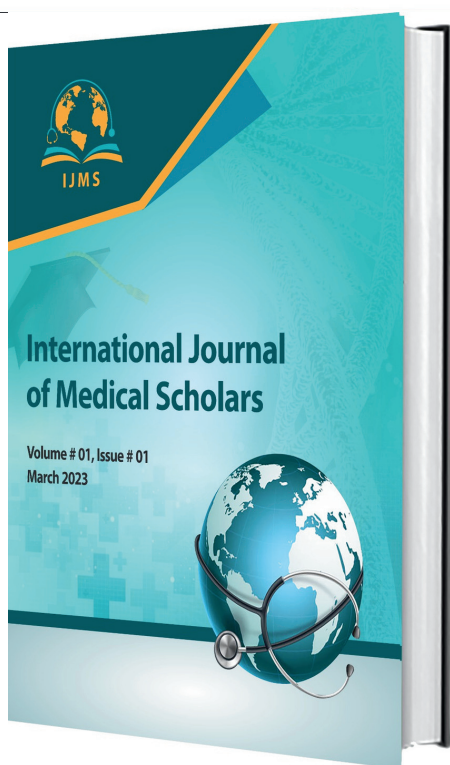


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**Authors**

Saim Ather<sup>1\*</sup>, Muhammad Usama Rauf Hiraj<sup>2</sup>,  
Muhammad Sabir<sup>3</sup>

<sup>1</sup>Ibn e Sina Hospital Multan, Pakistan

<sup>2,3</sup>Nishtar Hospital Multan, Pakistan

**\*Corresponding Author Email:**

saimather333@yahoo.com

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## Recurrence of breast abscess: comparison between incision drainage and aspiration

Saim Ather<sup>1\*</sup>, Muhammad Usama Rauf Hiraj<sup>2</sup>, Muhammad Sabir<sup>3</sup>

<sup>1</sup>Ibn e Sina Hospital Multan, Pakistan

<sup>2,3</sup>Nishtar Hospital Multan, Pakistan

\*Corresponding Author Email: saimather333@yahoo.com

### ABSTRACT

**Objective:** To compare recurrence of incision & drainage versus aspiration of breast abscess.

**Methods:** In group A, patients, needle aspiration was done while in Group B patients, incision & drainage was done. In both groups, patients were prescribed tab. Ciprofloxacin 500mg x BD and tab danzen DS x BD for 10 days. All procedures were performed by the researcher himself. All patients were followed for 2 weeks and recurrence (yes/no).

**Results:** Mean Age of patients in group A was  $25.67 \pm 3.61$  years and in B was  $25.50 \pm 3.73$  years. Size of abscess upto 2cm in group was found in 93.3% patients and 90% in group B. Regarding outcome variable recurrence was observed in 13.3% in group A and 36.7% of patients in group B.

**Conclusion:** Recurrence of breast abscess was lower in aspiration group compared with incision and drainage, hence our study results support the use of needle aspiration technique for the management breast abscess. All surgeons treating such patients should employ aspiration technique to achieve desired outcomes which will decrease burden of related morbidities and mortalities.

**Keywords:** Breast abscess, aspiration, incision & drainage, recurrence.

## 1. INTRODUCTION

Breast infections can manifest either as a localized issue or as part of a broader systemic illness. Among the various surgical emergencies, breast abscesses are particularly common, often occurring in lactating women. The incidence of breast abscesses is closely linked to pregnancy, with nipple piercing by a child during feeding and bacterial colonization stemming from improper nursing techniques and incomplete breast emptying being significant causes. Swift and accurate diagnosis and management are essential not only for the continuation of breastfeeding but also to prevent potential complications.

The management of breast abscess poses a clinical dilemma, with treatment options ranging from conservative measures to surgical intervention; traditionally, the preferred approach involved an invasive procedure of surgical incision and drainage under general anesthesia or daily gauze packing, but there has been a shift towards a minimally invasive strategy, utilizing percutaneous placement of suction drain and aspiration/repeated aspiration for the effective treatment of breast abscess.

This study aims to compare the recurrence outcomes of incision and drainage versus aspiration for breast abscess treatment, addressing existing controversies. Despite prior studies favoring aspiration, a reevaluation is crucial for practical recommendations, guiding the choice of a more effective technique with a lower recurrence rate to minimize patient morbidity.

## 2. METHODOLOGY

Study was conducted at department of General surgery Nishtar Hospital, Multan from January 2023 to December 2023. Study approved by review committee of

hospital. Sample size was calculated with CI: 95%, power: 90% and taking recurrence as 23.33% in incision & drainage group while as 70.0% in needle aspiration group.<sup>7</sup> (our hypothesis is needle aspiration is better but this study has shown incision and drainage as better option. All patients with breast abscess, duration of abscess >3 months, size of abscess >1 cm (measured by measuring tape) and age 20-60 years were included in the study.

Breast abscess: presence of all these i.e. breast pain (VAS >3), fever (temp >37 C), fluctuant tender swelling on examination and presence of a complex and thick walled echo, septations and cystic on ultrasonography was taken as positive. Outcome was measured in terms of recurrence after 14 days of treatment. Diabetes mellitus: all known diabetic patients for last 2 years and taking medication with controlled serum sugar (FBS >110 mg/dl on 2 consecutive occasions).

Patients of suspected malignancy, recurrent abscess, patients with active pulmonary tuberculosis or tuberculous cervical lymphadenitis, imminent necrosis of skin overlying breast, any bleeding disorder (INR >1.5), immunocompromized patients, chronic renal failure were excluded from the study.

