

# Frequency of Breast Abscess among Lactating Women Presenting to Ambulatory Care of Tertiary care Hospital

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## ABSTRACT

**Background:** The excruciating build-up of pus in breast tissue is known as a breast abscess. This condition is more common in lactating women and is caused by bacterial infection at the nipple zone, which is primarily brought on by biting the child while breastfeeding, poor sanitation, blockage of the milk ducts, and the development of lumps that may be cancerous. Mastitis to abscess development is at different levels of severity for breast abscesses. Breast abscesses can be central or perieolar in location. Acute cases are readily treatable, but surgical intervention is required for chronic cases.

**Aim:** To determine the frequency of breast abscess among lactating women presenting to ambulatory care of tertiary care hospital of Peshawar.

**Study design:** Cross-sectional observational study.

**Place and duration of study:** Department of General Surgery, Hayatabad Medical Complex Peshawar from 1<sup>st</sup> March 2021 to 1<sup>st</sup> September 2021.

**Methodology:** Three hundred and thirty four patients of age groups 15–45 years old, lactating mothers up to 40 days after childbirth, and all women presenting with mastalgia (more than 3 on visual analogue scale) were included. Patients with an alternate infection site identified through clinical examination, those with diabetes (FBS >120mg/dl), those with other immunosuppressive conditions like HIV, and those with a history of steroid use within the previous month were excluded.

**Results:** There were 49(14.7%) cases belong to age group of 19-30 years, while 31(9.3%) belongs to >30 years age (p 0.049). Thirty six (10.8%) of abscess was noted in those who had parity of 1-2 while 44(13.2%) had parity 3-4. The mean BMI of the study sample was 26.6±3.5kg/m<sup>2</sup> amongst whom 29(8.7%) frequency of breast abscess was observed in 18.5-24.9 kg/m<sup>2</sup>, 36(10.8%) had BMI of 25-29.9 kg/m<sup>2</sup> and 15(4.5%) had >30kg/m<sup>2</sup>. The mean postpartum day was 12.1±4.1 day. Fifty four (16.2%) abscess was noted in 6-12 postpartum day, while 26(7.8%) was noted in >12-19 postpartum day.

**Conclusion:** Breast abscess was fairly common (24%) in postpartum women and significantly associated with age of the patient (>30 years).

**Keywords:** Breast abscess, Parity, Lactating women, Post-partum, Body mass index

## INTRODUCTION

Painful pus-filled growths in the breast tissue are known as breast abscesses.<sup>1</sup> This is primarily observed in lactating women and is brought on by bacterial infection at the nipple zone, which is primarily brought on by biting the infant during breastfeeding, poor sanitation, the obstruction of milk ducts, and the development of lumps that may be cancerous.<sup>2</sup> Mothers who breastfeed experience discomfort or a burning sensation and their breasts itch as a result of the warmth and redness. The infection leads to breast abscess. The current method of treating breast abscesses involves making an incision and applying a cut to discharge pus or infected fluid. Following the administration of antibiotics, the condition may also be fully resolved by percutaneous needle aspiration of pus using a syringe to collect pus.<sup>3</sup>

Mastitis to abscess formation are different levels of severity for breast abscesses. Breast abscesses can be central or perieolar in location. Acute cases are readily treatable, but the chronic stage requires surgery.<sup>4</sup> There are numerous therapy options available for breast abscesses, with incision drainage being the most common. Another in the medication-series, subcutaneous aspiration, effectively treats this condition by enabling the mother to feed her child.<sup>5</sup>

Infectious mastitis can cause lactational breast sores, which are more common in primiparous women. Breast abscess is thought to occur in 0.4% to 3% of mastitis patients in women.<sup>6</sup> The likelihood of developing a lactational breast abscess increases with maternal age at birth, gestational age >41 weeks, mastitis, primiparity, difficulty breastfeeding in the hospital and cracked nipples.<sup>7,8</sup> An ultrasound scan is used to confirm a clinical diagnosis of lactation breast abscess.<sup>9,10</sup>

The goal of the current research is to ascertain how frequently postpartum lactating mothers experience breast abscesses. Breast abscess is a prevalent condition in our community, early diagnosis and treatment is crucial to reducing morbidity and enabling breastfeeding to continue. Furthermore, as was already stated, the severity of these breast abscesses in postpartum lactating mothers varies depending on the population. With the help of this study, we will be able to quickly determine the incidence of breast abscess among postpartum lactating mothers in our population. The study's findings will also aid in developing future research questions and policy recommendations.

