

A COMPARATIVE STUDY OF DRAINAGE OF BREAST  
ABSCESSSES BY CONVENTIONAL INCISION AND DRAINAGE  
VS ULTRASOUND GUIDED NEEDLE ASPIRATION/RE-  
ASPIRATION IN A TERTIARY HEALTH CARE CENTRE

A DISSERTATION SUBMITTED TO  
THE TAMILNADU DR.MGR MEDICAL UNIVERSITY

In partial fulfilment of the regulations for the award of the

**Degree of M.S (GENERAL SURGERY)**  
BRANCH-1



DEPARTMENT OF GENERAL SURGERY  
STANLEY MEDICAL COLLEGE AND HOSPITAL  
TAMILNADU DR.MGR MEDICAL UNIVERSITY, CHENNAI  
MAY 2020

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## **DECLARATION**

I **Dr. VARSHA MADHAVNARAYAN TOTADRI** solemnly declare that this dissertation titled “**A COMPARATIVE STUDY OF DRAINAGE OF BREAST ABSCESSSES BY CONVENTIONAL INCISION AND DRAINAGE VS ULTRASOUND GUIDED NEEDLE ASPIRATION/RE-ASPIRATION IN A TERTIARY HEALTH CARE CENTRE**”, is a bonafide work done by me in the department of general surgery, Govt. Stanley Medical College and Hospital, Chennai under the supervision of **Prof. Dr. T. SIVAKUMAR M.S.** and **Prof. Dr. A. ANANDI M.S.** This dissertation is submitted to the Tamilnadu Dr MGR Medical university, Chennai in partial fulfillment of the university regulations for the award of M.S,degree (General Surgery ), branch – 1 examination to be held in May 2020.

**DATE: 23/10/2019**

**PLACE: CHENNAI**

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## ACKNOWLEDGEMENT

I am grateful to the Dean *Prof. Dr.R.SHANTHIMALAR M.D,D.A*, for permitting me to conduct the study and use resources of the college. I consider it a privilege to have done this study under the supervision of my beloved professor and head of the department *Prof. Dr. T. SIVAKUMARM.S.*, who has been a source of constant inspiration and encouragement to accomplish this work. I am sincerely thankful to my guides *Prof. Dr. K. SHANTHAKUMAR M.S., Prof. Dr. C. BALAMURUGAN M.S, Prof. Dr. A. K. RAJENDRAN M.S.* and *Prof. Dr. A. ANANDI M.S.*, for their immense support in completing my work.

I express my deepest sense of thankfulness to my assistant professors *Dr. S.THIRUMURUGANAND M.S., Dr. D.S.KUMARESAN M.S.*, for their valuable inputs and constant encouragement, without which this dissertation could not have been completed. I express my sincere thanks to the Department of Radiodiagnosis and imaging for their help and support. I express my sincere thanks to my fellow post graduates, my beloved senior and junior colleagues for their support and help in completing this dissertation. It is my earnest duty to thank my family without whom accomplishing this task would have been impossible. I am extremely thankful to my patients who consented and participated to make this study possible.

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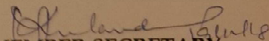
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DESIGNATION : PG IN MS GENERAL SURGERY  
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The request for an approval from the Institutional Ethical Committee (IEC) was considered on the IEC meeting held on 07.12.2018 at the Council Hall, Stanley Medical College, Chennai-1 at 10am.

The members of the Committee, the secretary and the Chairman are pleased to approve the proposed work mentioned above, submitted by the principal investigator.

The Principal investigator and their team are directed to adhere to the guidelines given below:

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6. You should submit the summary of the work to the ethical committee on completion of the work.

  
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# **INTRODUCTION**

There are 2 general categories in infections of the breast: lactational infections and chronic subareolar infection. Breast infections are most commonly caused by *Staphylococcus Aureus* and may manifest as cellulitis with breast parenchymal inflammation (mastitis) or as an abscess. True abscess requires drainage. Initial attempt should include needle aspiration. Incision and drainage is generally reserved in for abscesses that are not amenable to needle aspiration under antibiotic cover. Ultrasound helps to characterize an abscess and aids in the management.

Breast abscess continues to be a major cause of morbidity in developing countries. The treatment of breast abscess continues to be a challenge. Traditionally, treatment of breast abscess involved incision and drainage which is done under general anaesthesia following which the patient requires frequent dressing, will have unsightly scar formation and lactating mothers tend to avoid breast feeding after treatment. With this continuously tried method of incision and drainage, the recurrence rate is still high.

Treatment of breast abscess has modified from invasive methods to less invasive procedures. The conventional method of incision and drainage (I and D), breaking loculi and insertion of a drain under general anesthesia has shifted to a minimally invasive approach of aspiration.

The following study aims at establishing the necessity and the advantages of adopting a less invasive method of management of breast abscess which is also technically feasible.

# **AIMS AND** **OBJECTIVES**

To compare management of breast abscess by incision and drainage v/s USG guided needle aspiration/re-aspiration (under antibiotic coverage) with respect to

1. Residual abscess
2. Recurrence
3. Clinical outcome of patient basis functional and cosmetic criteria

# **METHODOLOGY**

**STUDY DESIGN:** Prospective Randomized Controlled study

**SAMPLE SIZE:** 50 patients admitted in General Surgery ward with a diagnosis of breast abscess for the period of 9 months (December 2018 to August 2019)

**Inclusion criteria:**

- Patients >12 yrs age
- Patients with clinical diagnosis of breast abscess as per clinical history, examination and Ultrasound findings confirmatory of breast abscess diagnosis
- Patients undergoing either treatment of surgical intervention i.e., Incision and drainage or USG Guided needle aspiration
- Patients who are willing to participate in the study and have given written consent.

**Exclusion criteria:**

- Breast abscess due to other causes like tuberculosis.
- Patients with recurrent or chronic breast abscess
- Patients not consenting to participating in the study

## **METHODOLOGY:**

- Written informed consent was obtained from all the subjects before enrolment in the study.
- Patients selected for this study were those who were admitted with primary diagnosis of breast abscess
- Diagnosis was confirmed basis detailed history, clinical examination and ultrasonography of both breasts.
- Patients were RANDOMLY ALLOTTED into 2 groups
  1. Group 1- Underwent incision and drainage
  2. Group 2- Underwent ultrasound guided needle aspiration/re-aspiration of abscess cavity
- All patients were given appropriate antibiotic coverage primarily with injection Cloxacillin 500mg iv BD (ATD) and injection Metrogyl 500mg iv TDS
- Pus culture and sensitivity was sent for patients from both groups and antibiotics thereafter modified accordingly.
- Ultrasound scan of the operated/drained breast was done on day 3 and 7 post operatively/post drainage to rule out residual abscess
- Each patient was analysed on the basis of residual abscess, recovery time period, recurrence of abscess and resumption of functionality for lactating mothers.



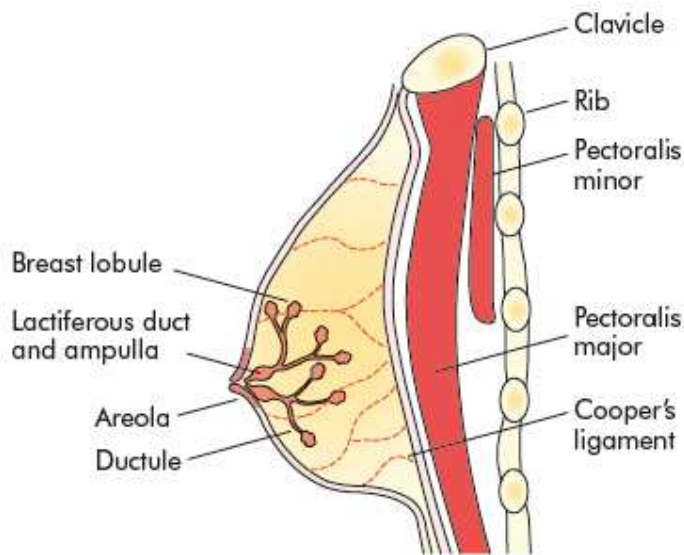
- Both groups were compared based on multiple factors to assess the better method of management of breast abscess and the comparative charts and parameters have been documented and analysed.
- Each patient in the study was followed up 2 weeks after discharge to assess clinical improvement.

**REVIEW**  
**OF**  
**LITERATURE**

A basic knowledge about the anatomy and physiology of the mammary glands is essential to aid in the management of breast abscess.

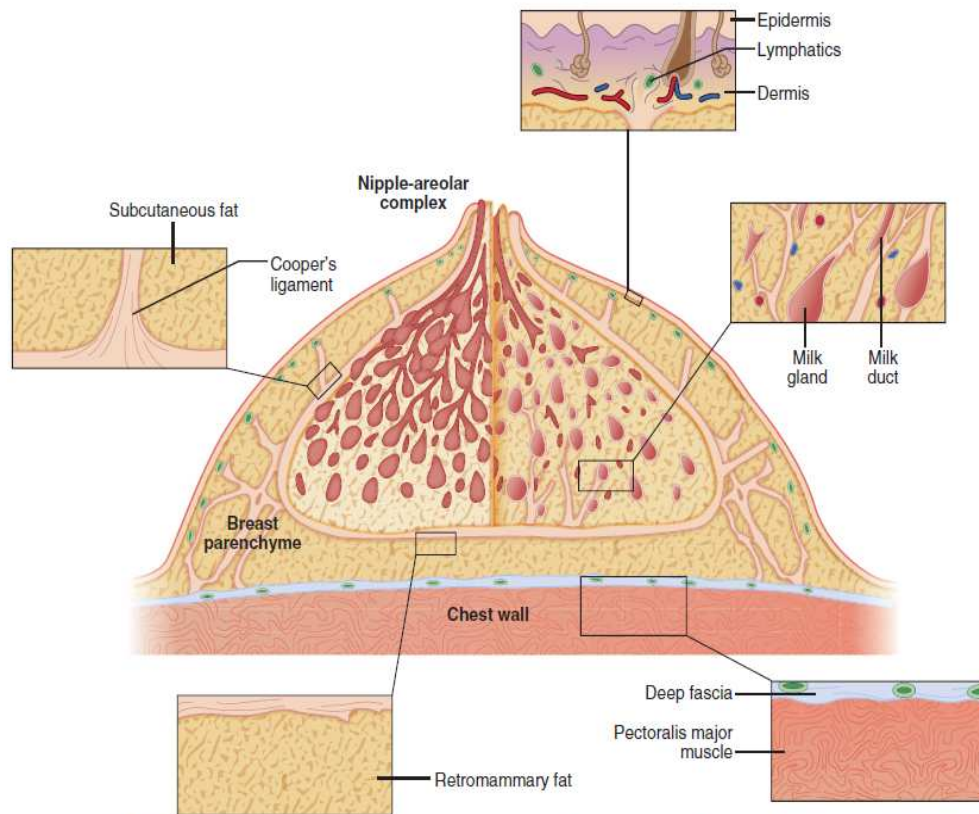
### BASIC ANATOMY:

The human breast extends from second to sixth ribs and from lateral border of the sternum to the anterior axillary line. Its basic structural unit is a lobule. Lobules empty via ductules into lactiferous ducts.



The ligaments of Cooper attach the breast to the superficial fascia and skin.

The retromammary space containing lymphatics and small vessels lies between the breast and pectoralis major muscle. Beneath the pectoralis major muscle is the pectoralis minor muscle which is enclosed by the clavipectoral fascia which laterally fuses with the axillary fascia.



**FIGURE 34-1** Cut-away diagram of a mature resting breast. The breast lies cushioned in fat between the overlying skin and pectoralis major muscle. The skin and the retromammary space under the breast are rich with lymphatic channels. Cooper's ligaments, the suspensory ligaments of the breast, fuse with the overlying superficial fascia just under the dermis, coalesce as the interlobular fascia in the breast parenchyme, and then join with the deep fascia of breast over the pectoralis muscle. The system of ducts in the breast is configured like an inverted tree, with the largest ducts just under the nipple and successively smaller ducts in the periphery. After several branching generations, small ducts at the periphery enter the breast lobule, which is the milk-forming glandular unit of the breast.

## BLOOD SUPPLY:

The main blood supply of the breast is from:

- (a) perforating branches of the internal mammary artery;
- (b) lateral branches of the posterior intercostal arteries; and
- (c) branches from the axillary artery

The second, third, and fourth anterior intercostal perforators and branches of the internal mammary artery join in the breast giving the medial mammary arteries.

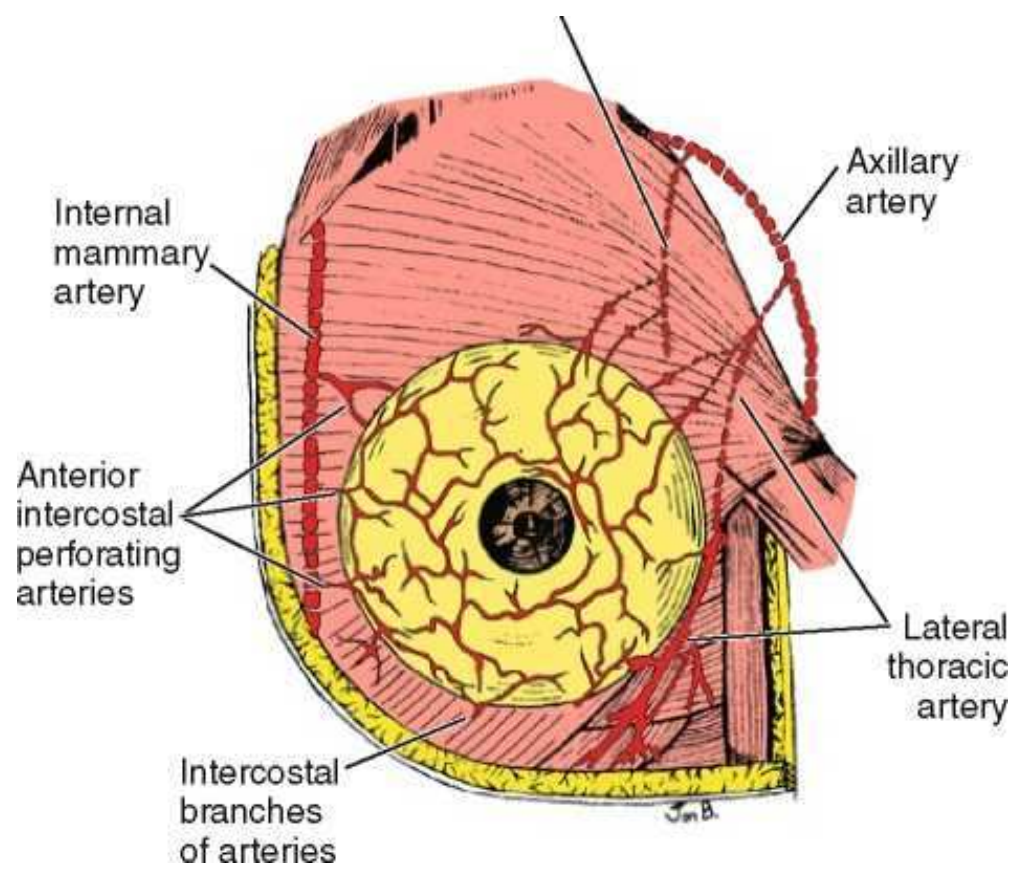
The lateral thoracic artery supplies the following muscles: serratus anterior, pectoralis major, pectoralis minor and subscapularis muscles. It also gives rise to lateral mammary branches.

Veins of the breast and chest wall follow along the course of the arteries.

