



Breast Abscess in Females

Atika Ahmed ^{*1}, Muhammad Fahad Aslam², Znaira Zeeshan³

^{*1}Corresponding author: Medical Officer, PMDC, 00923330721063, dratikaahmed26@gmail.com

² Medical Officer, Primary and Secondary healthcare, Punjab, 00923347355651, fahadaslam031@gmail.com

³ Medical Officer, Primary and Secondary healthcare, Punjab, 00923338815506,

DoctorZnairazeeshan@gmail.com

ABSTRACT

Objective:

The purpose of the current research is the comparison of incidence between lactating and non-lactating mothers and finding for the benefit of the patient the best management choice who are suffering from breast abscess.

Place and Duration of Study:

The study was carried out from Oct 2018 to March 2019 at the Mayo Hospital, Lahore.

Materials and Methods:

Lactational and non-lactational patients got admitted in Emergency and Surgical OPD of Mayo Hospital, Lahore. After surgical procedures, complete history, clinical and imaging examination and biochemical was performed.

Results:

The current study was carried out over 30 patients. Out of 30 patients, lactating mothers were 24(80%) and non-lactating women and girls were 6(20%). Some patients went through the pus aspiration by wide bore cannula and guided by ultrasound. Mostly patients were incised for drainage. Staphylococcus Aureus was shown by culture and sensitivity of pus which is the frequent organism resulting breast abscesses in the current research.

Conclusion:

Excellent outcome was obtained from incision drainage with no repetition rate. Organism involvement was detected by culture and sensitivity of pus and requisite anti-biotics were initiated and resulted in getting good healing mechanism.

Key Words:-Breast Abscess, Lactation, Staphylococcus aureus

INTRODUCTION

Breast abscess has been defined as an infection in breast. Normally it is affecting females between the age of 18 to 50 years who are having the status of lactational and non-lactational. Rarely neonates are found with it. Normally, obese patients and smokers are found with non-lactational abscesses. The most common gently breast infection appears during puerperium and pregnancy. The range of breast abscess incidence among breastfeeding

mothers is from 0.4% to 11%. Internationally, the range of mastitis in breastfeeding mothers is from 1 to 10%. The recent advancement in it involves the enhance mastitis incidence i.e. up to 33%. Through cracked nipple the commonest organism Staphylococcus aureus is getting into breast. Seldom, the said infection is hematogenous.

Primarily, the infection is limited to only one section but later on it grows to other section as well. Under the current scenario, the best mode of bacterial proliferation is milk. The gather milk in affected sections and loose breast parenchyma increases infection to spread fast through milk ducts and within stroma. The bacteria are defecated in milk. Zuska, in 1957, revealed lactiferous fistulas diseased which is also known as Zuska's disease. It has been discovered by Bundred et al. that breast abscesses exclusively in smokers is caused by anaerobic bacteria. The breast abscess causes are different microorganism mainly bacteria. The commonest bacteria which is causing this illness is Staphylococcus Aureus. There are multiple bacteria are involved in breast abscess cases with seclusion of anaerobes and aerobes. Isolated aerobes are Streptococcus, Staphylococcus, Coryn Bacterium, Enterobacteriaceae, Pseudomonas and Escherichia coli. The involved anaerobes are Propionibacterium, Peptostococcus, Bacteroides, Clostridium, Lactobacillus, Fusobacterium, Eubacterium and Villanelle. Anaerobes are normally harboured in smokers. The minimum involvement of bacteria is of Mycobacteria, Bartonellahenselae maggot infestation and parasites. Initially the breast abscesses were found with Human Immunodeficiency Virus (HIV). Breast abscess is also normally caused by typhoid. Abscess formation is also led by tuberculosis and duct ectasia. The mastitis is giving rise to the pathophysiology of diseases. Bacteria coming from the baby's mouth entered into breast and finds maternal milk cultural environment for quick replication. Increased replication due to overproduction and stagnant milk leads to mastitis. If no treatment is given to inflammation, then transform into abscess. Normally the occurrence of lactational breast abscess is in periphery of breast.



