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Original Research Article

Frequency of Breast Abscess Among Lactating Women in a Tertiary Care Hospital

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Abstract: *Breast abscess is a relatively common complication during lactation, often resulting in pain, discomfort, and interruption of breastfeeding. Prompt diagnosis and management are essential to prevent morbidity, yet its reported incidence varies across populations.* ***Objective:*** *To ascertain the frequency of breast abscess among lactating women presenting to a tertiary care hospital in Karachi, Pakistan.* ***Methods:*** *A descriptive cross-sectional study was conducted in the Department of Surgery at Kulsoombai Valika Social Security Hospital, Karachi, from July 2024 to December 2024. After obtaining ethical approval from the institutional review board, a total of 151 lactating women aged 20–40 years, presenting with a painful breast lump and swelling for at least 3 days, were enrolled through non-probability consecutive sampling. Data on sociodemographic variables, parity, and clinical presentation were collected. Descriptive statistics were used for baseline characteristics, and the Chi-square test was applied to evaluate associations between categorical variables. A p-value < 0.05 was considered statistically significant.* ***Results:*** *The mean duration of symptoms among participants was 8.2 ± 3.4 days. Breast abscess was diagnosed in 12% of the cases (n = 19). The occurrence of abscess did not show a statistically significant association with socioeconomic status (P = 0.744), with distribution as follows: poor (n = 6), middle class (n = 11), and rich (n = 2). Similarly, no significant relationship was observed between parity and abscess development (P = 0.626); 11 abscess cases were observed in women with parity ≤3 and 8 cases in those with parity >3.* ***Conclusion:*** *The study identified a 12% frequency of lactational breast abscess among the participants, which falls within the higher range reported in the literature. No significant association was observed with socioeconomic status or parity. Early detection and proper management are crucial to minimizing complications in lactating women.*

Keywords: Lactation, Breast Abscess, mastitis, frequency

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Introduction

Breast abscess is a localized collection of pus in the breast tissue that normally involves a lactating woman with mastitis as a complication (1). It is a substantial cause of morbidity which frequently requires medical intervention such as antibiotics, drainage and rarely surgery. Lactational breast abscesses tend to develop within a few weeks of parturition in cases of milk stasis, ductal obstruction or bacterial invasion through a crack in the nipple. Most frequently implicated pathogen is Staphylococcus aureus, but particularly methicillin resistant strains (MRSA) (2).

The incidence of lactational breast abscess in the population, breastfeeding practices and the level of healthcare access globally has been found to be varying from 0.4% to 11% of the population (3). Amir et al., (2004) reported an incidence of 3% in an Australian cohort study of breastfeeding women (4), and Egbe et al (2020) estimated the incidence in Cameroon at 11%, and a significant number of patients needing percutaneous aspiration for management (5). As Ghondkar et al. (2024) also found, poor breastfeeding technique, primiparity and delayed intervention for mastitis were key predictors of abscess formation (6).

Data regarding the exact frequency of lactational breast abscess in developing countries like Pakistan is limited, but clinical observation suggests it is not uncommon (7). Some contributing factors are poor maternal education, lack of postnatal follow up, and delayed presentation to healthcare facilities (8). A descriptive cross sectional study design would be appropriate to determine the burden of this condition in a tertiary care setting as the sample will represent at least heterogeneous socioeconomic and demographic background.

Serious outcomes can result from undrained or poorly managed breast abscesses, including chronic pain, scarring, milk fistulae, and becoming unable to breastfeed – potentially affecting the neonates' nutrition (9). Impressive results were obtained in early diagnosis and timely, appropriate intervention are associated with favorable maternal outcomes. In recent years, the recommended management has shifted towards minimally invasive techniques, ultrasound guided needle aspiration with high success rates and good patient satisfaction, when compared with traditional incision and drainage (10).

The present study intends to ascertain the frequency of breast abscess amongst lactating women seen at a tertiary care hospital in Karachi. Understanding the burden and sociodemographic factors, the findings may be applied to setting early screening and management protocols with a view towards improving maternal child health outcomes in resource limited settings.

Methodology

After the ethical approval from the institutional review board, this cross-sectional study was conducted the surgery department of Kulsoombai Valika Social Security Hospital Karachi from July 2024 to dec 2024. Through non-probability consecutive sampling, 151 patients aged 20-40 years, 2. with painful lump & swelling in breast for 3days were included in the present study. Patients with known chronic renal disease (abnormal baseline renal parameters like serum creatinine and/or gross proteinuria), with immunosuppressive disease e.g. diabetes, HIV or history of steroids use, and Patients with metastatic disease, assessed by history and

clinically were excluded from the present study. After the informed consent, demographic data like medical record number, name & age (in years) and the clinical history regarding place of residence, parity, socio-economic status will be noted. All these patients will be assessed for breast abscess on history and clinical examination as per operational definition to reach the outcome that is Frequency of breast abscess among lactating women. All information will be collected on a specifically designed Proforma. All collected data will be entered into SPSS version 22 and analysed. Values was presented as mean ± standard deviation like age (in years) & duration of pain and lump in the breast. Qualitative data like residence, socio-economic status & parity will be presented as frequency and percentages. Effect modifiers will be controlled by stratification of data with regard to age, duration of pain and lump in the breast, residence, socio-economic status & parity. Post stratification chi-square test and if frequency is <5 fisher's exact test will be used to check the effect of effect modifiers on the outcome that is lactating breast abscess. P value less than and equal to 0.05 will be taken as significant.

