Clinical Case

Chirurgia (2016) 111: 527-531
No. 6, November-December

http://dx.doi.org/10.21614/chirurgia.111.6.527

Bilateral Axillary Accessory Breast Tissue Revealed by Pregnancy

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Rezumat

Țesut mamar accesor axilar bilateral evidențiat de sarcină

Ilustrăm cazul rar al unei paciente de 28 ani ce s-a prezentat cu două formațiuni tumorale axilare bilateral ce au apărut în timpul sarcinii, crescând apoi progresiv în dimensiuni. Examenul local a evidențiat două formațiuni de 5/3/5 cm fiecare cu caracteristici clinice de benignitate, dezvoltate la nivelul extensiei axilare a glandei mamare. În timpul lactației, un lichid similar laptelui s-a evacuat printr-un mamelon rudimetar, maroniu, localizat în centrul fiecărei formațiuni. La 1 an de la naștere, rezonanța magnetică nucleară e evidențiat la nivelul celor două mase tumoraleșesut mamar accesor cu același semnal ca și glanda eutopică de care se delimitează. Din motive estetice și din cauza riscului de a dezvolta tumori benigne sau maligne, țesutul mamar ectopic a fost excizat chirurgical. Examenul histologic a evidențiat țesut mamar glandular normal.

Cuvinte cheie: țesut mamar accesor, polimastie, axilă, sarcină

Abstract

We illustrate a rare case of a 28 year-old woman with bilateral axillary masses, which were uncovered during her first pregnancy only and grew progresively in size ever since. On local examination, there were two 5/3/5 cm masses with benign clinical characteristics, developed apparently on the axillary extension of the mammary gland. During lactation, a milk-like liquid was evacuated through a brownish, rudimentary, nipple located in the center of each axillary masses. One year after parturition, the MRI showed bilateral axillary breast tissue appearance, separated from the eutopic mammary gland, but having similar signal intensity. Due to aesthetic reasons and the additional risk for subsequent malignant or benign breast disease, the ectopic breast tissues were completely surgically removed. The histology report showed normal glandular breast tissue.

Key words: accessory breast tissue, polymastia, axilla, pregnancy

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This work was partly presented at the Romanian National Congress of Surgery – Sinaia 2016.

Introduction

Mammary glands have the embryological origin in the surface of the ectodermal layer, along with the skin, the hair and the sweat glands. The bilateral proliferation of the epidermis normally appears during the fifth week of gestation on the ventral part of the embryo, forming two bands of modified sweat glands called the mammary ridges. In the seventh week, these bands are extending from the base of the forelimb, the future axilla, to the region of the hind limb-the inguinal region. This forms a line known as the milk-line. In the next weeks, most of the mammary ridges disappear, and only two of them persist in the anterior thoracic region. They penetrate the mesenchy-

mal tissue and cannulate afterwards in the lactiferous ducts (1,2). Only in puberty, with the stimulation of estrogen and progesterone hormones, these ducts grow by forming alveoli and secretory cells (3, 4).

Defects involving breast embryogenesis are more likely to appear during the mammary ridges regression due to some possible heterogeneous inheritance (5). Failure of milk-line regression leads to polythelia or to polymastia (1, 4). Polythelia is the most common congenital breast anomaly, consisting of one or more accessory nipples or/and areolae. The evolution of this accessory tissue into a complete histological breast is called polymastia, with or without the nipple (6).

Polythelia is more frequently found in 2 to 10% of general population, while polymastia occurs only in 0.22 to 6% of the people, with a higher incidence in women (3,6,7). Auxiliary breasts appear to be more symptomatic especially after puberty. Exactly as normal breasts, individuals with polymastia can experience physiologic modifications in the auxiliary masses, like tenderness, pain, volume rising, even lactation. All of them are a result of the hormonal changes during the menstrual cycle or pregnancy (7,8).

Case report

A 28 year-old caucasian female, gravida one, para zero, arrived to our clinic during the first trimester of pregnancy. She was referred by her general practitioner, due to the appearance of bilateral axillary "lumps" which had recently started to progressively grow. The woman had a clear medical history, with the menarche at age 13, and 4 years of combined hormonal contraceptives which were stopped one year before the actual pregnancy. She never took other chronical treatment and her family medical history did not present any breast pathology. The patient`s only surgical intervention was an appendectomy at the age of 15.