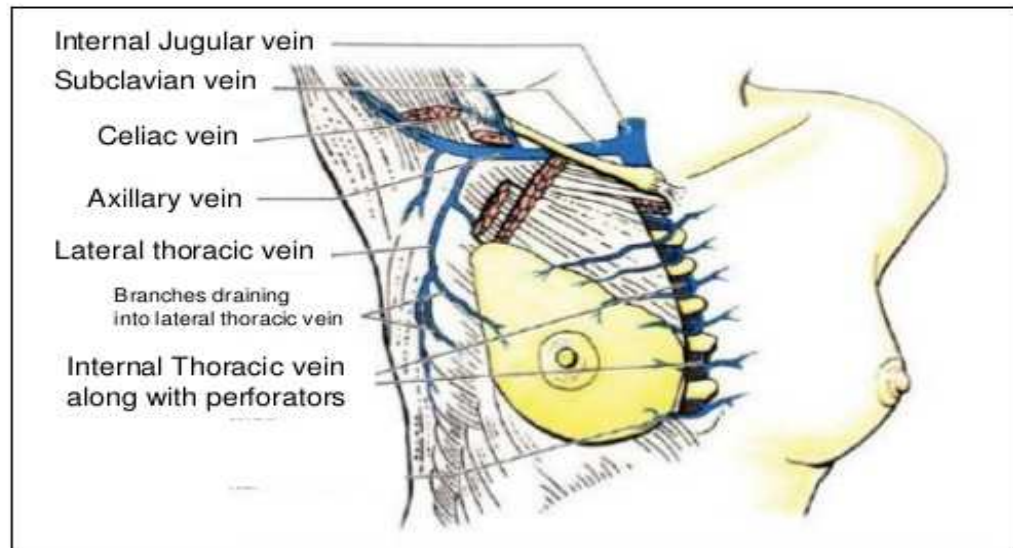
The three principal groups of veins are:

- (a) perforating branches of the internal thoracic vein,
- (b) perforating branches of the posterior intercostal veins, and
- (c) tributaries of the axillary vein.

Batson's vertebral venous plexus, which invests the vertebrae and extends from the base of the skull to the sacrum, may provide a route for breast cancer metastases to the vertebrae, skull, pelvic bones, and central nervous system.



## Venous drainage:



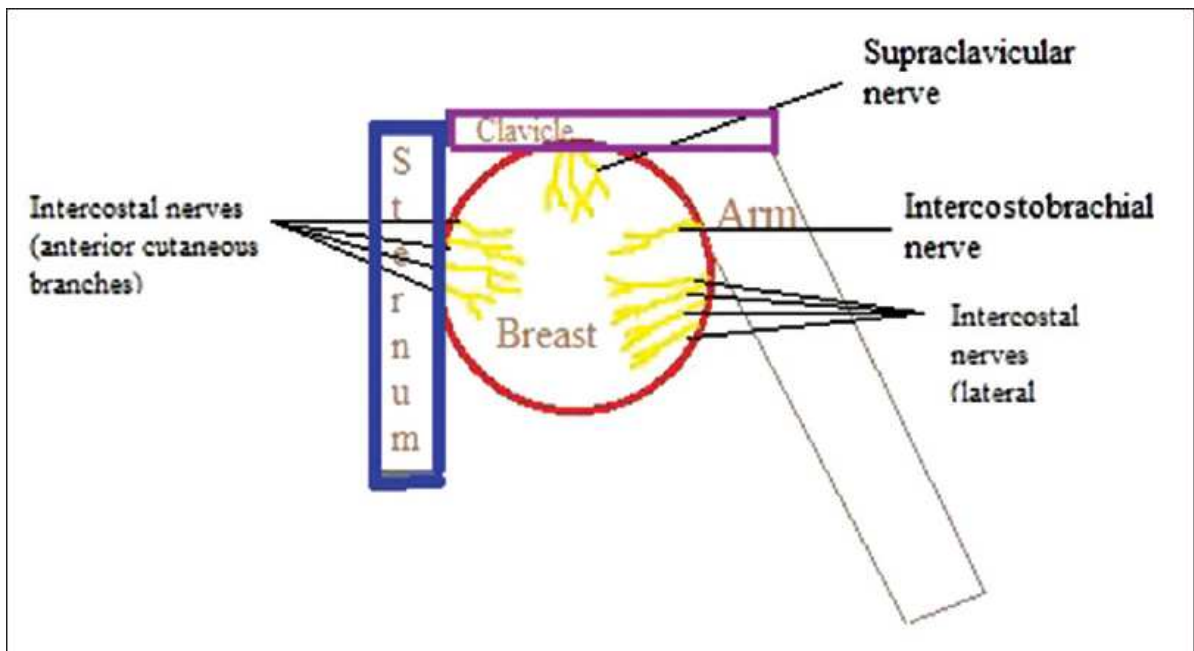
### NERVE SUPPLY:

Lateral cutaneous branches of the third through sixth intercostal nerves provide sensory innervation of the breast (lateral mammary branches) and of the antero lateral chest wall. These branches exit the intercostal spaces between slips of the serratus anterior muscle.

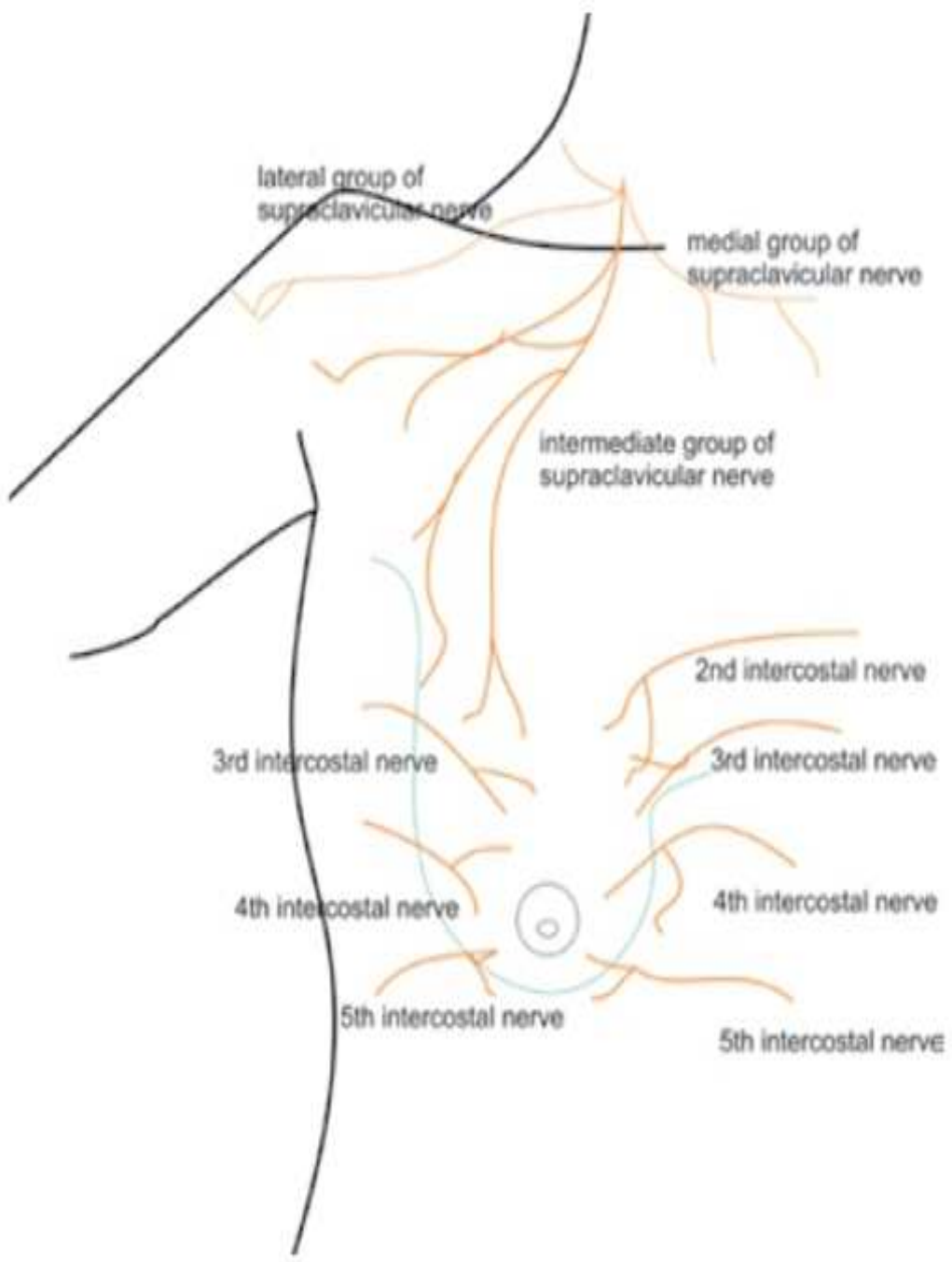
Cutaneous branches that arise from the cervical plexus, specifically the anterior branches of the supraclavicular nerve, supply a limited area of skin over the upper portion of the breast.

The intercostobrachial nerve is the lateral cutaneous branch of the second intercostal nerve and may be visualized during surgical dissection of the axilla. Resection of the intercostobrachial nerve causes loss of sensation over the medial aspect of the upper arm.

#### DIAGRAMATIC REPRESENTATION OF NERVE SUPPLY







## LYMPHATIC DRAINAGE:

The axillary lymph nodes are found within the loose areolar tissue of the axilla.

The axillary lymph nodes are divided into three anatomic levels.

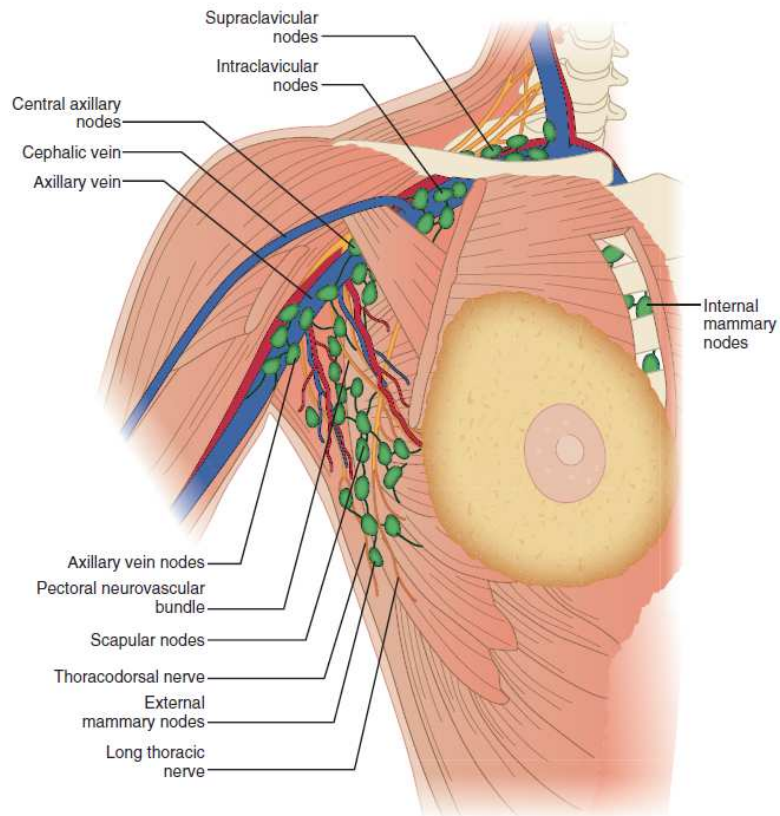
1. Level I: lateral to the lateral border of pectoralis minor
2. Level II: posterior to pectoralis minor muscle
3. Level III: medial to pectoralis minor muscle and includes subclavicular nodes

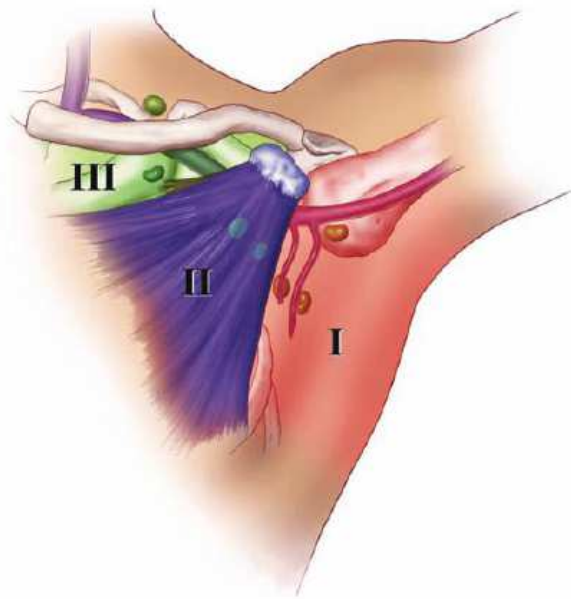
Lymph nodes in between pectoralis major and minor muscles are called Rotter's lymph nodes. Lymphatic flow from the breast- 75% is directed towards axillary nodes. Lymph flow also occurs to the internal mammary nodes.

Apex of the axilla is defined by the costoclavicular ligament (Halstead's ligament) at which point the axillary vein passes into the thorax and becomes the subclavian vein.

Close to the chest wall in the medial wall of the axilla is the long thoracic nerve - Nerve of Bell which innervates the serratus anterior. The long thoracic nerve is preserved during axillary surgery. The second major nerve encountered

during axillary dissection is the thoracodorsal nerve, which innervates the latissimus dorsi muscle. The thoracodorsal nerve and vessels are preserved during dissection of the axillary lymph nodes. The pectoral neurovascular bundle is a useful landmark because it indicates the position of the axillary vein, which is just cephalad and deep (superior and posterior) to the bundle. This neurovascular bundle should be preserved during standard axillary dissection.





**Figure 17-7.** Axillary lymph node groups. Level I includes lymph nodes located lateral to the pectoralis minor muscle; level II includes lymph nodes located deep to the pectoralis minor; and level III includes lymph nodes located medial to the pectoralis minor. The axillary vein with its major tributaries and the supraclavicular lymph node group are also illustrated. (Visual Art: © 2012, The University of Texas MD Anderson Cancer Center.)

### MICROSCOPIC ANATOMY:

Mature breast is composed of three principle types of tissues

- a) Glandular epithelium
- b) Fibrous stroma
- c) Adipose tissue

In adolescents, the predominant tissues are epithelium and stroma. In postmenopausal women, the glandular structures involute and are largely replaced by adipose tissue.

Cooper's ligaments provide shape and structure to the breast as they course from the overlying skin to the underlying deep fascia. The glandular apparatus of the breast is composed of a branching system of ducts, organized in a radial pattern spreading outward and downward from the nipple-areolar complex. Each of the major ducts has progressive generations of branching and ultimately ends in the terminal ductules or acini. The acini are milk forming glands of the lactating breast.

The entire ductal system is lined by epithelial cells, which are surrounded by specialized myoepithelial cells that have contractile properties and serve to propel milk formed in the lobules toward the nipple. Outside the epithelial and myoepithelial layers, the ducts of the breast are surrounded by a continuous basement membrane containing laminin, type IV collagen, and proteoglycans. The basement membrane layer forms a crucial boundary in differentiating in situ from invasive breast cancer.

