



A Comparative Study of Drainage of Breast Abscesses by Conventional Incision and Drainage Vs Ultrasound Guided Needle Aspiration/Re-Aspiration in a Tertiary Health Care Centre

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KEYWORDS

Breast abscess, Incision and drainage, Suction drainage, USG aspiration

ABSTRACT:

Background: Breast abscesses are common among lactating women most prevalent in developing countries because of poor hygiene, malnutrition, and health conditions. In an era of technical advances management of breast abscesses has shifted to minimally invasive and painless techniques that are more patient-friendly. This study compares outcomes in the management of breast abscesses by ultrasound-guided needle aspiration, suction drainage, and incision and drainage procedures.

Materials & Methods: The present study was conducted in the department of surgery in the tertiary health center (Meenakshi Medical College Hospital & research institute, enathur, Kanchipuram). A total of 120 patients with breast abscess were divided into two groups. One group was managed by incision and drainage second group by ultrasound-guided needle aspiration (60 patients in each group).

Results: In our study, a total 120 patients were analyzed, the majority of the cases (40.8%) belong to 21–25 years age group. Post-operative pain, high recurrence rate, fistula formation, cessation of breastfeeding, ugly scar formation, and longer duration of hospital stay were observed in incision and drainage procedure

Conclusion: USG-guided needle aspiration was the safest, cost-effective, and widely accepted procedure in the treatment of breast abscess as compared to incision and drainage.

INTRODUCTION:

Breast abscesses are less common in affluent nations due to improvements in maternal hygiene,

nutrition, level of living, and early antibiotic use, but they remain a major source of morbidity among women in developing nations [1]. The most feared side effect of mastitis, which is more common in nursing moms, is



breast abscess. The cause of mastitis that progresses to a breast abscess is related to nursing issues, which usually lead to either prolonged engorgement or inadequate drainage [2]. The secret to preventing problems from mastitis is early diagnosis and timely, appropriate treatment [3]. There is a broad spectrum of therapy options available for breast abscesses, ranging from conservative management to surgical intervention. Traditionally, surgical incision and drainage have been the preferred course of action [4]. Breast cancer treatment.

MATERIALS & METHODS

This prospective and comparative study was conducted in Tertiary health care centre (Meenakshi medical college hospital & research institute, enathur, Kanchipuram, India. Duration of the study was 1 year.

Inclusion criteria: The following criteria were included in the study: 1. Age 18–40 years female, 2. Patients who give written informed consent, 3. Size >3 cm.

Exclusion criteria: The following criteria were excluded from the study are 1. Patients not willing to give written consent, 2. Patient with skin disease, 3. Size <3 cm, 4. Chronically ill patients (HIV, HBSAg, and Immunodeficiency), 5. Antibiooma, 6. Malignancy

Following their admission, these patients had the necessary preoperative testing, including pre-operative ultrasound, blood sugar testing, PT/INR, and full blood counts. Before beginning the surgery, the patient was told about it and gave their informed permission. The patients were divided into two groups, with one group performing standard incision and drainage (I and D) and the other opening I and D and using USG-guided aspiration. Under brief GA, every aseptic precautionary measure was followed. Due to cultural and sensitive issues, Pus was sent. For at least five hours, the patient was kept NBM. On the day of the surgery, the patient was begun on intravenous antibiotics and subsequently switched to oral antibiotics and analgesics.

The following results were used to compare the two groups:

1. Pain following surgery
2. Length of hospital stay
3. Resolution period (first, second, and fourth post-

operative week post-operative USG and follow-up visits)

4. The scar's appearance
5. Fistula/recurrence
6. Maintaining breastfeeding, emptying, and suppressing milk production

The collected data was entered in Microsoft Excel. Coding of the variables was done. Analysis was done using SPSS software (Version 27, IBM). Descriptive statistics was used. Association between categorical test. The outcomes of the treatment groups were compared using a test to reach the hypothesis, P value less than 0.5 was considered significant.

RESULTS:

This study included 120 patients with breast abscesses, ranging in age from 18 to 40. Participants in the research were split up into two groups, each with forty patients. The aforementioned outcome-based criteria were used to evaluate each group's results clinically.

Fig. 1 illustrates the distribution of age groups by age, with 40.8% of respondents being in the 21–25 age group being the largest number.

Table 1: Distribution based on age group

Age Group	Percentage
<=20	0%
21-25	20%
26-30	40%
31-35	60%
36-40	(Not provided)

According to the table, no individuals are categorized as being under or equal to 20 years old. However, 20% of the population falls within the age range of 21 to 25, 40% within 26 to 30, and 60% within 31 to 35. The percentage for the age group of 36 to 40 is not provided, leaving the distribution for this age range unspecified. This table offers insights into the demographic composition of the population studied, highlighting the prevalence of different age groups within it.

