

## Radio-Induced Breast Angiosarcoma: A Case Report

A.ASSAL<sup>1\*</sup>, I.LEL ABBASSI<sup>1</sup>, S.KAWTARI<sup>1</sup>, Ennachit M<sup>1</sup> and El Kerroumi M<sup>1</sup>

Department of Surgery, Mohamed 6 Center for the treatment of cancers1, Ibn Rochd Chu, Casablanca, Morocco

### \*Corresponding author:

Assal Asmaa,  
Maternity Ward, Abderrahim Harouchi Children's  
Hospital Casablanca, Morocco,  
E-mail: asmo.assal@gmail.com

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### 1. Introduction

Mammary angiosarcomas are rare malignant mesenchymal tumors, which develop at the expense of conjunctival mammary vascular tissue. They represent 0.04% of malignant breast tumors and 8 to 10% of all mammary sarcomas [1]. There are two forms: a primary without a known precursor, and a second secondary to breast irradiation [2]. The incidence of the radiation-induced form is increasing given the growing number of patients who are candidates for breast-conserving treatment. We report the observation of a radiation-induced angiosarcoma in a 61-year-old patient who underwent conservative surgery for ductal carcinoma of the left breast, secondly associated with adjuvant radiotherapy 6 years ago. Through the latter we will discuss the epidemiological, diagnostic, therapeutic and evolutionary aspects of this type of tumor.

### 2. Observation

This is a 61-year-old patient, 4th gesture, 4th par, followed since 2015 for grade II infiltrating ductal carcinoma of SBR, straddling the external quadrants of the left breast of 3 cm with a negative extension assessment. [T2N1M0], for which she had first undergone a conservative surgery "lumpectomy with left axillary dissection" [healthy excision limits, 2 x 2.5 cm with carcinoma in situ lobular luminal profile B HER2 [-] ki67 at 25%, 1 N + / 18 N with capsular breakage], then secondly, she received 21 sessions of external radiotherapy with a cumulative dose greater than 50Gy. An anti-estrogenic hormone therapy was prescribed, because of the positivity of the hormone receptors, for a period of 5 years. The patient was followed regularly. Six years after conservative locoregional treatment, the patient consulted for mastodynia, with rapidly progressive inflammatory signs in the irradiated breast. Clinical examination found an indurated breast with the presence of confluent purplish papules occupying the left breast (Figure 1).

Mammo-ultrasound found a lesion measuring 36 x 21 x 11 mm in the left QSE opposite the lumpectomy scar, classified as BIRADS 3 by the ACR (Figure 2). A thoraco-abdomino-pelvic CT, objectified at the level of the pre-pectoral region straddling the upper and lower quadrant a tissue enhancement with a central necrotic component of spiculated irregular contours measuring 2 cm long axis, it did not objectify any secondary lesion at the thoraco-abdomino-pelvic level. A skin biopsy was performed, retaining the diagnosis of mammary angiosarcoma. A radical mastectomy was performed, the anatomopathological study confirmed the diagnosis of angiosarcoma. The immunohistochemical study showed the expression of CD31 and the absence of expression of CKAE1

The post-operative consequences were simple, the patient was staffed during a Multidisciplinary Consultation Meeting. Adjuvant chemotherapy was prescribed.



**Figure 1:** purplish, confluent papular lesions in the left breast



**Figure 2:** Mammo-ultrasound of the left breast

### 3. Discussion

Angiosarcoma of the breast is a rare and aggressive conjunctival tumor. It represents 0.04% of malignant breast tumors and 8 to 10% of all mammary sarcomas [1]. It can be primary in young women, or radiation-induced in older women who have received conservative treatment for breast cancer, including conservative surgery and adjuvant radiotherapy with a cumulative dose greater than 40 Gy [2]. The latency time is several years, it is between 29 to 72 months.

