

CLINICAL PROFILE AND MANAGEMENT OUTCOMES OF BREAST ABSCESS IN LACTATING WOMEN

¹Dr Bharat Dayalal Choudhary, ²Dr Gadsa Rakeshkumar Premjibhai, ³Dr Gurram Rajasekhar Reddy

¹Assistant Professor, Department of General Surgery, Icare Institute of Medical Science and Research, Haldia, West Bengal

²Assistant Professor, Department of Obstetrics and gynecology, Gouri Devi Institute of Medical Science & Hospital, Durgapur, West Bengal

³Assistant Professor, Department of General Medicine, Dhanalakshmi Srinivasan Medical College and Hospital, Perambalur, Tamilnadu

Corresponding author

Dr Gadsa Rakeshkumar Premjibhai

ABSTRACT

Background: Breast abscess is a common complication of lactational mastitis and significantly affects breastfeeding practices, maternal health, and quality of life. Early diagnosis and appropriate management are essential to prevent recurrence and preserve lactation. Recent advances favor minimally invasive procedures such as ultrasound-guided needle aspiration over conventional incision and drainage.

Aim: To evaluate the clinical profile, microbiological pattern, treatment modalities, and management outcomes of breast abscess in lactating women.

Materials and Methods: A prospective observational study was conducted among 80 lactating women diagnosed with breast abscess in the Department of General Surgery of a tertiary care hospital from January 2024 to December 2025. Detailed demographic data, clinical presentation, ultrasound findings, microbiological culture reports, treatment modalities, and outcomes were recorded. Patients were managed either by ultrasound-guided needle aspiration or incision and drainage depending on abscess characteristics. Statistical analysis was performed using SPSS version 25.0. Chi-square test and Student's t-test were applied, and p-value <0.05 was considered statistically significant.

Results: The majority of patients belonged to the age group of 21–30 years (58.7%). Fever (72.5%) and breast pain (100%) were the most common presenting symptoms. *Staphylococcus aureus* was isolated in 56.2% of cases. Ultrasound-guided aspiration was performed in 60% of patients, while 40% underwent incision and drainage. Mean healing duration was significantly shorter in the aspiration group (11.2 ± 3.6 days) compared to incision and drainage group ($18.5 \pm$

4.2 days) ($p<0.001$). Continuation of breastfeeding was higher among patients managed with ultrasound-guided aspiration.

Conclusion: Breast abscess in lactating women commonly affects young primiparous mothers. Ultrasound-guided needle aspiration is associated with faster recovery, better cosmetic outcomes, and improved continuation of breastfeeding compared to conventional surgical drainage. Early diagnosis and prompt minimally invasive management improve clinical outcomes.

Keywords: Breast abscess, Lactational mastitis, Ultrasound-guided aspiration, Incision and drainage, Breastfeeding, *Staphylococcus aureus*

INTRODUCTION

Breast abscess is one of the most frequent complications associated with lactational mastitis in breastfeeding women. It usually develops due to milk stasis and secondary bacterial infection, leading to localized pus collection within breast tissue.[1] The condition causes considerable discomfort and may interfere with successful breastfeeding if not diagnosed and treated early. The reported incidence of lactational breast abscess varies widely across different populations, particularly among primiparous women during the early postpartum period.[2] Inadequate emptying of the breast, nipple trauma, poor breastfeeding technique, and delayed treatment of mastitis are considered important predisposing factors.[3] Clinically, affected women commonly present with breast pain, swelling, fever, erythema, and tenderness. Ultrasonography has become an essential diagnostic tool because it helps confirm the diagnosis, assess abscess size, and identify loculations, thereby assisting in treatment planning.[4] Conventional management of breast abscess has long involved surgical incision and drainage along with antibiotic therapy. Although effective, this method is frequently associated with prolonged healing, painful wound care, interruption of breastfeeding, and cosmetic concerns. In recent years, ultrasound-guided needle aspiration has gained popularity as a minimally invasive alternative with favorable outcomes.[5] Despite advances in management, breast abscess continues to contribute significantly to maternal morbidity and psychological stress during lactation. Therefore, timely diagnosis and selection of appropriate treatment remain important for preserving breastfeeding and improving patient recovery.[6]

MATERIALS AND METHODS

A prospective observational study was conducted in the Department of General Surgery in collaboration with the Department of Radiodiagnosis and Microbiology at a tertiary care

teaching hospital from January 2024 to December 2025. The study included lactating women who were diagnosed clinically and radiologically with breast abscess. A total of 80 patients fulfilling the study criteria were enrolled and evaluated for clinical presentation, microbiological profile, treatment modalities, and management outcomes.

