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Original Article

Management Strategies for Recent Breast Abscess: A Clinical Overview

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Abstract:

Breast abscesses are a common and often painful condition that primarily affects women, particularly during the lactating years, although they can occur in non-lactating women as well. The management of breast abscesses involves a combination of conservative measures, antibiotics, and, in many cases, surgical interventions such as incision and drainage. This study aims to explore the clinical characteristics, microbiological findings, and treatment strategies for breast abscesses patients. This cross-sectional type of observational study was conducted in Department of Surgery, Dhaka Medical College Hospital from August 2016 to February 2017. A total of 60 patients were selected as study subjects using purposive sampling technique. Among them the highest incidence in the 21–30 years age group (43.33%) and 36.67% in the 11–20 years group. Most patients were married (73.33%), housewives (73.33%), and from a poor socioeconomic background (70%). The common symptoms included pain, fever, swelling, and redness (86.67%), and 10% had recurrent abscesses. Nipple abnormalities were found in 10% of cases. Staphylococcus aureus was isolated in 76.67% of cases, all sensitive to Flucloxacillin. Treatment was primarily incision and drainage (86.67%), with a small percentage requiring mastectomy, quadrantectomy, or conservative management. Incision and drainage remains the primary treatment for recent breast abscesses (86.67%), while fewer cases required mastectomy (6.67%), quadrantectomy (3.33%), or conservative management (3.33%). A tailored treatment strategy is essential for optimizing patient outcomes.

Keywords: Breast abscess, Staphylococcus aureus, Mastectomy, Incision & drainage.

Introduction:

Breast abscesses are a significant clinical concern due to their ability to cause localized infection, pain, and possible complications in both lactating and non-lactating women. Breast abscesses often arise from infections that begin as acute mastitis, which is most common in lactating women. The infection typically results from bacterial entry through nipple cracks or areas of milk stasis, where bacteria from the infant's mouth or the skin invade the breast tissue. Staphylococcus aureus is the most frequent causative organism, though other bacteria, such as Streptococcus species, can also be involved.[1] Recent studies have

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highlighted an increase in the incidence of methicillin-resistant Staphylococcus aureus (MRSA) in breast abscesses, which complicates treatment and requires the use of alternative antibiotics.[2] Non-lactating women are also at risk, with other factors like smoking, diabetes, and duct ectasia contributing to abscess formation.[3] Additionally, conditions like granulomatous mastitis and breast trauma can predispose women to breast abscesses, underscoring the importance of comprehensive risk factor evaluation.[4] The clinical presentation of breast abscesses includes localized pain, swelling, erythema, and warmth in the affected breast, often accompanied by systemic symptoms like fever and malaise. In lactating women, these symptoms can closely resemble those of simple mastitis, and the distinction between the two conditions may not always be clear without further investigation.[4] If symptoms persist despite appropriate antibiotic treatment, or if a palpable mass is noted, the diagnosis of an abscess should be considered. Ultrasound is the gold standard for the diagnosis of breast abscesses, as it can reveal the presence of a hypoechoic fluid collection, which confirms the abscess diagnosis and guides the drainage process.[5] Antibiotic treatment plays a pivotal role in the management of breast abscesses. Empiric antibiotics are often started based on the most common pathogens involved, particularly Staphylococcus aureus and Streptococcus species. First-line antibiotics include cephalexin or dicloxacillin, which are effective against most of these organisms, especially in lactating women.[6] However, the rise of MRSA has necessitated the inclusion of agents such as clindamycin, trimethoprim-sulfamethoxazole, or doxycycline for areas with a high prevalence of resistant strains.2 Once culture results become available, the antibiotic regimen can be adjusted to target specific pathogens, ensuring more effective treatment and reducing the risk of resistance.[7] The cornerstone of treatment for breast abscesses is drainage. Needle aspiration is the first-line approach for smaller, uncomplicated abscesses, as it is minimally invasive, effective, and associated with a lower risk of complication.[8] Aspiration can often resolve the abscess without the need for more invasive procedures, though it may require repeated sessions to fully drain the abscess cavity.[6] For larger or recurrent abscesses, incision and drainage (I&D) is necessary. This involves making an incision to allow pus drainage and may require the placement of a drain to facilitate ongoing drainage and prevent reaccumulation.[9] The choice of drainage method is based on the size, location, and complexity of the abscess, with needle aspiration being preferred for less severe cases and I&D reserved for more complicated situations.Recurrent breast abscesses are a significant challenge in clinical practice. Such abscesses may indicate underlying conditions such as uncontrolled diabetes, immunosuppression, or poor drainage. These cases require a more thorough evaluation, with potential investigations into the presence of granulomatous mastitis, which can lead to recurrent abscess formation[10]. This study aims to discuss current management strategies for recent breast abscesses.