On the clinical examination, the breasts were free of nodules or other palpable lesions, while in both of the axillary regions, there were found two subcutaneous elastic, firm masses 5/3/5 cm in size (Fig. 1 A, B). No enlargement of the axillary, cervical or supraclavicular lymphnodes were observed. The routine blood tests were normal. The masses were locatedon the topography of what appeared to be the milk-line. The patient did not remember any discomfort, pain or soreness during her menstrual period on the axillary area. The ultrasonography revealed the presence of ductal tissue at the level of the axillary masses suggesting accessory breasts and discharged any pathological lesion. Because of the hormonal changes during pregnancy in both ectopic and normal breasts, at the clinical exam we could not delimitate very well the accessory masses from the eutopic mammary tissue. Both of them presented a brownish macule of 3 mm diameter, highly suspicious of rudimentary nipples (Fig. 1 A, B, black arrows).

Being considered an uncomplicated auxiliary mammary

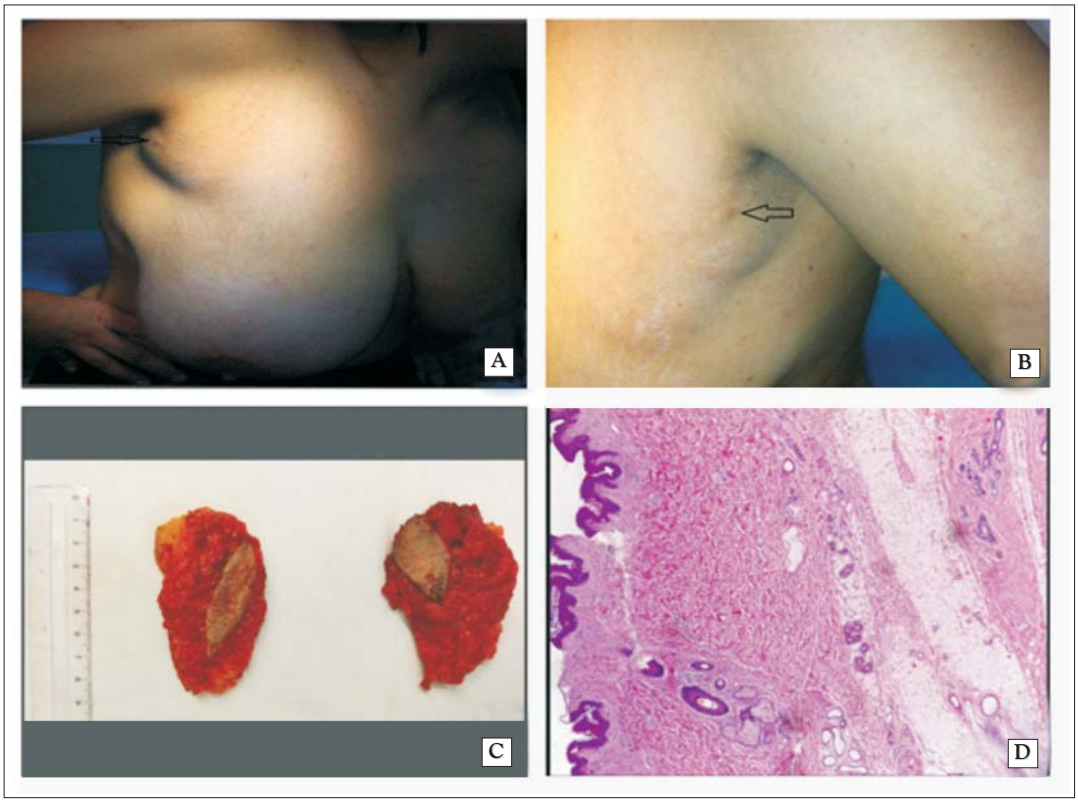

Figure 1. *Bilateral axillary masses (**A** – right, **B** – left), with rudimentary nipples (black arrows); **C** – the specimens; d - Histopathological examination (H&E stain, x10)*

tissue, the patient decided to come back after parturition, although aware of the possible discomfort or risks. The clinical exam and the ultrasound were repeated every three months for the rest of the pregnancy and in her postpartum period, when through the rudimentary nipples, a similar lactational secretion was evacuating – a strong indication of the diagnosis. She was informed not to stimulate the accessory breasts, other wise she would increase the milk flow in these masses. She breastfed normally until one year postpartum, when she returned to our clinic for further investigations and treatment. The US exam and the MRI of the normal breast and accessory masses showed two bilateral axillary breast tissue appearances, separated from the eutopic mammary gland but having similar signal intensity (Fig. 2).