Inclusion Criteria

- Lactating women aged 18–40 years
- Clinically diagnosed breast abscess confirmed by ultrasonography
- Patients willing to participate in the study
- Postpartum women within one year of delivery

Exclusion Criteria

- Non-lactational breast abscess
- Recurrent breast abscess with previous breast surgery
- Suspected malignant breast lesions
- Patients with immunocompromised states or tuberculosis
- Patients unwilling to provide consent

Methodology

All patients underwent detailed clinical evaluation including age, parity, duration of lactation, presenting complaints, and breast examination findings. Ultrasonography was performed to assess abscess size, number, and loculation. Pus samples were sent for Gram staining, culture, and sensitivity testing.

Patients with abscess cavity less than 5 cm and uniloculated lesions underwent ultrasound-guided needle aspiration along with antibiotic therapy. Patients with large, multiloculated abscesses or failed aspiration underwent incision and drainage.

Patients were followed until complete healing. Outcome parameters included duration of healing, recurrence, hospital stay, breastfeeding continuation, and complications.

Statistical Analysis

Data were entered into Microsoft Excel and analyzed using SPSS software version 25.0. Continuous variables were expressed as mean $\pm$ standard deviation, while categorical variables were expressed as frequencies and percentages. Chi-square test and Student's t-test were applied wherever appropriate. A p-value <0.05 was considered statistically significant.

RESULTS

A total of 80 lactating women diagnosed with breast abscess were included in the present study. Detailed analysis of demographic characteristics, clinical presentation, microbiological findings, treatment modalities, and management outcomes was carried out. The observations obtained during the study period are presented in the following tables and figures.

Table 1: Demographic and Clinical Characteristics of Study Participants

Variable	Number (n=80)	Percentage
Age 18–20 years	12	15%
Age 21–30 years	47	58.7%
Age 31–40 years	21	26.3%
Primiparous	50	62.5%
Multiparous	30	37.5%
Fever	58	72.5%
Breast pain	80	100%
Breast swelling	74	92.5%
Nipple cracks	32	40%

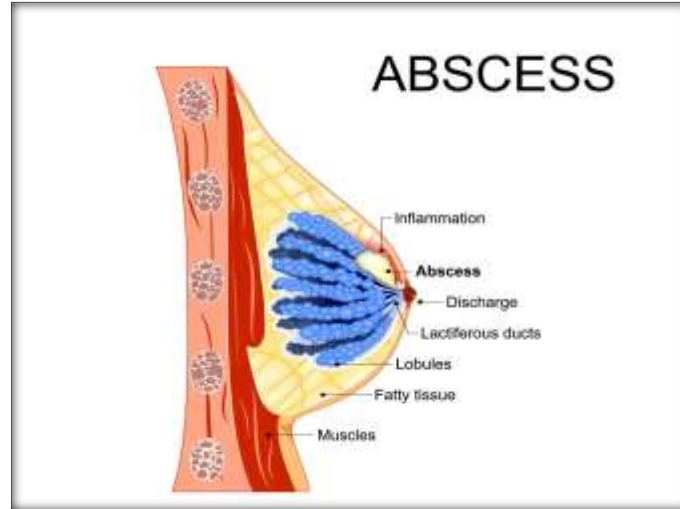
Most patients belonged to the 21–30 years age group, and primiparous mothers constituted the majority. Breast pain and swelling were the predominant clinical symptoms. (Table 1)

Table 2: Ultrasound and Microbiological Findings

Finding	Number (n=80)	Percentage
Right breast involvement	46	57.5%
Left breast involvement	34	42.5%
Uniloculated abscess	52	65%
Multiloculated abscess	28	35%
Abscess size <5 cm	48	60%
Abscess size ≥5 cm	32	40%
<i>Staphylococcus aureus</i>	45	56.2%
MRSA	10	12.5%
No growth	15	18.8%
Mixed organisms	10	12.5%