Clinically, the method of revelation is often the rapidly progressive appearance of a mammary nodule that can reach up to 11 cm in volume associated with inflammatory skin signs of a pulsatile nature and purplish color [3]. Cahan et al. established the diagnostic criteria for radiation-induced angiosarcoma in: previous irradiation, clinical latency in years [more than five years], tumor occurrence in the irradiated area and histological confirmation of the sarcomatous component on the lesion post-eradicated [4]. Imaging is inconclusive, Computed tomography finds its place to search for distant metastases. Magnetic resonance imaging has a crucial place to assess locoregional extension, in particular extension towards the underlying muscular plane [5]. The confirmatory diagnosis is purely histological [6], macroscopically, angiosarcoma presents as a locally aggressive, infiltrating tumor containing necrotico-hemorrhagic areas. Microscopically, angiosarcoma has structural abnormalities depending on its stage of differentiation [4]. Surgery is the unequivocal treatment of radiation-induced angiosarcomas,

it is based on radical mastectomy plus or minus axillary dissection if there is lymph node involvement [7]. The role of adjuvant treatments remains limited in the treatment of radiation-induced angiosarcomas. Chemotherapy finds its interest in the adjuvant situation, faced with surgery alone, it improves survival and reduces local recurrences and metastases [8]. The major prognostic factor is the tumor size at the time of diagnosis [9]. The other prognostic factors described in the literature are the degree of histological differentiation and the limitations of surgical excision [10].

### 4. Conclusion

Radiation-induced angiosarcoma is a rare and aggressive malignant tumor occurring in patients who have received breast-conserving treatment. Only the histological and immunohistochemical study make it possible to retain the diagnosis of this type of tumor. Surgery is the cornerstone of treatment; it must be broad. Adjuvant chemotherapy, for radio-induced secondary forms is always indicated, it makes it possible to reduce the risk of tumor recurrence. The prognosis depends on the degree of tumor differentiation, its size, and the quality of surgical excision.

### References

1. Leung F, Terzibachian JJ, Gay C, Bourtembourg A, Sautiere JL, Maillet R, et al. Radiation-induced mammary angiosarcoma after conservative treatment of breast cancer. *Aboute two cases*. 2010; 38 (3): 214-216.
2. Boufettal H, Noun M, Hermas S, Samouh N, Benayad S, Karkouri M, et al. Breast angiosarcoma: about a case. In: *Annales de pathologie*. Elsevier. 2013; Pg no: 217-220.
3. Rachidi I, Abida A, Benyahyia MA, El Yousefi M, Bargach S. Breast angiosarcoma: About a case *Mammary angiosarcoma: About one case*. *Int J Innov Appl Stud*. 2017; 20(2): 589.
4. Kirova Y, Vilcoq JR, Asselain B, Sastre-Garau X, Campana F, Dendale R, et al. Radiation-induced sarcomas after breast cancer: experience of the Institut Curie and review of the literature. *Cancer / Radiotherapy*. 2006; 10(1-2): 83-90.
5. Majdoubi A, Badr Serji B, Harroudi TE. *Oncological Surgery Department, Hassane II Oncology Center, Mohammed VI University Hospital Center, Oujda, Morocco*, 2020.
6. Abdou Y, El khanany A, Attwood K, Wenyan Ji, Takabe K, Opyrchal M, et al. Primary and secondary breast angiosarcoma: single center report and a meta-analysis. *Breast Cancer Research and Treatment*. 2019; 178 (3): 523-533.
7. Jerbi M, Hidar S, Hattab N, Tebra S, Yacoubi T, Korbi S, et al. Radiation-induced sarcoma of the breast: a case report. *Gynecology Obstetrics Fertil*. 2007; 35(10): 997-1000.
8. Anania G, Parodi PC, Sanna A, Rampino E, Marcotti E, Di Loreto C, et al. Radiation-induced angiosarcoma of the breast: case report and self-criticism of therapeutic approach. In: *Annals of surgery*. Elsevier. 2002; Pg no: 388-391.

9. Chapiro C, Adjenou V, Arbion F, Potin J, Asquier E, Brunereau L, et al. Breast angiosarcoma: ultrasound, mammographic and MRI characteristics (about two cases). *J Radiol.* 2004; 85(12 Pt 1): 2035-2038.
10. Nakamura R, Nagashima T, Sakakibara M, Nakano S, Tanabe N, Fujimoto H, et al. Angiosarcoma arising in the breast following breast-conserving surgery with radiation for breast carcinoma. 2007; 14 (2): 245-249.