Breast abscess has two types: lactational breast and non-lactational breast. The risk elements for lactational type formation are that; after 30 years having 1st pregnancy, prolonged pregnancy over the period of 41 weeks and breast inflammation. There is subdivision of non-lactational breast abscess into peripheral, central or skin related. Women who are diagnosed with diabetes mellitus, non-lactational breast abscess and are smokers they are more vulnerable to have recurring infection. The said type is connected with squamous metaplasia of lactiferous duct epithelium, duct ectasia and duct obstruction. Clinically, the females having breast abscess comes with red, painful and unstable breast lump with malaise, fever and enlarged lymph node in axilla. Clinically the diagnose of this illness is on the basis of examination and history. The diagnosis is assisted by the location as mostly non lactational abscess are present in sub areolar area whereas the lactation can be found peripherally. In diagnosis, breast ultrasound is quite helpful besides routine biochemical examination. For abscess diagnose and treatment, fine needle aspiration is done. Pus drained is forwarded to histopathology for malignancy exclusion. in in suspected cases, biopsy is pointed out. Nipple discharge, milk, excised tissue and aspirated material is forwarded to histopathological diagnose. A short role is played by mammography in the diagnosis. In tuberculous suspected case, tuberculin test is an extra test to diagnoses. Normally the treatment of breast abscesses is by analgesic (paracetamol and ibuprofen), breast feeding, emptying of breast by self or suction, breast support and anti-staphylococcal antibiotics. Particular treatments are incision drainage, catheter drainage/ultrasound needle aspiration and pus aspiration. The important management role is to empty the affected breast regularly. Normally, mechanical devices for suction are recommended in the event of sub-areolar abscesses or where baby feeding or due to dressings or pain it is impossible to empty the breast. Drug induced lactation suppression must be avoided because there are complications of vomiting and nausea to the patient. It also effects negatively on the baby growth and immune system. Antibiotics for the mastitis treatment are beta lactamase-resistant pencillins (dicloxacillin, cloxacillin or flucloxacillin). So, the antibiotics have poor milk concentration. Erythromycin is alkaline and has good milk concentration therefore

stays active in milk. Alternately, clindamycin or cephalixin can be used. Use of co-amoxiclav renders to induce MRSA. The breast abscess effective treatment has been proved by the antibiotics along with ultrasound guided aspiration. The abscess size over 3 cm is aspirated under ultrasound guidance. Other treatment option of the illness is drainage incision after multiple dressings. When the antibiotics and aspiration do not respondent then this surgical treatment enjoys an imperative role. Abscesses possess resistant bacteria, thick pus, inflammatory carcinoma, tuberculosis, multi loculated abscesses and immune compromised host.

MATERIALS AND METHODS

The current cross-sectional study was carried out at Mayo Hospital, Lahore from Oct 2018 to March 2019 over 30 patients. Admission of the patients was made through the emergency department and OPD. The patients were suffering from breast abscesses. They record the history of the patient and complete clinical examination of breast (normal and effected) along with axillary lymph node was performed. The patients were complaining painful swelling in breast left or right or both. The patients were also having fever from mild to high grade. While performing general physical examination, tachycardia was seen. Some patients were having enlarged regional lymph nodes. Affected breast was found with hot and redness on local examination. There were burst abscesses on some patients having numerous necrotic materials. Temporary diagnose was done. Routine examination of blood was completed wherein WBC have increased because of inflammation in breast. Breasts ultrasonography was advised to the patients, which tells the pus quantity in the breast. Precise diagnose was done. After briefing surgical procedure and pre & post-operative complications to the patient and attendants, surgery was planned. Consent of the patient was obtained and shifted to theatre for incision drainage and pus for culture/biopsy when it is needed.

RESULTS

The current study was carried out over 30 patients. Out of 30 patients, lactating mothers were 24 (80%) and non-lactating women and girls were 6 (20%) as shown in the Table 1.

Table 1: Incidence of breast abscess

Incidence	Number (Percentage)
Lactating Females	24 (80)
Non-lactating females	6 (20)



All the patients had different age. 24 Lactational patients were between the age of 20 to 50 years and remaining 6 non-lactational patients; 2 of them were between the age of 15 to 19 and 4 were between the age of 51 to 70 years as shown in the Table 2.

Table 2: Age wise distribution

Age groups	Number (Percentage)
15 to 19 years (non-lactating)	2 (6.66)
20 to 50 years (lactating)	24 (80)
51 to 70 years (non-lactating)	4 (13.33)

In order to treat this illness different surgical methods were adopted. In 3 (10%) patients pus aspiration was performed, and ultrasound guided aspiration treatment was given to 8 (26.66%). The remaining patients 19(63.33%) have undergone incision drainage and necrotic tissue debridement as shown in the Table 3.

Table 3: Treatment options

Treatment options	Number (Percentage)
Incision drainage	19 (63.33)
Ultrasound guided aspiration	8 (26.66)
Pus simple aspiration	3 (10)

There was only 3(10%) patient who was found with recurrent breast abscess had history of smoking and diabetes mellitus. Further the patient was old lady non-lactating. Patients' drained pus was forwarded for culture and sensitivity which revealed that 18(60%) patients were having Staphylococcus aureus. 6(20%) patients were found with pseudomonas whereas 3(10%) patients were found with E. Coli. Breast abscess development in 2(6.66%) and 1(3.33%) was because of infection due to Mycobacterium and Bacteroides as shown in the Table 4.

