

Breast Cancer in a Supernumerary Breast at the Yaoundé Gynaeco-Obstetric and Paediatric Hospital: About a Case

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Abstract

Accessory or ectopic breast tissue is an anomaly in the development of the breast. It is a rare condition that occurs along the embryological mammary line. In less than 1% of all breast cancers, supernumerary breast cancer is reported, with the axillary location being the most common in 60% to 90% of cases. Cancerous degeneration of this supernumerary breast tissue can pose a dual diagnostic and therapeutic problem. We report the case of locally advanced adenocarcinoma in a right supernumerary breast. This is a 75-year-old, grand-multiparous, postmenopausal, and known hypertensive patient on treatment. Family history was remarkable for brain cancer in her sister and oesophageal cancer in her mother. She consulted for a mass in the right axillary cavity on supernumerary breast evolving for a year. Clinical examination revealed a large, fixed, budding and haemorrhagic-ulcerated mass of the right axilla, with long axis measuring about 15 cm. There was as well a supernumerary breast on the left, but without particularity. A soft tissue ultrasound showed a large hypoechoic mass in the right axillary region of 116 mm with areas of central necrobiosis. Morphologically, the breasts were normal. A breast MRI revealed a subcutaneous mass in the right axillary cavity with skin ulceration and satellite lymphadenopathy. The extension assessment revealed liver metastases, and a biopsy of the mass revealed a breast adenocarcinoma. The case was the subject of a multidisciplinary consultation meeting following which a wide excision of the mass was indicated. The histo-pathology analysis results of the surgical specimen were in favour of a triple negative

papillary adenocarcinoma. After a post-operative multidisciplinary consultation meeting, adjuvant chemotherapy was indicated. The development of supernumerary breasts depends on hormones, just like normal breasts. Breast cancer in accessory breast tissue is quite rare with the incidence being 6%. The most common pathology is invasive carcinoma (50% - 75%). It is usually located in the armpit (60% - 70%) although it can be present in other less common locations such as the inframammary region (5% - 10%) and rarely the thighs, perineum, groin and the vulva. Since accessory axillary breast tissue is not considered during breast screening examination, it is necessary for clinicians to be aware of this entity and associated pathologies. Their preventive excision in women at high risk can also be considered.

Keywords

Adjuvant Chemotherapy, Papillary Adenocarcinoma, Surgery, Supernumerary Breast, Treatment of Supernumerary Breast Cancer

1. Introduction

During embryonic and foetal development, breasts appear on two initial mammary ridges located on a line extending from the axillary line to the anterior-internal aspect of the thigh. Tissues present in the axillary region, including breast parenchyma, can develop into an axillary mass. Imaging modalities can detect the possible tissue of origin or underlying pathology. In 19% of cases, there is fibro-glandular tissue of breast origin [1]. Accessory breast tissue is the most common congenital breast anomaly, occurring in 2% to 6% of women and 1% to 3% of men [2].

Supernumerary breasts (polymastia or even hypermastia) are due to the absence of regression of the mammary buds during embryonic life. Axillary accessory mammary glands are common but most often confused with the axillary extension of the breast [3]. Supernumerary breast cancer is rare and represents 0.2% to 0.6% of all breast cancers. The axillary location is the most common, and occurs in 60% to 90% of cases [4]. Like the normal breast, ectopic breast tissue is hormone-dependent. The abnormality is present at birth but is generally only discovered during pregnancy or lactation, during an increase in volume, cyclical pain, or a sensation of discomfort. In 13% of cases, an axillary supernumerary breast is present on both sides [5]. There is scarcity of studies on incidental breast tissue cancer due to its rarity. We report the case of locally advanced adenocarcinoma in the right supernumerary breast.

2. Case Presentation

This is a 75-year-old patient, grand-multiparous and postmenopausal for 25 years, known to be hypertensive under treatment. The family history was remarkable for brain cancer in her sister and oesophageal cancer in her mother.