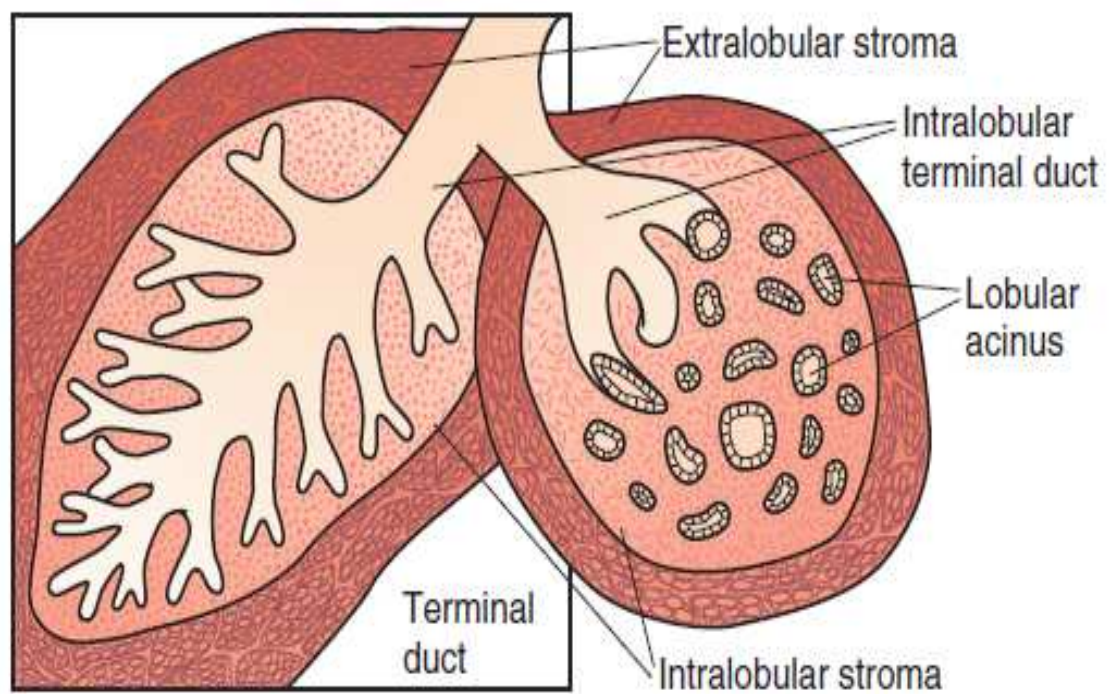
## BREAST DEVELOPMENT AND PHYSIOLOGY

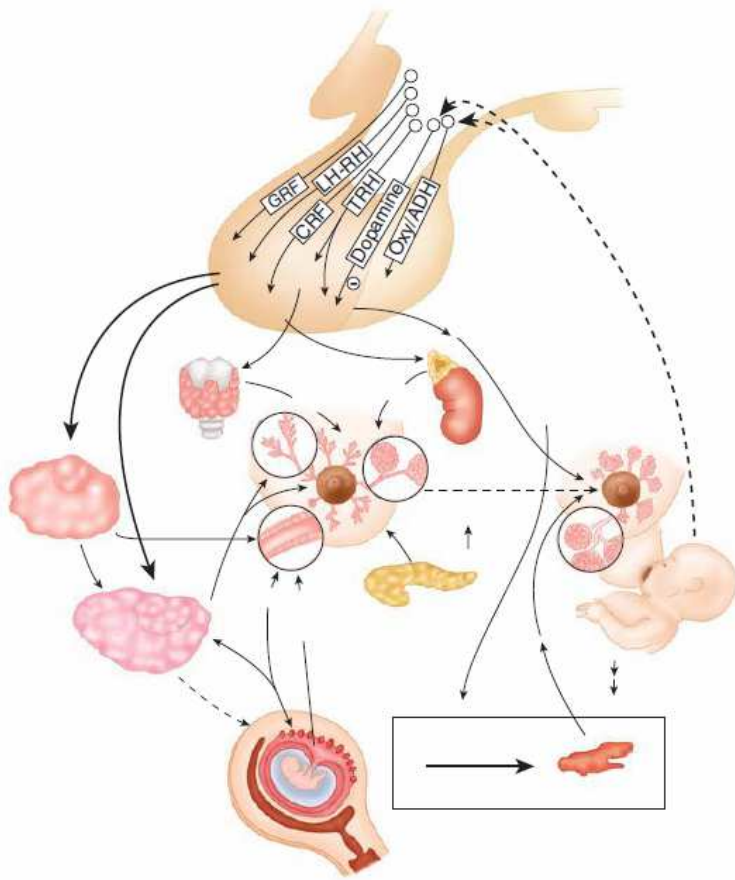
Hormone dependent development of the breast (thelarche) entails increased deposition of fat, formation of new ducts and the first appearance of lobular units. The process of growth and elongation is dependent on estrogen, progesterone, adrenal hormones and pituitary hormones. During phases of the menstrual cycle or in response to exogenous hormones, the breast epithelium and lobular stroma undergo cyclic stimulation.

The dominant process appears to be hypertrophy and alteration of morphology rather than hyperplasia. In the late luteal (premenstrual) phase, there is an accumulation of fluid and intralobular edema. This edema can produce pain and breast engorgement.

After birth, due to sudden loss of placental hormones which when combined with elevated prolactin levels, is the principal trigger for lactation. The actual expulsion of milk is under hormonal control and occurs by contraction of myoepithelial cells lining the ductules- this occurs due to pituitary derived oxytocin secretion. Suckling instigates continued secretion of prolactin and the acute secretion of oxytocin. When breastfeeding ceases, prolactin levels decrease and there is no stimulus for release of oxytocin and the breast returns to resting state. Menopause results in involution and a general decrease in the epithelial elements of the resting breast. These changes include

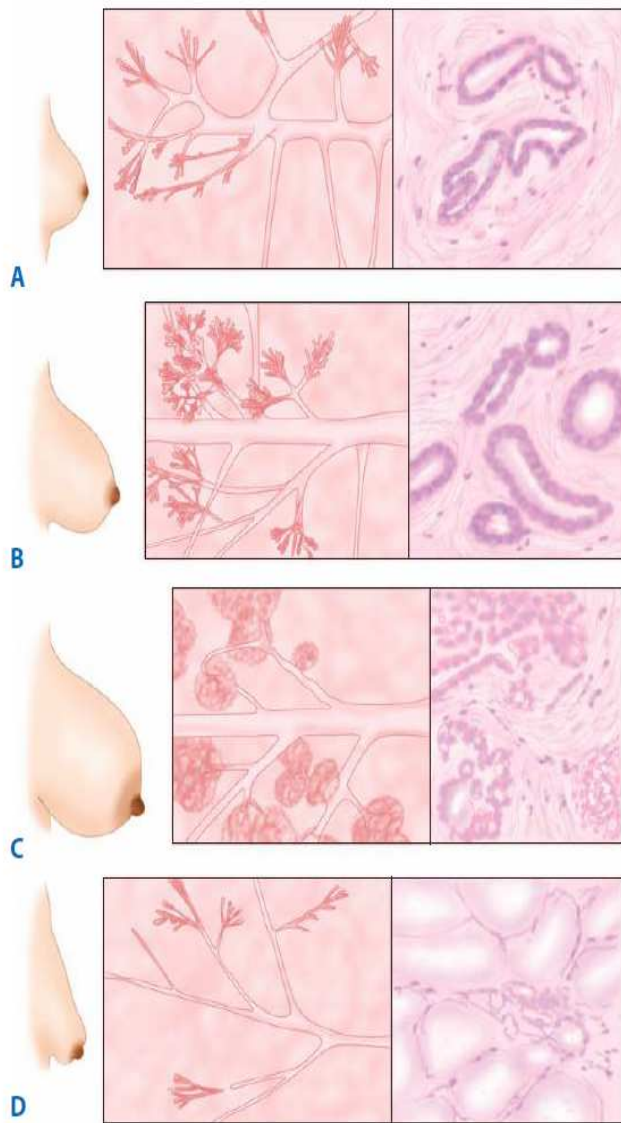
increased fat deposition, diminished connective tissue, and the disappearance of lobular units.





**Figure 17-8.** Overview of the neuroendocrine control of breast development and function. ADH = antidiuretic hormone; CRF = corticotropin-releasing factor; GRF = growth hormone releasing factor; LH-RH = luteinizing hormone-releasing hormone; Oxy = oxytocin; TRH = thyrotropin-releasing hormone. (Reproduced with permission from Kass R et al. Breast physiology: normal and abnormal development and function. In: Bland KI, Copeland EMI, eds. *The Breast: Comprehensive Management of Benign and Malignant Diseases*. Philadelphia: Saunders, 2009. Copyright Elsevier.)





**Figure 17-9.** The breast at different physiologic stages. The central column contains three-dimensional depictions of microscopic structures. A. Adolescence. B. Pregnancy. C. Lactation. D. Senescence.

## DIAGNOSIS OF BREAST DISEASE:

### PATIENT HISTORY-

In a woman in whom breast disease is suspected, it is important for the examiner to determine the patient's age and to obtain her reproductive history, including age at menarche, age at menopause and history of pregnancies including age at first full-term pregnancy. With respect to the specific breast complaint, the patient should be asked about history of a mass, breast pain, nipple discharge, and any skin changes. If a mass is present, the patient should be asked how long it has been present and whether it changes with the menstrual cycle.

### PHYSICAL EXAMINATION-

The physical examination begins with the patient in the upright sitting position. The breasts are carefully visually inspected for obvious masses, asymmetries, and skin changes. The nipples are inspected and compared for the presence of retraction, nipple inversion, or excoriation of the superficial epidermis. Simple maneuvers such as stretching the arms high above the head or tensing the pectoralis muscles may accentuate asymmetries and dimpling. Visual inspection should be followed by palpation of the regional lymph nodes and breast tissue. While the patient is still in the sitting position, the examiner supports the patient's arm and palpates each axilla to detect the presence of enlarged axillary lymph nodes. The supraclavicular and

infraclavicular spaces are similarly palpated for enlarged nodes. Then the patient lies down, and the breast is palpated.

Palpation of the breast is always done with the patient lying supine on a solid examining surface, with the arm stretched above the head. Palpation of the breast while the patient is sitting often leads to inaccurate interpretation because the overlapping breast tissue may feel like a mass or a mass may go undetected within the breast tissue.

The breast is best examined with compression of the tissue toward the chest wall, with palpation of each quadrant and the tissue under the nipple-areolar complex.

Palpable masses are characterized according to their size, shape, consistency, and location and whether they are fixed to the skin or underlying musculature. Benign tumors, such as fibroadenomas and cysts, can be as firm as carcinomas; usually, these benign entities are distinct, well circumscribed, and movable. Carcinoma is typically firm but less circumscribed, and moving a carcinoma produces a drag of adjacent tissue.

Cysts and fibrocystic changes can be tender with palpation of the breast; however, tenderness is rarely a helpful diagnostic sign. Most palpable masses are self-discovered by patients during casual or intentional self-examination.

## BREAST IMAGING:

Breast imaging techniques are used to detect small, non palpable breast abnormalities, evaluate clinical findings, and guide diagnostic procedures. The primary imaging modality for screening asymptomatic women is mammography. During mammography, the breast is compressed between plates to reduce the thickness of the tissue through which the radiation must pass, separate adjacent structures, and improve resolution. On screening mammography, two views of each breast are obtained, mediolateral oblique and craniocaudal.

For further evaluation of abnormalities identified on a screening mammogram or of clinical findings or symptoms, diagnostic mammography is indicated. Magnification views are obtained to evaluate calcifications, and compression views are used to provide additional detail when a mass lesion is suspected.

Mammography in women younger than 30 years, whose breast tissue is dense with stroma and epithelium, may produce an image without much definition. As women age, the breast tissue involutes and is replaced by fatty tissue. On mammography, fat absorbs relatively little radiation and provides a contrasting background that favors detection of small lesions. Other imaging techniques include ultrasonography and magnetic resonance imaging.

## ULTRASOUND AS AN INVESTIGATIVE TOOL

Ultrasonography is useful in determining whether a lesion detected by mammography is solid or cystic. Ultrasonography can also be useful for discriminating lesions in patients with dense breasts. However, it has not been found to be a useful breast cancer screening tool because it is highly dependent on the operator performing the freehand screening and there are no standardized screening protocols.

Ultrasound is particularly useful in young women as they have dense breasts. Ultrasound helps localize impalpable lesions of the breasts. With modernization of techniques and a trend towards minimally invasive modalities of treatment, ultrasound has become a therapeutic tool. In patients with breast abscess it has now become the primary modality of diagnosis as well as treatment as ultrasound aids in aspiration of the abscess cavity.



Ultrasound image of breast abscess

### BREAST ABSCESS

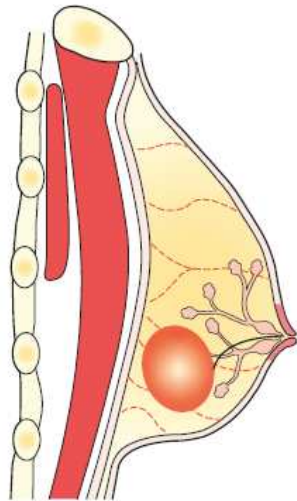
Breast abscess usually begins as bacterial mastitis. Ascending infection from a sore or cracked nipple usually initiates the development of breast abscess. The lactiferous ducts get blocked by epithelial debris leading to stasis with eventual development of breast abscess. Once within ampulla of duct, in lactating women, the most common organism *Staphylococcus*, causes clotting of milk and within this clot the organisms multiply.

Typically breast abscesses are seen in staphylococcal infections and present with point tenderness, erythema, and hyperthermia. When these abscesses are related to lactation they usually occur within the first few weeks of breastfeeding. If there is progression of a staphylococcal infection, this may result in subcutaneous, subareolar, interlobular (periductal), and retromammary abscesses (unicentric or multicentric). During initial cellulitic stage patient can be treated with appropriate antibiotics like flucloxacillin and coamoxiclav. Feeding or

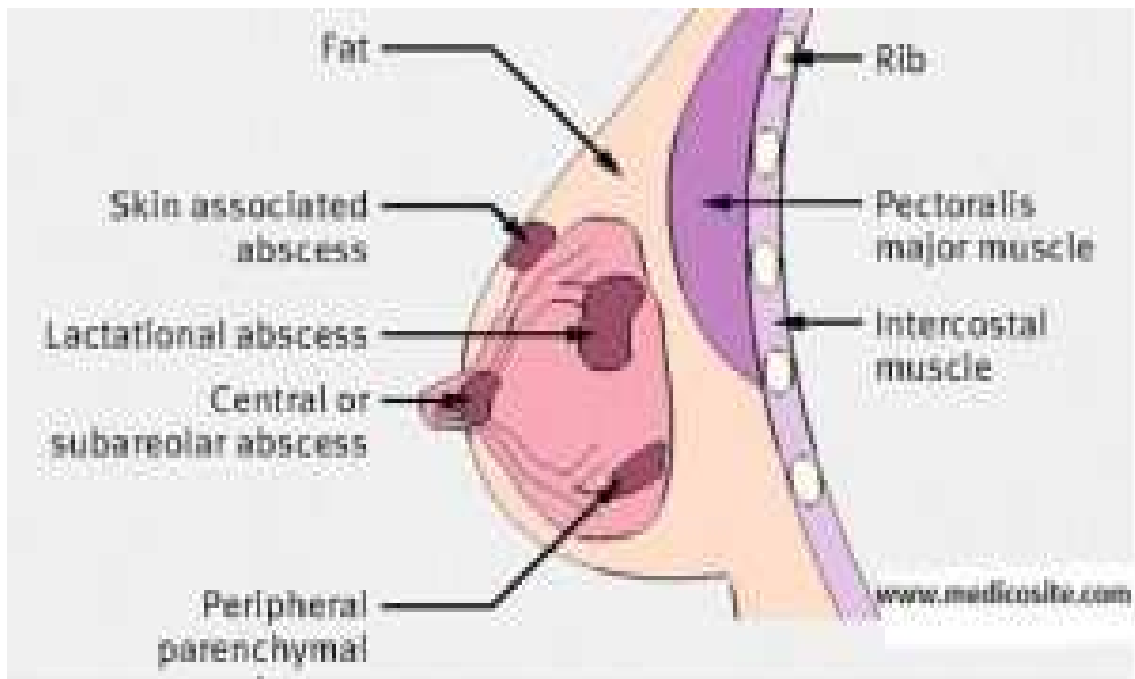
expression of milk from the affected breast in a lactating patient should continue. Local heat and analgesia relieve the pain and discomfort over the affected breast.

Previously almost all cases of breast abscess were treated by operative incision and drainage but now the initial approach is antibiotics and repeated aspiration of the abscess, usually ultrasound guided aspiration. Operative drainage is now reserved for those cases which do not resolve with repeated aspiration and antibiotic therapy or if there is some other indication for incision and drainage (e.g., thinning or necrosis of the overlying skin).

Preoperative ultrasonography is effective in delineating the required extent of the drainage procedure. While staphylococcal infections tend to be more localized and may be situated deep in the breast tissues, streptococcal infections usually present with diffuse superficial involvement. They are treated with local wound care, including application of warm compresses, and the administration of IV antibiotics (penicillins or cephalosporins). Breast infections may be chronic, possibly with recurrent abscess formation. In this situation, cultures are performed to identify acid-fast bacilli, anaerobic and aerobic bacteria, and fungi. Uncommon organisms may be encountered, and long-term antibiotic therapy maybe required.



Intramammary breast abscess.



TYPES OF BREAST ABSCESS



It is important to note that if antibiotic alone is given in an undrained breast, it can result in an ANTIBIOMA- a large, sterile, brawny edema.

Non epidemic (sporadic) puerperal mastitis refers to involvement of the interlobular connective tissue of the breast by an infectious process. The patient develops nipple fissuring and milk stasis, which initiates a retrograde bacterial infection.

Emptying of the breast using breast suction pumps shortens the duration of symptoms and reduces the incidence of recurrences. The addition of antibiotic therapy results in a satisfactory outcome in >95% of cases.

