

OUTCOME OF SURGICAL EXCISION OF ACCESSORY BREAST TISSUE IN THE AXILLA

By

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ABSTRACT

Background: The axilla is the most common site for accessory breasts. Although they may be asymptomatic, axillary accessory breasts can cause cosmetic concerns, pain, or restriction in arm movements. The radiological methods used for diagnosis include ultrasonography and MRI. The main concerns about the surgical treatment of accessory breasts are leaving any breast tissue unresected and cosmetic problems resulting from a bad scar or contour deformities.

Objective: To evaluate the surgical outcome after excision of prominent accessory breast in the axilla.

Patients and Methods: The current study included 50 female patients, presented to Al-Azhar University Hospitals, in Cairo, for elective excision of uncomplicated axillary accessory breast, in which an axillary swelling was noticed by themselves following pregnancy and lactation, during the period from May 2019 till April 2020. Their ages ranged from ranged between 18-40 years with a mean of 28.76 ± 5.7 years.

Results: The local examination of the axillary breast revealed that its size ranged between 4-10 cm with a mean of 6.8 ± 2.3 cm. Consistency was firm in 40% of patients, hard in 40% of patients and soft in 20% of patients, fixed in 40% of patients and mobile in 60% of them, with an extension beyond the axilla in 40% of cases, whereas no extension was found in 60% of cases. Ultrasound examination of the axillary breast revealed that the mass was hyper-echoic in 60% of patients and hypo-echoic in 40% of them. Size ranged between 5-12 cm with a mean of 8 ± 2.6 cm. Wound healing was good in 82% of patients and was delayed in 18% of them. It was affected by hemoglobin level, but not with albumin level. Postoperative complications ranged from mild scar hypertrophy in 3 patients (6%), medial arm pain in 2 patients (4%), allergy to sticking plaster in 2 patients (4%), and hematoma in 1 patient (2%).

Conclusion: Proper surgical excision provided numerous advantages as an option in treating an accessory axillary breast with virtually no postoperative complications.

Keywords: Surgical Excision, Accessory Breast Tissue, Axilla.

INTRODUCTION

Accessory breast tissue can occur anywhere between the axilla and the groin. Axillary breast tissue may represent true ectopic tissue that is not contiguous with the breast but more commonly represents enlargement of the “axillary tail

of Spence.” The condition is usually bilateral (*Shultz et al., 2018*).

Polymastia means the accessory breast glandular tissue with or without nipple and areola in human beings. Accessory nipple with or without rudimentary glandular tissue is called polythelia. Ectopic breast tissue (EBT) is seen mostly

along the milk line and may occur unilaterally and bilaterally. The most frequent sites are axilla, chest wall and vulva. Other unusual sites include knee, lateral thigh, buttock, face, ear and neck (*Loukas et al., 2017*).

The clinical presentation of accessory breast may be asymptomatic or may present with pain in the premenstrual phase due to congestion. Many women are anxious about presence of swelling in the axilla. The breast cancer awareness programs also bring these women to clinician for lump in the axilla. Most of women present for the cosmetic problem (*Velanovich et al., 2012*).

Axillary breast tissue affects between 2 and 6 percent of women. The variability of presentation and the possibility of other disease make this problem clinically challenging, and although it is a well-known entity, there is no established classification system to guide its management. Determining which surgical technique to use is critical to achieving an optimal outcome (*Sahu et al., 2017*).

These axillary breasts can become tender and increase in size during premenstrual period. For these symptoms, more women are seeking surgeon consultation. These women want investigations to rule out breast carcinoma. Reassurance or counseling that the axillary swelling is accessory breast tissue which has enlarged during lactation works only when breast cancer has been ruled out and of these women still want surgical excision for fear of developing carcinoma at a later date (*Solanki et al., 2018*).

In cases where there is a firm core of palpable glandular tissue within the mass,

a combination of direct excision and suction lipectomy is necessary. Failure to excise the glandular elements may result in a residual mass and the necessity for a secondary procedure (*Bartsich et al., 2011*).