All patients in both groups were prescribed a 10-day course of tab. Ciprofloxacin 500mg twice daily and tab Danzen DS twice daily. The patients were followed for 2 weeks, and the presence or absence of recurrence was noted according to the predefined operational definition. Various demographic and clinical parameters, such as age, marital status (married/unmarried), lactation status (yes/no), duration and size of abscess, BMI, diabetes mellitus, and overall outcome (satisfactory/unsatisfactory), were recorded for analysis.

All the data was entered and analyzed by using SPSS version 16.0. and p-value  $\leq 0.05$  was considered as significant.

### 3. RESULTS

Our study encompassed a total of 60 patients with mean age of the study participants was  $25.58 \pm 3.64$  years. Rural residents were 18% in group A and 56.7% in group B, Urban residents were 40% and 43.3% in group A and B. Married were 70% and 73% in group and B respectively. Total 7 (23.3%) patients were fall under the category of Obese 3 (10%) in group A and 4 (13.3%) in group B. Lactating mothers were 60% in group A and 56.7% in group B. Duration of disease was upto 4 months in 28 (93.3%) in group A and 29 (96.7%) in group B. Size of abscess upto 2cm in group was found in 28 (93.3%) patients and 27 (90%) in group B. Regarding outcome variable recurrence was observed in 4 (13.3%) in group A and 11 (36.7%) of patients in group B.

**Table-1: Demographics and study characteristics**

Characteristics	Groups	
	Frequency (%), group A	Frequency (%), group B
Age upto 30 years	27 (90%)	26 (86.7%)
Age above 30 years	3 (10%)	4 (13.3%)
Rural Residence	18 (60%)	17 (56.7%)
Urban Residence	12 (40%)	13 (43.3%)
Married	21 (70%)	22 (73%)
Unmarried	9 (30%)	8 (26.7%)
<b>Obesity</b>		
Yes	3 (10%)	4 (13.3%)
No	27 (90%)	26 (86.7%)
<b>Lactation</b>		
Yes	18 (60%)	17 (56.7%)
No	12 (40%)	13 (43.3%)
<b>Duration of disease</b>		
Upto 4 months	28 (93.3%)	29 (96.7%)
Above 4 months	2 (6.7%)	1 (3.3%)
<b>Size of Abscess</b>		
Upto 2 cm	28 (93.3%)	27 (90%)
Above 2 cm	2 (6.7%)	3 (10%)
<b>Recurrence</b>		
Yes	4 (13.3%)	11 (36.7%)
No	26 (86.7%)	19 (63.3%)
* p = 0.072, which is statistically in – significant for recurrence		

### 4. DISCUSSION

In the evolving approach to breast abscess management, ultrasound-guided needle aspiration has emerged as the primary strategy, replacing the traditional method of incision and drainage coupled with antibiotic therapy<sup>11</sup>. However, its efficacy may be limited in cases of large abscesses or those with thick material. In such instances, ultrasound-guided vacuum-assisted biopsy (VAB), a technique well-established for diagnosing breast lesions, has been increasingly employed as an efficient alternative for managing breast abscesses, offering advantages over fine needle aspiration cytology and core biopsy in specific situations<sup>12</sup>.

In a Ugandan study comparing incision and drainage (I&D) to needle aspiration observed equal healing rate (recurrence) between non lactating and lactating women, but needle aspiration was more economical. The study reported an 11% conversion rate in the I&D group, with recurrence noted in one patient during follow-up visits. Conversely, in needle aspiration group recurrence was zero percent<sup>13</sup>. Another study by Javed et al<sup>14</sup> found a significantly lower recurrence rate (23.33%) in the I&D group compared to multiple needle aspirations 70.0%.

In a separate study by Khan et al<sup>15</sup>, it was found that there was no recurrence of breast abscess observed in the needle aspiration group, whereas a 3.3% recurrence rate was noted in the incision and drainage (I & D) group. Additionally, Naeem et al<sup>16</sup> demonstrated that recurrent mastitis developed in 10.2% of patients within a median follow-up time of 24 weeks. Within this subset, 2.73% of patients from the needle aspiration group and 0.9% from the I & D group experienced a recurrence of breast abscess.

In a study conducted in Karachi, recurrence was observed in 14.5% of patients

after the second aspiration, with only one patient requiring a third aspiration for management. Additionally, 12.7% of patients underwent incision and drainage (I&D) due to the presence of a painful lump, an abscess of the same size, and accompanying fever. Notably, no recurrences were noted in the needle aspiration group during the follow-up period<sup>17</sup>.

In a study conducted by Karvande et al<sup>18</sup>, it was reported that the needle aspiration group showed no recurrence of breast abscess, while the incision and drainage group exhibited a recurrence rate of 3.3% during the study. Findings reported by O'Hara et al<sup>19</sup>. Notably, in the incised group, only one patient (3%) experienced failure. Furthermore, no recurrence of breast abscess was observed in the needle aspiration group throughout the study, contrasting with the significantly lower recurrence rate of 31% in the incision and drainage group, as reported by Strauss et al<sup>20</sup>. It is worth noting that the observed low recurrence rate in the needle aspiration group may be attributed to the relatively short follow-up period in the study.

**Limitations:** The study may not consider external factors that could impact recurrence rates, such as changes in healthcare policies, advancements in medical technology, or shifts in patient demographics.

The study might not account for variations in patient compliance with post-treatment care or follow-up appointments, which can influence recurrence rates.

## 5. CONCLUSION

Recurrence of breast abscess was lower in aspiration group compared with incision and drainage, hence our study results support the use of needle aspiration technique for the management breast abscess. All surgeons treating such patients should employ aspiration technique to achieve

desired outcomes which will decrease burden of related morbidities and mortalities.

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