ORIGINAL ARTICLE

Frequency of breast abscess among lactating women presented at tertiary care hospital, Peshawar

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Abstract

Objective: To determine the frequency of breast abscess among lactating women presented at tertiary care Hospital, Peshawar.

Study design: Cross-sectional descriptive study.

Setting: Department of General Surgery, Khyber Teaching Hospital, Peshawar.

Study duration: From 1st May, 2020 to 30th April, 2021.

Material and Methods: A total of 144 patients fulfilling the inclusion criteria were subjected to diagnose the breast abscess through clinical and ultrasound breast, purulent discharge by aspiration through 5cc disposable syringe or collected milk, discharge from breast. Specimen were sent to Hospital laboratory for culture and sensitivity. Data was collected in proforma and analyzed with SPSS 22.

Results: Mean age was 30 years with SD±8.91. Mean BMI was 25 kg/m² with SD±45.27. Mean duration of disease was one month with SD±1.88. 7(5%) patients had breast abscess and 137(95%) had not breast abscess. Breast abscess was not significant among different ages, diabetes mellitus (DM), BMI and low socio-economic family as the P-value was not less than 0.05.

Conclusion: It is concluded that the frequency of breast abscess is 5% among lactating women and also we found that age, diabetes mellitus, BMI, Low socio-economic family has no significant effect.

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Introduction:

Breast infections are more common during pregnancy and puerperium. It's global prevalence in lactating women ranges from 1-10% and may be upto 33%.[1-3] Breast abscess commonly affect women aged between 18-50 years and is a localized collection of purulent material within the breast.[2]

Breast abscess incidence is reported of 0.1-3% in breastfeeding women and 3-11% from mastitis as complication.[4-6] Breast abscess pose stress to women and commonly presented with tender, hard breast mass with erythma of the overlying skin. Breast abscesses may occur with untreated or delayed treatment of mastitis or, mastitis complicating a blocked duct.[7] Needle aspiration yields pus, cultures, of which yield the infecting micro-organisms.[8]

In general population breast abscesses are more common in obese patients and smokers. Incision and drainage of pus along with anti-staphyloccal antibiotics is the traditional treatment of breast abscess, but this is associated with regular dressing, problems in breastfeeding, prolonged healing time, and the milk fistula, and unsatisfactory cosmetic outcome.[9]

It has recently been reported that breast abscesses can be treated by repeated needle aspirations and suction drainage.[10] Symptoms can be non-focal and/or, generalized or, systemic consisting of chills, fever, fatigue and diffuse myalgias.[11]

Table 1: Demographic parameters of the study population (n=144)

		Frequency	Mean±SD
Age (years)	≤ 30	98 (68%)	30 years ±8.91
	> 30	46 (32%)	
Duration of disease(weeks)	< Two	105 (73%)	1 month±1.88
	> Two	39 (27%)	
BMI (Kg/m^2)	≤ 25	111 (77%)	25 ±45.27
	>25	33 (23%)	
Residence	Urban	85 (59%)	
	Rural	59 (41%)	
Education Level	Educated	76 (53%)	
	Un-educated	68 (47%)	
Socio-economic Status	Poor	60 (42%)	
	Middle class	68 (47%)	
	Rich	16 (11%)	
Diabetes Mellitus	Yes	32 (22%)	
	No	112 (78%)	

Missed feedings, cracked nipples, skin abrasion and fatigue have, also, been associated with mastitis. The reported prevalence of breast abscess among lactating women is 39.5%[12] and 78.2%.[13]

Aim of this study is to determine the frequency of breast abscess among lactating women. Although very few but no such study has been conducted in our population and this study will provides us the latest and updated magnitude of frequency of breast abscess among lactating women. Moreover, the results of this study will be share with other health professionals for better diagnosis, treatment and future recommendations.

Objective:
To determine the frequency of breast abscess among lactating women presenting at tertiary care hospital Peshawar.

