandan, tüm meme kanserleri mamografide tespit edilemeyebilir. Klinik olarak şüphe uyandıran bir lezyon, görüntüleme özelliklerine bakılmaksızın, biyopsi ile değerlendirilmelidir. Çünkü bu tür lezyonların %15'i mamografide görülemeyebilir (4). Biyopsi ile en az invaziv yöntemle tanıya ulaşmak ve meme kanseri açısından risk teşkil etmeyen lezyonların cerrahisini önlemek amaçlanır.

Meme kanseri şüphesi multidisipliner bir yaklaşımı gerektirir. Meme radyologları ve cerrahların koordineli çalışması ile gereksiz meme biyopsilerinin önüne

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KAYNAKLAR

1. Whang, J.S., Baker, S.R., Patel, R., Luk, L., & Castro, A.G. (2013). "The causes of medical malpractice suits against radiologists in the United States", *Radiology*, 266(2): 548-54.
2. American Cancer Society. (2020). *Cancer Facts & Figures 2020*, Atlanta, p. 4.
3. Møller, M.H., Lousdal, M.L., Kristiansen, I.S., & Størvring, H. (2019). "Effect of organized mammography screening on breast cancer mortality: A population-based cohort study in Norway", *International Journal of Cancer*, 144(4): 697-706.
4. Barlow, W.E., Lehman, C.D., Zheng, Y., Ballard-Barbash, R., Yankaskas, B.C., Cutter, G.R., Carney, P.A., Geller, B.M., Rosenberg, R.D., Kerlikowske, K., Weaver, D.L., & Taplin, S.H. (2002). "Performance of diagnostic mammography for women with signs or symptoms of breast cancer", *Journal of the National Cancer Institute*, 94(15): 1151-9.
5. Chang, J.H., Vinés, E., Bertsch, H., Fraker, D.L., Czerniecki, B., Rosato, E.F., Lawton, T.C., Conant, E.F., Orel, S.G., Schuchter, L.M., Fox, K.R., Zieber, N., Glick, J.H., & Solin, L.J. (2001). "The impact of a multidisciplinary breast cancer center on recommendations for patient management: the University of Pennsylvania experience", *Cancer*, 91(7): 1231-7.
6. Fiorica, J.V. (2016). "Breast Cancer Screening, Mammography, and Other Modalities", *Clinical Obstetrics and Gynecology*, 59(4): 688-709.
7. Houssami, N., & Hunter, K.E. (2017). "The epidemiology, radiology and biological characteristics of interval breast cancers in population mammography screening", *NPJ Breast Cancer*, 3: 12.
8. Sprague, B.L., Arao, R.F., Miglioretti, D.L., Henderson, L.M., Buist, D.S., Onega, T., Rauscher, G.H., Lee, J.M., Tosteson, A., Kerlikowske, K., & Lehman, C.D. (2017). "National Performance Benchmarks for Modern Diagnostic Digital Mammography: Update from the Breast Cancer Surveillance Consortium", *Radiology*, 283(1): 59-69.
9. Lehman, C.D., Arao, R.F., Sprague, B.L., Lee, J.M., Buist, D.S., Kerlikowske, K., Henderson, L.M., Onega, T., Tosteson, A., Rauscher, G.H., & Miglioretti, D.L. (2017). "National Performance Benchmarks for Modern Screening Digital Mammography: Update from the Breast Cancer Surveillance Consortium", *Radiology*, 283(1): 49-58.
10. Sickles, EA, D'Orsi CJ, et al. (2013). "ACR BI-RADS Mammography", *ACR BI-RADS® Atlas, Breast Imaging Reporting and Data System*, 5th ed, (eds. D'Orsi CJ, Sickles EA, Mendelson EB, et al.), American College of Radiology, Reston, VA 2013.
11. Stomper PC. (2000). "Breast imaging", *Atlas of Breast Cancer*, (ed. Hayes DF), Mosby, Philadelphia 2000. p.54.
12. Harvey, J.A., Nicholson, B.T., Lorusso, A.P., Cohen, M.A., & Bovbjerg, V.E. (2009). "Short-term follow-up of palpable breast lesions with benign imaging features: evaluation of 375 lesions in 320 women", *American Journal of Roentgenology*, 193(6): 1723-30.