**Table 2: Cross tabulation between treatment groups and post op pain**

Rating	Incision and Drainage (N %)	USG Aspiration (N %)
0	0 (0%)	31 (77.5%)
2	1 (2.5%)	8 (20%)
4	13 (32.5%)	1 (2.5%)
6	25 (62.5%)	0 (0%)
8	1 (2.5%)	0 (0%)
10	0 (0%)	0 (0%)

For instance, at a severity rating of 0, no cases underwent Incision and Drainage, while 31 cases (77.5%) received USG Aspiration. As the severity rating increases, the utilization of Incision and Drainage becomes more prevalent, reaching its peak at a rating of

6, where 25 cases (62.5%) received the procedure. Conversely, the utilization of USG Aspiration declines as severity increases, with no cases undergoing the procedure at higher rating levels (6, 8, and 10).

Table 3: Cross tabulation between treatment groups and duration of hospital stay

Day of Discharge (Post-op day)	Incision and Drainage (N %)	USG Aspiration (N %)
Day 0	0 (0%)	29 (72.5%)
Day 1	0 (0%)	9 (22.5%)
Day 2	4 (10%)	2 (5%)
Day 3	11 (27.5%)	0 (0%)
Day 4	17 (42.5%)	0 (0%)
Day 5	8 (20%)	0 (0%)

For instance, on day 0 post-operation, none of the cases received Incision and Drainage, while 29 cases (72.5%) underwent USG Aspiration. As the days progress, the utilization of Incision and Drainage increases gradually,

peaking on day 4 with 17 cases (42.5%), while USG Aspiration decreases. Notably, there are no cases where USG Aspiration was performed beyond day 2.

Table 4: Cross tabulation between treatment groups and recurrence

Recurrence	Incision and Drainage (N %)	USG Aspiration (N %)
Yes	5 (12.5%)	1 (2.5%)
No	35 (82.5%)	39 (97.5%)
Total	40 (100%)	40 (100%)



Among cases where recurrence did occur, 5 cases (12.5%) received Incision and Drainage, while only 1 case (2.5%) underwent USG Aspiration. Conversely, among cases where recurrence did not occur, 35 cases (82.5%) were treated with Incision and Drainage, while 39 cases (97.5%) underwent USG Aspiration.

Only 98 specimens (81.7%) out of 120 exhibited bacterial output. Twenty of them (20.4%) had polymicrobials. *Staphylococcus aureus* was the most prevalent organism, appearing in 56 of 78 (71.8%) aerobic cultures and 34 (60.7%) containing MRSA. Coagulase-negative *Staphylococcus*, *Pseudomonas aeruginosa*, *Proteus mirabilis*, and other isolates were among the remaining organisms. In comparison to other groups, the incision and drainage group had a higher pain score (six on the visual analogue scale). In comparison to the suction drainage and USG aspiration groups, a longer hospital stay (three to four days) was seen in the I and D groups. The rate of recurrence was 2.5% in the USG aspiration group, 7.5% in the suction drainage group, and 12.5% in the incision and drainage group.

Following USG-guided aspiration, the largest number of patients (85%) continued to breastfeed, whereas the lowest percentage (55%) was in the group that had incision and drainage. There was very little (2.5%) probability of scar development in the USG-guided aspiration group. Compared to the suction drainage or USG aspiration group, the incision and drainage group had a much longer resolution time.

DISCUSSION:

The current investigation was conducted on breast abscess patients who were undergoing treatment at a tertiary care center's surgical department. A total of 120 patients with breast abscesses underwent suction and drainage, ultrasound guided aspiration, and incision and drainage. There were 60 patients in each group. We have included patients in the reproductive age bracket of 18 to 40. Similar to Kataria et al.'s study, the bulk of our patients (64.2%) belonged to the lactating age range (21–30 years) [10]. We found that *S. aureus* was primarily isolated from pus cultures, which is consistent with the findings of Elliman et al. [11]. According to the current study, post-operative discomfort was

considerably greater in the drainage and incision group than in the suction group.

CONCLUSION:

We have concluded that USG-guided aspiration is a commonly used, straightforward, safe, and affordable procedure for the treatment of breast abscesses. Compared to incision and drainage, USG aspiration was less intrusive, resulted in less discomfort after surgery, produced less scarring, did not interfere with breastfeeding, had a very low recurrence rate, and required a shorter hospital stay.

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