## MATERIALS AND METHODS

This cross-sectional observational study was conducted at Department of General Surgery, Hayatabad Medical Complex Peshawar from 1<sup>st</sup> March 2021 to 1<sup>st</sup> September 2021. The study included 334 cases with lactating women's breast abscess rates at 4.4% with 95% confidence level, and a 2.2% margin of error. Age groups 15-45 years old, lactating mothers up to 40 days after childbirth, and all women presenting with mastalgia (more than 3 on visual analogue scale) were included. Patients with an alternate infection site identified through clinical examination, those with a history of diabetes (fasting blood glucose >126mg/dl), those with other immunosuppressive conditions like HIV and those with a history of steroid use within the previous month were excluded. All patients underwent thorough clinical examinations. A sample of breast discharge from each patient was sent for bacterial culture in order to corroborate the presence of breast abscesses. All of the information listed above, including name, age and location was recorded. The study findings were controlled for confounders and bias using strict exclusion criteria. A qualified pathologist with a minimum of five years of expertise oversaw all of the laboratory investigations. The data was entered and analyzed through SPSS-

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23. The Chi square test was applied with a p value <0.05 considered significant.

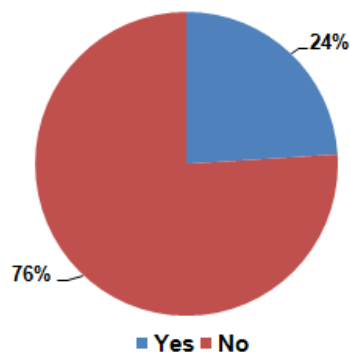
## RESULTS

Age ranged between 15-45 years with a mean age of  $27.2 \pm 5.3$  years. Frequency of breast was noted in 80 (24%) cases (Fig. 1). There were 49 (14.7%) cases belong to age group of 19-30 years, while 31 (9.3%) belongs to >30 years age (p 0.049). Parity wise stratification concluded that 36 (10.8%) of abscess was noted in those who had parity of 1-2 while 44 (13.2%) had parity 3-4. The mean BMI of the study sample was  $26.6 \pm 3.5$  kg/m<sup>2</sup> amongst whom 29 (8.7%) frequency of breast abscess was observed in 18.5-24.9 kg/m<sup>2</sup>, 36 (10.8%) had BMI of 25-29.9 kg/m<sup>2</sup> and 15 (4.5%) had >30 kg/m<sup>2</sup>. The mean postpartum day was  $12.1 \pm 4.1$  day. Total 54 (16.2%) abscess was noted in 6-12 postpartum day, while 26 (7.8%) was noted in >12-19 postpartum day. According to socio economic class, 39 (11.7%) breast abscess was noted in poor class, 30 (8.9%) in middle class and 11 (3.2%) in rich socio economic class. Residence wise frequency was 26 (7.8%) belong to urban areas while 54 (16.2%) belongs to rural areas (Table 1).

Table 1: Outcome of the study

Outcome	Breast Abscess		P value
	Yes	No	
<b>Age (years)</b>			
19-30	49 (14.7%)	185 (55.4%)	0.049
30-40	31 (9.3%)	69 (20.6%)	
<b>Parity</b>			
1-2	36 (10.8%)	115 (34.4%)	0.956
3-4	44 (13.2%)	139 (41.6%)	
<b>Body massed index (kg/m<sup>2</sup>)</b>			
20.4-24.9	29 (8.7%)	92 (27.5%)	0.311
>24.9-29.9	36 (10.8%)	95 (28.4%)	
>29.9-32	15 (4.5%)	67 (20%)	
<b>Postpartum (days)</b>			
6-12	54 (16.2%)	156 (46.7%)	0.326
>12-19	26 (7.8%)	98 (29.3%)	
<b>Residence</b>			
Urban	26 (7.8%)	91 (27.2%)	0.586
Rural	54 (16.2%)	163 (48.8%)	
<b>Socioeconomic class</b>			
Poor	39 (11.7%)	151 (45.2%)	0.164
Middleclass	30 (8.9%)	68 (20.3%)	
Rich	11 (3.2%)	35 (10.5%)	

Fig. 1: Frequency of breast abscess



## DISCUSSION

Breast abscesses are still an issue for women in developing countries, despite the fact that they are less prevalent there due to improvements in maternal hygiene, nutrition, standard of living, and early antibiotic administration. The management of breast abscesses presents a challenging therapeutic issue. I/D are the traditional methods for treating breast abscesses, but they are also

associated with the need for general anaesthesia, extended recovery times, regular dressing and difficulty in breast-feeding and potentially unsatisfactory cosmetic results.<sup>12</sup> Breast abscess recurrence is estimated to occur between 10%-38% of the time<sup>11</sup>, despite intensive treatment with incision drainage, and antibiotics. Repeated needle aspirations with or without ultrasound assistance are treatment options for breast abscesses. In addition to helping with needle placement during aspiration and allowing for the visualisation of numerous abscess loculations, the ability to diagnose breast abscesses with ultrasonography has been proven. This procedure has a successful track record, is linked to fewer recurrences, outstanding cosmetic outcomes and is less expensive<sup>12</sup>.