Material and Methods:
This descriptive cross-sectional study was conducted at the Department of Surgery, Khyber Teaching Hospital, Peshawar, from 1st May, 2020 to 30th April, 2021 after taking approval from institutional ethical and research board. Sample size was calculated on WHO formula keeping 39.5%[12] prevalence of breast abscess in lactating women, confidence interval 95% and margin of error 5%. Consecutive non-probability sampling technique was used for sample collection. All lactating mothers upto 8-weeks after child birth presented with mastalgia and more than one week duration of disease were included. Patients who were suffering from HIV and used steroid, anti-boitics in the last one month were excluded from the study.

Patients fulfilling the inclusion criteria i.e. all lactating mothers with mastalgia were enrolled in the study through out-patient department (OPD) and Surgery Department of Khyber Teaching Hospital, Peshawar. The purpose and benefit of the study was explained to the patients and a written informed consent was obtained.

Detail history and clinical examination was done from all the lactating women. From all the included patients, a specimen of discharge from the breast was taken by using 5cc syringe and the specimen was sent to hospital laboratory for culture and sensitivity test for the detection of bacteria/breast abscess. All the laboratory investigations were done under supervision of an expert pathologist having at least 5-years of experience. Breast abscess was considered positive on the presence of ulcer in the breast (on the basis of clinical examination) and discharge of purulent material (confirmed by the growth of bacteria on the basis of laboratory investigations)

All the information i.e. age, weight, height, BMI, duration of disease, diabetes mellitus (DM), socio-economic status, education status, residence were recorded in proforma. Exclusion criteria had strictly followed to avoid bias in the study results.

The collected data on performa was entered in statistical software SPSS version 22 and descriptive analysis was performed. Mean and standard deviation was computed for quantitative variables like age weight, height, BMI and duration of disease. Frequency and percentages were computed for categorical variables like diabetes, socio-economic status, education status, residence, breast abscess. Breast abscess was stratified among age, BMI, duration of disease,

Table 2: Stratification of breast abscess among age, BMI, residence, education level and duration of diseases in study population (n=144)

		Breast Abscess		Total (% age)	P-value
Modifiers		**Yes (%age)**	**No (%age)**		
Age (years)	≤ 30	5 (3.5)	93 (64.5)	98 (68)	0.844
	> 30	2 (1.5)	44 (30.5)	46 (32)	
Total		7 (5)	137 (95)	144 (100)	
Duration of disease(weeks)	< Two	5 (3.5)	100 (69.5)	105 (73)	0.927
	> Two	2 (1.5)	37 (25.5)	39 (27)	
Total		7 (5)	137 (95)	144 (100)	
BMI (Kg/m2)	≤ 25	5 (3.5)	106 (73.5)	111 (77)	0.715
	>25	2 (1.5)	31 (21.5)	33 (23)	
Total		7 (5)	137 (95)	144 (100)	
Residence	Urban	4 (2.8)	81 (56.2)	85 (59)	0.917
	Rural	3 (2.2)	56 (38.8)	59 (41)	
Total		7 (5)	137 (95)	144 (100)	
Education Level	Educated	4 (2.8)	72 (50)	76 (52.8)	0.812
	Un-educated	3 (2.2)	65 (45)	68 (47.2)	
Total		7 (5)	137 (95)	144 (100)	
Socio-economic Status	Poor	3 (2.2)	57 (39.6)	60 (41.8)	0.951
	Middle class	3 (2.2)	65 (45)	68 (47.2)	
	Rich	1 (0.6)	15 (10.4)	16 (11)	
Total		7 (5)	137 (95)	144 (100)	
Diabetes Mellitus	Yes	2 (1.5)	5 (3.5)	7 (5)	0.678
	No	30 (20.8)	107 (74.2)	137 (95)	
Total		32 (22.3)	112 (77.7)	144(100)	

duration of breast feed and diabetes mellitus, socio-economic status, education status, residence to see the effect modifications. Post-stratification chi-square test was applied in which P value < 0.05 was considered as significant value. All results were presented in the form of table and graphs.