Zuska's disease, also called recurrent periductal mastitis, is a condition of recurrent retroareolar infections and abscesses

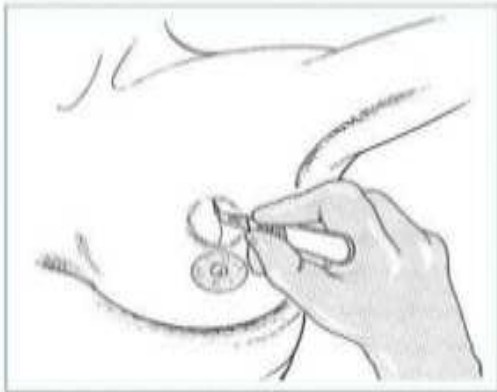


Incision and drainage is done via a radial incision over the most dependent part of the abscess over the skin and subcutaneous tissue, a sinus forceps is inserted into the abscess

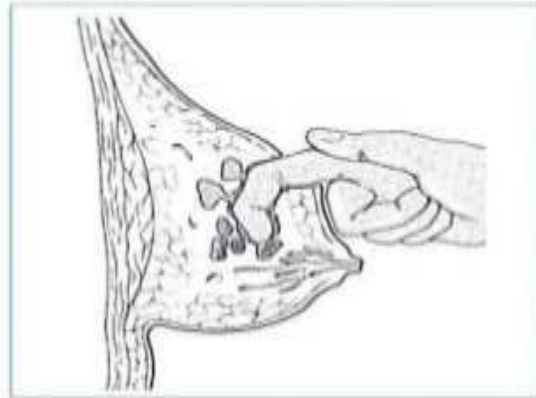
cavity. Every part of the abscess is palpated against the point of the sinus forceps and its jaws are opened. All loculi that can be felt are entered.

Finally, the forceps are withdrawn and finger is introduced and remainder septa are broken. The wound is then washed and packed with gauze and daily debrided or dressed. The wound slowly heals with eventual scar formation- this forming the initial reason behind USG guided aspiration taking prominence as the mode of management.

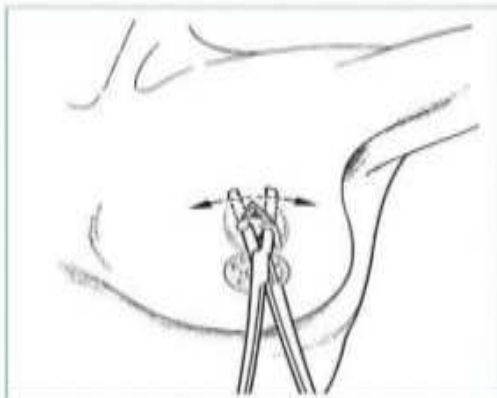
# DRAINAGE OF BREAST ABSCESS



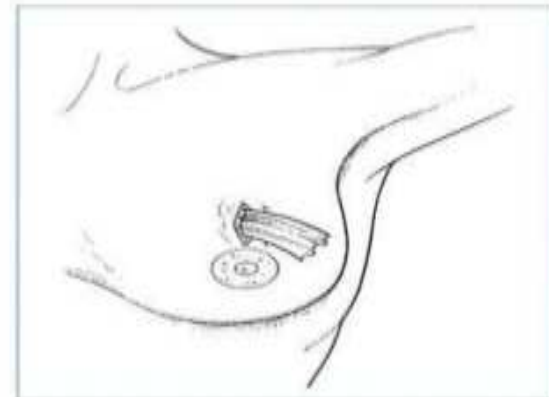
**Incise**



**Break down loculations**



**Spread**



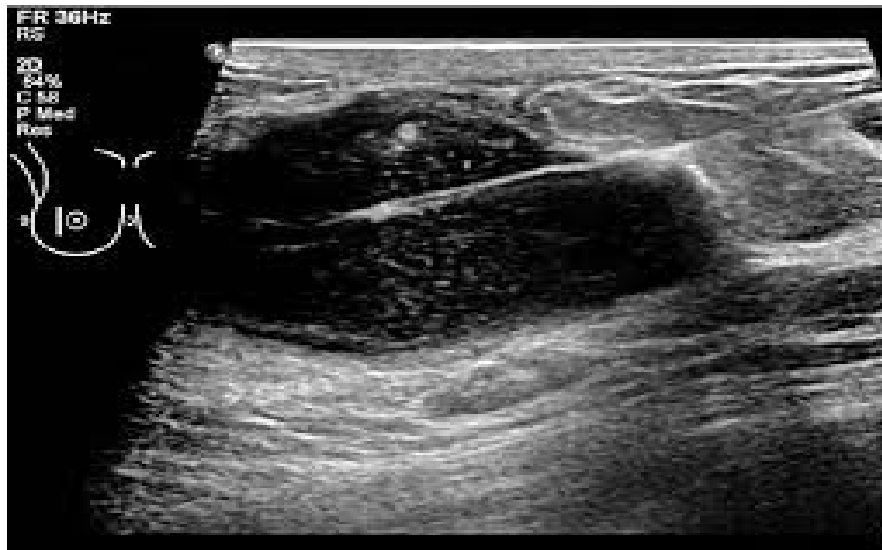
**Drain**

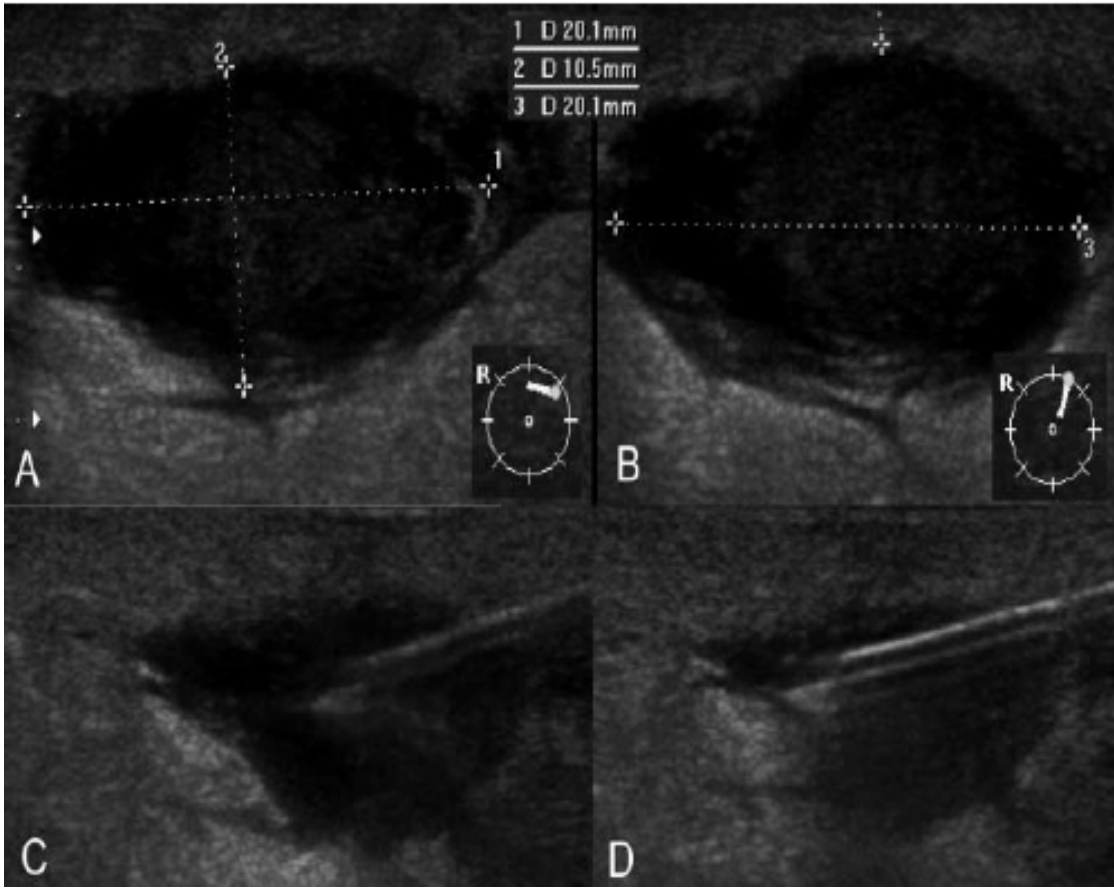
IMAGES SHOWING DRAINAGE OF BREAST ABSCESS:



In USG guided aspiration of breast abscess, patient is initially started on intravenous antibiotic regimen (if inpatient) following which she is prepared for the procedure. Patient is placed in a comfortable position and draped. Ultrasonography of the normal and affected breast is done and abscess is identified on the basis of classical Ultrasound findings. Patient is painted and under strict aseptic precautions a 16 gauge/wide bore needle/ blood IV set needle is inserted and abscess contents are repeatedly aspirated till the cavity is collapsed. This is fully done under ultrasound guidance. Ultrasound is continued to visualize the number of loculations and to guide placement of the needle. Post procedure, pus is sent for culture and sensitivity, and the aspirated site is cleaned and dressed.

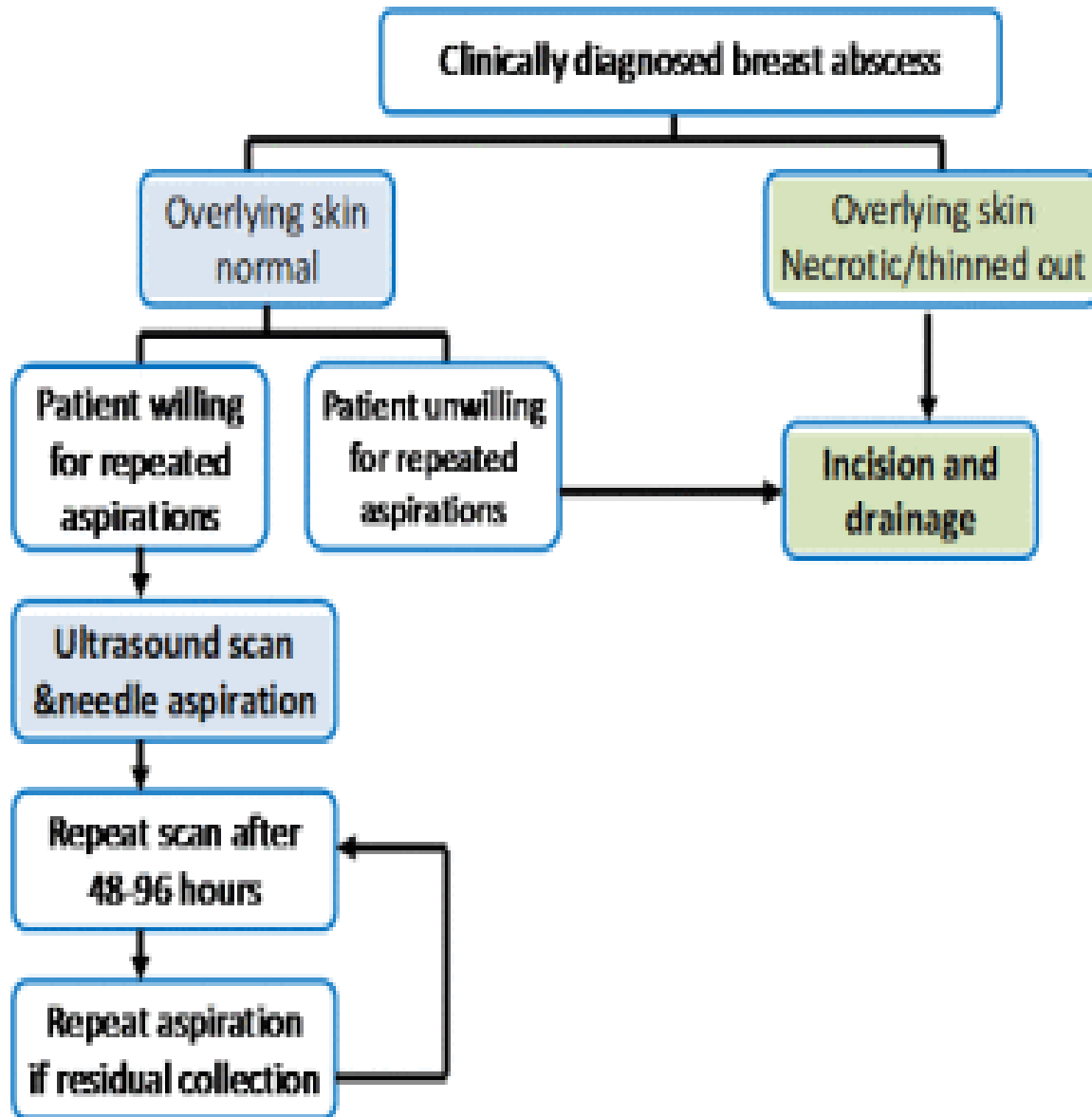
Images showing USG guided drainage of breast abscess





Above image shows measurement of abscess cavity and process of aspiration

## ALGORITHM FOR TREATMENT OF BREAST ABSCESS



# **RESULTS**



A comparative study of drainage of breast abscess by conventional incision and drainage versus ultrasound guided needle aspiration/re-aspiration in a tertiary health care centre was done to compare management in terms of residual abscess, recurrence and clinical outcome of patient basis functional and cosmetic criteria. A total of fifty patients were studied prospectively for nine months.

The mean age of the I and D group is 36.4 years with standard deviation of 10.27 years with a median of 35 years ranging between 21-56 years. The mean age of the USG Guided Aspiration group is 31.8 years with standard deviation of 8.03 years with a median of 30 years ranging between 19-48 years.

In the I and D group, 40% (n=10) patients were lactating compared to the 48% (n=12) patients of the USG Guided Aspiration group. Chi-square analysis showed that these two groups did not differ significantly in lactation.

In the I and D group, 2 patients were found to have multiloculated abscess. Similarly 2 patients in USG guided aspiration group had multiloculated abscess. 1 patient in the I and D group had recurrence of the breast abscess after 2 weeks. Both patients in USG guided aspiration group with multiloculated breast abscess had no recurrence and recovered fully after 3 sittings of aspiration.

Out of 25 patients in I and D group, 13 (52%) of them left breast abscess while 12 (48%) of them had right abscess. In the USG Guided Aspiration group, 14 (56%) of them had left breast abscess while 11 (44%) of them had right breast abscess.

Out of 25 patients in the USG guided aspiration group, 13 (52%) of them were aspirated once, 8 (32%) of them were aspirated twice and only 4 (16%) of them were aspirated thrice.

Out of 25 patients in the I and D group, only one of them was normal (4%) while the rest (n=24, 96%) had residual abscess (on POD 7), edema, minimal collection, subcutaneous edema or persistent loculations. On comparison, in the USG guided aspiration group, Around 44% (n=11) returned to normal while the remaining 56% (n=14) had had residual abscess (on POD 7), edema, minimal collection, subcutaneous edema, etc.

Out of 25 patients in the I and D group, 9 (25%) had residual abscess on 7<sup>th</sup> post-operative day compared to only 3 (12%) had residual abscess in USG guided aspiration group. Chi-square analysis showed that the two groups were significantly different.

Out of 25 patients in the I and D group 28% (n=7) had recurrence after two weeks while in USG Guided Aspiration group, none of them had recurrence after two weeks while. Chi-square analysis showed that the two groups were significantly different.

The resumption of lactation was better in the USG guided aspiration with 91.67% resuming lactation while only 20% in the I and D group resumed lactation. Chi-square analysis showed that the two groups were highly significantly different.

In the I and D group there was 100% incidence of scar while in the USG guided aspiration group, there was no incidence of scar.

The pus culture and sensitivity shows that S.Aureus is the most commonly encountered organism (n=20, 40%) of the cases in both the groups.

The mean time taken for healing in I and D group is 13.9 days with a standard deviation of 5.06 days, ranging between 8-29 days. While in the USG guided aspiration group, the mean time taken for healing is 5 days with a standard deviation of 2.5 days, ranging between 2-14 days.

The healing period is shorter for patients in the USG guided aspiration. Student t-test reveals a F value of 6.25,  $t=7.95$  ( $df=48$ ) with highly significant results. This infers that USG guided aspiration is better than Incision and Drainage.

### **Selection and distribution of patients between the two groups**

Out of 50 patients, 25 (50%) of them were selected for USG guided aspiration and the remaining 25 (50%) of them were chosen for Incision and Drainage (I and D).