Materials and Methods:

This cross-sectional type of observational study was conducted in both inpatient and outpatient Department of Surgery, Dhaka Medical College Hospital, Dhaka from August 2016 to February 2017. Patients admitted with breast abscess, patients admitted with mastitis and patients who gave consent to participate in the study were enrolled as the study population. On the other hand, patient with carcinoma of the breast, patient with fibroadenosis, and mastalgia were excluded. A total of 60 patients were selected as study subjects using a purposive sampling technique. Data were collected in a pre-designed data collection sheet. All data were recorded and calculated by manual calculator. Written informed consent were taken from the patients.

Results:

The total number of cases in this study was 60. The youngest patient was 16 years old and the oldest was 55 years old. The highest incidence of abscess was in the age group 21-30 years old, consisting of 26 patients (43.33%). The age group of 11-20 years was the next most common which was 22 (36.67%) of the total (Table-I).

Table I: Distribution of patients according to age (n= 60)

Age Range (in years)	Number of Patients (%)
11-20	22 (36.67%)
21-30	26 (43.33%)
31-40	4 (6.67%
41-50	4 (6.67%
51-60	4 (6.67%

The marital status of the cases in this series was recorded. Out of 60 cases, 44(73.33%) were married and the remaining 16 (26.67%) were unmarried. Occupations of the patients of this study were

recorded. Out of 60 cases, 44(73.33%) were housewives, 12 (20%) were a student and the remaining 4 (6.67%) were service holders. Out of 60 cases, 42(70%) were poor, 16(26.67%) were middle class and only 2 (3.33%) were solvent. 24(40%) cases were found illiterate and the remaining 36(60%) cases were literate (Table-II).

Table II: Distribution of patients according to demographic characteristics (n= 60).

Demographic characteristics	Number of patients (%)
Marital Status	
Married	44 (73.33%)
Unmarried	16 (26.67%)
Occupation	
Housewives	44 (73.33%)
Student	12 (20%)
Service holder	4 (6.67%)
Socioeconomic Status	
Poor (monthly income < 5000/-)	42 (70%)
Middle class (monthly income 5000 – 10000/-)	16 (26.67%)
Solvent (monthly income > 10000/-)	2 (3.33%)
Educational Status	
Illiterate	24 (40%)
Literate	36 (60%)

Out of 60 cases, 44(73.33%) cases were non-lactating and 16(26.67%) cases were lactating (Figure-1).

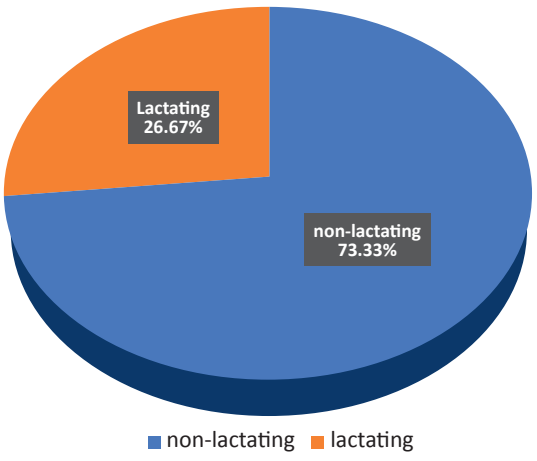

Figure 1: Pie diagram showing the incidence of lactating and non-lactating breast abscess (n= 60)

Out of 60 cases, 52(86.67%) cases presented with pain, fever, swelling and redness of the breast, 6(10%) recurrence and 2(3.33%) antibioma (Table-III). Among recurrence; 2 ha tuberculosis, 2 had other Granulomatous mastitis & 2 had inadequate drainage.

Table III: Distribution of the patients by according to presenting features (n=60).

Features	Number of patients (%)
Pain, fever, swelling, redness	52 (86.67%)
Recurrence	6 (10%)
Antibioma	2 (3.33%)

The nipple and areola were examined properly. Out of 60 cases, 4 (6.67%) cases showed cracking of nipple and 2 (3.33%) showed retracted nipple. Total 54 (90%) cases were normal. In this study, breast abscesses involved 36 (60%) in the right breast and 24 (40%) in the left breast (Table-IV).

Table IV: Distribution of patients according to condition of nipple and breast involvement (n= 60).

Variables	Number of patients (%)
Condition of the nipple	
Normal	54 (90%)
Crack	4 (6.67%)
Retracted	2 (3.33%)
Involvement of breast	
Right	36 (60%)
Left	24 (40%)

Staphylococcus aureus was isolated in 46 (76.67%) cases and the remaining 14 (23.33%) cases yielded no growth (Figure-2).