She consulted in our health facility for a mass in the right axillary cavity on supernumerary breast evolving for 1 year, gradually increasing in size and associated with intermittent pain. Clinical examination revealed a fixed, large, budding, ulcerative and haemorrhagic right axillary mass measuring 15 cm on the long axis (**Figure 1(a)**). There was no palpable mass nor lymph nodes on the left breast, but presence of a supernumerary breast without particularity (**Figure 1(b)**).



Figure 1. Clinical appearance (a) of the large budding and haemorrhagic right axillary mass on the right supernumerary breast (shown by the blue arrow) and in (b) the left (contralateral) supernumerary breast with a normal appearance (shown by the yellow arrow).

According to imaging investigations, a soft tissue ultrasound revealed a large hypoechoic tissue mass in the right axillary region measuring 111×94 mm with areas of central necrobiosis. Morphologically, the breasts were normal.

A breast MRI revealed a subcutaneous mass in the right axillary cavity measuring $136 \times 113 \times 116$ mm with skin ulceration and satellite lymphadenopathy suggesting a malignant process (**Figure 2(a)** and **Figure 2(b)**).

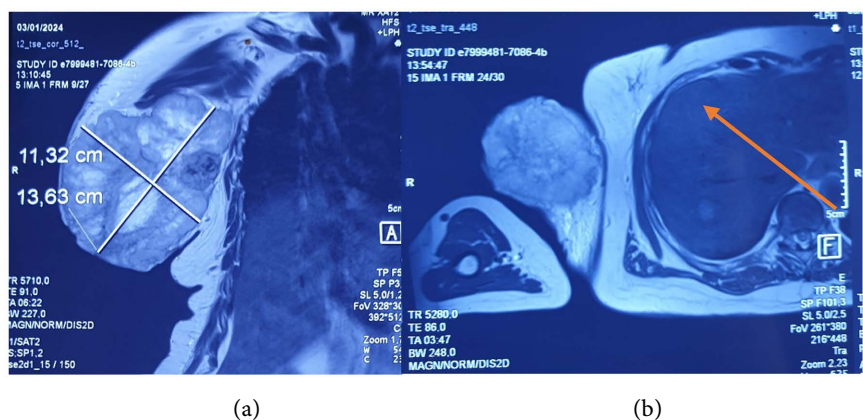


Figure 2. Breast MRI in sagittal and frontal section, right side showing a subcutaneous mass in the right axillary cavity corresponding to the supernumerary breast. The section on figure (b) shows the normal-looking right breast (orange arrow).

The extension assessment found multiple hepatic nodules suggestive of he-

patic metastases. The persistence of abundant bleeding from the supernumerary breast and the discomfort associated with this mass also prompted a surgical procedure. A Tru-cut needle biopsy was taken from the ectopic breast lesion revealed breast adenocarcinoma (**Figure 3(a)**), following which immunohistochemistry was requested (**Figure 3(b)**).