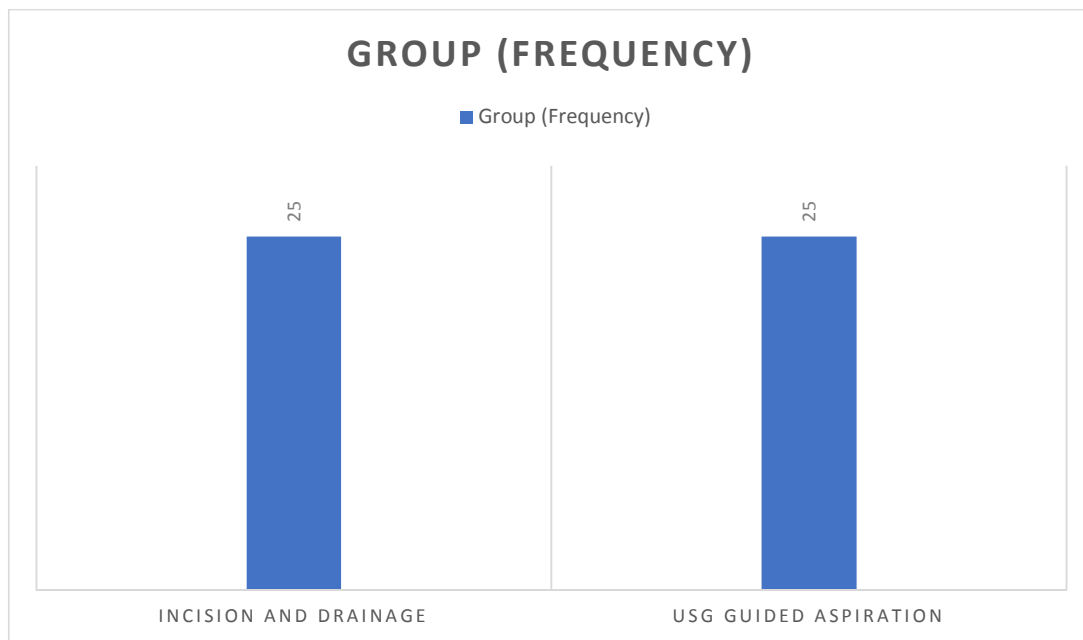


Figure 1: Selection and distribution of patients between the two groups

## Age Distribution

The mean age of the I and D group is 36.4 years with standard deviation of 10.27 years with a median of 35 years ranging between 21-56 years. The mean age of the USG Guided Aspiration group is 31.8 years with standard deviation of 8.03 years with a median of 30 years ranging between 19-48 years.

Age Distribution	I AND D	USG GUIDED ASPIRATION
<b>N</b>	25	25
<b>Mean</b>	36.4000	31.8000
<b>Median</b>	35.0000	30.0000
<b>Mode</b>	34.00	30.00
<b>Std. Deviation</b>	10.27132	8.03119
<b>Minimum</b>	21.00	19.00
<b>Maximum</b>	56.00	48.00

Table 1: Age distribution

The following figures show the age distribution of the patients studied.

Age distribution in the Incision and Drainage group

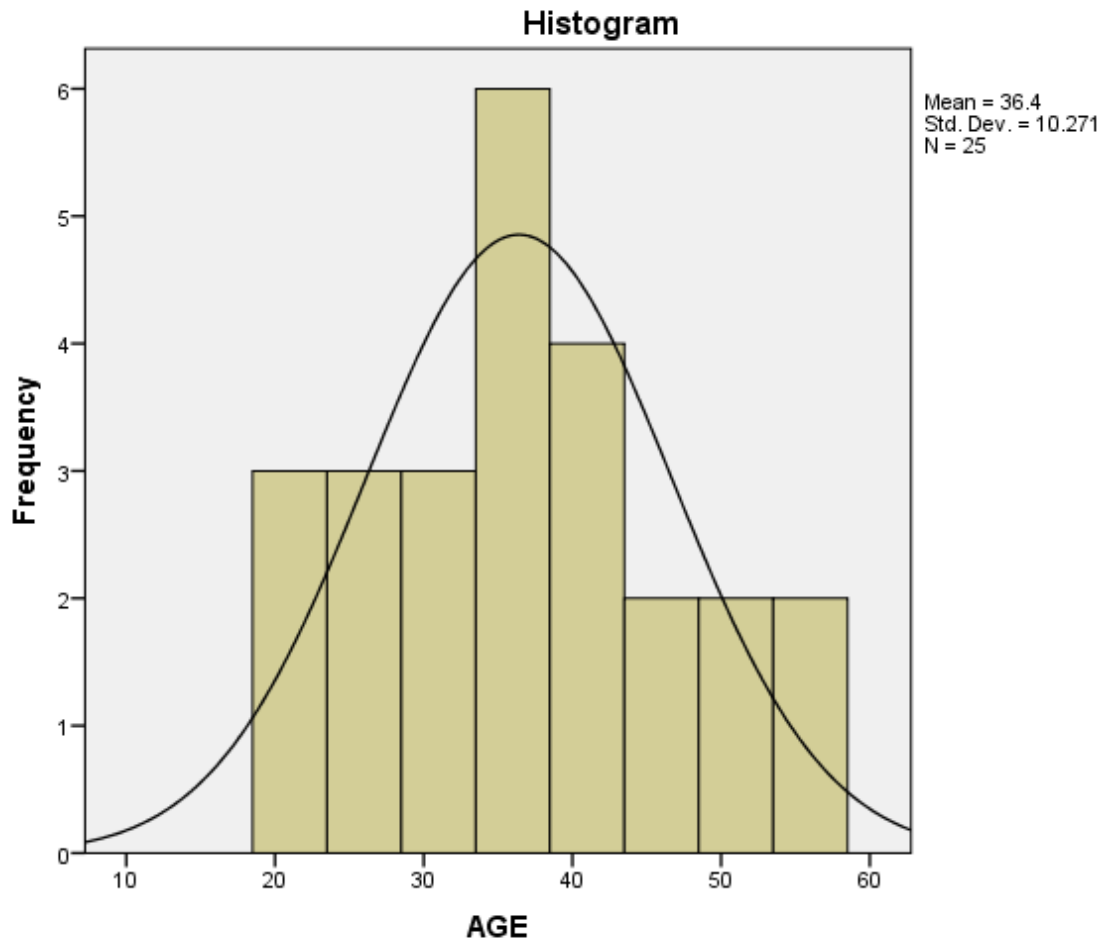


Figure 2: Age distribution in the Incision and Drainage group

Age distribution in the USG Guided Aspiration group

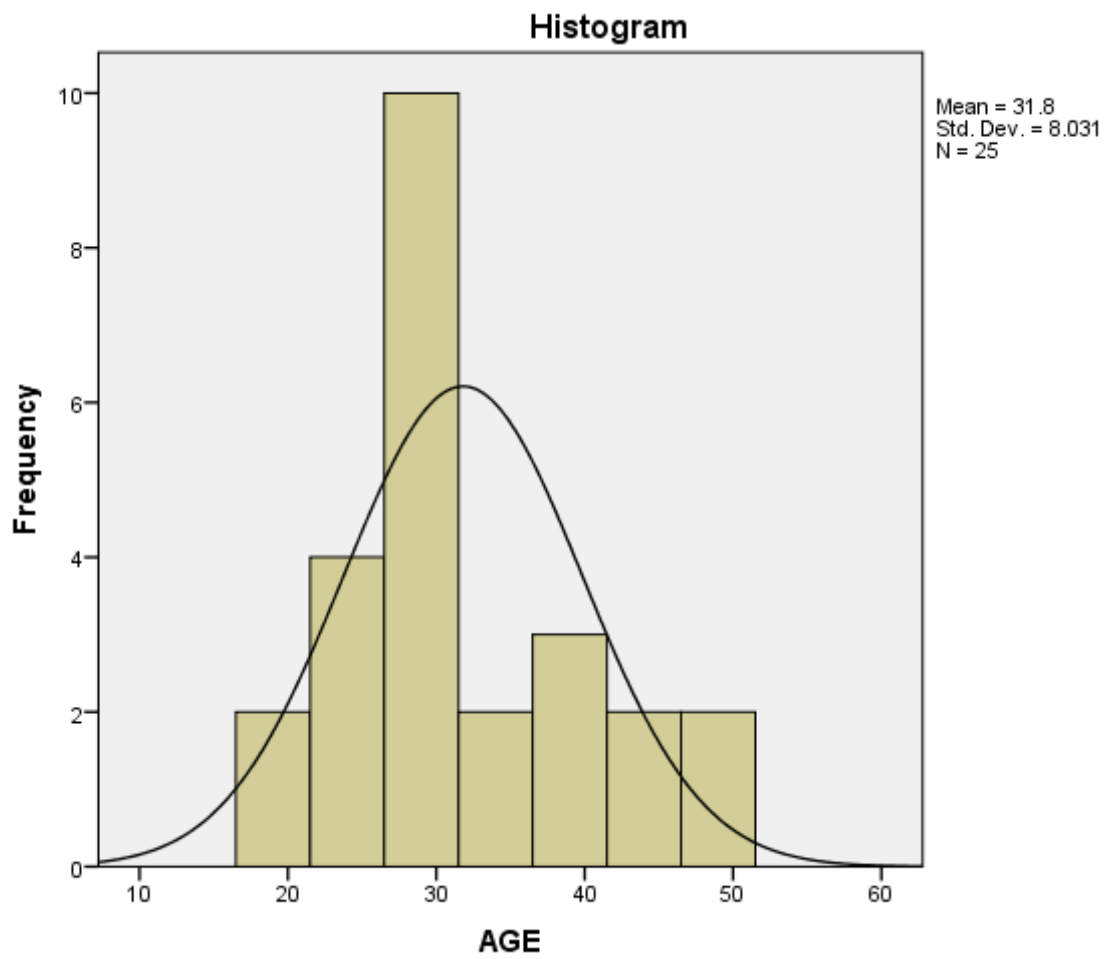


Figure 3: Age distribution in the USG Guided Aspiration group

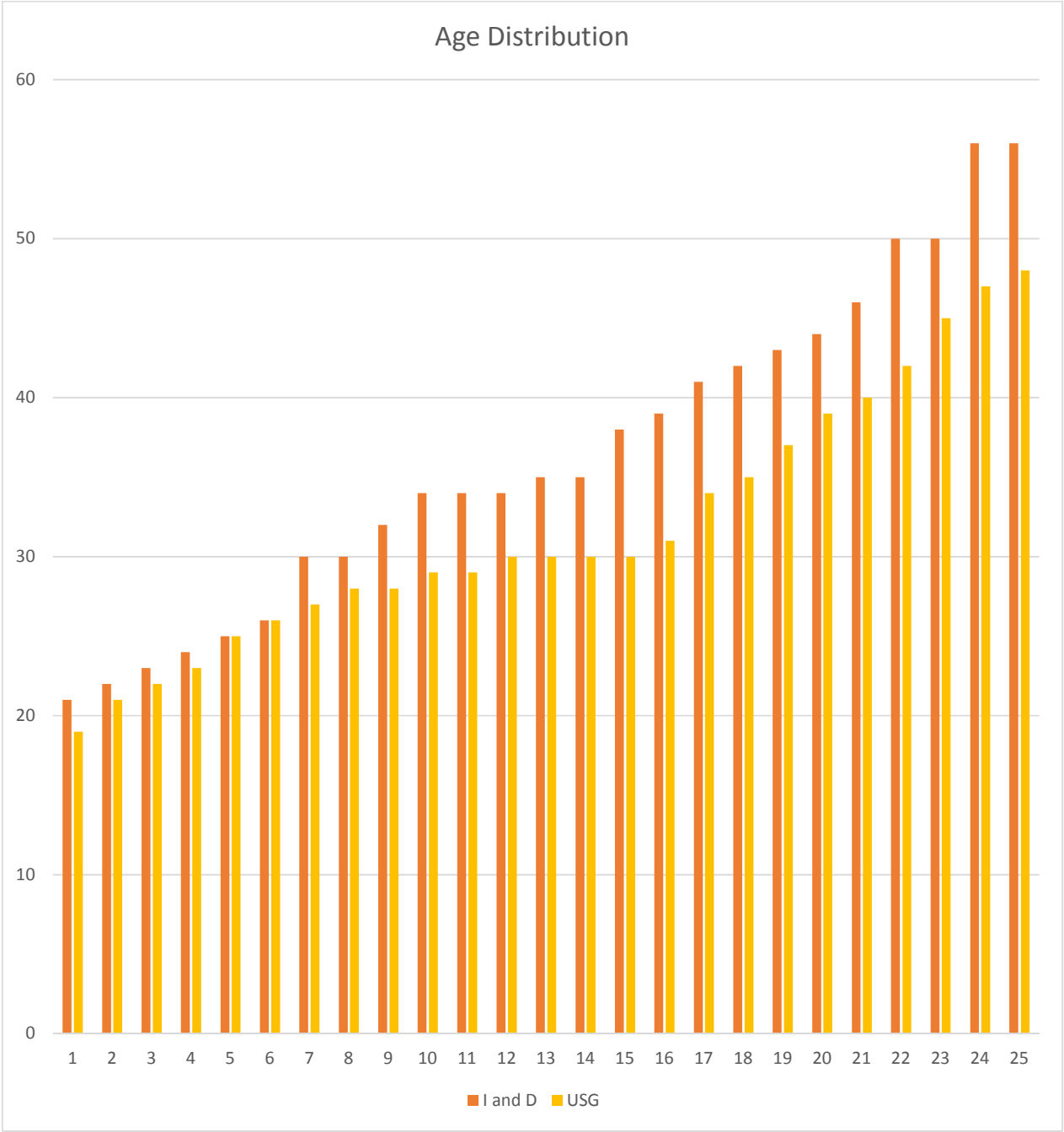


Figure 4: Distribution of Age across the two groups



**Lactating patients for each group**

In the I and D group, 40% (n=10) patients were lactating compared to the 48% (n=12) patients of the USG Guided Aspiration group. Chi-square analysis showed that these two groups did not differ significantly in lactation.

		MANAGEMENT (METHOD)		Total	Chi-square test (p-value)
		I AND D	USG GUIDED ASPIRATION		
<b>Lactating</b>	No	15	13	28	0.325
	Yes	10	12	22	P=0.776
<b>Total</b>		25	25	50	Not Significant

Table 2: Lactating patients for each group

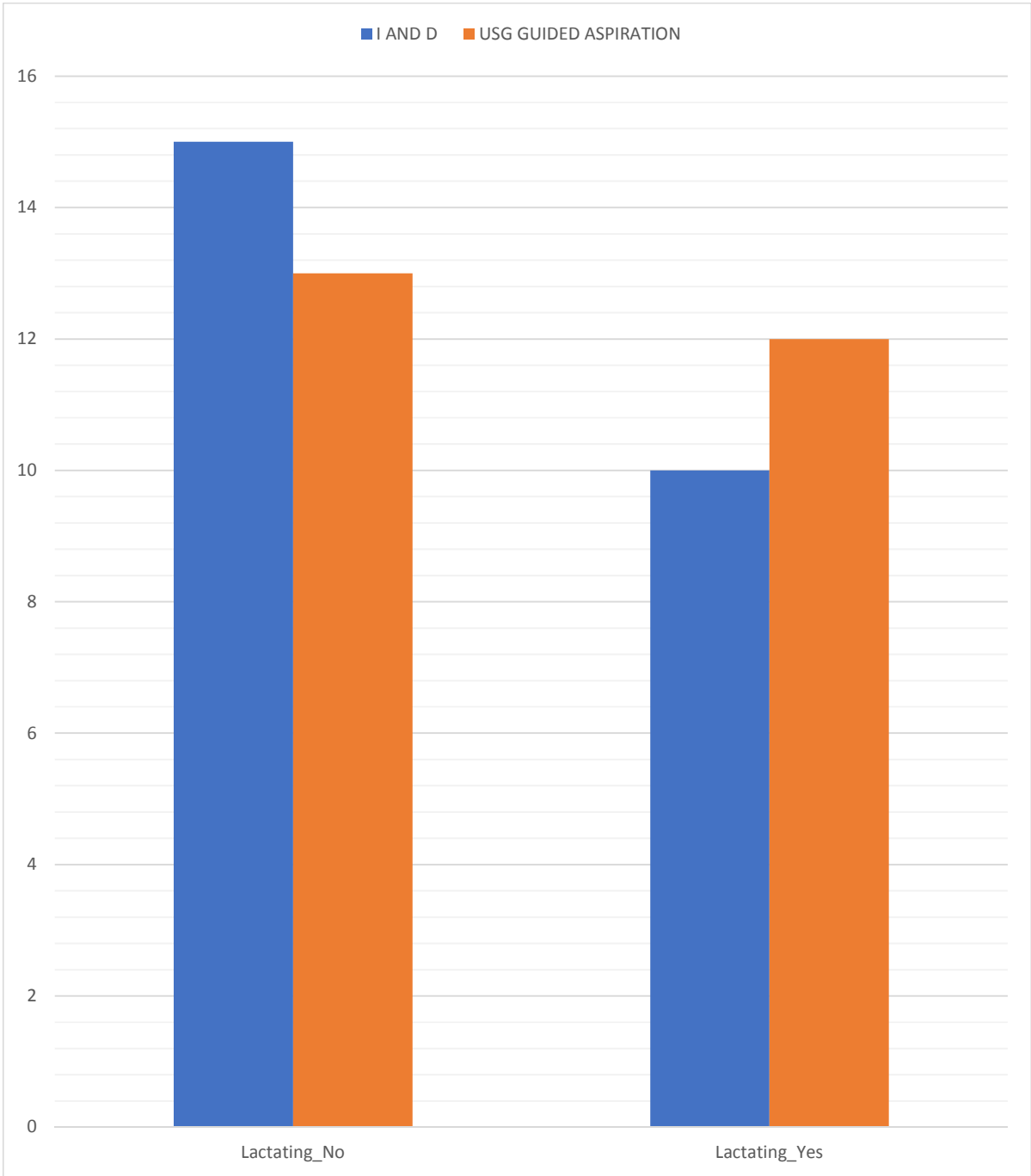


Figure 5: Lactating patients for each group

## Diagnosis

Out of 25 patients in I and D group, 13 (52%) of them left breast abscess while 12 (48%) of them had right abscess. In the USG Guided Aspiration group, 14 (56%) of them had left breast abscess while 11 (44%) of them had right breast abscess.