13. Stomper, P.C., Winston, J.S., Proulx, G.M., Hurd, T.C., & Edge, S.B. (2000). "Mammographic detection and staging of ductal carcinoma in situ: Mammographic-pathological correlation", *Seminars in Breast Disease*, 3(1):26-41.
14. Stomper, P.C., Gerdts, J., Edge, S.B., & Levine, E.G. (2003). "Mammographic predictors of the presence and size of invasive carcinomas associated with malignant microcalcification lesions without a mass", *American Journal of Roentgenology*, 181(6): 1679-84.
15. Venkatesan, A., Chu, P.W., Kerlikowske, K., Sickles, E.A., & Smith Bindman, R. (2009). "Positive predictive value of specific mammographic findings according to reader and patient variables", *Radiology*, 250(3): 648-57.
16. Holland, R., Stekhoven, J.H., Hendriks, J.H., Verbeek, A.L., & Mravunac, M. (1990). "Extent, distribution, and mammographic (histological correlations of breast ductal carcinoma in situ", *The Lancet*, 335: 519-522.
17. Healey, E.A., Osteen, R.T., Schnitt, S.J., Gelman, R.S., Stomper, P.C., Connolly, J.L., & Harris, J.R. (1989). "Can the clinical and mammographic findings at presentation predict the presence of an extensive intraductal component in early stage breast cancer?", *International Journal of Radiation Oncology, Biology, Physics*, 17(6): 1217-21.
18. Gluck, B.S., Dershaw, D.D., Liberman, L., & Deutch, B.M. (1993). "Microcalcifications on postoperative mammograms as an indicator of adequacy of tumor excision", *Radiology*, 188(2): 469-72.

19. Hilton, J.F., Bouganim, N., Dong, B., Chapman, J.W., Arnaout, A., O'Malley, F., Gelmon, K., Yerushalmi, R., Levine, M.N., Bramwell, V.H., Whelan, T.J., Pritchard, K.I., Shepherd, L.E., & Clemons, M. (2013). "Do alternative methods of measuring tumor size, including consideration of multicentric (multifocal disease, enhance prognostic information beyond TNM staging in women with early stage breast cancer: an analysis of the NCIC CTG MA.5 and MA.12 clinical trials", *Breast Cancer Research and Treatment*, 142(1): 143-151.
20. Morris, E.A., Schwartz, L.H., Drotman, M.B., Kim, S.J., Tan, L.K., Liberman, L., Abramson, A.F., Zee, K.J., & Dershaw, D.D. (2000). "Evaluation of pectoralis major muscle in patients with posterior breast tumors on breast MR images: early experience", *Radiology*, 214(1): 67-72.
21. Egan, R.L., & McSweeney, M.B. (1983). "Intramammary lymph nodes", *Cancer*, 51(10): 1838-42.
22. Upponi, S.S., Kalra, S., Poultidis, A., Bobrow, L., & Purushotham, A.D. (2001). "The significance of intramammary nodes in primary breast cancer", *European journal of surgical oncology: the journal of the European Society of Surgical Oncology and the British Association of Surgical Oncology*, 27(8): 707-8.
23. Shen, J., Hunt, K.K., Mirza, N.Q., Krishnamurthy, S., Singletary, S.E., Kuerer, H.M., Meric-Bernstam, F., Feig, B.W., Ross, M.I., Ames, F.C., & Babiera, G.V. (2004). "Intramammary lymph node metastases are an independent predictor of poor outcome in patients with breast carcinoma", *Cancer*, 101(6): 1330-7.
24. Flobbe, K., Bosch, A.M., Kessels, A.G., Beets, G.L., Nelemans, P.J., Meyenfeldt, M.F., & Engelshoven, J.M. (2003). "The additional diagnostic value of ultrasonography in the diagnosis of breast cancer", *Archives of Internal Medicine*, 163(10): 1194-9.