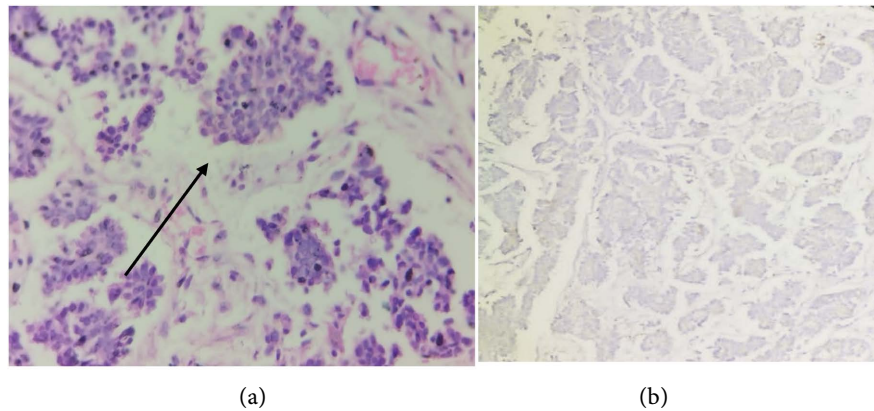


Figure 3. (a) Histology of papillary adenocarcinoma on supernumerary breast (presence of morular masses surrounded by clear spaces resembling lymphatic slits oriented by the black arrow) HE $\times 40$. (b) Immunohistochemistry of accessory mammary tumour (No overexpression of hormonal receptors (Estrogen Receptors negative, progesterone Receptor negative) and HER2 negative)).

The patient's case was the subject of a multidisciplinary consultation meeting following which a wide excision by right cleansing surgery was indicated and done. The histo-pathology analysis results of the surgical specimen were in favour of a triple negative papillary adenocarcinoma. After a post-operative multidisciplinary consultation meeting, adjuvant chemotherapy was indicated.

3. Discussion

The bilateral embryonic mammary buds or milk line are thick bands of ectoderm that extend along the ventral surface of the body from the anterior axillary fold to the medial aspect of the inguinal fold symmetrically on both sides. They involute during embryogenesis except at the thoracic region to give rise to breast tissue [6]. Their development depends on hormones, just like normal breasts and usually appears during puberty and pregnancy. The associated pathologies are similar to those of normal breasts, namely pain, inflammation, fibro-adenoma and carcinoma [4]. The incidence of carcinoma in supernumerary or accessory breast tissue is approximately 6% [4]. Given this hidden atypical localization in the axillae, and due to insufficient information and low clinical suspicion [2], the majority of patients are diagnosed with stage II disease or higher [2], with a mean delay of 40.5 months to obtain a diagnosis [2]. This confirms our study with a late discovery at an advanced stage due to its location.

The main differential diagnoses include lymphomas, lymph node metastases,

sarcomas, and benign changes may include fibro-adenomas, phyllodes tumours, lipomas, and abscesses [7].

The most common pathology is invasive ductal carcinoma (50% - 75%), but cases of medullary, lobular and phyllodes carcinoma have been reported [8]. It most commonly occurs in the armpit (60% - 70%), but can occur in other locations such as the inframammary region (5% - 10%) and rarely in the thighs, perineum, groin and vulva [7] [8].

Cancer treatment is usually delayed due to the wide variety of differential diagnoses and lack of awareness about the possibility of supernumerary breast cancer. Routine mammograms may miss supernumerary breast cancers due to their location and may be confused with soft tissue sarcomas [2]. CT scan [7], Bone scintigraphy and breast MRI are useful for delineating tumor extension [2], in addition to the detection of another primary tumor [2].

There is no specific management for breast cancer on supernumerary breast. Surgical management is somewhat controversial. Some authors recommend mastectomy of the ipsilateral breast if the axilla is affected by carcinoma [9]. Mastectomy can only be considered in patients who have an additional lesion in the breast. However, if the clinical examination and para-clinical tests such as mammography and MRI exclude its presence, the patient may be spared of mastectomy with close follow-up [7].

Adjuvant or neo-adjuvant systemic chemotherapy is administered according to the same principles in case of supernumerary breast cancer. Radiotherapy to the tumour site should be performed if the axillary lymph nodes are positive but radiotherapy to the ipsilateral anatomical breast is controversial [5]. Long-term follow-up is necessary to exclude a local recurrence and to exclude a concomitant breast tumor.

4. Conclusion

Supernumerary breast cancer is an extremely rare disease. It is important to diagnose it at an early stage in order to improve its prognosis. Since accessory axillary breast tissue is not considered during breast screening examination, it is necessary for clinicians to be aware of this entity and associated pathologies. Their preventive excision in women at high risk can also be considered. We encourage further studies to develop specific management for supernumerary breast cancer.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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