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CLINICAL VIGNETTE

Rapid Recurrence of Ductal Carcinoma In Situ (DCIS) after Lumpectomy

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The first patient is a 62-year-old female who had a routine screening mammogram which revealed clustered microcalcifications in the left breast. A biopsy six weeks later revealed invasive carcinoma, grade 2, estrogen receptor (ER) and progesterone receptor (PR) positive and HER2 Neu negative. Ki-67 was 10-20%. Breast magnetic resonance imaging one month after biopsy revealed a 1.9 x 1.3 cm left lower outer breast non mass enhancement 5 cm from the nipple. The patient underwent a left breast lumpectomy with oncoplastic closure and sentinel lymph node biopsy three weeks after the MRI. Pathology revealed a 1.1 cm primary with 80% invasive component and 20% ductal carcinoma in situ (DCIS) and widely negative margins. Six sentinel lymph nodes were negative. Patient was staged as stage IA, pT1b N0 MX. Gene expression profile testing (Oncotype DX 21-gene) revealed a recurrence score of 20, distant recurrence risk at 9 year of 6% and chemotherapy benefit < 1%. She completed adjuvant partial beam radiation therapy and began adjuvant anastrozole one year later. Mammogram 14 months after completing radiation revealed suspicious 20 mm calcifications in the left breast, upper outer quadrant, 9 cm from the nipple near the lumpectomy edge. Biopsy revealed DCIS. She elected bilateral mastectomies with reconstruction, which were performed six weeks after biopsy. Pathology revealed atypical lobular hyperplasia in the right breast and atypical ductal hyperplasia and atypical lobular hyperplasia in the left breast. She then began Exemestane on 06/04/2024.

The second patient is a 67-year-old female who had a routine screening mammogram on 09/21/2023 which revealed clustered calcifications in the right breast. Diagnostic mammogram and ultrasound on 10/19/2023 revealed amorphous and fine linear calcifications measuring 23 mm in the upper outer quadrant of the right breast, located 8 cm from the nipple with no axillary lymphadenopathy. Biopsy on 11/09/2023 revealed DCIS which was ER and PR positive. She underwent a right breast lumpectomy with oncoplastic closure on 12/18/2023. Pathology revealed DCIS, intermediate grade with widely negative margins and no invasive component. She completed adjuvant partial beam radiation therapy on 02/20/2024 and began adjuvant anastrozole on 02/24/2024. Right diagnostic mammogram on 06/13/2024 revealed calcifications in the upper outer quadrant of the right breast located 9 cm from the nipple near the lumpectomy edge. Biopsy from 06/18/2024 revealed focal DCIS, intermediate nuclear grade, ER positive and PR negative. The patient underwent another lumpectomy on 07/10/2024 which revealed a focus of residual ductal carcinoma in situ, measuring 0.2 cm with widely clear margins and no

invasive carcinoma. Radiation oncologist recommended no further radiation therapy.

Discussion

Rapid recurrence or persistent DCIS early after lumpectomy and radiation therapy is quite unusual and disturbing to both the patient and the treating physician, surgeon and radiation oncologist. Both these patients had excellent margins of clearance after their first lumpectomies and had partial beam adjuvant radiation therapy. In 32 years of busy practice these two back-to-back early recurrences vs persistent disease of DCIS post operatively at the first six month mammogram were the very first time the treating surgeon had seen this event. These two patients were in their sixties, margins were well clear, they received well planned radiation therapy and were on medical therapy to prevent recurrence. The risk of recurrence for DCIS after lumpectomy with radiation therapy is from 5-15% and rarely as soon as six months post operatively.¹ After much thought and two separate presentations of these cases to our faculty conferences, two thoughts emerged. Firstly, the oncoplastic closure could have moved the breast tissue around enough to distort the radiation field for partial breast radiation even though clips were placed at the edges of the lumpectomy at the time of initial surgery. It is also possible that not all the edges of the lumpectomy were treated. Secondly, mammograms were not done after the lumpectomies and prior to initiating the radiation therapy to make sure there were no remaining abnormal microcalcifications still in the breast. Although pre radiation mammograms are not a standard they can certainly be done when the lumpectomy was performed for microcalcifications as the presentation for DCIS or infiltrating breast cancer without a palpable mass.²

Conclusion

We are in the process of changing policy within the UCLA Breast Program for those patients who have received lumpectomies for either invasive breast cancer or DCIS that presents as microcalcifications on mammography. Mammograms will be strongly considered after the lumpectomy but prior to initiation of radiation therapy in these patients to assure that no suspicious microcalcifications remain within the breast. Patients that have undergone oncoplastic closures after lumpectomies for disease presenting as microcalcifications will be considered for whole breast radiation at the discretion of the treating surgeon and radiation oncologist.

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