Results:

A total of 144 patients were analyzed. Mean age was 30 years with SD±8.91. The demographic parameters are shown in table no.1.

Frequency of breast abscess among 144 patients was 7(5%) while 137(95%) patients didn't had breast abscess.

Stratification of breast abscess with respect to age, BMI, duration of disease, duration of breast feed and diabetes mellitus, socio-economic status, education status, residence is shown in table no.2.

Discussion:

Breast abscesses were more common before the use of antibiotics. A prospective surveillance study conducted in a Scottish town between 1941 and 1943 found that 156 women developed a breast abscess, representing 8.9% of women giving birth (156/1751). In the 1950s and early 1960s, serious staphylococcal infections occurred worldwide due to phage 80 'staphylococcus aureus.'[14] For example, during an outbreak of breast abscesses at Philadelphia General Hospital in late 1954, 16 abscesses occurred in one month.[15] In Edinburgh in 1957, it was estimated that between 3% and 4% of all women giving birth developed a breast abscess requiring hospital treatment.[16]

Although the authors described an apparent drop in the incidence of breast abscesses in lactating women in the 1980s,[17] as recently as 2002, Foxman et al.[18] stated that abscesses are reported to occur in 11% of all affected women. However, the 1970 reference cited is a 20-year review of 53 patients seen by a private obstetrician, dating back to 1948.[19] The WHO Mastitis review (2000) concluded that 11% of women with mastitis develop mastitis, an abscess from the same study, and also cited 11% for the Thomsen study (when it should be 2.8% of women with clinical mastitis).

The incidence of breast abscess has decreased in recent years but still more common. The pathogenesis of breast abscess are two distinct clinical entities in lactating and non-lactating women. The main reasons for breast abscess formation are nipple fissures and milk stasis during lactation. Other risk factors that contribute in the formation of breast abscess are first pregnancy at a maternal age greater than 30 years, pregnancy greater than 41 weeks gestation, obesity, tobacco consumption and mastitis.[20-24]

In the present study, 68% of the patients were between 20 and 30 years old, 32% of the patients were between 31 and 45 years old. The mean age

was 30 years with SD± 8.91. 73% of patients had a disease duration of ≤2 weeks and 27% of patients had a disease duration of >2 weeks. More than 5% of the patients had a breast abscess and 95% of the patients did not have a breast abscess.

A study by Saria MS et al, reported that during the study period 43 patients had breast problems, of which 11(25.6%) were pregnant and 32(74.4%) were lactating. The age of these patients ranged from 16 to 40 years. Ultrasonography was performed in all patients and revealed solid lesions in 8, cystic lesions in 5, abscesses in 23, and mastitis in 7 patients. The reported prevalence of breast abscess among lactating women is 39.5%.[12]

In another study by Dener C et al,[15] it was reported that 128 lactating women with breast infection were followed up. Of these, 102 had mastitis (80%) and 26 breast abscesses (20%). Recurrent mastitis developed in 13 patients (10.2%) within a median of 24 weeks of follow-up. Late treatment of mastitis can lead to abscess formation and can be prevented with early antibiotic therapy. Ultrasound is helpful in detecting abscess formation. In selected cases, the abscess can be drained with needle aspiration with excellent aesthetics.[15]

In our study the rate of breast abscess is low it may be due to awareness program in the province. Single institution and abscess only in lactating women are the limitation of our study. This problem needs multi-centre and randomized controlled studies to elaborate it further for the community.

Conclusion:
We concluded that the frequency of breast abscess is 5% among lactating women and also we found that age, diabetes mellitus, BMI, Low socio-economic family has no significant effect.

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Role and contribution of authors:
Sana Arooj, collected the data, references and did the initial write up.

Misbahullah, collected the data and helped in discussion writing.

Munir Ahmad, collected the references and wrote the introduction and discussion.

Muhammad Naeem, went through the article and advised useful changes.

Mushtaq Ahmad, critically review the article and made final changes.

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