

Incidence and Management of Breast Abscess in Lactating and Non Lactating Females

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ABSTRACT

Objective: The rationale of our study is to compare the incidence in lactating and non lactational mothers and to find out the best management option for the benefit of patients suffering from the breast abscess.

Study Design: Cross sectional study

Place and Duration of Study: This study was conducted at the Surgical Department of Peoples Medical College Hospital from September 2016 to August 2018.

Materials and Methods: All the patients lactational and non lactational were admitted through Surgical OPD and emergency Department of PMC Hospital Nawabshah Sindh. Detailed History, Clinical Examination and Required biochemical as well as imaging investigations were done followed by different surgical procedures.

Results: Total 50 patients were included in this study. Of 50, 40 (80%) were lactating mothers and 10 (20%) were non lactating girls and women. Pus aspiration by wide bore cannula and ultrasound guided was done in some patients. Incision drainage was done in most of patients. Culture and sensitivity of pus showed Staphylococcus Aureus the most common organism causing the breast abscesses in our study.

Conclusion: Incision drainage produced the excellent results with no recurrence rate. C/S of pus detected the organism involvement and the required antibiotics were started and got good results in healing mechanism.

Key Words: Breast Abscess, lactation, Pus Aspiration, Incision Drainage, Staphylococcus Aureus

Citation of articles: Khowaja MA, Jamali AH, Zardari IA, Ghumro AH, Dahri FJ. Incidence and Management of Breast Abscess in Lactating and Non Lactating Females. Med Forum 2019;30(2):27-30.

INTRODUCTION

A breast abscess is simply defined as an infection in the breast. It commonly affects women aged between 18 to 50 years having lactational and non lactational status. Seldom is it found in neonates. Generally, non lactational abscesses are noted in obese patients and smokers.¹

These are the commonest benign breast infections occurring during pregnancy and puerperium. The incidence of breast abscess ranges from 0.4% to 11% among all breastfeeding mothers. Globally, the mastitis in breastfeeding mothers ranges from 1-10%. The recent advances in this connection entails the increase incidence of mastitis upto 33%.²

Staphylococcus Aureus is the most common organism gaining entry into breast through cracked nipple. Rarely, this infection is hematogenous.

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Received: November, 2018
Accepted: December, 2018
Printed: February, 2019

Initially, the infection is confined to a single segment later on involving other segments also. Milk is the best culture medium for bacterial proliferation in this case. Loose parenchyma of breast and accumulated milk in affected segments enhances infection to spread rapidly within the stroma and through the milk ducts. The bacteria are excreted in milk.³

In 1957, Zuska unveiled this disease as lactiferous fistulas also called Zuska's disease. Bundred et al discovered the anaerobic bacteria causing breast abscesses in smokers only.⁴

The causes of breast abscess are various microorganisms predominantly bacteria. The staphylococcus aureus is the most common bacteria causing this disease. A few cases of breast abscess involve multiple bacteria with isolation of aerobes and anaerobes. Aerobes isolated are staphylococcus, streptococcus, enterobacteriaceae, corynebacterium, escherichia coli, and pseudomonas. Anaerobes involved are peptostreptococcus, propionibacterium, bacteroides, lactobacillus, eubacterium, clostridium, fusobacterium and veillonella. Smokers commonly harbor anaerobes. Least common bacteria involved includes bartonellahenselae, myobacteria, parasites and maggot infestation. Unusually, Human immunodeficiency virus (HIV) initially present as breast abscesses. Typhoid is the commonest cause of developing breast abscess in those countries where it is

prevalent. Duct ectasia and tuberculosis also lead to abscess formation.⁵

The pathophysiology of diseases arises from mastitis. Bacteria originating from the mouth of baby gets entry into breast where it gets the cultural environment of maternal milk for rapid replication. Stagnant milk and its overproduction enhances its replication leading to mastitis. If this inflammation is not treated in time, it converts into abscess. Lactational breast abscess usually occur in periphery of breast.⁶

There are two types of breast abscess. One is lactational breast abscess and other is non lactational one. Risk factors for its formation of lactational type are first pregnancy after 30 years, pregnancy prolonged to more than 41 weeks and inflammation of breast. Non lactational breast abscesses are subdivided into central, peripheral or skin associated. Patients with diagnosis of non lactational breast abscess, diabetes mellitus and smokers are prone to develop recurrent infections. This type is associated with squamous metaplasia of lactiferous duct epithelium, duct obstruction and duct ectasia.⁷

