Radiation Induced Angiosarcoma of the Breast Four Years After Breast Conservation Therapy

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INTRODUCTION

- Breast angiosarcomas are a rare neoplasm, accounting for only 1% of all breast soft tissue tumors[1]
- Angiosarcomas have a high rate of recurrence[2]
- Can be classified as either primary or secondary, with secondary being associated with radiation exposure[3]
- Primary breast angiosarcoma tends to present in women age 30-50 as a poorly defined skin mass[1,4]
- Secondary breast angiosarcoma usually presents later, with a median age of 67-71; it presents as painless bruising[2,3,4]
- Imaging studies of angiosarcoma do not have pathognomonic findings of malignancy and may be mistaken as benign[1,4]
- Diagnosis for secondary angiosarcoma is generally made with punch or incisional biopsy[1,3]
- Sarcomas frequently occur at the edge radiation fields where doses and tumor necrosis are heterogeneous[4]
- Median occurrence is approximately 10 years after radiation exposure[2,4]
- Due to their rare nature, there is no standard treatment strategy[1,2,4]

CASE REPORT

- 69-year-old female with a history of left sided DCIS who underwent BCT with lumpectomy, sentinel lymph node biopsy, and radiation in February 2018
- Patient was routinely followed with clinical exams and imaging studies
- She initially was noted to have post-radiation changes, but was monitored closely
- Underwent punch biopsy in Oct 2021 that had benign findings
- In January 2022, she noticed acute discoloration of her breast
- Punch biopsy was performed that confirmed angiosarcoma
- PET scan was done that showed only local disease with thickening of the skin of the left breast
- Other work-up was negative, so decision was made to proceed to the OR for left sided mastectomy

OPERATION

- Underwent left sided mastectomy with wide margins in February 2022
- Final pathology: angiosarcoma with negative margins, 10.8 cm involving skin and breast tissue, no lymphovascular or perineural invasion

Image 1. Preoperative skin changes. Gross clinical appearance prior to surgery.

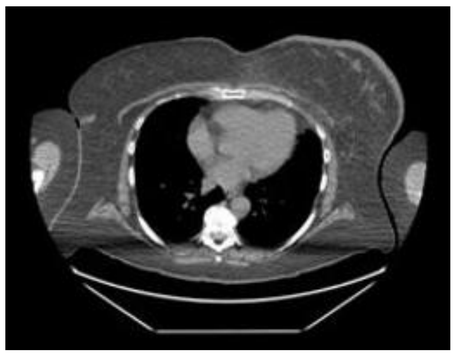

Image 2. Pre-operative CT findings. Left-sided skin thickening noted on imaging.

Image 3. Post-operative incision. Left mastectomy with wide margins.

POST-OPERATIVE COURSE

- Patient has continued to be followed in clinic and noticed a discolored nodule at the posterior aspect of her incision in mid-July
- The nodule has since been excised widely and was confirmed to be recurrence of angiosarcoma

CONCLUSIONS

- 69-year-old female with a history of BCT for left sided DCIS later developed secondary angiosarcoma of the breast
- She underwent mastectomy with wide margins, however, has had subsequent recurrence
- Although median development of secondary angiosarcoma is approximately 10 years, patients should be regularly monitored for skin changes and swelling[4]
- Prognosis tends to be linked with the tumor grade and margin status of the resection, with negative margins having significantly improved disease-free survival time[1,2,3,4]
- Overall, the prognosis of secondary angiosarcoma is poor; with five-year survival ranging from 43-88% [2,4]
- As BCT continues to be a mainstay of breast cancer treatment, breast angiosarcoma diagnoses will likely increase[2,4]
- Wide local excision is generally recommended for treatment however extent of margins has not been well defined, nor has the use of adjuvant or neoadjuvant chemotherapy and radiotherapy[1,2,4]

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