

**ABERRANT AXILLARY BREAST CARCINOMA: A CASE REPORT AND LITERATURE REVIEW****<sup>1</sup>Minoza KG, <sup>1</sup>Na'aya HU, <sup>2</sup>Yawe KT, <sup>3</sup>Mustapha Z, <sup>4</sup>Nggada HA, <sup>1</sup>Lawan MA**

<sup>1</sup>Department of Surgery, University of Maiduguri, Nigeria, <sup>2</sup>Department of Surgery, University of Abuja, Nigeria, <sup>3</sup>Department of Radiology, University of Maiduguri, Nigeria, <sup>4</sup>Department of Histopathology, University of Maiduguri, Maiduguri, Nigeria.

**Correspondence and reprint request to: Dr. Karen G. Minoza**

Department of Surgery, College of Medical Sciences, University of Maiduguri, P.M.B 1414, Maiduguri, Nigeria. **eMail:-** [karminoza@gmail.com](mailto:karminoza@gmail.com) **Phone:** +2348027417410

**ABSTRACT**

**Background:** Ectopic breast tissue (EBT) develops along the mammary line owing to incomplete embryologic regression of the mammary ridges. This includes supernumerary breasts and aberrant breast tissue, in which malignancy is rarely reported. The commonest site of ectopic breasts is at the axilla, and the subcutaneous axillary mass may pose a diagnostic challenge to the clinician.

**Case Report:** We report the case of a 31 year old multiparous Nigerian woman who presented with a painless left axillary mass of two months' duration. The anatomical breasts were grossly and radiologically normal. A diagnosis of aberrant breast carcinoma in her left axilla was confirmed by tissue biopsy. She had wide local excision and left axillary dissection, followed by one course of cytotoxic chemotherapy before she began radiotherapy.

**Conclusion:** Malignancy of aberrant breast tissue is a rare entity. A high index of suspicion and a low threshold for biopsy of subcutaneous lesions in the periphery of the breast allows for early intervention and a better prognosis. Triple assessment with clinical, radiological and pathological assessment of lesions in the axilla or along the embryonic milk line can not be over-emphasized.

**Keywords:** *Carcinoma, Axillary breast, Aberrant, Immunohistochemistry*

**INTRODUCTION**

Ectopic breast tissue is reported in 2-6% of the general population with most located in the axillary region.<sup>1,2</sup> It is subject to physiological and benign pathological changes, but primary cancer of ectopic breast tissue is rare, estimated at 0.3% of all breast cancers.<sup>3</sup> The most common site of primary ectopic breast cancer is the axilla, with 60-70% occurring here.<sup>3-6</sup> Ectopic mammary tissue appears in humans due to incomplete embryologic regression of the mammary ridges, which is an ectodermal thickening extending from the axillae to the groin. In the classification of ectopic breast tissue by Copeland and Geschickter<sup>7</sup>, supernumerary breasts include accessory nipple or areolar formation, or both, with or without glandular tissue, while

aberrant breast tissue refers to ectopic breast tissue without a nipple or areolar complex. We report this rare case of a 31 year old woman who had aberrant left axillary breast carcinoma diagnosed by triple assessment, who had wide local excision and axillary dissection and subsequent adjuvant therapy.

**CASE REPORT:**

A 31 year old Nigerian woman presented with two months' history of a painless swelling on the anterior aspect of her left axilla, which gradually increased in size and later had hyperpigmentation of the skin, but no ulceration. There were no other swellings elsewhere, and she had never previously noticed any axillary swelling, even during

pregnancy. There was no history of use of oral contraceptive pills, or family history of breast cancer. She is para 4, and her last childbirth was ten months earlier. Menarche was at 16 years of age, with a regular 30-day cycle. She was a fit-looking young woman who was not pale. The right breast and axilla were grossly normal, as was the left breast. There was a non-tender, dome-shaped mass at the anterior aspect of the left axilla, with intact hyperpigmented skin at its summit, with no accessory nipple or areola. It was firm, smooth and mobile, measuring about 14 x 10 x 6 cm in its widest dimensions (Figure 1, 2). There was a palpable left axillary lymph node at the central region; firm, mobile, 2 x 1 cm size, and no cervical lymphadenopathy. There were no significant findings on the examination of the other systems.

Bilateral mammography showed a normal right breast, and homogenous pear-shaped density over the left axilla, separate from the otherwise normal left breast (Figure 3, 4). Fine Needle Aspiration Cytology (FNAC) of the mass was suspicious for malignancy. The diagnosis of cancer of an accessory left breast at the axilla was made (T3 N1 M0), confirmed by an incision biopsy which reported