Clinically, the patient suffering from breast abscess present with complain of painful, red and fluctuant breast lump along with fever, malaise and enlarged lymph nodes in axilla.⁸

This disease is diagnosed clinically on the basis of history and examination. Location also help in the diagnosis as most of the lactational abscess present peripherally where as non lactational are seen in sub areolar areas.⁹

Apart from routine biochemical investigations, Ultrasound of breast is significantly helpful in its diagnosis. Fine needle aspiration is also done to diagnose and treat these abscesses. Drained pus is sent for histopathology to exclude malignancy. Biopsy is indicated in suspected cases. Milk, nipple discharge, aspirated material and excised tissue are sent for histopathological diagnosis. Mamography plays limited role in its diagnosis. Tuberculin skin test in suspected cases of tuberculosis is an additional test to diagnose.¹⁰

Generally these abscesses are treated by analgesics (ibuprofen and paracetamol), breast support breast emptying by self or suction device, breast feeding and antistaphylococcal antibiotics. Specific treatment includes pus aspiration, ultrasound guided needle aspiration/ catheter drainage and incision drainage. Regular emptying of the affected breast is important part of management. Mechanical suction devices are usually suggested in cases of subareolar abscesses or where feeding for baby/ breast emptying is impossible due to severe pain or dressings. Drug induced suppression of lactation should not be done as it has complication of causing nausea and vomiting to patient. It has also negative effect on immune system and growth of the baby.¹¹

Antibiotics to treat mastitis are beta lactamase-resistant penicillins (Cloxacillin, dicloxacillin or flucloxacillin) as penicillins are acidic so is milk. Therefore these drugs are poorly concentrated in milk. Erythromycin is alkaline and well concentrated in milk so remain active in milk. Cephalexin or clindamycin can be used as alternative to erythromycin. Co-Amoxiclav use in these patients render them to induce MRSA.¹²

The Ultrasound guided aspiration along with antibiotics has proved to be effective as treatment of the breast abscess. The size of abscess < 3 cm are aspirated under guidance of ultrasound whereas ultrasound guided catheter drainage are indicated for abscesses 3cm or larger. Another option to treat this disease is incision drainage followed by multiple dressings. This surgical treatment has important role in cases which do not respond to aspirations and antibiotics. Abscesses possessing thick pus, resistant bacteria, multi loculated abscesses, tuberculosis, inflammatory carcinoma or an immunocompromised host.¹³

MATERIALS AND METHODS

This is a cross sectional study conducted within 2 years over 50 patients, admitted at Surgical Department of Peoples Medical College Hospital from September 2016 to August 2018. All the patients were admitted through Out Patient Department (OPD) and emergency Department. They were suffering from breast abscesses. History was taken and thorough clinical examination of normal as well as affected breast along with axillary lymph nodes was done. Patients presented with complain of painful swelling in right or left breasts or both simultaneously. Fever was also noted from mild to high grade. Tachycardia was also found on general physical examination. Regional lymph nodes were also enlarged in some patients. Hot and redness was found in breast on local examination of the affected breast. Some patients came with burst abscesses having multiple necrotic material on examination. The provisional diagnosis was made. Routine blood investigations were done in which white blood cell (WBC) was raised due to inflammation in breasts. The patient was also advised to get ultrasonography of both breasts which told the volume of pus present in the breast. The accurate diagnosis was made. Surgery was planned after briefing the surgical procedure to patient herself as well as attendants along with per operative and postoperative complications. Consent was taken and patients were shifted to operation theater for the incision drainage and pus for culture/biopsy wherever required.

RESULTS

This study included total 50 patients. Of them, 40 (80%) were lactating mothers and 10 (20%) were non lactating females. All patients were operated through Pfannenstiel incision but wound closure was done by

different threads of different sizes. There was age difference among all patients. The Lactational patients aged between 20 to 50 years where as 3 patients out of total 10 non lactational aged between 15 to 19 years and remaining 7 patients were of 51 to 70 years. 20 lactating mothers had first pregnancy before 30 years and 20 had first pregnancy after 30 years of their age. Different surgical procedures were done to treat the disease. Pus aspiration was done in 10 (20%) patients whereas 13 (26%) patients were treated by Ultrasound guided aspiration. Remaining 27 (54%) patients went under incision drainage and debridement of necrotic tissues as is shown in graph 2 below. Only 1 (2%) came with recurrence of breast abscesses having Diabetes mellitus and smoking history. She was non lactational old age lady.