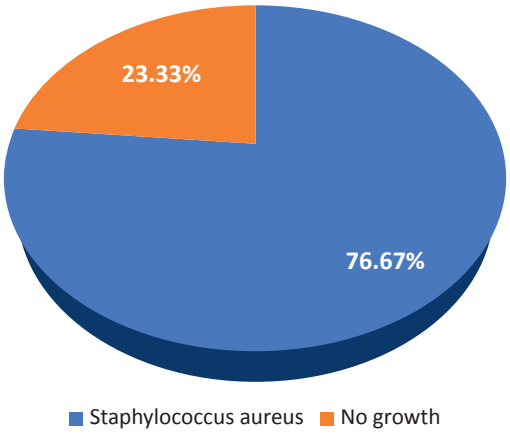

Figure 2: Pie diagram showing the percentage of patients affected by the organism (n=60)

In this study, 52(86.67%) cases were treated by incision and drainage, 4(6.67%) cases were treated by mastectomy, and 2 (3.33%) cases were treated by quadrentectomy and aspiration done in 2(3.33%) cases. Aspiration revealed no pus (antibioma) & these two patients were treated conservatively (Table-V).

Table V: Distribution of patients according to hospital treatment (n=60).

Treatment of patient	Number of patients (%)
Incision and drainage	52 (86.67%)
Mastectomy	4 (6.67%)
Quadrentectomy	2 (3.33%)
Conservative	2 (3.33%)

Discussion:

In our study, the highest incidence of breast abscess was found in the age group 21-30 years. This coincides with the study of Mohammad Sabri Abdul-Razzaq. In that study, the highest incidence was among the age group 20-29 years.[11] Socioeconomic condition affects health. Poor personal hygiene is mostly seen among people coming from low socioeconomic conditions. Seventy per cent of our patients came from low socioeconomic conditions which is almost similar to another study.[12] Illiterate women suffering from breast abscess was 40% (<class five) which is high. Ignorance and illiteracy play a major role in any disease process.In this study most common presentations were pain, swelling, induration, and fever. Presentation with complications (discharging sinus or spontaneous bursting) was less common. Compared to this, other studies showed the same prevalence of discharging sinus or spontaneous bursting during their presentation.[6,8] It was due to a delay in attending to a qualified doctor or a hospital. In our study, lactational breast abscesses were 26.67% and non-lactational 73.33%. A study conducted by Sandhu et al (lactational 32% and non-lactational 68%) and another study by Khalifa et al (lactational 6.1% and non-lactational 93.8%) also revealed higher incidence in non-lactational women.[13,14] The condition of the nipple was normal in 90% of cases. American Journal of Epidemiology shows cracking of the nipple was a common finding, accounting for 95% of all breast abscesses, and thus differs from this study.[15] This reduction in the incidence was due to an increased incidence of non-lactational breast abscesses. Most organisms encountered were Staphylococcus aureus (76.67%) and the remaining culture and sensitivity reports showed no growth (23.33%). All cases were sensitive to flucloxacillin. According to Abdel Hadi et al Staphylococcus aureus was the most common organism affecting 75% of cases[16]. Another study also supports this where Staphylococcus aureus was the most common organism.[11,13] In this tudy, sixty (60) cases of breast abscess were taken, where 52(86.67%) patients were treated by incision and drainage, 04(6.67%) patients by mastectomy, 02(3.33%) patients by quadrentectomy, and 02(3.33%) patients by conservative treatment.Various studies have explored treatment approaches for breast abscesses, highlighting differences in management strategies. Another author found that among 110 patients, 29% were managed conservatively with antibiotics, 51% underwent minimally invasive procedures such as ultrasound-guided fine-needle aspiration or drainage, while 20% required surgical intervention.[17] The study by Fathy et al. compared surgical drainage and ultrasound-guided needle aspiration for managing acute lactational breast abscesses. The authors found that ultrasound-guided needle aspiration was an effective alternative to traditional surgical drainage, particularly for small to moderate-sized abscesses.[18]

Conclusion:

Incision and drainage remain the primary treatment for recent breast abscesses (86.67%), while fewer cases require mastectomy (6.67%), quadrantectomy (3.33%), or conservative management (3.33%). Surgical intervention plays a crucial role in managing larger or persistent abscesses, while less invasive approaches are considered for selected cases. A tailored treatment strategy is essential for optimizing patient outcomes. The study was conducted in a single hospital with a small sample size. So, the results may not represent the whole community.

Conflict of interest: There is no conflict of interest.

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