

# Treatment Challenges of Primary Acinic Cell Carcinoma of the Breast

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## Abstract

We present a rare case of primary acinic carcinoma in the breast, which is almost always associated with salivary glands. We will discuss the multidisciplinary approach to treatment, highlighting the role of chemotherapy and radiation. Additionally, this tumor was seen on magnetic resonance imaging (MRI), which is not a readily used diagnostic test for breast disease, emphasizing its diagnostic sensitivity in these patients.

**Keywords:** Acinic carcinoma; Breast cancer; Treatment

## Introduction

Acinic cell carcinoma (ACC) is a low grade malignancy unique to salivary gland treated with a combination of surgical and oncologic management. Although the treatment plan for salivary malignancy is well established, primary breast acinic carcinoma remains a challenge to the multidisciplinary team with various treatment algorithms. We hope this paper will raise awareness of this rare subtype and direct a treatment plan for similar patients in the future.

## Case Report

We present a 57-year-old female with an abnormal routine mammogram. Her history is significant for maternal breast cancer. Her ultrasound showed no abnormality and mammogram showed a 2 cm focal asymmetry, classified as BI-RADS 0 (not diagnostic). Subsequently a magnetic resonance imaging (MRI) was performed that showed a right breast lobulated enhancing mass which when biopsied showed ACC. The

patient was taken for breast conserving therapy with axillary node dissection. Pathology confirmed ACC, estrogen negative, progesterone positive, HER-2 negative with negative margins and no positive lymph nodes. Of note, she was progesterone positive in a typically triple negative cancer. After discussion with the radiation oncology team, she was deemed not a candidate for adjuvant chemotherapy but did receive 21 cycles of adjuvant radiotherapy. On 5-year follow-up, she has had no locoregional recurrence or metastatic disease.

## Discussion

About one in eight (12.4%) of women will develop invasive breast cancer over the course of their lifetime with greater than 250,000 new cases diagnosed annually [1]. Common malignant subtypes include invasive ductal carcinoma and invasive lobular carcinoma with varying hormone susceptibility. Rare subtypes pose a challenge to common treatment algorithms. The breast functionally resembles a secretory gland and although this subtype is rare, it is explanatory. ACC is usually a triple-negative breast carcinoma that demonstrates morphologic similarity with primary acinic cell carcinoma of the breast, but with less studied treatment [2]. Our patient was progesterone positive on hormonal analysis, unlike the typical presentation. Although this did not impact her morbidity or mortality, as ACC is considered a low-grade tumor.

The first case of ACC of the breast was described by Roncaroli in 1996, since then only 39 cases have been documented [3]. The mean age of patients ranged from 20 - 80 years of age, with 51 as the most common. Although the histopathological features remain similar for the 39 documented cases, the treatment remains unclear. In a retrospective analysis 29 patients were treated with modified radical mastectomy, 16 were treated with breast conservation therapy, eight of which had a sentinel lymph node dissection, four of the modified radical and sentinel node patients received neoadjuvant chemotherapy, 10 breast conservatory and modified radial patients received adjuvant chemotherapy, and six of the breast conservatory patients received radiation therapy [4]. Locoregional recurrence only happened in one patient after lumpectomy with no neoadjuvant or adjuvant chemotherapy or radiation therapy, and three patients had metastasis after surgery with neoadjuvant chemotherapy and radiation therapy [4]. Unfortunately, the articles discuss their decision-making regarding which patients receive neoadjuvant or adjuvant chemotherapy or radiation therapy. The treatment plans seems to be based on a case-by-case ba-

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sis, emphasizing the need for a more structured treatment algorithm.

Another treatment challenge is the radiographic variability. Typically ACC will present with lucency or scattered calcifications on mammogram, much like invasive ductal carcinoma [4]. In some patients, like this case report, the mammogram will show only a focal asymmetry, which was considered BI-RADS 0 and not diagnostic. MRI was more sensitive in detecting this suspicious lesion and may be more useful in similar patients.

## Conclusions

Salivary gland tumors are rare triple negative cancers of the breast and the degree of variability in treatment plans continues to become a challenge for the multidisciplinary breast oncology team. We hope this paper raises awareness of this rare subtype and helps direct a similar treatment plan among breast

surgeons and ultimately a standard treatment algorithm.

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