Right breast involvement was slightly more common. *Staphylococcus aureus* was the predominant organism isolated from pus culture. (Table 2)

Figure 1: Diagrammatic Representation of Lactational Breast Abscess



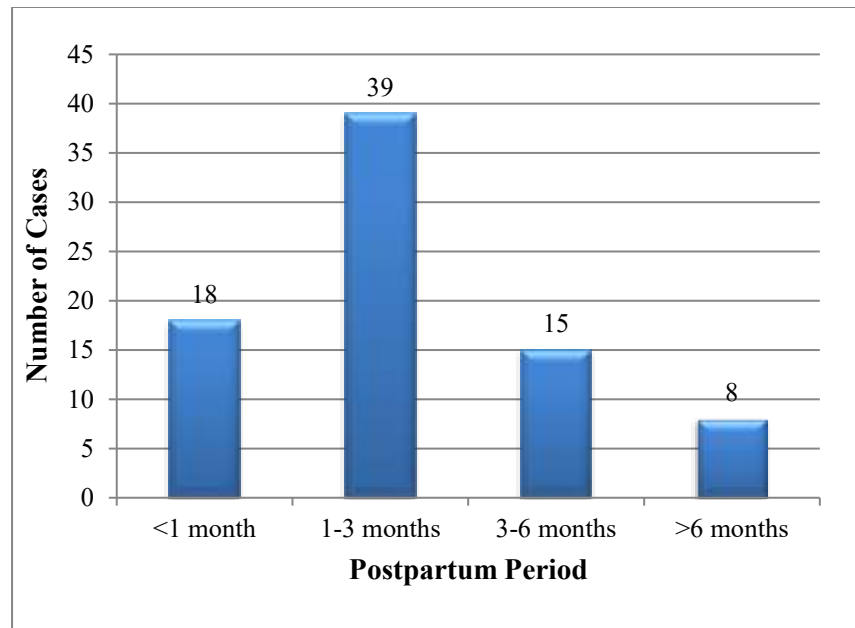
The figure demonstrates the anatomical location of a breast abscess within lactating breast tissue along with associated inflammatory changes and ductal involvement. It highlights the localized pus collection commonly seen in lactational breast infections. (Figure 1)

Table 3: Comparison of Outcomes Between Treatment Groups

Outcome	Aspiration Group (n=48)	Incision & Drainage Group (n=32)	p-value
Mean healing duration (days)	11.2 ± 3.6	18.5 ± 4.2	<0.001
Mean hospital stay (days)	2.1 ± 1.2	5.6 ± 2.3	<0.001
Recurrence	4	3	0.781
Continued breastfeeding	42	18	0.002
Cosmetic satisfaction	44	16	<0.001

Patients treated with ultrasound-guided aspiration had significantly shorter healing duration and hospital stay along with better breastfeeding continuation and cosmetic satisfaction. (Table 3)

Figure 2: Distribution of Abscess According to Postpartum Duration



Most breast abscess cases occurred during the first three months postpartum, indicating increased vulnerability during early lactation. (Figure 2)

Table 4: Complications Observed During Follow-Up

Complication	Number	Percentage
Recurrence	7	8.7%
Delayed healing	9	11.2%
Milk fistula	2	2.5%
Scar formation	11	13.7%
No complication	51	63.7%

Most patients recovered without complications. Scar formation was more common among patients undergoing incision and drainage. (Table 4)

DISCUSSION

The present study evaluated the clinical characteristics and treatment outcomes of breast abscess in lactating women attending a tertiary care center. Most patients in the current study belonged to the 21–30 years age group and were predominantly primiparous mothers. Similar demographic findings have been reported in previous studies, suggesting that first-time mothers are more susceptible to breastfeeding-related complications.[7,8] Breast pain and swelling were the most common presenting complaints, while fever was observed in a large proportion of patients. These findings are consistent with earlier reports describing the inflammatory nature of

lactational breast infections.[9] Microbiological analysis in the present study showed that *Staphylococcus aureus* was the predominant pathogen isolated from pus samples. Comparable observations have been documented in several recent studies where *S. aureus* remained the leading causative organism in lactational breast abscesses.[10,11] Ultrasound-guided needle aspiration was associated with shorter healing duration, reduced hospital stay, and better continuation of breastfeeding compared to conventional incision and drainage. The minimally invasive nature of aspiration likely contributes to improved patient comfort and cosmetic outcomes. Similar advantages have also been highlighted by Zhou et al. in their meta-analysis comparing aspiration with surgical drainage.[12] However, incision and drainage still play an important role in patients with large, multiloculated, or recurrent abscesses where aspiration alone may not be sufficient.[5] In the present study, complications such as scar formation and delayed wound healing were observed more frequently in surgically managed patients. Current evidence increasingly supports minimally invasive management strategies for uncomplicated lactational breast abscesses. Early diagnosis, appropriate antibiotic therapy, and continued breastfeeding are important measures that can improve overall treatment success and reduce recurrence rates.[13,14]