DIAGNOSIS		MANAGEMENT (METHOD)		Total
		I AND D	USG GUIDED ASPIRATION	
LEFT BREAST ABSCESS		13	14	27
RIGHT BREAST ABSCESS		12	11	23
<b>Total</b>		25	25	50

Table 3: Diagnosis

## Quadrants involved

The following tables and figures show the involvement of the quadrants in both the groups.

QUADRANT	MANAGEMENT (METHOD)		Total
	I AND D	USG GUIDED ASPIRATION	
2 SEPARATE LOCULI	0	1	1
DIFFUSE	0	1	1
DIFFUSE, MULTILOCULATED	1	0	1
DIFFUSE, MULTILOCULATED WITH EDEMA	1	0	1
MULTILOCULATED	2	2	4
LLIQ (Left Lower Inferior)	4	3	7
LLOQ (Left Lower Outer)	3	2	5
LUIQ (Left Upper Inferior)	2	4	6
LUOQ (Left Upper Outer)	3	1	4
RLIQ (Right Lower Inferior)	0	2	2
RLOQ (Right Lower Outer )	3	4	7
RUIQ (Right Upper Inner)	5	1	6
RUOQ (Right Upper Outer)	1	4	5
<b>Total</b>	<b>25</b>	<b>25</b>	<b>50</b>

Table 4: Quadrants Involved

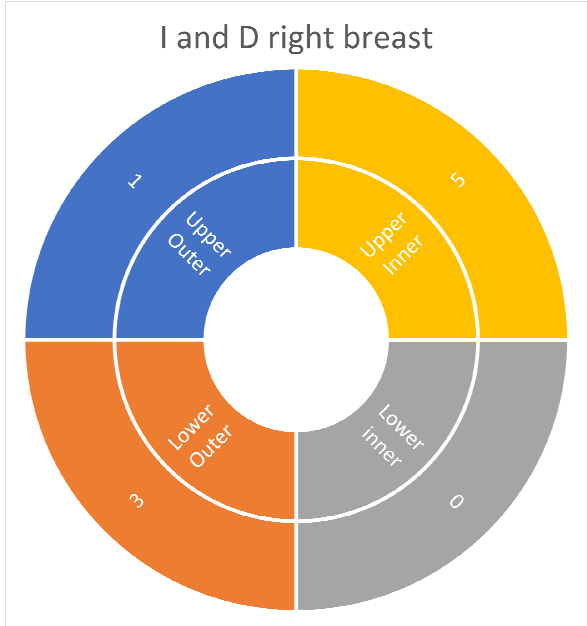


Figure 6: Quadrants involved in I and D

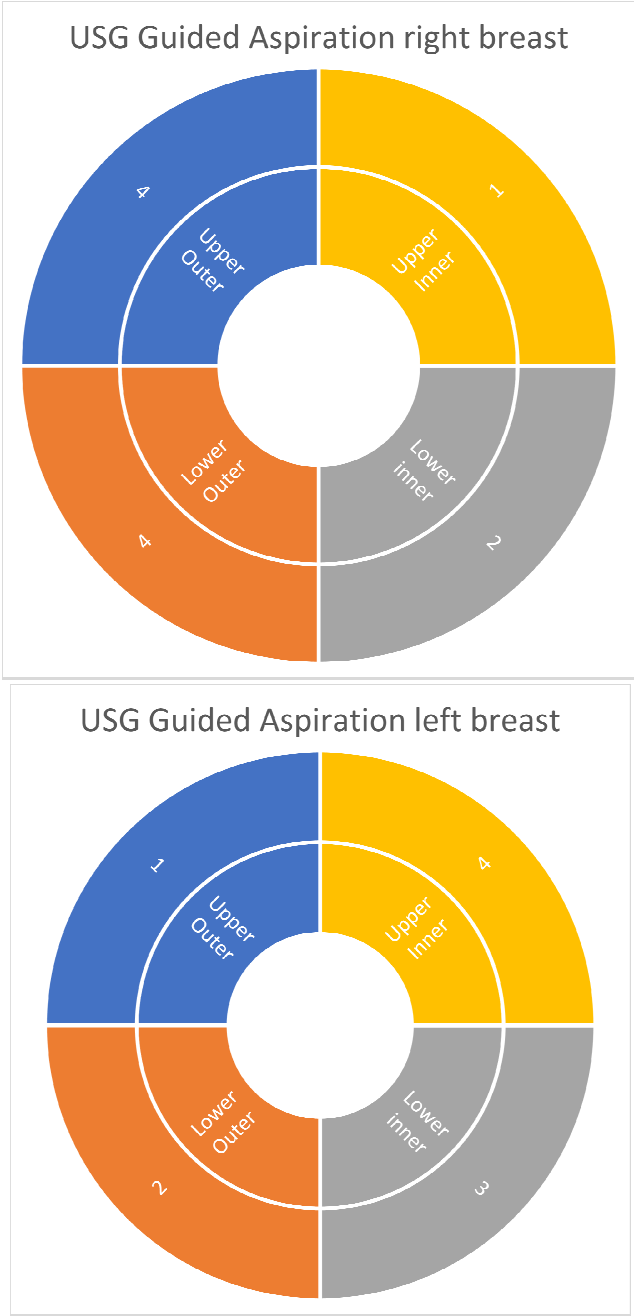


Figure 7: Quadrants involved in USG Guided Aspiration

## **Size of the abscess**

Largest abscess was of size 12x13 cm which was managed via Incision and drainage.

The most frequently encountered size of abscess was 4x4cm which was found in 6 patients over both groups.

4 patients were noted to have multiloculated abscess, 2 patients were managed by incision and drainage and 2 patients managed by USG guided aspiration. A single patient was found to have an abscess of 7x6cm with 2 loculi and was managed successfully with USG guided aspiration.

A tabular representation is further explained.

The following table shows the size of the abscess in the two groups.

USG FINDING (SIZE)	MANAGEMENT (METHOD)		Total
	I AND D	USG GUIDED ASPIRATION	
10X8CM	1	0	1
11X10CM	0	1	1
12X13CM	1	0	1
2X2CM	0	1	1
2X3CM	0	1	1
3X2CM	0	2	2
3X4CM	1	0	1
4X2CM	1	2	3
4X3CM	3	2	5
4X4CM	4	2	6
4X5CM	2	1	3
4X6CM	1	0	1
5X2CM	1	0	1
5X3CM	3	2	5
5X4CM	1	3	4
5X5CM	2	2	4
5X6CM	1	0	1
6X3CM	0	3	3
6X5CM	1	1	2
6X6CM	1	0	1
7X3CM	0	1	1
7X4CM	1	1	2
<b>Total</b>	25	25	50

Table 5: Size of the abscess in the two groups



## Number of aspirations in the group that was treated with USG Guided aspiration

Out of 25 patients in the USG guided aspiration group, 13 (52%) of them were aspirated once, 8 (32%) of them were aspirated twice and only 4 (16%) of them were aspirated thrice.

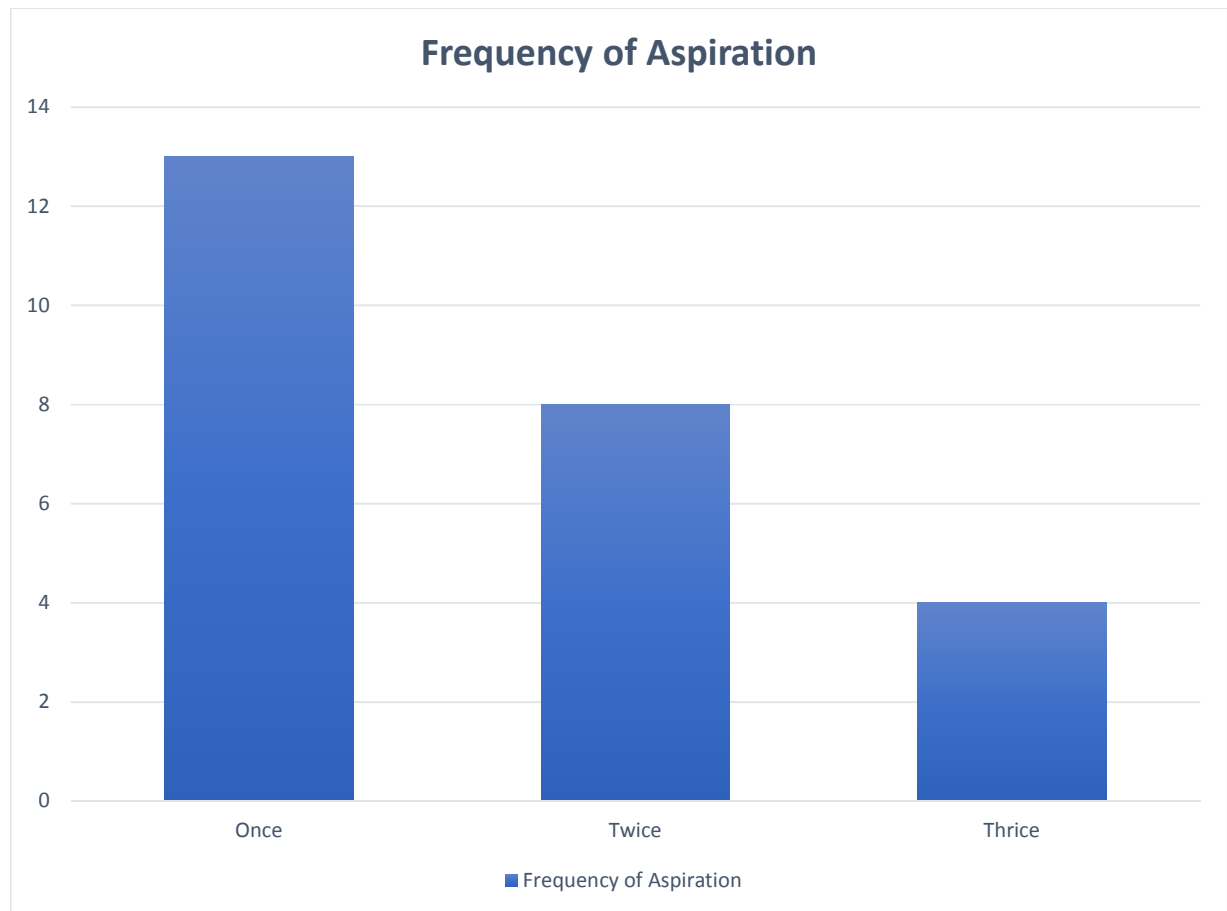


Figure 8: Frequency of aspiration

## Post-operative findings

### *On the 3<sup>rd</sup> post-operative day*

Out of 25 patients in the I and D group, only one of them was normal (4%) while the rest (n=24, 96%) had residual abscess, edema, minimal collection, subcutaneous edema or persistent loculations. On comparison, in the USG guided aspiration group, Around 44% (n=11) returned to normal while the remaining 56% (n=14) had had residual abscess, edema, minimal collection, subcutaneous edema, etc.

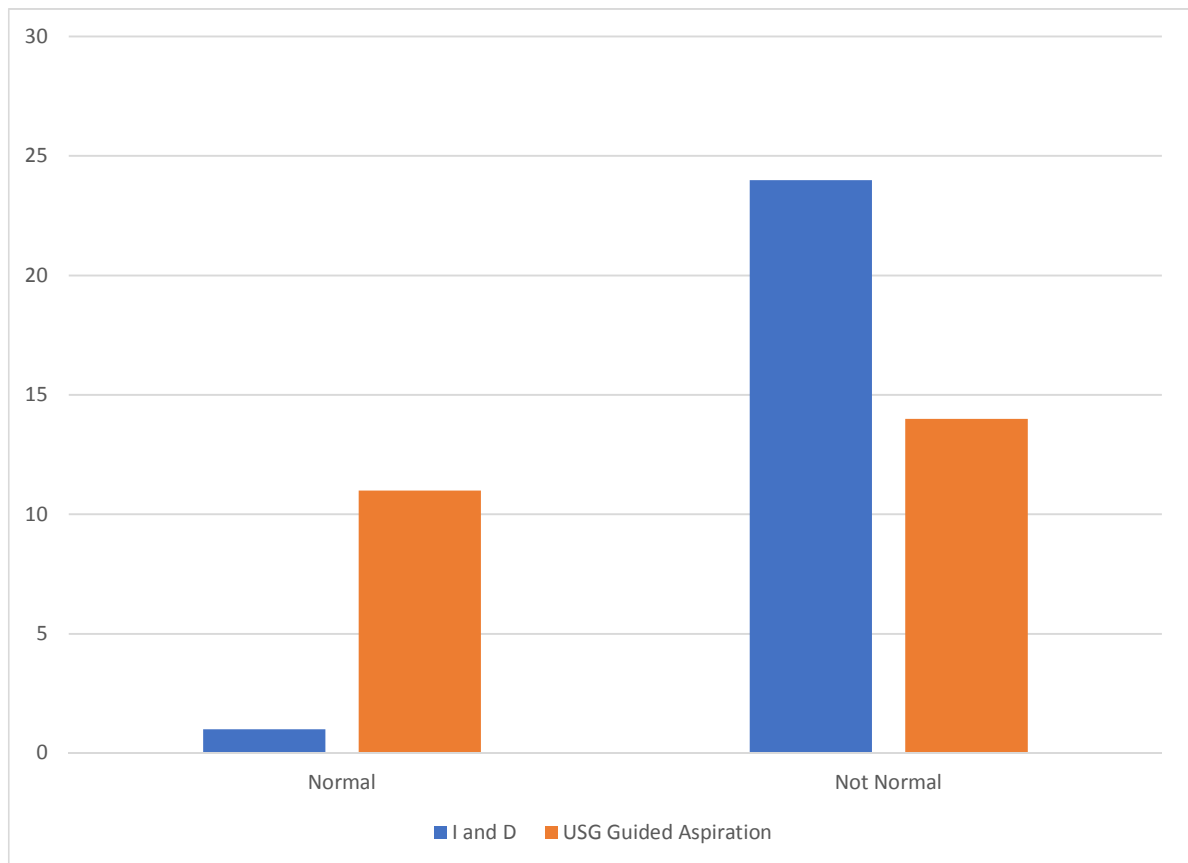


Figure 9: Findings on the 3<sup>rd</sup> post-operative day

***Residual abscess on 7<sup>th</sup> post-operative day***

Out of 25 patients in the I and D group, 9 (25%) had residual abscess on 7<sup>th</sup> post-operative day compared to only 3 (12%) had residual abscess in USG guided aspiration group. Chi-square analysis showed that the two groups were significantly different.