The patient chose to surgically remove the masses in order to do a proper histopathology exam as well as for aesthetic reasons, so fine needle aspiration or biopsy were no longer needed. Both masses were completely removed under general anesthesia. The frozen sections and the paraffin blocks examination confirmed normal breast tissue (Fig. 1 C, D). No postoperative complications were noted. The patient reported back one month after the surgery with no signs of soreness or other axillary "lumps". She declared herself completely satisfied with the result and she was encouraged to come in for anannual follow-up.

Discussions

Polymastia, an accessory breast tissue, is a rare congenital anomaly that develops due to failure of regression of the mammary ridge which extends from axilla to the pelvic region. Most of the defects appear where the milk-line was during embryogenesis. But there are cases with auxiliary breast tissue in other parts of the body, like face, scapula, limbs or buttocks (2,4). There are also a few cases where the mammary ridge did not develop into a pectoral breast, but one ridge next to this region grew into a complete mammary gland (9).

The oldest classification of congenital breast anomalies was published by Kajava in 1915, when he ordered them in classes from I to VIII. Even if this classification was simplified afterwards, the original onestill remains the most used one (10, 11). Classes I, II and III, all consist of a complete breast glandular tissue. Class I includes both the areola and the nipple, class II includes just the nipple, while class III consists of areola and glandular tissue with no nipple. Class IV consists of incomplete breast glandular tissue only.

Classes V, VI, VII and VIII don't present any glandular tissue at all. Class V consists of nipple and areola, class VI just the nipple (polythelia), class VII consists only an areola, and class VIII consists just a patch of hair (polytheliapilosa) (2,10). Our case fits in class II.

The ectopic breasts remain asymptomatic and may become prominent during menstruation, pregnancy, birth and lactation

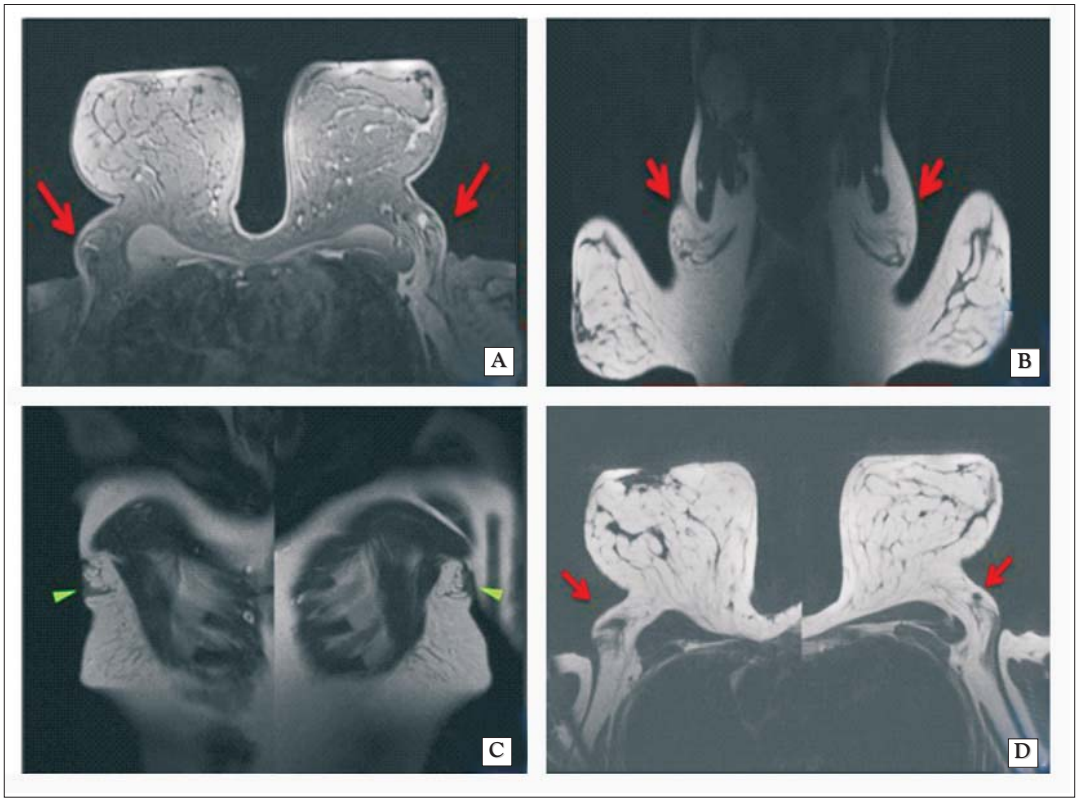

Figure 2. *MRI scan: bilateral axillary breast tissue unrelated with the eutopic breast (**A,B,D** – red arrows); rudimentary nipples (**C** – green arrows)*

