



## A PROSPECTIVE STUDY TO COMPARE EFFECTIVENESS OF ULTRASOUND-GUIDED PERCUTANEOUS ASPIRATION VERSUS INCISION AND DRAINAGE IN MANAGEMENT OF SMALL BREAST ABSCESS

### General Surgery

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### ABSTRACT

This hospital-based observational study evaluates and compares ultrasound-guided percutaneous aspiration (UGPA) with conventional incision and drainage (ID) for the management of small breast abscesses. Sixty patients admitted with abscesses less than 5 cm in diameter were randomized into two groups of 30 each: UGPA and ID. Demographics, clinical features, procedure details, outcomes such as resolution rates, symptom improvement, hospital visits, and healing duration were analyzed. The UGPA group demonstrated significantly shorter healing times (mean 12.6 vs. 23.77 days,  $p < 0.0001$ ), fewer hospital visits (mean 4.37 vs. 6.9,  $p < 0.0001$ ), and comparable clinical efficacy with reduced risk of scarring and better cosmetic outcomes. Complete abscess resolution was documented in 83.3% for UGPA and 66.7% for ID. While ID remains standard for larger or refractory abscesses, UGPA is recommended as first-line therapy for abscesses smaller than 5 cm, particularly in lactating women.

### KEYWORDS

Breast Abscess, Ultrasound-Guided Aspiration, Incision And Drainage, Healing Time, Lactational Mastitis

#### INTRODUCTION

Breast abscess, a localized collection of pus within breast tissue, is common among lactating women and may significantly impact their comfort, breastfeeding, and quality of life. The primary treatment modalities are conventional incision and drainage (ID) and ultrasound-guided percutaneous aspiration (UGPA), with the latter gaining favor for its minimally invasive nature, cosmetic advantages, and patient preference. The present study aims to prospectively compare UGPA and ID in terms of efficacy, healing time, recurrence, and overall clinical outcomes for small breast abscesses.

#### Review Of Literature

Recent studies suggest UGPA is nearly as effective as ID for small breast abscesses, offering faster recovery, less pain, and improved cosmetic outcomes (Chorma et al., 2022; Patel et al., 2023). Meta-analyses report similar resolution rates, with UGPA demonstrating decreased recurrence and enhanced patient satisfaction (Chang et al., 2022). Risk factors include postpartum period, improper breastfeeding, diabetes, smoking, obesity, and immunosuppression. *Staphylococcus aureus* (including MRSA) is the leading pathogen in both lactational and non-lactational cases.

#### AIM AND OBJECTIVES

**Aim:** To evaluate and compare the efficacy of UGPA versus conventional ID in managing small breast abscesses.

#### Objectives:

- Compare healing time
- Assess abscess resolution rates
- Evaluate symptomatic improvement
- Analyze hospital visit frequency
- Determine aspiration count required in UGPA group

#### MATERIALS AND METHODS

This study was conducted at SMS Medical College and Hospital, Jaipur, involving 60 patients with breast abscesses  $< 5$  cm, randomly assigned to UGPA (Group A) or ID (Group B). Exclusion criteria included immunocompromised status, recurrent or large abscesses, and suspected malignancy or tuberculosis. Continuous variables were analyzed using mean  $\pm$  SD and the paired t-test; categorical variables were compared via Chi-square test. Statistical significance was set at  $p < 0.05$ .

#### RESULTS

No significant differences were found in age or initial clinical

presentation between groups ( $p > 0.05$ ).

| Group       | Mean Age (years)  | Mean Week of Presentation | Fever (%) | Pain/Tenderness (%) |
|-------------|-------------------|---------------------------|-----------|---------------------|
| UGPA (n=30) | $28.97 \pm 10.47$ | $6.6 \pm 1.65$            | 53.33     | 100                 |
| ID (n=30)   | $29.77 \pm 10.47$ | $6.9 \pm 1.4$             | 53.33     | 100                 |

Majority (90%) in UGPA group achieved resolution within two aspirations.

| Parameter               | UGPA (n=30)     | ID (n=30)       | p-value |
|-------------------------|-----------------|-----------------|---------|
| Procedure time (min)    | $23.73 \pm 4.2$ | $6.9 \pm 1.4$   | 0.0001  |
| Hospital visits         | $4.37 \pm 1.08$ | $6.9 \pm 1.4$   | 0.0001  |
| Healing duration (days) | $12.6 \pm 3.82$ | $23.77 \pm 5.4$ | 0.0001  |
| Complete resolution (%) | 83.33           | 66.67           | 0.14    |
| Symptom improvement (%) | 83.33           | 73.33           | 0.36    |

#### DISCUSSION

UGPA offers significant advantages over conventional ID, including shorter healing time, reduced hospital visits, and improved cosmetic outcomes, making it ideal for small breast abscess management, particularly in lactating women. Patient selection is crucial; ID remains preferable for large or recurrent abscesses. Multiple studies corroborate UGPA's effectiveness, with high cure rates and minimal procedural complications. The findings substantiate UGPA as first-line therapy for small abscesses, with the potential to revolutionize care protocols in similar clinical settings.

#### SUMMARY AND CONCLUSION

USG-guided percutaneous aspiration is a minimally invasive and cosmetically superior modality for small breast abscesses, delivering rapid recovery and high patient satisfaction. Conventional ID is reserved for larger or refractory cases. Successful management relies on appropriate case selection, regular follow-up, and patient education regarding breastfeeding and abscess care.

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