A rare case of Adenoid Cystic Carcinoma of breast during Pregnancy – A case report and literature review

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INTRODUCTION

- Adenoid cystic carcinoma (ACC) of the breast is a rare malignant tumor, with an incidence of less than 0.1%
- Commonly seen in postmenopausal women
- Despite its triple-negative receptor status,It is characterized by **slow progression and low metastatic potential**.
- Presentation during pregnancy is extremely uncommon resulting in a diagnostic and therapeutic challenge.
- This is a case report of a high grade ACC of breast diagnosed during pregnancy and treated with breast conservation and reconstruction

CASE PRESENTATION

- A 30- year old female with no comorbs
- 33 weeks pregnant
- No Family history of malignancy
- No risk factors or habits
- Presented with left breast lump
- No nipple discharge, skin changes or pain

- **Examination:** 3 cm firm,non tender mobile mass in upper outer quadrant of left breast, skin and nipple – areolar complex unremarkable. Ipsilateral soft axillary lymph nodes. Contralateral breast and axilla normal.
- No pathology in salivary glands.

- **Core Biopsy:** Invasive carcinoma with salivary gland- type features. Estrogen, progesterone Herceptin receptor negative. Ki 67 index 40%.

- **Ultrasound Breast:** Left breast 26x29x31mm mass at 1 o clock. Ipsilateral axilla showed 5mm lymph nodes.

- **Ultrasound Abdomen & Pelvis:** Single alive intrauterine pregnancy with good cardiac activity.

- **MDT decision:**Head and neck evaluation/Targeted sono evaluation with FNA of salivary glands/If negative then Upfront BCT with Sentinel Lymph Node Biopsy followed by Adjuvant chemo and radiotherapy

MANAGEMENT

- Patient delivered a healthy baby boy at full term
- **Surgical procedure:** Left Breast Segmentectomy, Sentinel Lymph Node Biopsy and Lateral Mammoplasty with Lateral Intercostal Artery Perforator Flap Reconstruction 13-05-2025
- Unremarkable post-surgery stay
- **Final Histopathology:** High Grade Adenoid Cystic Carcinoma 60mm, all margins clear. 2 reactive lymph nodes free of tumor
- **Adjuvant Therapy:** AC-DOSE DENS 4 cycles followed by TAXOL D. DENS 4 cycles
- **XRT awaited**

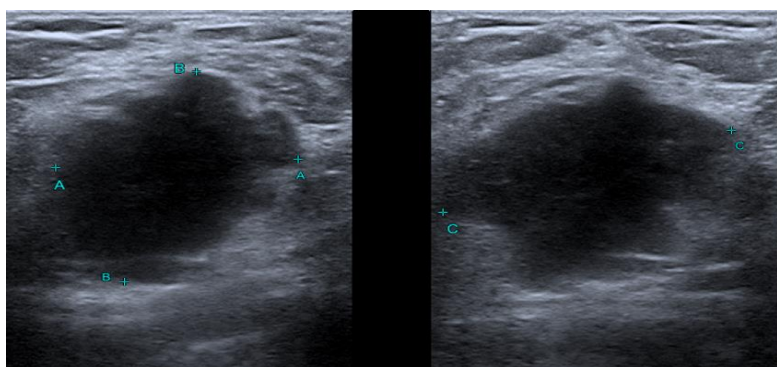

Figure 1: Ultrasound showing breast lesion

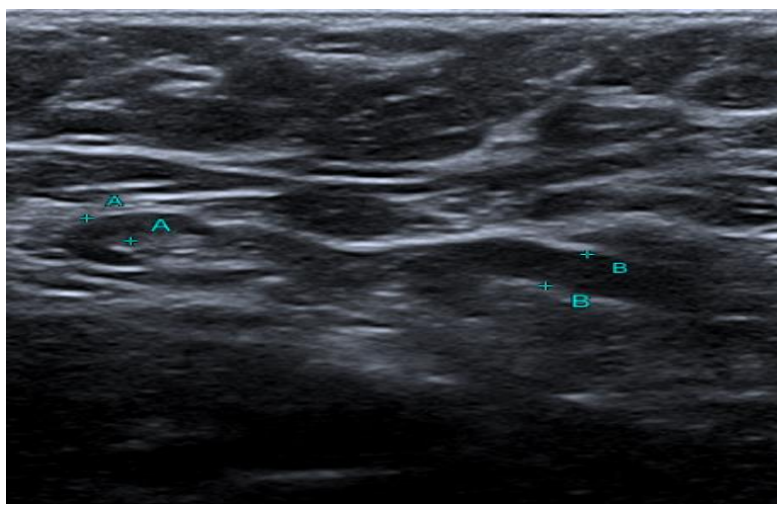

Figure 2: Ultrasound showing enlarged axillary lymph nodes

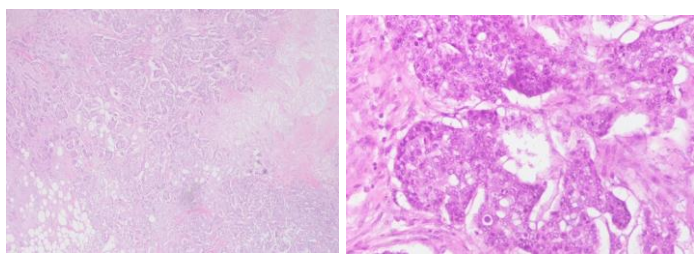

Figure 3; Histopathology section shows a malignant tumor Composed of ductal and myoepithelial cells. Myoepithelial cells have dark,angulated nuclei with scanty cytoplasm giving a basaloid appearance.Solid architecture is seen with perineural invasion.

CONCLUSION:

A thorough diagnostic evaluation, with core needle biopsy as the gold standard, is essential to establish the diagnosis and to rule out an extramammary primary. When combined with multidisciplinary planning, this approach enables safe and effective management.

Our case highlights that breast-conserving surgery, along with oncoplastic reconstruction and sentinel lymph node biopsy, can provide oncologic safety and excellent cosmetic outcomes, even for large adenoid cystic carcinomas (ACCs) diagnosed during pregnancy.

Continued reporting and analysis of such rare cases will contribute to a better understanding of optimal diagnostic and therapeutic strategies for this uncommon breast tumour

DISCUSSION & LITERATURE REVIEW

- The first documented case of adenoid cystic carcinoma (ACC) of the breast was reported by **Geschickter and Copeland** in **1945,** marking the initial recognition of this rare salivary-gland–type malignancy within the breast
- According to population-based data, the incidence of breast ACC is extremely low; Ghabach et al. (2006) reported an annual rate of approximately 0.92 cases per million women
- A study published by Qing QI Liu 2024 reported that axillary involvement is rare in ACC, consistent with our case where the patient had no nodal metastasis. Where as solid and basaloid ACC's exhibit aggressive behavior and surgery remains the mainstay of treatment with clear margins and SLNb if indicated. Adjuvant radiotherapy may be used especially if margins are close or to reduce local recurrence.
- As per literature review by Taylor Neilson 2023 upfront surgical resection with or without axillary staging in patients who are clinically node-negative is indicated, with consideration for adjuvant radiation therapy. Systemic therapy may provide only a minimal benefit, without sufficient justification to merit exposure to the cytotoxic adverse effects.

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