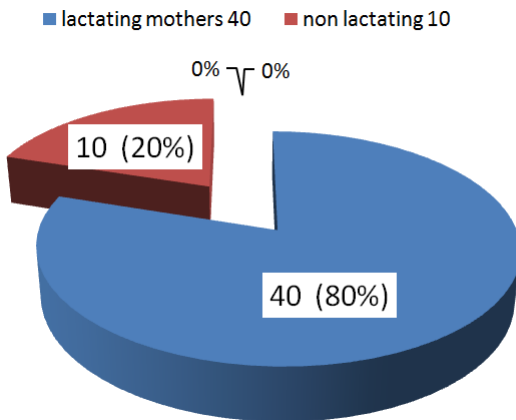


Chart No.1: Incidence of breast abscess

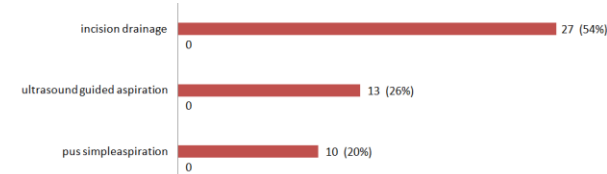


Chart No.2: Treatment options.

Table No.1: Age wise distribution

S.No.	Lactational females	Non lactational girls	Non lactational old age patients	Total
No of patients	40	3	7	50
Age	20 to 50 years	15 to 19 years	51 to 70 years	15 to 70 yrs

Table No. 2: Treatment percentage.

S No	Micr organism	No of patients	Percentage
1	Staphylococcus Aureus	32	64%
2	Pseudomonas	7	14%
3	Escherichia Coli	7	14%
4	Mycobacterium	2	4%
5	Bacteroids	2	4%
Total		50	100%

Pus drained from the patients was sent for culture and sensitivity that showed the presence of staphylococcus Aureus in 32 (64%) patients. Pseudomonas Coli was detected in 7 (14%) patients whereas Escherichia Coli was also found to be present in 7 (14%) patients. 2 (4%) patients developed the breast abscess due to the infection caused by Mycobacterium and bacteroids affected 2(4%) patients as is shown in table 2 below

DISCUSSION

The breast abscess is the condition prevalent commonly among lactating women and rarely is it found among non lactating females. Patients usually present in different ways from simple small sized abscess to large ones. A few patients come with complain of burst abscess.¹⁴

In India, large abscess are treated by suction drainage but this practice is not applied in our setup because of recurrence. Sharma has called ultrasound guided aspiration as the best one as these facilities are available in India even in remote areas but in our study, open incision drainage is considered to be the best option because the recurrence rate is zero and no multiple visits are required to drain the abscess. In simple aspiration, there are chances of developing fistula formation but in our study no fistula formation noted. For the purpose of cosmeses, aspiration of breast abscess is done throughout the world but the defect in this method is that it requires multiple visits at least daily for 5 to 7 days which is then followed by ultrasound scan for confirmation of any remaining collection in the breast. There is another more limitation for aspiration that every abscess cannot be aspirated. Necrosis in abscess is treated by open surgical procedure. In our study, patients also paid multiple visits on different occasions. Ankit Bharat in study has claimed the increasing ratio of non lactational abscesses but in our study lactational cases are common and frequent. Same study also showed recurrence in non lactational patients that is similar to our study.^{15,16} In one study, cigarette smoking, hypertension and diabetes Mellitus has been shown as causative factors for recurrence but in our study, smokers and diabetics old age females developed recurrences. The smoking toxins affect the ductal secretions which cause fibrosis in the retroareolar tissues. On study concluded the 97% and 81% accuracy of drainage by ultrasound guided aspirations in lactating and non lactating females respectively. In our study, we also needed no any second aspiration of abscess by ultrasound guided.^{17,18}

CONCLUSION

Incision drainage produced the excellent results with no recurrence rate. C/S of pus detected the organism involvement and the required antibiotics were started and got good results in healing mechanism.

Author's Contribution:

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Conflict of Interest: The study has no conflict of interest to declare by any author.

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