Title

The Rare Case of the Synchronous Bilateral Invasive Breast Cancer

Journal

Proceedings of UCLA Health, 23(1)

Authors

Naghshineh, Sheila
Lorber, Jeremy

Publication Date

2019-04-12

CLINICAL VIGNETTE

The Rare Case of the Synchronous Bilateral Invasive Breast Cancer

Sheila Naghshineh, MD[1] and Jeremy Lorber, MD[2]

[1]David Geffen School of Medicine at UCLA
[2]Cedars-Sinai Medical Center

Introduction

Synchronous bilateral invasive breast cancer (SBBC) is rare, accounting for approximately 2% of newly diagnosed breast cancers.[1,2] The clinical criteria for a synchronous breast tumor varies. The second tumor in the contralateral breast may be a synchronous or a metachronous lesion depending on the definition.[3] While the exact interval between the diagnoses of the two tumors that qualifies as synchronous tumor is controversial, an acceptable interval is under 6 months.[4] The pathophysiology behind the second cancer is also debatable, given that there is evidence to support both a metastatic spread versus two independent primaries.[5-7]

Case Report

A 74-year-old female, without a personal or family history of breast cancer, was found to have bilateral breast cancer on her annual screening mammogram. Three years prior to presentation, patient who was found to have bilateral masses on mammography, which appeared to be bilateral benign cysts on an ultrasound, notable for two complicated cysts at 9 o'clock in the right breast (7cm from nipple) and 3 o'clock in the left breast (5cm from nipple). Her 6-month-ultrasounds and an annual mammogram showed bilateral cysts, unchanged in size or appearance, until about 2 years later when the complicated cyst at 9 o' clock in the right breast (7cm from nipple) now demonstrated a more antiparallel appearance with more indistinct, microlobulated margins. Subsequent ultrasound guided aspiration showed brown cyst fluid without concern for malignancy. She was advised to have annual breast imaging thereafter. A year later, the annual screening mammogram and ultrasound showed a new focal area of architectural distortion in the right breast and focal asymmetry in the left breast. The bilateral benign cysts remained stable. Additional diagnostic views showed two new masses: an irregular 13 x 12 x 10 mm mass in the right breast at 10 o' clock (6cm from nipple) and an irregular 15 x 13 x 9 mm mass in the left breast at 11 o' clock (5cm from nipple). No axillary lymphadenopathy is noted. She then underwent ultrasound guided core needle biopsy of both masses. The 1.1 cm lesion on the right was consistent with invasive ductal carcinoma (IDC) with lobular features, grade 2, lymph and vascular invasion absent, ER >95%, PR 80%, HER-2 negative (IHC +1), ki 67 1-2%. The 1.1 cm lesion on the left was consistent with IDC, grade 1, lymph and vascular invasion negative, ER >95%, PR >95%, HER-2 negative (IHC +1), and Ki 67 5-10%.

During her entire course, she denied palpable masses, breast pain, skin changes, or nipple discharge or retraction. She was not of Ashkenazi Jewish descent, and denied family history of breast or ovarian cancer. She had received post-menopausal hormone replacement therapy from age 50 until her cancer diagnosis. Her breast exam did not show skin retraction, nipple distortion or dominant palpable masses. She had no lymphadenopathy.

After consultation with surgery and medical oncologist, patient decided to have bilateral simple mastectomies with bilateral sentinel lymph node biopsies, which confirmed bilateral negative lymph nodes, a left 1.8cm grade 1 IDC at T1c and a right 2.3cm grade 2 IDC at T2, both strongly ER and PR positive, and HER2 negative. She was subsequently started on an aromatase inhibitor.