<i>Residual abscess on 7<sup>th</sup> post-operative day</i>	<b>MANAGEMENT (METHOD)</b>		<b>Total</b>	<b>Chi-square test</b>
	I AND D	USG GUIDED ASPIRATION		
No	16 (64%)	22 (88%)	38	3.947 P=0.047  Significant
<b>Yes</b>	<b>9 (36%)</b>	<b>3 (12%)</b>	<b>12</b>	
<b>Total</b>	25	25	50	

Table 6: Residual abscess on 7<sup>th</sup> post-operative day

## Recurrence after two weeks

Out of 25 patients in the USG Guided Aspiration, none of them had recurrence after two weeks while around 28% (n=7). Chi-square analysis showed that the two groups were significantly different.

<i>Recurrence after two weeks</i>	<b>MANAGEMENT (METHOD)</b>		<b>Total</b>	<b>Chi-square test</b>
	I AND D	USG GUIDED ASPIRATION		
No	18 (72%)	25 (100%)	43	8.857  P=0.012
<b>Yes</b>	<b>7 (28%)</b>	<b>0</b>	<b>7</b>	Significant
<b>Total</b>	25	25	50	

Table 7: Recurrence after two weeks

## Resumption of lactation

The resumption of lactation was better in the USG guided aspiration with 91.67% resuming lactation while only 20% in the I and D group resumed lactation. Chi-square analysis showed that the two groups were highly significantly different.

<i>Resumption of lactation in lactating patients</i>		<b>MANAGEMENT (METHOD)</b>		<b>Total</b>	<b>Chi-square test</b>
		I AND D	USG GUIDED ASPIRATION		
No	8 (80%)	1(8.33%)	9	11.82	P=0.003 Highly Significant
<b>Yes</b>	<b>2 (20%)</b>	<b>11 (91.67%)</b>	<b>13</b>		
<b>Total</b>	10	12	50		

Table 8: Resumption of lactation

## Incidence of Scar

In the I and D group there was 100% incidence of scar while in the USG guided aspiration group, there was no incidence of scar.

<i>Incidence of scar</i>	<b>MANAGEMENT (METHOD)</b>		<b>Total</b>	<b>Chi-square test</b>
	I AND D	USG GUIDED ASPIRATION		
No	0 (0%)	25(100%)	25	46.15 P=0.00064 Highly Significant
Yes	<b>25 (100%)</b>	<b>0 (0%)</b>	<b>25</b>	Significant
<b>Total</b>	10	12	50	

Table 9: Incidence of Scar

## Pus Culture and Sensitivity

The pus culture and sensitivity shows that S.Aureus is the most commonly encountered organism (n=20, 40%) of the cases in both the groups.

Pus Culture and Sensitivity	MANAGEMENT (METHOD)		Total
	I AND D	USG GUIDED ASPIRATION	
E.COLI	4	8	12
K. PNEUMONIA	3	2	5
MRSA	2	1	3
POLYMICROBIAL	4	3	7
PROTEUS	2	1	3
S. AUREUS	10	10	20
<b>Total</b>	25	25	50

Table 10: Pus Culture and Sensitivity

## Time taken for healing

The mean time taken for healing in I and D group is 13.9 days with a standard deviation of 5.06 days, ranging between 8-29 days. While in the USG guided aspiration group, the mean time taken for healing is 5 days with a standard deviation of 2.5 days, ranging between 2-14 days.

Characteristic	I and D group	USG Aspiration Group	Guided
<b>Mean</b>	13.9200	5.0000	
<b>Median</b>	13.0000	5.0000	
<b>Mode</b>	13.00	5.00	
<b>Std. Deviation</b>	5.01597	2.51661	
<b>Minimum</b>	8.00	2.00	
<b>Maximum</b>	29.00	14.00	

Table 11: Time taken for healing



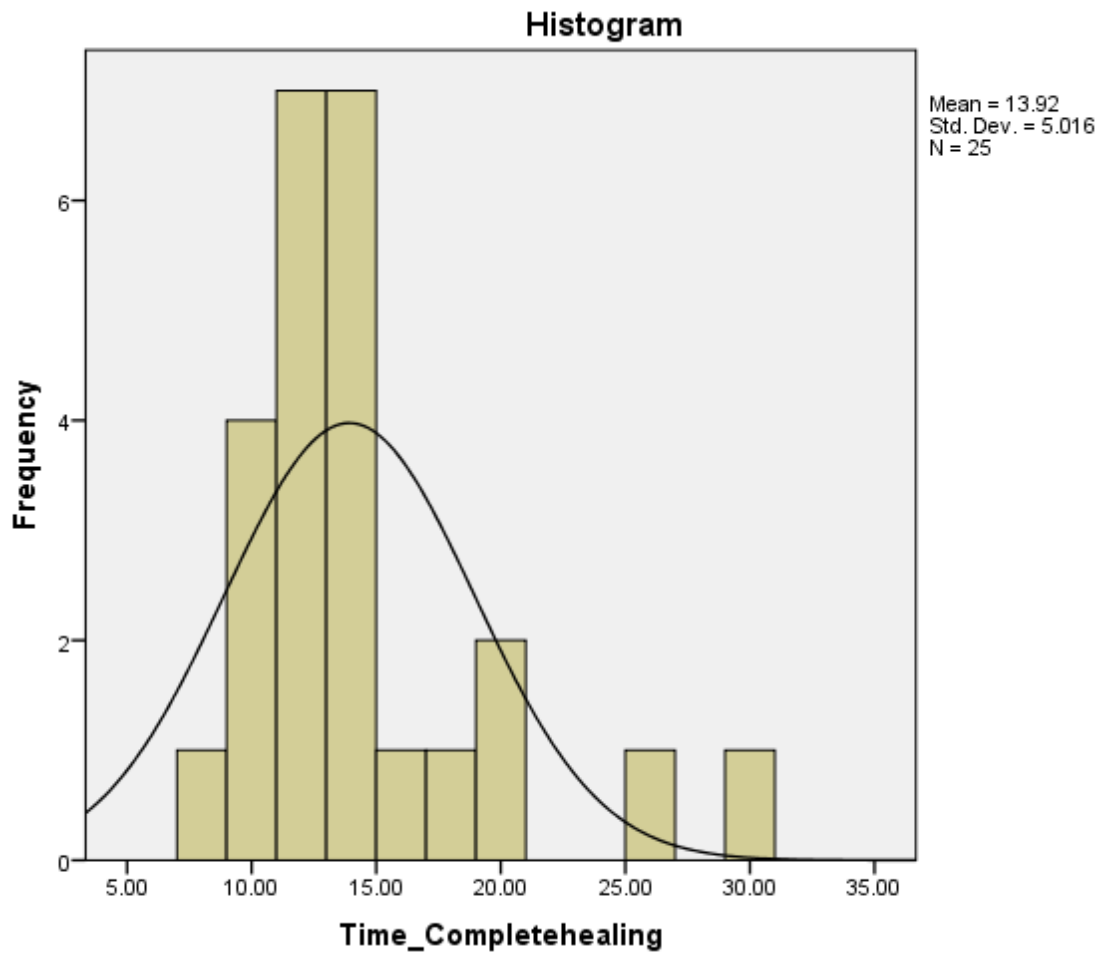


Figure 10: Time taken for healing in I and D group

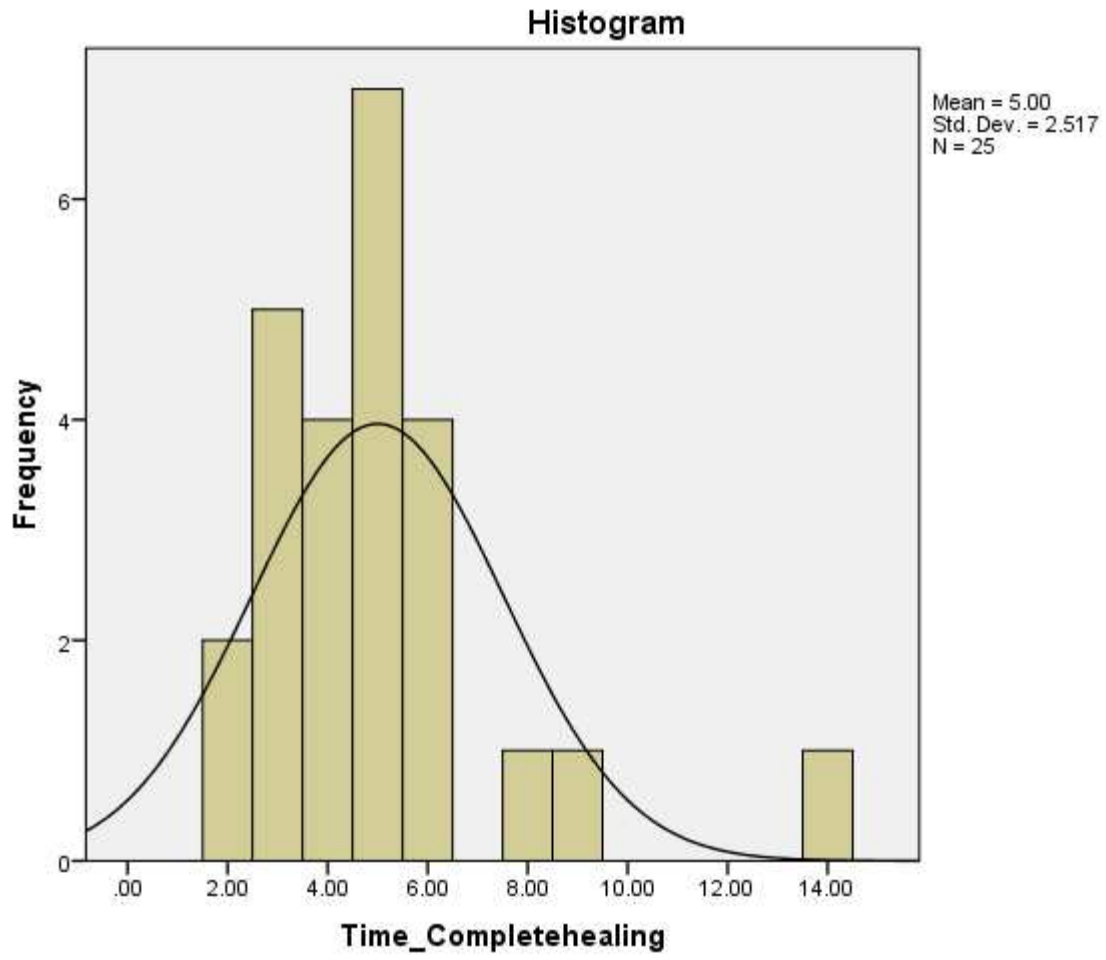


Figure 11: Time taken for healing in USG Guided Aspiration group

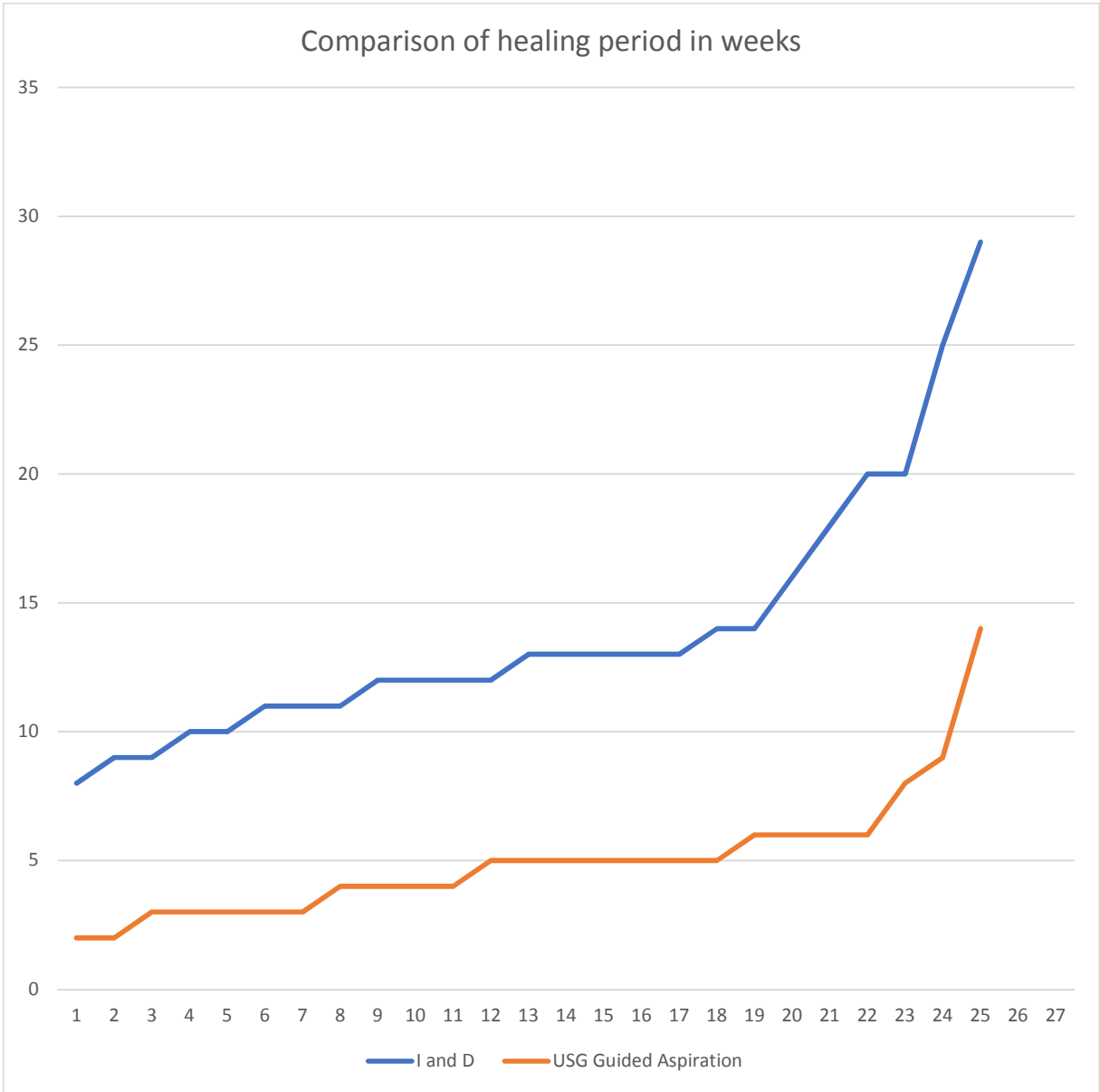


Figure 12: Comparison of healing time between the two groups

## Student t-test for comparison of healing times

The healing period is shorter for patients in the USG guided aspiration. Student t-test reveals a F value of 6.25,  $t=7.95$  ( $df=48$ ) with highly significant results. This infers that USG guided aspiration is better than Incision and Drainage.

Comparison of healing times	N	Mean	Std. Deviation	Std. Error Mean
Incision and Drainage	25	13.9200	5.01597	1.00319
USG guided aspiration	25	5.0000	2.51661	.50332

Student t-test										
Comparison of healing times		Levene's Test for Equality of Variance		t-test for Equality of Means						
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
	Equal variances assumed	<b>6.25</b>	.01	7.9	48	<b>.000</b>	8.92000	1.12238	6.66331	11.17669
	Equal variances not assumed			7.9	35.3	.000	8.92000	1.12238	6.64229	11.19771

Table 12: Student-test for comparison of healing times

# **DISCUSSION**

Breast abscess (lactational and non lactational) form a very common clinical entity identified in daily practice. At an early stage and on initial presentation, acute mastitis can be treated conservatively with antibiotics.

Once an abscess is formed, management previously involved incision and drainage but this was associated with the requirement of daily dressing, prolonged healing time, apprehension in continuing breastfeeding, an unsatisfactory cosmetic outcome and recurrence of breast abscess.

Traditionally, this was the main modality of management but over time with further analysis, research and trials, it has come to light that minimally invasive methods provide better results and are a more acceptable method of management.

Ultrasound guided needle aspiration under antibiotic coverage has become the latest management protocol in many institutions due to its ease and outcome.

This study was performed amongst 50 inpatients in the Department of General Surgery in our institution by fulfilling the inclusion criteria, over a period of 9 months.

The results showed that Ultrasound guided aspiration of breast abscess proved a better and more successful method of management in terms of healing time period, less rate of recurrence, no scar formation, compliance in resumption of breast feeding, less incidence of residual abscess and a better cosmetic and functional outcome.