Results

The study included a total of 151 lactating women with a mean age of 29.49 ± 6.1 years. In terms of residential distribution, 52% (n=79) of the participants were from rural areas, while 48% (n=72) resided in urban settings. Regarding socioeconomic status, the majority of the women belonged to the middle class (49%, n=74), followed by the poor (37%, n=57) and the rich (13%, n=20).

The mean duration of pain and breast lump experienced by the patients was 8.2 ± 3.4 days. The frequency of breast abscess among the participants was found to be 12% (n=19) (Table 1).

When evaluating parity, a diverse distribution was observed: 23 women had one child, 31 had two, 23 had three, 28 had four, 21 had five, and 25 had six children 9 (Figure 1). Women under the age of 30 years accounted for 12 cases of abscess, while those over 30 had 7 cases, with a P-value of 0.805, indicating no statistically significant association between age and breast abscess. In terms of residence, 7 abscess cases were found among rural residents and 12 among urban residents (P = 0.219), again showing no significant difference.

Socioeconomic status did not significantly affect abscess occurrence either (P = 0.744), with 6 cases in poor, 11 in middle class, and 2 in rich participants. Parity was also analyzed; 11 women with parity less than 3 and 8 women with parity more than 3 developed breast abscesses, resulting in a P-value of 0.626, signifying no statistically significant association between parity and abscess development (Table 3).

Overall, while the frequency of breast abscess in this cohort was consistent with previously reported data (approximately 11–12%), none of the studied demographic or clinical parameters showed a statistically significant correlation with the presence of breast abscess.

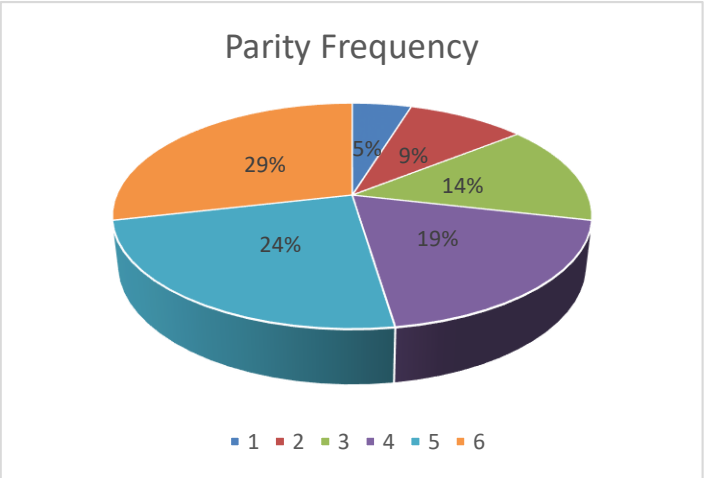

Figure 1: Frequencies of Parity in the study population

Table 1: Demographic and Clinical Parameters

Parameters	Mean and Frequency
Age (years)	29.49±6.1
Residence	
Rural	79 (52%)
Urban	72 (48%)
Socioeconomic status	
Poor	57 (37%)
Middle	74 (49%)
Rich	20 (13%)
Duration of pain	8.2±3.4
Abscess frequency	19 (12%)

Table 2: Stratification of data

Variable	Abscess		P value
	Yes	No	
Age (years)			0.805
<30	12	75	
>30	7	55	
Residence			0.219
Rural	7	72	
Urban	12	60	
Socioeconomic status			0.744
Poor	6	51	
Middle	11	63	
Rich	2	18	
Parity			0.626
<3	11	66	
>3	8	66	

Discussion

Our cohort overall observed 12% incidence of lactational breast abscess, which falls at the higher end of frequencies previously reported in the international literature. For example, aBangladesh prospective cohort found a 0.4% incidence of abscess among breastfeeding women (95% CI 0.14 – 0.98), which was substantially lower than our 12% (11), and identified primiparity and delayed treatment of mastitis as key risk factors for abscess formation. On the other hand, our data did not show significant difference in abscess formation between parity (P = 0.626) age, residence or socioeconomic status (all P > 0.2). In one Cameroonian study, 3 792 lactating women were studied, with an incidence of only 0.74% and the

percentage of patients who continued to breastfeed after ultrasound guided needle aspiration plus flucloxacillin therapy was documented to be 76% (5). They may have a much lower incidence due to health seeking behavior, referral patterns, or diagnostic criteria (i.e. inclusion only of clinically evident, aspiration confirmed abscesses) (12). Active case-finding in a tertiary surgical outpatient setting may in part explain our higher 12% rate.