Discussion

Despite numerous prior screening mammograms and diagnostic imaging of both breasts, the patient was diagnosed with new bilateral invasive ductal carcinoma. Her diagnosis falls under the category of synchronous bilateral breast cancer. The similar histological features, differentiation, and tumor types argue for intra breast metastasis; however, there have been cases that demonstrated clonally independent events despite similar pathologies and hormonal features.[6,7]

The most common surgery for patients with SBBC is bilateral mastectomy. Even though breast conservation is an acceptable alternative, as was the case with our patient, bilateral mastectomy is the preferred management given the anxiety associated with the diagnosis of SBBC.[2,5,8] Chikaraddi et al (2014) shows that SBBC have a higher likelihood of being triple receptor negative.[9] However, our patient probably has a better prognosis, given both tumors were ER/PR positive. While the results are variable, studies show SBBC survival is equivalent or only moderately lower than unilateral breast cancer.[1,3] It is key to discuss treatment options based on prognostic markers specific to the individual's cancer while also taking into account the

heavy psychological impact of SBBC for most patients.

This patient's case is unusual given that she did not have the typical risk factors for SBBC, such as family history of breast cancer, young age at diagnosis of first cancer, and lobular breast cancer.[2] She did not have BRCA testing given the absence of significant family history or personal history of cancer at a younger age. This case shows the importance of universal screening mammography but also imaging and careful examination of the contralateral breast of those with breast cancer at the time of diagnosis and with surveillance imaging.

REFERENCES

1. **Hartman M, Czene K, Reilly M, Adolfsson J, Bergh J, Adami HO, Dickman PW, Hall P**. Incidence and prognosis of synchronous and metachronous bilateral breast cancer. *J Clin Oncol*. 2007 Sep 20;25(27):4210-6. PubMed PMID: 17878475.
2. **Padmanabhan N, Subramanyan A, Radhakrishna S**. Synchronous Bilateral Breast Cancers. *J Clin Diagn Res*. 2015 Sep;9(9):XC05-XC08. doi: 10.7860/JCDR/2015/14880.6511. Epub 2015 Sep 1. PubMed PMID: 26500995; PubMed Central PMCID: PMC4606324.
3. **Nichol AM, Yerushalmi R, Tyldesley S, Lesperance M, Bajdik CD, Speers C, Gelmon KA, Olivotto IA**. A case-match study comparing unilateral with synchronous bilateral breast cancer outcomes. *J Clin Oncol*. 2011 Dec 20;29(36):4763-8. doi: 10.1200/JCO.2011.35.0165. Epub 2011 Nov 21. PubMed PMID: 22105824.
4. **Dalal V, Kaur M, Bhatnagar A, Bansal A**. Synchronous and metachronous bilateral breast malignancies: Report of two case and literature review. *J Gyn Surg*. 2016;32(2): 136.
5. **Gollamudi SV, Gelman RS, Peiro G, Schneider LJ, Schnitt SJ, Recht A, Silver BJ, Harris JR, Connolly JL**. Breast-conserving therapy for stage I-II synchronous bilateral breast carcinoma. *Cancer*. 1997 Apr 1;79(7): 1362-9. PubMed PMID: 9083159.
6. **Saad RS, Denning KL, Finkelstein SD, Liu Y, Pereira TC, Lin X, Silverman JF**. Diagnostic and prognostic utility of molecular markers in synchronous bilateral breast carcinoma. *Mod Pathol*. 2008 Oct;21(10):1200-7. doi: 10.1038/modpathol.2008.35. Epub 2008 May 9. PubMed PMID: 18469799.
7. **Imyanitov EN, Suspitsin EN, Grigoriev MY, Togo AV, Kuligina ESh, Belogubova EV, Pozharisski KM, Turkevich EA, Rodriquez C, Cornelisse CJ, Hanson KP, Theillet C**. Concordance of allelic imbalance profiles in synchronous and metachronous bilateral breast carcinomas. *Int J Cancer*. 2002 Aug 10;100(5):557-64. PubMed PMID: 12124805.
8. **Heron DE, Komarnicky LT, Hyslop T, Schwartz GF, Mansfield CM**. Bilateral breast carcinoma: risk factors and outcomes for patients with synchronous and metachronous disease. *Cancer*. 2000 Jun 15;88(12):2739-50. PubMed PMID: 10870056.
9. **Krishnappa R, Chikaraddi SB, Deshmane V**. Primary synchronous bilateral breast cancer. *Indian J Cancer*. 2014 July-September;51(3):256-258. doi: 10.4103/0019-509X.146762. PubMed PMID: 25494117.

Submitted March 13, 2019