period due to hormonal stimulation (3). Pathological lesions like mastitis, lipoma, fibrosis, fibroadenomas, phylodes tumors and carcinoma can also appear in accessory breasts with the same rate as in eutopic breasts, although the most frequent seems to be the carcinoma. (9,10,17) These future probable complications, along with aesthetic and psychological involvements (anxiety) are usually the reasons for surgical excision of the accessory glands (11,18). Restriction of arm movement was also reported (18).

Misdiagnosing an accessory breast tissue is very frequent and mostly occurs when the clinical examination is poor (7, 11). Polymastia is also easily confused with lipoma, sebaceous cyst, follicular cyst, lymphadenopathy or hidradenitis, while polythelia is mistaken usually for a birthmark (2,11). In our case the patient did not present any symptom before her first pregnancy when the hormonal changes started to stimulate the rudimentary breasts. In published literature the pregnancy is not considered as a risk factor for developing accessory breast tissue but the symptoms can be observed from this periodonwards (2,19). In our case, the presence of the glandular tissue together with nipple at the level of accessory breasts lead to lactational secretion in postnatal period although no swelling masses were observed before. Unfortunately, in some cases, patients are discovering the accessory breast tissues because of a malign tumor that appears at this level. This seems to have a worse prognosis than normal breast carcinoma exactly because of the delayed diagnosis of this disease (14).

When axillary breast tissue is suspected, beside the clinical evaluation, others exams should be performed including ultrasonography, mammogram or MRI. Any structural abnormality should be histologically defined through fine needle aspiration orcore-biopsy although false positive or false negative results can be encountered (2,14,18,19). Considering the patient's age and due to breast modifications induced by pregnancy, we chose the non-invasive diagnostic through US exam and the MRI for a more accurate evaluation of the structures and for delimitation of the masses from the pectoral breasts. MRI has no specific indication for accessory breast tissue therefore we performed it only for a complete preoperative evaluation.

As renal malformations were described with a sort of frequency in the patients with accessory breast tissue, we also performed a kidney ultrasound whichdid not show any pathologic modifications (4).

Different approaches are considered in these cases, depending mostly onpatients' symptoms and wishes. Uncomplicated auxiliary mammary tissue does not represent any medical indication for excision, and should be screened periodically exactly as normal breasts. Even like this, most of the symptomatic women choose the resection of the accessory masses due to cosmetic reasons (19). Benign or malignant lesions will be treated following the same protocol as the lesions in normal breasts (17,19).

If auxiliary breast masses with no lesions are found, a few options are put forward, reminding however the patient that any surgical option is a cosmetic choice and it is not always necessary. The one that is mostly preferred by the patients is the complete resection of the masses, as theoretically there is no need to further follow-ups, since the whole structure is safely removed (19). On the other hand, the postoperative scar deformity could be just as unpleasant as primary lesion itself (17,18,19).

A part of the authors consider the accessory breast to be a benign lesion taking in account that carcinoma to such tissue is very rare (0.3% of all breast cancers) (16). Being a less invasive method, the liposuction of the auxiliary tissueis considereda better cosmetic option with better aesthetic results for these authors. Unfortunately this procedure can never guarantee a completely excision of the breast tissue even if it is ultrasound-guided therefore closed follow-up is requested (16,20). Moreover a detailed histology examination of the lesion is not possible in order to rule out the malignancy. On the other hand there is no evidence that the malignancy is more frequent in accessory breast tissue (16).

Despite all the aesthetic concerns nowadays, there are patients that choose the conservative treatment, especially in asymptomatic small-sized benign cases (2,21). In our case the patient initially decided for a conservative attitude because of her pregnancy, but in the end she went for a complete excision for cosmetic reasons, due to the unpleasant swelling symptomatology and to prevent any possible complications in the future.

Conclusions

Despite the fact the accessory breasts are benign lesions in almost all of the cases,careful evaluation and adapted treatment should be given especially in patients with high risk of breast cancer. Each patient with normal appearance of the accessory breast on imaging exams should be presented with both theadvantages and disadvantages of the surgical or non-surgical methods of treatment toghether with the associated complications and requested follow-up.

Disclosure

None of the authors has a conflict of interest.

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