CONCLUSION

Breast abscess remains an important complication of lactational mastitis, particularly among young and primiparous women. Early clinical evaluation combined with ultrasonographic assessment is helpful in prompt diagnosis and treatment planning.

The findings of the present study indicate that ultrasound-guided needle aspiration offers several advantages over conventional incision and drainage, including shorter recovery time, reduced hospital stay, improved cosmetic outcomes, and better continuation of breastfeeding.

Appropriate antibiotic therapy, patient education regarding breastfeeding practices, and early intervention can substantially reduce disease-related morbidity. Adoption of minimally invasive approaches whenever feasible may improve overall patient satisfaction and clinical outcomes in lactating women with breast abscess.

REFERENCES

1. Mitchell KB, Johnson HM, Rodriguez JM, et al. Academy of Breastfeeding Medicine Clinical Protocol #36: The Mastitis Spectrum, Revised 2022. *Breastfeed Med.* 2022;17(5):360-376.

2. Boakes E, Woods A, Johnson N, Kadoglou N. Breast Infection: A Review of Diagnosis and Management Practices. *Eur J Breast Health*. 2018;14(3):136-143.
3. Amir LH; Academy of Breastfeeding Medicine Protocol Committee. ABM clinical protocol #4: Mastitis, revised March 2014. *Breastfeed Med*. 2014 Jun;9(5):239-43.
4. Pesce C, Martincich L, Sarotto I, et al. Abscesses, infections, and periareolar mastitis of the breast. *Ann Breast Surg*. 2021;5:30.
5. Zhou F, Li Z, Liu L, Wang F, Yu L, Xiang Y, et al. The effectiveness of needle aspiration versus traditional incision and drainage in the treatment of breast abscess: a meta-analysis. *Ann Med*. 2023 Dec;55(1):2224045.
6. Irusen H, Rohwer AC, Steyn DW, Young T. Treatments for breast abscesses in breastfeeding women. *Cochrane Database Syst Rev*. 2015 Aug 17;2015(8):CD010490.
7. Pileri P, Campana F, Zerbini F, et al. Management of Breast Abscess during Breastfeeding. *Int J Environ Res Public Health*. 2022;19(9):5762.
8. Ding ST, Gao YJ, Zhang Y, He XP. Analysis of risk factors leading to multiple breast abscesses during lactation. *Medicine (Baltimore)*. 2024;103(9):e37367.
9. Boakes E, Woods A, Johnson N. Lactational breast abscess: clinical presentation and management outcomes. *Breast J*. 2019;25(4):678-684.
10. Rigourd V, Pontet M, Guillet A, et al. Management of lactating breast abscesses by ultrasound-guided needle aspiration. *J Gynecol Obstet Hum Reprod*. 2022;51(1):102251.
11. Berna-Serna JD, Madrigal M, Berna-Mestre JD. Percutaneous management of breast abscesses. An effective minimally invasive technique. *Cir Esp (Engl Ed)*. 2020;98(10):583-589.
12. Blackmon MM, Durgin JS. Lactational mastitis and breast abscess management strategies. *Clin Obstet Gynecol*. 2024;67(1):95-104.
13. Costa Morais Oliveira V, Cubas-Vega N, López Del-Tejo P, Baía-da-Silva DC, Araújo Tavares M, Picinin Safe I, et al. Non-lactational Infectious Mastitis in the Americas: A Systematic Review. *Front Med (Lausanne)*. 2021 Aug 2;8:672513.
14. Wang N, Wang S, Zhang Y, et al. Clinical study of ultrasound-guided minimally invasive catheterization in the treatment of lactational breast abscess. *BMC Womens Health*. 2024;24:512.