Table 4: Microorganisms

Microorganisms	Number (Percentage)
Staphylococcus aureus	18 (60)
Pseudomonas	6 (20)
Escherechia coli	3 (10)
Mycobacterium	2 (6.66)
Bacteroids	1 (3.33)

DISCUSSION

The condition of breast abscess is commonly found in lactating mother and seldom is present in non-lactating women. Breast abscess was present in patients in different sizes from small to large. A little number of patients complaint about burst abscess. In India suction drainage is used for the treatment of large abscess whereas this practice is not in use in our part because of recurrent nature. Ultrasound guided aspiration has been called the best facility by Sharma as this facility is even available in remote areas of India but in the current research, the best option is incision drainage because there is zero rate of recurrence and no need for numerous visits for the abscess drainage. There is probability of growing of fistula formation in simple aspiration whereas in the current research fistula formation is not found. The aspiration has limitation that aspiration cannot be applied to every abscess. Open surgical procedure is used for the treatment of necrosis in abscess. In the current research, on different occasions patients madenumerous visited. Growing ration of non-lactational abscess has been claimed in a study

conducted by Ankit Bharat whereas in the current research the cases of lactation are quite frequent and common. Recurrence has been shown by the same research in non-lactational patients which is in line with the current study. In one research hypertension, smoking and diabetes mellitus has been depicted as an element causing recurrence whereas in other research the development of recurrence is caused by smoking and diabetes in women of old age. Ductal secretion is affected by the smoking toxins that is causing fibrosis in the retro areolar tissues. The current research concludes the ultrasound guided aspiration drainage accuracy is 81% and 97% in non-lactating and lactating women respectively. In the current research, there is no need for 2nd abscess aspiration by ultrasound guided.

CONCLUSION

The best result has been given by the incision drainage with zero rate recurrence. Organism involvement was detected by culture and sensitivity of pus and requisite anti-biotics were initiated and resulted in getting good healing mechanism.



Reference:

- Amir, L 2014, 'ABM clinical protocol #4: Mastitis, revised March 2014', *Breastfeed Med*, vol 9, pp. 239-243.
- Bharat, A, Gao, F & Aft, R 2009, 'Predictors of primary breast abscesses and Recurrence', *World J Surg*, vol 33, no. 12, pp. 2582-6.
- Boakes, E, Woods, A, Johnson, N & Kadoglou, N 2018, 'Breast infection: A Review of Diagnosis and Management Practices', *Eur J Breast Health*, vol 14, no. 3, pp. 136-143.
- David, M, Handa, P & Castaldi, M 2018, 'Predictors of outcomes in managing breast abscesses-A large retrospective single-center analysis', *Breast J*, vol 24, no. 5, pp. 755-63.
- Dixon, J 2013, 'Breast infection', *Bri Med J*, vol 347, p. f3291.
- Giess, C, Golshan, M, Flaherty, K & Birdwell, R 2014, 'Clinical experience with aspiration of breast abscesses based on size and etiology at an academic medical center', *J Clin Ultrasound*, vol 42, pp. 513-521.
- Gollapalli, V, Liao, J, Dudakovic, A, Sugg, S, ScottConner, C & Weigel, R 2010, 'Risk factors for development and recurrence of primary breast abscesses', *J Am Coll Surg*, vol 211, pp. 41-48.
- Irusen, H, Rohwer, A, Steyn, D & Young, T 2015, 'Treatments for breast abscesses in breastfeeding women', *Cochrane Database Syst Rev*, no. 8, pp. 22-5.
- Kang, Y & Kim, Y 2016, 'Comparison of needle aspiration and vacuum assisted biopsy in the ultrasound guided drainage of lactational breast abscesses', *Ultrason Seoul Korea*, vol 35, no. 2, pp. 148-52.
- Kasales, C, Han, B, Smith, J, Chetlen, A, Kaneda, H & Shereef, S 2014, 'Nonpuerperal mastitis and subareolar abscess of the breast', *AJR Am J Roentgenol*, vol 202, pp. W133-W139.
- Kataria, K, Srivastava, A & Dhar, A 2013, 'Management of Lactational Mastitis and Breast Abscesses: Review of Current Knowledge and Practice', *Ind J Surg*, vol 75, no. 6, pp. 430-435.
- Kazama, T, Tabei, I, Sekine, C, Funamizu, N, Onda, S & Okamoto, T 2017, 'Subareolar breast abscess in male patients: a report of two patients with a literature review', *Surg case Rep*, vol 3, p. 128.
- Lam, E, Chan, T & Wiseman, S 2014, 'Breast abscess: evidence based management recommendations', *J Expert Review of Anti- infective Therapy*, vol 12, pp. 1-5.
- Leung, S 2016, 'Breast pain in lactating mothers', *Hong Kong Med J*, vol 22, no. 4, pp. 341-6.
- Marchant, D 2002, 'Inflammation of the breast', *Obstet Gynecol Clin North Am*, vol 29, pp. 89-102.
- Saboo, A & Bennett, I 2007, 'Trends in non-lactation breast abscesses in a tertiary hospital setting', *ANZ J Surg*.
- Singh, G, Dasgupta, M, Gautam, V, Behera, A & Ray, P 2011, 'Bilateral Breast Abscesses due to Salmonella Enterica Serotype Typhi', *J Glob Infect Dis*, vol 3, pp. 402-404.
- Sinha, R, Sinha, M, Gaurav, K & Kumar, A 2014, 'Idiopathic bilateral male breast abscess', *BMJ Case Rep* 2014.