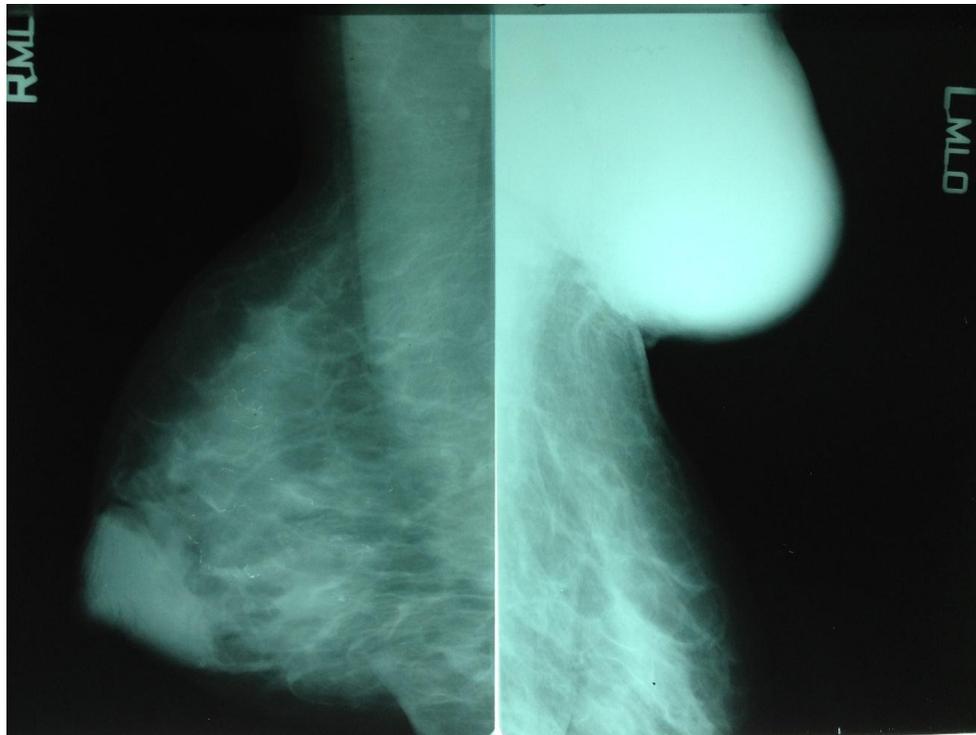
invasive ductal carcinoma (not otherwise specified, NOS). Immunohistochemical analysis revealed it to be Triple Positive (ER+, PR+, Her2+). Chest X-ray and the rest of the work up were reported as normal. Hormonal therapy with Tamoxifen tablets at 20 mg daily was commenced as soon as histological diagnosis was made, one week before she had a wide local excision of the left axillary mass with left axillary node dissection. Intra-operatively, there were curiously numerous enlarged left axillary lymph nodes in the posterior and central groups. The mass was not attached to the chest wall and was distinct from the axillary tail of the left breast. She did well post-operatively. The histology report of the excised specimen was that of Invasive Ductal Carcinoma of left accessory breast, with the deep excision margin and resection margins free of tumour, and nine of the eighteen axillary lymph nodes excised had metastatic deposits. She received one course of adjuvant cytotoxic therapy (IV Cyclophosphamide, Adriamycin, 5-FlouroUracil, and Prednisolone tablets) before she was ready for post-operative radiotherapy of the tumour bed at a Radiotherapy centre. She is yet to return for her follow-up.



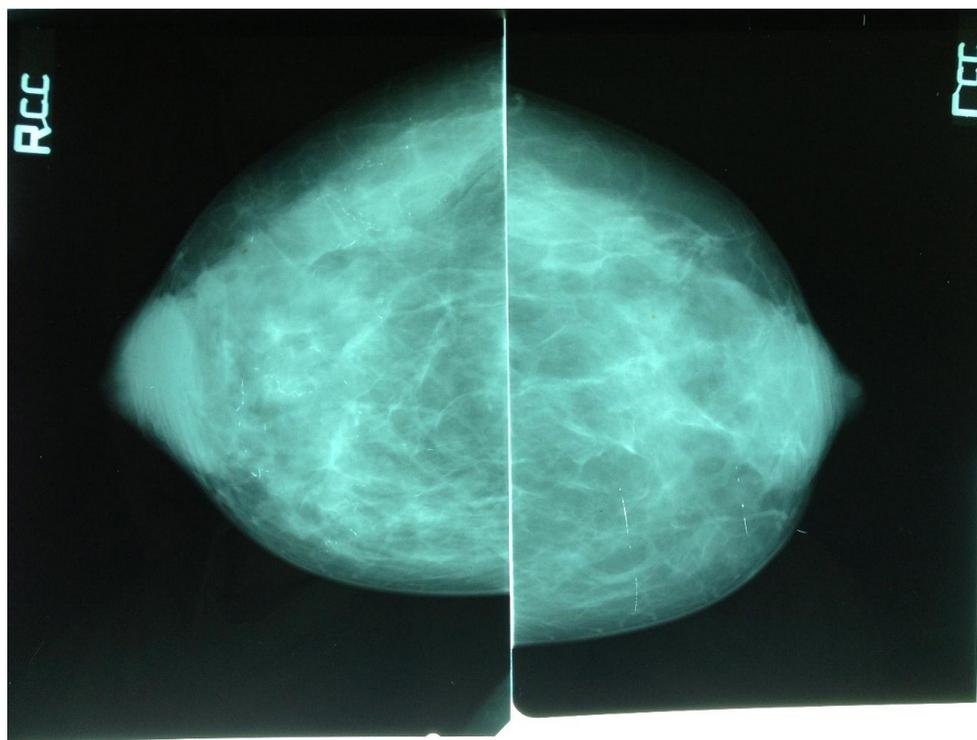
**Figure 1:** Left Axillary Breast with hyperpigmented skin but no nipple or areolar complex; aberrant axillary breast.