The differential diagnosis of axillary accessory breast includes axillary lymphadenopathy, lipoma, hyderadenitis suppurative and sebaceous cyst. Ultrasound of axillary swelling can give a preliminary diagnosis but fine needle aspiration cytology gives confirmatory diagnosis keeping in mind that the typical lobules, stroma and duct may be poorly organized in accessory breast tissue. Axillary accessory breast tissue is a cause of anxiety among women for fear of malignant change and the potential of malignancy in the accessory axillary breast is more than normal breast. Whatever maybe the presenting complaint, it must be investigated by radiological and fine needle aspiration cytology. Because of high incidence of benign and malignant changes, the accessory axillary breast tissue must be excised. All other complains of cyclical mastalgia, engorgement and enlargement after pregnancy and lactation, cosmetic problem can be resolved by surgical excision (*Arora et al., 2016*).

The aim of the present work was to evaluate the surgical outcome after excision of prominent accessory breast in the axilla.

PATIENTS AND METHODS

The present prospective cohort study included fifty female patients, presented to Al-Azhar University Hospitals, for elective excision of uncomplicated

axillary accessory breast, in whom an axillary swelling was noticed by themselves after puberty and following pregnancy and lactation, during the period from May 2019 till April 2020 and after obtaining the local ethics committee approval. All patients admitted to the Surgery Department and signed written informed consents.

Inclusion criteria: Female patients with axillary accessory breast and fulfilling the following criteria: Age 15 -50 years, single or married, seeking surgical consultation and cooperative during the follow-up period.

Exclusion criteria: Age < 15 or > 50 years, during lactation or pregnancy, uncooperative, or refusing surgical consultation, patients at high risk for anaesthesia, class 4, and 5 according to physical status classification of the (ASA) American Society of Anesthesiologists and history for drug abuse, psychiatric illness, uncontrolled depression, and, suicidal attempt.

All patients were subjected to detailed history taking with particular stress upon:

- The period between the onset of symptoms and seeking consultation was noted.
- Reasons for seeking surgical consultation in the included cases were: palpable thickening in axilla or large pendulous mass with premenstrual pain and swelling and exacerbation during pregnancy and lactation as well as restricted arm movements, irritation from clothing and bad cosmoeses.
- Body mass index.

Physical examination with particular stress upon:

- Size, consistency, mobility and extension.
- Examination of breast and axillary tail was performed to diagnose concomitant lesions.
- It was ensured that axillary breast swelling was separate from the axillary tail of Spence.
- A record was made whether the axillary swelling was unilateral or bilateral.

Routine laboratory investigations included:

- Complete blood analysis.
- Blood urea and serum creatinine.
- Alanine transaminase (ALT) & Aspartate transaminase (AST).
- Prothrombin time (PT), Partial thromboplastin time (PTT) & International normalization ratio (INR).

Radiological investigations:

Ultrasonography breast and axilla was performed for all patients to determine size and echogenicity.

Fine needle aspiration cytology: From the axillary swelling was performed for all patients. After confirmation of diagnosis, patients were advised surgical treatment accordingly.

Surgery was indicated for alleviation of symptoms as well as to rule out malignancy.

Operations were carried out under general anaesthesia. Antibiotic prophylaxis was performed routinely with second generation cephalosporin.

- The preoperative design was marked along the margin of the axillary mound with the patient standing during adduction of the arm and with the arm at rest. The markings included an incision line within the natural wrinkle line in the axillary fold and demarcation of the area in which lipoplasty was to be performed and also of the area in which undermining was to be performed for excision of accessory breast tissue and excess dermo-fat tissues.
- A solution of 2% lidocaine and 1:100,000 epinephrine was injected into the incision line and mixed solutions (1000 mL 0.9% normal saline + 25 mL 0.5% bupivacaine + 25 mL 1% lidocaine + 1 cc epinephrine 1:1000) were administered into the lipoplasty site through a stab incision in the incision line.
- After an incision was made to the depth of the superficial fat layer, the skin flap was elevated using a light retractor to fully expose the mass. Further deep dissection was performed to separate isolated accessory breast tissue and excess fat tissue from the underlying axillary tissues.
- The mass was then removed, taking care to avoid damage to the subcutaneous plexus or axillary neurovascular structures when isolating the main mass.
- The wound was irrigated with copious saline and a drain was placed to stitch up the opening once bleeding was controlled. Excess skin removal was unnecessary followed by insertion of sub-cutaneous drain.
- The removed specimen was sent for histopathological assessment.