25. Soo, M.S., Rosen, E.L., Baker, J.A., Vo, T.T., & Boyd, B.A. (2001). "Negative predictive value of sonography with mammography in patients with palpable breast lesions", *American Journal of Roentgenology*, 177(5): 1167-70.
26. Baker, J.A., Kornguth, P.J., Soo, M.S., Walsh, R., & Mengoni, P.M. (1999). "Sonography of solid breast lesions: observer variability of lesion description and assessment", *American Journal of Roentgenology*, 172(6): 1621-5.
27. Rahbar, G., Sie, A.C., Hansen, G.C., Prince, J.S., Melany, M.L., Reynolds, H.E., Jackson, V.P., Sayre, J.W., & Bassett, L.W. (1999). "Benign versus malignant solid breast masses: US differentiation", *Radiology*, 213(3): 889-894.
28. Uzan, C., Séror, J., & Séror, J. (2015). "Management of a breast cystic syndrome: Guidelines", *Journal de Gynécologie Obstétrique et Biologie de la Reproduction*, 44(10): 970-979.
29. Adrada, B.E., Candelaria, R.P., & Rauch, G.M. (2017). "MRI for the Staging and Evaluation of Response to Therapy in Breast Cancer", *Topics in Magnetic Resonance Imaging*, 26(5): 211-218.
30. Peters, N., Rinkes, I.H., Zuithoff, N.P., Mali, W.M., Moons, K.G., & Peeters, P.H. (2008). "Meta-analysis of MR imaging in the diagnosis of breast lesions", *Radiology*, 246(1): 116-124.
31. Houssami, N., Turner, R., & Morrow, M. (2017). "Meta-analysis of pre-operative magnetic resonance imaging (MRI) and surgical treatment for breast cancer", *Breast Cancer Research and Treatment*, 165(2): 273-283.
32. Houssami, N., Turner, R., Macaskill, P., Turnbull, L.W., McCready, D., Tuttle, T.M., Vapiwala, N., & Solin, L.J. (2014). "An individual person data meta-analysis of preoperative magnetic resonance imaging and breast cancer recurrence", *Journal of Clinical Oncology: Official Journal of the American Society of Clinical Oncology*, 32(5): 392-401.
33. Holland, R., Veling, S.H., Mravunac, M., & Hendriks, J.H. (1985). "Histologic multifocality of Tis, T1-2 breast carcinomas. Implications for clinical trials of breast-conserving surgery", *Cancer*, 56(5): 979-90.
34. Speers, C., & Pierce, L.J. (2016). "Postoperative Radiotherapy After Breast-Conserving Surgery for Early-Stage Breast Cancer: A Review", *JAMA Oncology*, 2(8): 1075-82.
35. https://www.acrin.org/Portals/0/Protocols/6694/A011104_v04-13_Summary.pdf (Accessed on Feb 09, 2020).
36. Turnbull, L.W., Brown, S.C., Harvey, I., Olivier, C., Drew, P., Napp, V., Hanby, A.M., & Brown, J. (2010). "Comparative effectiveness of MRI in breast cancer (COMICE) trial: a randomised controlled trial", *The Lancet*, 375(9714):563-571.

37. Lai, H., Chen, C., Lin, Y., Chen, S.H., Wu, H., Wu, Y., Kuo, S., Chen, S., & Chen, D. (2016). "Does Breast Magnetic Resonance Imaging Combined With Conventional Imaging Modalities Decrease the Rates of Surgical Margin Involvement and Reoperation?", *Medicine (Baltimore)*, 95(22): e3810.
38. Sung, J.S., Li, J., Costa, G.D., Patil, S., Zee, K.J., Dershaw, D.D., & Morris, E.A. (2014). "Pre-operative breast MRI for early-stage breast cancer: effect on surgical and long-term outcomes", *American Journal of Roentgenology*, 202(6): 1376-82.
39. Bleicher, R., Ciocca, R.M., Egleston, B.L., Sesa, L., Evers, K., Sigurdson, E.R., & Morrow, M. (2009). "Association of routine pretreatment magnetic resonance imaging with time to surgery, mastectomy rate, and margin status", *Journal of the American College of Surgeons*, 209(2): 180-7; quiz 294-5.