**Figure 2:** The grossly normal pendulous anatomical breasts contrast with the dome-shaped malignant left aberrant axillary breast.



**Figure 3:** The Medio-Lateral-Oblique (MLO) views of the mammogram show a normal right breast, and a homogenous pear-shaped density over the left axilla, separate from the otherwise radiologically normal left breast



**Figure 4:** The Cranio-Caudal (CC) views of the mammogram of the right and left breasts were normal.

## DISCUSSION

Accessory breasts appear most commonly along the original distribution of the mammary ridge ("milk line") which extends from the axillae to the groin. Less commonly, they may appear on the face, posterior neck, chest, buttock, vulva, hip, posterior or lateral thighs.<sup>4</sup> Ectopic breast cancer is rare; and with general lack of awareness amongst physicians and patients about this entity, delay in diagnosis is common.<sup>1</sup> A study in Nigeria found an incidence of 14% of cancer in accessory breasts, out of twenty-two patients with breast cancer.<sup>8</sup> Due to the small amount of breast tissue, invasion of skin or underlying tissue is more common<sup>9</sup>, and there are several reports that metastases to ipsilateral lymph nodes occurs earlier and more frequently than in anatomical breast cancers.<sup>4,6,9,10</sup> Drainage of lymph fluids differ as well, and should be considered when performing a sentinel lymph node biopsy<sup>9</sup>. Youn et al.<sup>11</sup> however, reported a case of axillary breast carcinoma without lymph node metastases. With the axilla being the commonest site of ectopic breast tissue, it follows that it is also the commonest site of primary ectopic breast cancer, with 70% of ectopic breast cancers reported to occur at the axilla.<sup>3,4,5,6</sup> Our patient's presentation is similar to that reported by Hatada et al.<sup>12</sup> in Japan, although their patient noted the axillary swelling during her three pregnancies. The differential diagnoses of such axillary lesions are usually benign; excess axillary fat, axillary lymph node, sebaceous cyst, lipoma and hydradenitis suppurativa.<sup>3,4</sup> However, cancer arising from the axillary tail of the breast is also an important differential. Consideration of an axillary mass as the initial presentation of an occult primary breast cancer must be kept in mind, as reported by Ohene-Yeboah.<sup>13</sup> A low threshold for biopsy is thus advocated.

Apart from its location, the clinical presentation of ectopic breast carcinoma is not different from that of carcinoma of the anatomical breast. The commonest sign is that of a palpable mass, though some present as seemingly benign nodular lesions; Teke et al.<sup>14</sup> reported an unsuspecting dyspigmented nodule at the axilla with a normal bilateral mammogram, while Rajan et al.<sup>15</sup> described a small subcutaneous mass below the left breast, lateral to an accessory nipple. The diagnosis

is also by mammography and ultrasonography, followed by pathological diagnosis with a FNAC or gross excision.<sup>4</sup> The anatomical breasts in our patient were grossly normal and showed no mammographic features of malignancy, as was noted in similar reports.<sup>13,14,16</sup> Axillary breast cancer usually occurs at the exclusion of the anatomical breast<sup>3</sup>, so screening of both breasts by mammography is indicated, even after primary treatment, to exclude any later manifestation of an occult primary neoplasm in the breast.<sup>13</sup> Our patient had axillary mastectomy and excision of lymph nodes. Some authors recommend radical mastectomy of the ipsilateral breast if the regional lymph nodes have metastases<sup>4</sup>, but Evans and Guyton<sup>5</sup> had concluded in their review of world literature in 1995 that there was no survival advantage for modified radical mastectomy over that of local excision with axillary dissection or radiation, and the addition of radiation to either type of mastectomy provided no additional benefit. Cogwells<sup>17</sup> had also reported that ipsilateral mastectomy does not result in a better prognosis for ectopic breast carcinoma.

The principles of post-operative treatment are the same as for anatomical breast carcinoma. Radiotherapy of the tumour site increases local control, but radiation of the ipsilateral anatomical breast is not systematically performed.<sup>4</sup> As regional lymph node disease is usually found, adjuvant systemic therapy is given, and adjuvant chemotherapy and radiotherapy have also been advised in node-negative disease.<sup>2</sup> The prognosis of accessory breast carcinoma is difficult to determine, mainly because it is rare, and also because of limited follow-up data. But although it has a higher rate of lymph node involvement, it is said to follow the same prognostic indices as anatomical breast carcinoma.<sup>4,9</sup>

Certainly more light should be shed on this rare entity of malignancy in ectopic breast tissue. Clinicians must have a high index of suspicion. Triple assessment with early biopsy and surgical excision of nodules or masses around the region of the breast and along the milk line serves to provide appropriate and timely diagnosis and treatment and thus, a better prognosis.

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