Several previous reports have identified young maternal age and low socioeconomic status as risk factors for breast abscess, which may be mediated through an earlier presentation and poor breastfeeding support. For instance, Boakes et al. (2018) noted that lower income and first time motherhood were predictive of abscess formation among both non lactational and lactational cases (13). However, in our sample we found neither middle versus low socioeconomic class (P = 0.744) nor age under vs. over 30 years (P = 0.805) was statistically effective—indicating that in our setting access to care and cultural practices of breastfeeding may be more homogenized overall demographically than in other populations. However, we found no urban–rural difference (12 urban vs 7 rural abscesses; P = 0.219), in contrast to some which report higher abscess rates in rural women, due to lack of access to lactation counselling and antibiotics. Indeed, it may be the case that rural patients travel to our tertiary center at the same rate as once symptoms become severe, thus diluting a true community-level difference (14).

Importantly, the consistency of our 12% rate with the upper bound of the literature (0.7–11%) significantly underscores that local surveillance is essential because what appears to be a consistency in frequency is driven by differences in healthcare infrastructure, in breast care education, and in antibiotic protocols. Future work should prospectively compare needle aspiration with incision and drainage across our population and explore modifiable care delivery factors (e.g. time to first antibiotic dose, availability of lactation support) that might explain why demographic factors did not predict abscess as they have elsewhere (15).

Conclusion

In this study, a frequency of lactational breast abscess of 12 percent was found to be in agreement with the higher range of reported frequency in the literature. Demographic factors including age, residence, socioeconomic status, parity were not significantly associated with abscess formation. These findings underline the importance of early clinical recognition and consistent breastfeeding support, irrespective of hospital patient category, to minimise complications.

Declarations

Data Availability statement
All data generated or analysed during the study are included in the manuscript.

Ethics approval and consent to participate
Approved by the department concerned. (IRBEC-KVSS-24)

Consent for publication
Approved

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Conflict of interest

The authors declared the absence of a conflict of interest.

Author Contribution

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All authors reviewed the results and approved the final version of the manuscript. They are also accountable for the integrity of the study.

References

1. Shankar A, Chandran M, Sundar M. A Single-Center Retrospective Study on the Bacteriological Profile of Breast Abscesses. Cureus. 2025;17(4):e82173.
2. Li D, Li J, Yuan Y, Zhou J, Xiao Q, Yang T, et al. Risk factors and prognosis of acute lactation mastitis developing into a breast abscess: A retrospective longitudinal study in China. PloS one. 2022;17(9):e0273967.
3. Koziol KJ, Smiley A, Latifi R, Castaldi MT. Predictive Risk Factors for Childbirth-Associated Breast Infections in the United States: A 10-Year Perspective. International journal of environmental research and public health. 2023;20(14).
4. Arora A, Manohar N, Hayen A, Bhole S, Eastwood J, Levy S, et al. Determinants of breastfeeding initiation among mothers in Sydney, Australia: findings from a birth cohort study. International Breastfeeding Journal. 2017;12(1):39.
5. Egbe TO, Njamen TN, Essome H, Tendongfor N. The estimated incidence of lactational breast abscess and description of its management by percutaneous aspiration at the Douala General Hospital, Cameroon. International Breastfeeding Journal. 2020;15(1):26.
6. Gondkar P, Kumar H, Patel K. Incidence and risk factors associated with human mastitis. Health Sciences Review. 2024;12:100191.
7. Siddique Ahmad SAMARTSNAGKAZ. Frequency of Breast Abscess among Lactating Women Presenting to Ambulatory Care of Tertiary care Hospital. Pakistan Journal of Medical & Health Sciences. 2023;17(03):152.
8. Ghunaim H. Percutaneouse ultrasound-guided needle aspiration for management of breast abscesses - a review. Journal of medical radiation sciences. 2023;70(3):327-37.
9. Douglas P. Re-thinking benign inflammation of the lactating breast: Classification, prevention, and management. Women's Health. 2022;18:17455057221091349.
10. Totadri VM, Vetri R, Sainath S. 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. European journal of breast health. 2024;20(3):194-8.
11. Ahmed FU, Bose Gk, Talukder MRA. "Incidence of Breast Abscess in Lactating Women-A Randomised Controlled Trial and a Survey Study". EAS Journal of Medicine and Surgery. 2022.
12. Manzoor A, Rashid I, Waqar S, Shah SA. Comparison of Needle Aspiration and Incision & Drainage in the Management of Lactational Breast Abscess. Journal of The Society of Obstetricians and Gynaecologists of Pakistan. 2022;12(1):32-7.
13. Boakes E, Woods A, Johnson N, Kadoglou N. Breast Infection: A Review of Diagnosis and Management Practices. European journal of breast health. 2018;14(3):136-43.
14. Dar SM, Siddique S, Qureshi U, Nawaz S. Ultrasound guided needle aspirations versus incision and drainage for lactational breast abscess: A randomized control trial. The Professional Medical Journal. 2022;29(07):938-42.
15. Totadri VM, Vetri R, Sainath S. 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. European journal of breast health. 2024;20(3):194.