Statistical analysis of the data:

Data were fed to the computer and analyzed using IBM SPSS software package version 20.0. Qualitative data were described using number and percent. Quantitative data were described using mean and standard deviation. Significance test results are quoted as two-tailed probabilities. Significance of the obtained results was judged at the 5% level.

RESULTS

All patients underwent surgical excision under general anesthesia, and there were no intra-operative complications. Their ages ranged from ranged between 15-40 years with a mean of 28.76 ± 5.7 years. The local examination of the axillary breast revealed

that its size ranged between 4-10 cm with a mean of 6.8 ± 2.3 cm.

Ultrasound examination of the axillary breast revealed that its size ranged between 4-10 cm with a mean of 6.8 ± 2.3 cm. The weight excised (g) of the axillary breast ranged between 8-20 g with a mean of 13.6 ± 4.6 g (**Table 1**).

Table (1): Patients’ age and axillary breast size, ultrasound examination; size and Weight of the excised axillary breast

Parameters \ Data	Mini	Max	Mean	SD
Age	15	40	28.76	5.75
Size (cm)	4	10	6.80	2.34
Weight (g)	8	20	13.60	4.68

Regarding side, 21 patients presented by bilateral axillary accessory breast, while 29 had unilateral accessory breast. The Local examination of the axillary breast revealed that the consistency was firm in 40% of patients, hard in 40% of patients and soft in 20% of patients. That local examination of the axillary breast revealed that the mass was fixed in 40% of patients and mobile in 60% of them.

Local examination of the axillary breast revealed that it had an extension beyond the axilla in 40% of cases whereas no extension was found in 60% of cases. Ultrasound examination of the axillary breast revealed that the mass was hyper-echoic in 60% of patients and hypo-echoic in 40% of them. Wound healing was good in 82% of patients and was delayed in 18% of them (**Table 2**).

Table (2): Axillary breast consistency, mobility, extension beyond the axilla, ultrasound examination; echogenicity and wound healing

Parameters \ Data	No	%	
Consistency	Firm	20	40.0%
	Hard	20	40.0%
	Soft	10	20.0%
Mobility	Fixed	20	40.0%
	Mobile	30	60.0%
Extension	No	30	60.0%
	Yes	20	40.0%
Echogenicity	Hyper	30	60.0%
	Hypo	20	40.0%
Wound healing	Good	41	82%
	Delayed	9	18%

Changes in hemoglobin level were associated with significant changes in healing and that good wound healing was associated with a significantly higher mean hemoglobin level. Meanwhile,

albumin levels were not associated with significant changes in healing.

Table (3): Association between hemoglobin and albumin level and wound healing:

Wound healing Parameters	Good		Delayed		P value
	Mean	SD	Mean	SD	
Hb level	12.64	0.66	12.20	0.29	0.042
Albumin	3.92	0.31	3.98	0.27	0.599

Postoperative complications ranged from; mild scar hypertrophy in 3 patients (6%), medial arm pain in 2 patients (4%), allergy to sticking plaster in 2 patients

(4%), and hematoma in 1 patient (2%). There were no cases with infection, seroma, lymphedema, dog ear, residual mass or axillary contracture.