The breast, one of a woman's sex organs should be handled delicately to prevent major harm to its attractiveness, in order to preserve its usefulness and function. Women in underdeveloped nations continue to experience breast infection issues. Incision and drainage have historically been used to treat breast abscesses but it has been observed that this approach may result in an unattractive cosmetic result, make it difficult to breastfeed, necessitate general anaesthesia, require a lengthy healing time and require frequent dressing. Repeated aspiration with or without ultrasound assistance is a different option for treating breast abscess and has been related to a reduced recurrence rate, excellent cosmetic results, and lower costs. Infectious mastitis can cause lactational breast sores, which are more common in primiparous women. Between 0.4%-3% of women with mastitis are thought to acquire breast abscesses. A concentrated buildup of contaminated fluid in breast tissue is referred to as a breast abscess<sup>13</sup>.

Mastitis can develop at any point during breastfeeding, but it typically appears during the first six weeks. Additionally, as antibiotics are used more frequently and breastfeeding techniques are better, the frequency of lactational breast abscesses is decreasing. The most common and methicillin-resistant pathogenic bacteria is *Staphylococcus aureus*. Other species have also been discovered, including *Escherichia coli* and *Haemophilus influenzae*. Risk factors for lactational breast abscess include cracked nipples, increased maternal age at birth, gestational ages higher than 41 weeks, mastitis, primiparity, mother employment and marital status. When an ultrasound scan is available, it is used to corroborate the clinical diagnosis of lactation breast abscess<sup>14</sup>.

Antibiotics have typically been used to treat lactational breast abscesses, incision, and draining. Especially in cases of MRSA, doctors may give preferred antibiotics, such as following an antibiotic sensitivity test or taking Flucloxacillin 500 milligrams four times per day. Cephalexin may be prescribed to women who have penicillin allergies, but clindamycin is recommended in instances of extremely severe penicillin hypersensitivity. Notably, regardless of the findings of susceptibility testing, Macrolides and quinolones should not be used to treat MRSA because they are likely to be ineffective. But more recently, studies have begun to support the use of ultrasound-guided needle aspiration to treat lactational abscesses, which is thought to be a less invasive procedure that results in less scarring, doesn't interfere with breastfeeding, doesn't need general anaesthesia or hospitalization, and is less expensive than I&D<sup>15</sup>. Incision and drainage has the benefit of dissolving the loculi, but if the operation is done under general anaesthesia, it also necessitates hospitalization and daily dressings. During what can already be a trying and busy time, this may cause significant distress to both mother and infant. Additionally, I&D is linked to a protracted recovery period, frequent dressings, challenges with breastfeeding and the potential for a poor cosmetic outcome and breastfeeding experience.

According to Chang<sup>16</sup>, the prevalence of breast abscess was 0.4%, however according to international literature 3% of mastitis patients will also acquire lactational breast abscess. It has been documented that the incidence of lactational breast abscess ranged from 0.19 in 2007 to 0.84% in 2011, with 70.6% of cases coming from primiparous mothers and a mean time between

delivery and breast abscess of 41.9±35.8 days.<sup>17</sup> Inflammation of the breasts and sore nipples were the most common risk factors. The relatively high incidence in this research could be attributed to participants having co-morbid conditions and underreporting of lactational breast abscess cases (diabetes, HIV). However, because our diagnosis was mainly clinical, some cases of lactational breast abscesses may have gone undetected. In contrast, De Block et al<sup>18</sup> study whose denominator was exact, followed up on 1193 breastfeeding women by telephone conversations at 6 months. Mastitis can appear at any point during lactation according to studies, but it typically happens during the first six weeks. Breast infection is preceded by mastitis.

According to Moseley TW's prospective monitoring research, 156 (8.9%) of women who giving birth was developed breast abscesses.<sup>19</sup> The phage 80 "golden staph" caused serious staphylococcal infections to spread throughout the globe in the 1950s and early 1960s. The prevalence of breast abscesses in lactating women appeared to decline in the 1980s, but as recently as 2022, Yu XZ et al<sup>20</sup> observed that "abscesses are known to occur in 11% of all affected women." According to the same research's findings, 11% of women with mastitis go on to develop an abscess. The WHO evaluation of mastitis from 2000 also cited this figure for the Thomsen study, which should have read 2.8% of women with clinical mastitis. The dangers of developing a non-lactational breast infection after nipple piercing have recently come to light.

Due to the many different meanings of mastitis that are used, it is challenging to make precise projections of the percentage of women who experience a breast abscess after mastitis. It's widely known that 11% of mastitis patients experience breast abscess development<sup>20</sup>.

More studies on higher sample sizes are recommended with factors which can predict the incidence of breast abscess in lactating women and interventional studies to before recommending future guidelines in prevention and early treatment of breast abscess.

## CONCLUSION

Breast abscess is fairly common in our postpartum women and significantly associated with age of the patient (more than 30 years).

**Conflict of interest:** Nil

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