The study compared the above factors between the 2 groups of randomly divided patients and a significant difference between the 2 groups was obtained in the parameters studied as described in the results.

The following is a summary of the results:

1. 96% of patients in Group A (who underwent incision and drainage) had residual abscess, edema, collection whereas 44% of patients in group B (who underwent USG guided aspiration) completely normalized and recovered with no residual abscess/recurrence.
2. 25% of patients who underwent incision and drainage had residual abscess on POD 7 whereas only 12% had residual abscess on POD 7
3. 28% of patients who underwent incision and drainage had a recurrence of breast abscess after 2 weeks, whereas no patient who underwent USG guided aspiration had any recurrence after 2 weeks.
4. 91.67% of lactating mothers in the USG guided aspiration group, resumed breastfeeding after treatment whereas only 20% of lactating mothers who underwent incision and drainage, resumed breastfeeding.
5. Mean healing time in I and D group was 13.9 days whereas in USG guided aspiration group mean healing time was 5 days
6. 100% of patients who underwent incision and drainage had a scar whereas no patient who underwent USG guided aspiration of breast abscess had any scar



The above summary of derived results explicitly shows that USG guided aspiration/re-aspiration of breast abscess is the better, more feasible and more acceptable method of management of breast abscess unless repeated failure of the same occurs.

Ultrasound guided aspiration/re-aspiration is a technically feasible and easy method of management when done under aseptic precautions and under antibiotic cover with good cosmetic and functional results for the patient and quick recovery.

A profound understanding of the pathogenesis of breast infections, mastitis and abscesses is essential to ensure appropriate and timely management.

Therefore, from the above study we can conclude that Ultrasound guided breast aspiration proves to be a better method of management of breast abscess and should be adopted into the primary protocol of management of the same

# **CONCLUSION**

Breast abscess is a basic clinical entity that every physician or surgeon must learn to diagnose especially in developing countries due to its common occurrence.

Once diagnosed it is important to treat at the earliest as it is a rapidly spreading condition which can involve the entire breast, skin and become multiloculated.

The method of management must be decided based on different factors such as ease of technique, feasibility, acceptance, time for complete healing, cosmetic and functional outcome.

Based on the above factors and the overall advantages of USG guided aspiration over incision and drainage, it is safe to conclude that USG guided aspiration is a safer and more effective method of treatment of breast abscess especially when initiated early and immediately after diagnosis.

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  - b) Schwarz RJ, Shrestha R.

# **ANNEXURES**

## **PROFORMA**

- NAME :
- AGE/SEX :
- CONTACT DETAILS:
- DATE OF ADMISSION:
- IP.NO :
- USG FINDINGS :
- COMORBIDITIES:
- INCISION AND DRAINAGE DONE: YES/NO
- USG GUIDED NEEDLE ASPIRATION DONE: YES/NO
- DATE OF SURGERY (IF INCISION AND DRAINAGE):
- USG FINDINGS ON DAY 3 AFTER PROCEDURE/SURGERY:
- CLINICAL STATUS OF PATIENT 2 WEEKS AFTER DISCHARGE:
  - a) Is there residual lump? YES/NO
  - b) Is there persistent discharge from previous abscess site? YES/NO
  - c) Is there persistent pain? YES/NO
  - d) Has the patient resumed breastfeeding comfortably? (for lactating mothers):  
YES/NO
- RECURRENCE: YES/NO



**GOVT.STANLEY MEDICAL COLLEGE, CHENNAI- 600 001**

- **INFORMED CONSENT**
- **DISSERTATION TOPIC: A COMPARATIVE STUDY OF DRAINAGE OF BREAST ABSCESSSES BY CONVENTIONAL INCISION AND DRAINAGE VS ULTRASOUND GUIDED NEEDLE ASPIRATION/RE-ASPIRATION IN GOVT STANLEY MEDICAL COLLEGE, CHENNAI**
- PLACE OF STUDY: GOVT. STANLEY MEDICAL COLLEGE, CHENNAI
- NAME AND ADDRESS OF PATIENT:
- I, \_\_\_\_\_ have been informed about the details of the study in my own language.
- I have completely understood the details of the study.
- I am aware of the possible risks and benefits, while taking part in the study.
- I understand that I can withdraw from the study at any point of time and even then, I will continue to receive the medical treatment as usual.
- I understand that I will not get any payment for taking part in this study.
- I will not object if the results of this study are getting published in any medical journal, provided my personal identity is not revealed.
- I know what I am supposed to do by taking part in this study and I assure that I would extend my full co-operation for this study.

Name and Address of the Volunteer:

Signature/Thumb impression of the Volunteer

Date:

Witnesses:

(Signature, Name & Address)

Date:

Name and signature of investigator:

# **MASTERCHART**

S.No.	NAME	AGE/LACTATING	DIAGNOSIS	USG FINDING (SIZE, QUADRANT)	GROUP ALLOTTED	MANAGEMENT (METHOD)	NO. OF ASPIRATIONS (IF GUIDED ASPIRATION DONE)	POD 3 USG	RESIDUAL ABSCESS ON POD 7	RECURRENCE (AFTER 2 WEEKS)	RESUMPTION OF LACTATION	SCAR	PUS GROWTH	C/
1	PUSHPA	30/N	LEFT BREAST ABSCESS	3X2CM, LUIQ	2	USG GUIDED ASPIRATION	1	NORMAL	N	N	-	N	S. AUREUS	
2	RAMYA	26/N	LEFT BREAST ABSCESS	4X2CM, LUIQ	2	USG GUIDED ASPIRATION	2	1x1CM COLLECTION FOUND AND DRAINED	N	N	-	N	E.COLI	
3	ARCHANA	31/N	LEFT BREAST ABSCESS	5X3CM, LUOQ	2	USG GUIDED ASPIRATION	1	NORMAL	N	N	-	N	E.COLI	
4	HAMIDA BANU	21/Y	RIGHT BREAST ABSCESS	4X2CM, RLOQ	2	USG GUIDED ASPIRATION	1	NORMAL	N	N	Y	N	E.COLI	
5	VALLI	35/N	RIGHT BREAST ABSCESS	2X2CM, RLOQ	2	USG GUIDED ASPIRATION	1	NORMAL	N	N	-	N	K. PNEUMONIA	
6	KARPAGAM	47/N	RIGHT BREAST ABSCESS	2X3CM, RLIQ	2	USG GUIDED ASPIRATION	1	NORMAL	N	N	-	N	S. AUREUS	
7	FATHIMA	26/Y	LEFT BREAST ABSCESS	12X13CM, DIFFUSE, MULTILOCULATED WITH EDEMA	1	I AND D	-	PERSISTENT LOCULATIONS WITH DIFFUSE EDEMA	Y	N	N	Y	S. AUREUS	
8	AMIRTHA	21/Y	LEFT BREAST ABSCESS	4X3CM, LUOQ	1	I AND D	-	NO COLLECTION, EDEMA +	N	N	N	Y	S. AUREUS	
9	REVATHY	34/N	RIGHT BREAST ABSCESS	5X3CM, RLOQ	1	I AND D	-	NO COLLECTION, EDEMA +	N	N	-	Y	POLYMICROBIA	
10	PRIYANGA	22/Y	RIGHT BREAST ABSCESS	6X3CM, RUOQ	2	USG GUIDED ASPIRATION	3	3X2CM COLLECTION PRESENT AND ASPIRATED	N	N	Y	N	POLYMICROBIA	
11	PREMA	29/Y	LEFT BREAST ABSCESS	11X10CM, DIFFUSE	2	USG GUIDED ASPIRATION	3	7X6CM MULTILOCULATED, DIFFUSE ABSCESS	Y	-	N	Y	POLYMICROBIA	
12	ANU	34/N	LEFT BREAST ABSCESS	7X4CM, LUIQ	1	I AND D	-	EDEMA +	N	N	-	Y	K. PNEUMONIA	
13	RAJAMMAL	30/Y	RIGHT BREAST ABSCESS	4X4CM, RUIQ	1	I AND D	-	EDEMA+, MINIMAL COLLECTION +	N	Y	N	Y	MRSA	
14	SRILEKHA	42/N	LEFT BREAST ABSCESS	5X3CM, LLIQ	1	I AND D	-	RESIDUAL ABSCESS 2X2CM +	Y	Y	-	Y	MRSA	
15	SUSILA	56/N	LEFT BREAST ABSCESS	5X5CM, LLIQ	1	I AND D	-	EDEMA +, MINIMAL COLLECTION +	Y	N	-	Y	K. PNEUMONIA	
16	ARPUTHAVALLI	22/Y	LEFT BREAST ABSCESS	4X5CM, LLOQ	1	I AND D	-	RESIDUAL ABSCESS OF 3X2CM	N	N	N	Y	PROTEUS	
17	SIVASAKTHI	48/N	RIGHT BREAST ABSCESS	5X5CM, RUOQ	2	USG GUIDED ASPIRATION	2	RESIDUAL ABSCESS OF 2X2CM	N	N	-	N	E.COLI	
18	SHEELA	46/N	RIGHT BREAST ABSCESS	10X8CM, DIFFUSE, MULTILOCULATED	1	I AND D	-	RESIDUAL COLLECTION OF 4X4CM +	Y	Y	-	Y	E.COLI	
19	BAKIYALAKSHMI	25/Y	RIGHT BREAST ABSCESS	6X3CM, RUOQ	2	USG GUIDED ASPIRATION	1	SUBCUTANOUS EDEMA +	N	N	Y	N	E.COLI	
20	ILAIYAKUMARI	23/Y	LEFT BREAST ABSCESS	7X4CM, 2 SEPARATE LOCULI	2	USG GUIDED ASPIRATION	2	RESIDUAL COLLECTION OF 3X2CM +	N	N	Y	N	S. AUREUS	
21	DHANALAKSHMI	24/Y	LEFT BREAST ABSCESS	4X3CM, LUOQ	1	I AND D	-	NORMAL	N	N	Y	Y	S. AUREUS	
22	SANDHIYA	19/N	LEFT BREAST ABSCESS	6X5CM, MULTILOCULATED	2	USG GUIDED ASPIRATION	3	RESIDUAL COLLECTION OF 3X2CM +	Y	N	-	N	S. AUREUS	
23	PARVATHY	39/N	LEFT BREAST ABSCESS	4X3CM, LLOQ	2	USG GUIDED ASPIRATION	1	NORMAL	N	N	-	N	S. AUREUS	
24	MUMTAJ	56/N	RIGHT BREAST ABSCESS	5X6CM, RLOQ	1	I AND D	-	EDEMA+, MINIMAL COLLECTION +	N	Y	-	Y	POLYMICROBIA	
25	MEGARUNISHA	45/N	RIGHT BREAST ABSCESS	4X3CM, RLOQ	2	USG GUIDED ASPIRATION	1	NORMAL	N	N	-	N	POLYMICROBIA	
26	KALAISELVI	28/Y	LEFT BREAST ABSCESS	5X4CM, LLIQ	2	USG GUIDED ASPIRATION	2	MINIMAL COLLECTION +	N	N	Y	N	PROTEUS	
27	BHARATI	30/Y	LEFT BREAST ABSCESS	4X4CM, LLIQ	2	USG GUIDED ASPIRATION	1	NORMAL	N	N	Y	N	E.COLI	

28	CHANDRA	39/N	LEFT BREAST ABSCESS	5X3CM, LUOQ	1	I AND D	-	RESIDUAL COLLECTION OF 2X2CM	N	N	-	Y	S. AUREUS
29	VANAJA	50/N	RIGHT BREAST ABSCESS	6X5CM, MULTILOCULATED	1	I AND D	-	RESIDUAL ABSCESS OF 3X2CM	Y	N	-	Y	S. AUREUS
30	KUMUDHA	29/Y	LEFT BREAST ABSCESS	4X4CM, LUIQ	2	USG GUIDED ASPIRATION	1	NORMAL	N	N	Y	N	S. AUREUS
31	MUMTAZ	30/Y	LEFT BREAST ABSCESS	5X4CM, LLIQ	2	USG GUIDED ASPIRATION	2	MINIMAL COLLECTION OF 2X1CM+	N	N	Y	N	S. AUREUS
32	ANITHA	34/N	RIGHT BREAST ABSCESS	5X5CM, RUOQ	2	USG GUIDED ASPIRATION	1	EDEMA+, MINIMAL COLLECTION +	N	N	-	N	S. AUREUS
33	SHUBHA	23/Y	RIGHT BREAST ABSCESS	6X6CM, RUIQ	1	I AND D	-	COLLECTION OF 2X2CM+, EDEMA+	Y	N	N	Y	S. AUREUS
34	ARTHI	27/Y	RIGHT BREAST ABSCESS	6X3CM, RUIQ	2	USG GUIDED ASPIRATION	2	NORMAL	N	N	Y	N	MRSA
35	PUSHPA	37/N	LEFT BREAST ABSCESS	7X3CM, MULTILOCULATED	2	USG GUIDED ASPIRATION	3	COLLECTION OF 3X3CM, EDEMA +	Y	N	-	N	S. AUREUS
36	RADHA	42/N	RIGHT BREAST ABSCESS	3X2CM, RLIQ	2	USG GUIDED ASPIRATION	1	NORMAL	N	N	-	N	E.COLI
37	ANIYAMMAL	35/N	RIGHT BREAST ABSCESS	5X4CM, RLOQ	1	I AND D	-	DIFFUSE SUBCUTANEOUS EDEMA +	N	N	-	Y	K. PNEUMONIA
38	KUMARI	30/Y	LEFT BREAST ABSCESS	4X5CM, LLOQ	2	USG GUIDED ASPIRATION	2	EDEMA +	N	N	Y	N	K. PNEUMONIA
39	APOORVA	34/Y	LEFT BREAST ABSCESS	3X4CM, LLOQ	1	I AND D	-	MINIMAL COLLECTION +, EDEMA+	N	Y	N	Y	PROTEUS
40	AMUDHA	25/Y	RIGHT BREAST ABSCESS	4X4CM, RUIQ	1	I AND D	-	RESIDUAL COLLECTION OF 2X1CM+	N	N	Y	Y	POLYMICROBIAL
41	PRIYA	28/Y	LEFT BREAST ABSCESS	5X3CM, LUIQ	2	USG GUIDED ASPIRATION	1	EDEMA +	N	N	Y	N	E.COLI
42	ROJA	30/N	RIGHT BREAST ABSCESS	4X4CM, RUIQ	1	I AND D	-	DIFFUSE SUBCUTANEOUS EDEMA +	N	N	-	Y	S. AUREUS
43	KARPAGAM	32/Y	LEFT BREAST ABSCESS	5X2CM, LLIQ	1	I AND D	-	RESIDUAL COLLECTION OF 2X1CM+	N	Y	N	Y	S. AUREUS
44	VINITA	40/N	RIGHT BREAST ABSCESS	5X4CM, RLOQ	2	USG GUIDED ASPIRATION	2	MINIMAL COLLECTION OF 2X1CM+	N	N	-	N	S. AUREUS
45	PURNIMA	41/N	LEFT BREAST ABSCESS	4X2CM, LLOQ	1	I AND D	-	EDEMA+, MINIMAL COLLECTION +	N	N	-	Y	S. AUREUS
46	SAROJINI	35/N	RIGHT BREAST ABSCESS	4X6CM, MULTILOCULATED	1	I AND D	-	COLLECTION OF 2X3CM+, DIFFUSE EDEMA+	Y	Y	-	Y	E.COLI
47	BOMMI	50/N	LEFT BREAST ABSCESS	4X4CM, LLIQ	1	I AND D	-	EDEMA+, MINIMAL COLLECTION +	N	N	-	Y	E.COLI
48	MANJULA	38/Y	RIGHT BREAST ABSCESS	4X5CM, RUIQ	1	I AND D	-	DIFFUSE SUBCUTANEOUS EDEMA +	Y	N	N	Y	E.COLI
49	HEMALATHA	43/N	LEFT BREAST ABSCESS	4X3CM, LUIQ	1	I AND D	-	EDEMA+	N	N	-	Y	S. AUREUS
50	GOWRI	44/N	RIGHT BREAST ABSCESS	5X5CM, RUOQ	1	I AND D	-	EDEMA+, RESIDUAL ABSCESS OF 3X2CM+	Y	N	-	Y	POLYMICROBIAL