40. Iacconi, C., Galman, L., Zheng, J., Sacchini, V.S., Sutton, E.J., Dershaw, D.D., & Morris, E.A. (2016). "Multicentric Cancer Detected at Breast MR Imaging and Not at Mammography: Important or Not?", *Radiology*, 279(2): 378-384.
41. Abe, O et al. (2005). "Effects of chemotherapy and hormonal therapy for early breast cancer on recurrence and 15-year survival: an overview of the randomised trials", *Lancet*, 365(9472): 1687-1717.
42. Brennan, M.E., Houssami, N., Lord, S.J., Macaskill, P., Irwig, L.M., Dixon, J.M., Warren, R.M., & Ciatto, S. (2009). "Magnetic resonance imaging screening of the contralateral breast in women with newly diagnosed breast cancer: systematic review and meta-analysis of incremental cancer detection and impact on surgical management", *Journal of Clinical Oncology: Official Journal of the American Society of Clinical Oncology*, 27(33): 5640-5649.
43. Orel, S.G. (2008). "Who should have breast magnetic resonance imaging evaluation?", *Journal of Clinical Oncology: Official Journal of the American Society of Clinical Oncology*, 26(5): 703-711.
44. Yeh, E.D., Slanetz, P.J., Edmister, W.B., Talele, A.C., Monticciolo, D.L., & Kopans, D.B. (2003). "Invasive lobular carcinoma: spectrum of enhancement and morphology on magnetic resonance imaging", *The Breast Journal*, 9(1): 13-18.
45. Kim, D.Y., Moon, W.K., Cho, N., Ko, E.S., Yang, S.K., Park, J.S., Kim, S.M., Park, I., Cha, J.H., & Lee, E.H. (2007). "MRI of the Breast for the Detection and Assessment of the Size of Ductal Carcinoma in Situ", *Korean Journal of Radiology*, 8(1):32-39.
46. Warner, E., Causer, P., Wong, J.W., Wright, F.C., Jong, R.A., Hill, K.A., Messner, S.J., Yaffe, M.J., Narod, S.A., & Plewes, D.B. (2011). "Improvement in DCIS detection rates by MRI over time in a high-risk breast screening study", *The Breast Journal*, 17(1): 9-17.
47. Sorbero, M.E., Dick, A.W., Beckjord, E.B., & Ahrendt, G.M. (2009). "Diagnostic Breast Magnetic Resonance Imaging and Contralateral Prophylactic Mastectomy", *Annals of Surgical Oncology*, 16(6):1597-1605.
48. Solin, L.J., Orel, S.G., Hwang, W., Harris, E.E., & Schnall, M.D. (2008). "Relationship of breast magnetic resonance imaging to outcome after breast-conservation treatment with radiation for women with early-stage invasive breast carcinoma or ductal carcinoma in situ", *Journal of Clinical Oncology: Official Journal of the American Society of Clinical Oncology*, 26(3): 386-391.
49. Gradishar W.J. et al. (2020). "Breast Cancer, Version 2.2020, NCCN Clinical Practice Guidelines in Oncology", *Journal of the National Comprehensive Cancer Network*. https://www.nccn.org/professionals/physician_gls/pdf/breast_blocks.pdf (Accessed on Feb 8, 2020)
50. Hindle, W.H., Davis, L., & Wright, D.B. (1999). "Clinical value of mammography for symptomatic women 35 years of age and younger", *American Journal of Obstetrics and Gynecology*, 180(6 Pt 1):1484-1490.
51. Silverstein, M.J., Recht, A., Lagios, M.D., Bleiweiss, I.J., Blumencranz, P.W., Gizienski, T., Harms, S.E., Harness, J.K., Jackman, R.J., Klimberg, V.S., Kuske, R., Levine, G.M., Linver, M.N., Rafferty, E.A., Rugo, H.S., Schilling, K.J., Tripathy, D., Vicini, F.A., Whitworth, P.W., & Willey, S.C. (2009). "Special report: Consensus conference III. Image-detected breast cancer: state-of-the-art diagnosis and treatment", *Journal of the American College of Surgeons*, 209(4): 504-520.