

ULTRASOUND-GUIDED PERCUTANEOUS ASPIRATION OF BREAST ABSCESES: AN OUT-PATIENT PROCEDURE

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Abstract

Background: Breast abscess is defined as accumulation of pus within the breast, due to untreated mastitis or complication of mastitis. Breast abscess is a most common cause of morbidity in puerperal women. This study is to evaluate the efficinace of Ultrasound-Guided Percutaneous Aspiration of Breast abscess. **Materials and Methods:** This is a prospective study, there were 50 patients with breast abscesses randomized for ultrasound guided percutaneous aspiration on outpatient basis with antibiotic coverage and repeat aspiration at Gandhi Medical College, Suryapet, Telangana during the period 2021-2022. **Result:** Our results showed that most of the patients with breast abscesses can be treated with repeated aspirations with antibiotic coverage. **Conclusion:** USG guided aspiration of breast abscess represented a minimally invasive, simple outpatient department procedure without need of general anesthesia with good cosmetic results and effective method of treatment in breast abscess with good patient satisfaction in lactating women.

INTRODUCTION

Breast abscess is defined as accumulation of pus within the breast, due to untreated mastitis or complication of mastitis. Breast abscess is less common in developed countries due to improved puerperal hygiene, nutrition, early administration of antibiotics and standard of living, breast abscess remains a morbid condition among lactating women in developing countries. Breast abscess is a most common cause of morbidity in puerperal women. Breast abscess ranges from mastitis to deep abscess. The Incidence of lactational breast abscess is high in India. Non lactational breast abscess are uncommon in India, when compared to western countries.^[1-6] Early diagnosis and treatment of mastitis will prevent the complications of breast abscess like milk fistula, scarring, etc. In infective mastitis, Staphylococcus aureus is the most common pathogen. Less commonly, Streptococcus (such as Group A or Group B streptococcus) or Escherichia coli. Community-acquired methicillin-resistant S. aureus (MRSA) is increasingly being identified as the causative agent. The intermediary is usually the infant, After the second day of life, 50% of infants harbor staphylococci in the nasopharynx.^[2] From the fissured nipple the organisms from the infant's oral cavity enters into the breast through the duct. Risk factors for breast abscess are inadequately treated mastitis and sudden weaning during an episode of acute mastitis. Clinical examination along with

ultrasound breast is useful in the diagnosis and to find out the location of breast abscess.

In addition to the signs and symptoms of mastitis, there may be swelling, pain and tenderness at the site of the abscess. Patient with an encapsulated abscess may present with no systemic symptoms but will present with a breast lump and usually describe a recent episode of mastitis.

Traditionally, the breast abscess management involves incision and drainage. But this is associated with need for general anesthesia, prolonged healing time, regular dressing, difficulty in breast feeding, and possible unsatisfactory cosmetic outcome. Milk fistula from the incision site is common and will not allow the proper healing. USG breast is very much useful in the diagnosis of breast abscesses, guiding needle placement during aspiration and also enables visualization of multiple abscess loculation and thus useful in needle aspiration of breast abscesses. This procedure is successful in many places where efficient radiologist available and is associated with less complications, less postoperative stay,^[3] early postoperative recovery, excellent cosmetic result. The important points in the management of breast abscess are symptom management like simple analgesia, warm and cold applications, antibiotics and encouraging continued milk flow from the affected breast. The surgeon should explain the patient that antibiotics and pain killers will not affect her baby. The patient should be reassured to continue breastfeeding, and to drink plenty of fluids.

Close monitoring is needed to ensure that the infection resolves. The infant must be examined to look for adequate growth and hydration. Examination of the baby's mouth to look for any candida infection which is defined as a white filmy layer adherent to the buccal mucosa and to look for anatomical conditions like cleft palate or tongue-tie these are all the factors interfere with the baby attachment to the nipple. Observation of breast feeding also plays important role, as this will give the poor placement of baby to the nipple and areola complex. So, the aim of my study is to compare these two modalities of puerperal breast abscess treatment.

Aims and Objectives

The aim of this study is to evaluate the efficacy of ultrasound guided percutaneous aspiration in treating breast abscess as an outpatient procedure in the management of breast abscess.

MATERIALS AND METHODS

This is a prospective study, there were 50 patients with breast abscesses randomized for ultrasound guided percutaneous aspiration on outpatient basis with antibiotic coverage and repeat aspiration on outpatient basis with antibiotic coverage and repeat

aspiration at Gandhi Medical College, Suryapet, Telangana during the period 2021-2022

The Exclusion Criteria

Patients with immunosuppression, recurrent abscess, necrotic skin overlying the abscess, old age, very large abscess >7cms. Population included: patients with breast abscess who are undergoing treatment in Gandhi Medical College, Suryapet, Telangana during the period 2021-2022. Patients will be selected as per inclusion criteria and explained about the procedure with consent. Under Local anesthesia with Ultrasound guidance, aspiration done with 16G needle. Compressive bandage done. Patients will be followed up in 7th and 14th day following the procedure. Pus was sent for culture and sensitivity. Patient was started parenteral antibiotics and analgesics post operatively. On the 7th day, if abscess re-collects again do re-aspiration under ultrasound guidance, and followed up in 14th day. On the 14th day, if again re-collects consider as failure and go for INCISION AND DRAINAGE. On the 7th and 14th day following aspiration, patients should be assessed both clinically and by USG breast. Clinically by the presence of erythema, swelling, tenderness and fever. And consider as successful aspiration if no collection. Results were tabulated and analyzed.