Table (5): Postoperative complications

Complications	Cases	No.	%
Mild scar hypertrophy		3	6
Medial arm pain		2	4
Allergy to sticking plaster		2	4
Hematoma		1	2
Infection		Nil	0
Seroma		Nil	0
Lymphedema		Nil	0
Dog ear		Nil	0
Residual mass		Nil	0
Axillary contracture		Nil	0

DISCUSSION

The current study revealed that the patients' age ranged from 18 to 40 years with a mean age of 28.76 ± 5.7 years. A similar mean age was published by *Aydogan et al. (2010)* to evaluate surgical treatment of axillary accessory breasts as they reported that the ages of the patients at the time of surgery ranged from 19 to 54 years with mean age of 28.8 years. Nearly similar results were also published by *Arora et al. (2016)* who evaluate the profile of clinical presentation, diagnostic approach and current management of women presenting with axillary accessory breast. They reported that the age of patients was between 19 and 50 years. However, this finding differs from that published by *Bartsich et al. (2011)* who

mentioned that the average age at presentation was 42 years. This difference between results might be attributed due to a different inclusion period, with increasing awareness about cancer breast added to the effect of the breast cancer mass screening performed in Egypt as part of 100 Million Health Initiative which raises the awareness of females and bring them to consultation for lump in the axilla.

Local examination of the axillary breast in the present study revealed that its size ranged between 4-10 cm. The current study revealed that the consistency was firm in 40% of patients, hard in 40% of patients and soft in 20% of patients when local examination of the axillary breast was performed. Mass was fixed in 40% of patients and mobile in 60% of them when

local examination of the axillary breast was performed. Local examination of the axillary breast in the present study revealed that the axillary breast had an extension beyond the axilla in 40% of cases whereas no extension was found in 60% of cases. Ultrasound examination of the axillary breast performed for patients enrolled in the present study revealed that the mass was hyper-echoic in 60% of patients and hypo-echoic in 40% of them. Ultrasound examination of the axillary breast performed for patients enrolled in the present study revealed that its size ranged between 5-12 cm with a mean of 8 ± 2.6 cm.

The present study revealed that wound healing was good in 82% of patients and was delayed in 18% of them. A higher complication rate was reported by *Down et al. (2013)* who found a high complication rate of 39%, however they recommended the surgical excision of the accessory axillary breast.

The present study revealed that changes in pre-operative hemoglobin level were associated with significant changes in wound healing as good wound healing was associated with a significantly higher mean hemoglobin level. Hemoglobin is well suited as a transporter of oxygen molecules to the tissue (*Arenberger et al., 2011*). Tissue hypoxia is known to be a common etiology of wound healing disorders (*Guo and DiPietro, 2010*) as the wound healing processes demand a sharply higher oxygen supply to build up defenses against pathogens, developing granulation, cell proliferation, vascularization and collagen synthesis (*Sørensen, 2012*). Meanwhile, reduced hemoglobin may cause disorder in

surgical and traumatic tissue oxygenation and it can result in ischemia and inflammation that is base of wound infection (*Ortega-Andreu et al., 2011*). This finding comes in line with that published by *Jahromi et al. (2015)* who performed their retrospective study on 74 orthopedic patients aiming to determine correlation between hemoglobin levels and wound infections in orthopedic patients. They found that decreasing in hemoglobin levels immediately after operation was associated with surgical site infections.

The present study also revealed that changes in pre-operative albumin level were not associated with significant changes in wound healing. This finding comes in line with what was published by *Lizaka et al. (2011)* who found that serum albumin level was not significantly associated with ulcer healing.

In this study, regarding other postoperative complications; mild scar hypertrophy was found in 6%. In one patient, scar crossed the anterior axillary fold but was not hypertrophic. Medial arm pain was found in 4%. Pain despite preservation of nerves resolved with long-term pregabalin therapy. Allergy to sticking plaster was found in 4%. One required derroofing of blisters and antibiotic cream dressing. Bleeding due to vascular injury was not seen in our study. Excessive mobilization in post-op period can sometimes result in late hematoma. This occurred in one axilla of one of our patients on 8th post-op day. It responded to evacuation and pressure with many tailed elastic tape dressings. There were no cases with infection, seroma,

lymphedema, dog ear, residual mass or axillary contracture.

Our results were similar to *Bhave (2016)* who compared liposuction versus excision of axillary breasts and stated that proper direction of incision in alignment with maximum laxity helps prevent contractures. Limited skin excision and closure without tension prevents hypertrophy. Some patients having tendency to hypertrophy can have problem, which can be managed with standard intra-lesional kenacort injections and silicon-based scar products

CONCLUSION

Proper surgical excision provided numerous advantages as an option in treating an accessory axillary breast with virtually no postoperative complications. The advantage of this technique was that the final scar lay in the natural axillary fold, thus minimizing the evidence of surgery by rendering scars less notable with any outward movement of the arm and eliminating the need to remove excess skin.

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نتيجة الاستئصال الجراحي لأنسجة الثدي الملحقة في الإبط

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خلفية البحث: يعتبر الإبط الموقع الأكثر شيوعاً للثديين الملحقين (الإضافيين)، وعلى الرغم من أنها قد تكون بدون أعراض، إلا أن الثدي الإبطي يمكن أن يسبب مخاوف تجميلية أو ألمًا أو تقييدًا في حركات الذراع، وتشمل الأساليب الشائعة المستخدمة في التشخيص التصوير بالموجات فوق الصوتية والتصوير بالرنين المغناطيسي.

الهدف من البحث: تقييم النتيجة الجراحية بعد استئصال الثدي الإضافي البارز في الإبط.

المرضى وطرق البحث: اشتملت هذه الدراسة ٥٠ مريضة حضرن لمستشفيات جامعة الأزهر بالقاهرة لإجراء استئصال إختياري للثديين الإضافيين بالإبط، حيث لوحظ وجود تورم إبطي بعد الحمل والرضاعة خلال الفترة من مايو ٢٠١٩ حتى أبريل ٢٠٢٠، وقد تراوحت أعمارهن بين ١٨ - ٢٠ سنة بمتوسط ٢٨,٧٦ ± سنة، ٥,٧ سنة.

نتائج البحث: كشف الفحص الموضعي لثدي الإبطيين أن حجمه يتراوح بين ٤ - ١٠ سم بمتوسط ٦,٨ ± ٢,٣ سم، وكانت مرونة الأنسجة قوية في ٤٠٪ من المرضى، وصلبة في ٤٠٪ من المرضى ولينة في ٢٠٪ من المرضى، كن الثدي الإبطي مثبتًا في ٤٠٪ من المرضى ومتحرك في ٦٠٪ منهم، مع إمتداد يتجاوز الإبط في ٤٠٪ من الحالات، بينما لم يحدث تمدد في ٦٠٪ من الحالات. وقد كشف الفحص بالموجات فوق الصوتية لثدي الإبطيين أن كثافة الأنسجة كان لها صدى مفرط لدى ٦٠٪ من المرضى ونقص صدى في ٤٠٪ منهم، وتراوح الحجم بين ٥ - ١٢ سم بمتوسط ٨ ± ٢,٦ سم. وكان التئام الجروح جيدًا في ٨٢٪ من المرضى وتأخر في ١٨٪ منهم، وقد لوحظ تأثر الالتئام بمستوى الهيموجلوبين، ولكن لم يتأثر بمستوى الألبومين. وقد تراوحت مضاعفات ما بعد الجراحة بين تضخم خفيف في الندبة في ٣ مرضى (٦٪)، وآلام في الجانب الإنسي من الذراع

لمريضين (٤٪)، وحساسية من الضمادة اللاصقة في مريضين (٤٪)، وتجمع دموي عند مريض واحد (٢٪). ولم تسجل حالات للعدوى أو تجمع للسوائل أو الليمف أو زائدة أذن الكلب الجلدية أو أنسجة متبقية (بدون استئصال) أو التقلص الإبطي.

الإستنتاج: الاستئصال الجراحي المناسب يوفر العديد من المزايا كخيار في معالجة الثدي الإبطي (الإضافي) بدون أي مضاعفات بعد الجراحة تقريباً. وتعتبر ميزة هذه التقنية هي أن الندبة النهائية يتم وضعها في الطية الإبطية الطبيعية، وبالتالي إخفاء أدلة الجراحة عن طريق جعل الندبات أقل وضوحاً مع أي حركة خارجية للذراع وإلغاء الحاجة إلى إزالة الجلد الزائد.