RESULTS

Table 1: Age Distribution

Age Distribution	No. patients N=50	%
≤ 20 years	6	12.00
21-30 years	43	86.00
31-40 years	1	2.00
Total	50	100

Table 2: Size of Abscess

Size of Abscess	No. patients N=50	%
<3 cm	8	16.00
3-5 cm	34	68.00
5-7 cm	8	16.00
Total	50	100

Table 3: distribution of patients as per healing time

Healing Time	No. patients	%
<5days	16	32.00
6-10 days	25	50.00
< 10 days	9	18.00
Total	50	100

DISCUSSION

The present study was carried out among the patients of breast abscess attending the department of surgery at Gandhi Medical College, during the period 2021-2022.

There were total 50 patients with breast abscesses randomized for ultrasound guided percutaneous aspiration with their full informed consent. The mean age in my study was 23.52, Francisco et al, Dieter et al also observed similar findings in their study, 28 years in D Ullitzch et al series 27.8years in

Eryilmaz et al series.^[1,2] In our study swelling, pain over swelling, tenderness and raised local temperature was present in all patients of breast abscess. While fever was present in 75.5% of patient, this consistent with study of Isabelle et al. In our study, 45 patients were lactating, i.e. 90% of the total patients were lactating and only 5 patients (10%) were non-lactating. All lactating patients (90%) continued breastfeeding in the treatment period satisfactorily and no milk fistula developed. The findings were correlated with Schwarz and Shrestha lactating (83%) and non-lactating (17%)

while the study of Chandika et al.,¹⁵ found 66.2% of lactating patients.^[3,4] In our study, USG size of the abscess ranged in size from 1.5 to 7cm average size (3.5 cm) correlated with findings of Christensen et al., (3.5 cm) and Chandika et al., (3.49 cm).^[4,5]

In our study, cure rate with one aspiration was in 16 patients (32%), two Aspirations required in 26 patients (52%), and three aspirations required in 5 patients (10%) with failure in 3 patients (6%). In study of Sarhan et al., they mentioned cure rate with one aspiration in 23 patients (53.4%), two aspirations in 9 patients (21%), and three aspirations in 8 patients (18.6%) with failure in 3 patients (7%). In our study, pus volume ranges from 10 to 130 ml (avg 40 ml). Elagili et al., mentioned the volume range of 1-200 ml.³ Leborgne and Leborgne observed the range of 1-225 ml with the initial aspiration of 28 ml.^[6,7] *S. aureus* was the most common pathogen in 44 patients (88%) in our study which is correlated with Ulitzsch et al., (89%).^[5] In our study, the cure rate was 94%.^[2]

Our results showed that most of the patients with breast abscesses (94%) can be treated with repeated aspirations with antibiotic coverage. correlated with findings of Chandika et al., with cure rate (93.1%). Karstrup et al., (95%) and Sarhan et al., reported cure rate of 93% with antibiotic therapy.^[6,8,11] Ulitzsch et al., reported cure rate of 97.67% and Elagili et al., mentioned cure rate 83%.^[2,6,8,9]

In our study, no scarring was found and all patients continued breastfeeding (100%) correlated with the study of Saleem et al., and Ulitzsch et al.^[9,10]

They also found 100% results in their study. Eryilmaz et al,^[1] reported that All patients in incised group had swelling, Erythema, increased local temperature and tenderness. Schwarz et al,^[3] and Faisal Elagili et a,^[6] also observed similar signs and symptoms in their study. The risk factor for failure of needle aspiration of breast abscess was abscess size more than 5 cm. We also found failure in 2 (4%) patients with abscess size >5 cm with multiloculation. One patient was positive for tuberculous breast abscess was shifted to anti-tuberculous treatment. Healing time was 2 weeks consistent with finding of Chandika et al., and Strauss et al,^[4] All 50 patients (100%) in our study treated on outpatient basis consistent with study of Christensens et al, 77 patients (87%). USG-guided aspiration of breast abscess is very cost effective treatment as it is outpatient procedure without hospitalization and no general anesthesia and repeated dressing required consistent with findings of Chandika et al, (93.11%).^[4,5] No breast abscess recurrence was observed in all cured patients. The procedure is highly accepted by all the patients with 100% satisfaction consistent with study of Ulitzsch et al., and Christensen et al.^[2,5] In our study recurrence rate of USG guided aspiration was 4% which correlates with study conducted by Markus et al. The maximum healing time in USG guided aspiration group was 2 weeks

Consistent with findings of chandika et al., and strauss et al.^[4,10] In the present study 88% patients continued breast feeding in USG guided aspiration in all lactating females which correlate with the study of Dr. Saira Saleem et al.^[9] Satisfaction in patients treated by USG guided aspiration was 94% and the findings were in correlation with the study of Dieter et al and Saira Saleem et al.^[9] No cosmetic problems in USG guided aspiration.

CONCLUSION

USG guided aspiration of breast abscess represented a minimally invasive, simple outpatient department procedure without need of general anesthesia with good cosmetic results and effective method of treatment in breast abscess with good patient satisfaction in lactating women. It is very promising, feasible, and efficient alternative method of treatment to conventional I & D in properly selected patients. Antibiotoma and poor wound healing were most troublesome complications of I & D, was absent in USG guided aspiration. The patient acceptance was good in USG guided aspiration of breast abscess. In my study most common organism causing breast abscess is GRAM +VE COCCI, mostly staphylococcus aureus and sensitive to Amoxiclav and ampicillin, mycobacterium tuberculosis is seen in one case as per culture and sensitivity. In case of recurrent abscess, especially in non-lactating woman always suspect TB. USG guided aspiration of breast abscess with simultaneous oral antibiotic Management of lactational breast abscesses as an op procedure is safe, easy and effective. This method should become the GOLD STANDARD treatment of breast abscess here after for the management of all lactational breast abscesses in a selected patient.

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