IJBPAS, February, Special Issue, 2022, 11(2): 15-25
ISSN: 2277–4998

International Journal of Biology, Pharmacy and Allied Sciences (IJBPAS)
'A Bridge Between Laboratory and Reader'

www.ijbpas.com

A PROSPECTIVE STUDY BETWEEN NEEDLE ASPIRATION AND INCISION AND DRAINAGE OF BREAST ABSCESS IN LACTATING MOTHERS

CHOWDARY AY[1], JANUGADE HB[2] AND MEHTA T[3]

1: Junior Resident, Department of Surgery, Krishna Institute of Medical Sciences Deemed To Be University, Karad, Maharashtra (India)

2: Professor, Department of Surgery, Krishna Institute of Medical Sciences Deemed To Be University, Karad, Maharashtra (India)

3: Senior Resident, Department Of Surgery, Krishna Institute of Medical Sciences Deemed To Be University, Karad, Maharashtra (India)

*Corresponding Author: Dr. Alapati yaswanth Roy Chowdary: E Mail: alapatiyaswanthroychowdary6@gmail.com

Received 12th July 2021; Revised 14th Aug. 2021; Accepted 27th Oct. 2021; Available online 15th Feb. 2022

https://doi.org/10.31032/IJBPAS/2022/11.2.1003

ABSTRACT

OBJECTIVE

- Breast abscess is a common problem in women and especially in mothers who are breast feeding causing complications to the mother.
- The main aim of the study is to do comparison between the results obtained after doing needle aspiration or incision and drainage keeping in mind various factors like recurrence, post procedure scar formation, pain, time needed for healing.
- To study the most common organisms responsible for breast abscess and its sensitivity to various drugs.
- To study the most common source of infection in lactating mothers.

STUDY DESIGN

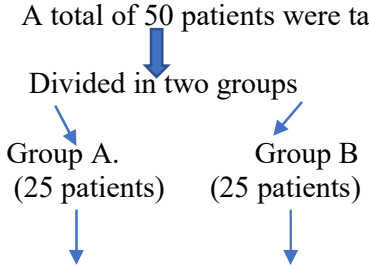
- A study design used is prospective study,

SETTING

- Krishna institute of medical sciences, Karad.

SUBJECTS AND METHODS

- Patients who attend OPD of general surgery or coming to the emergency department of Krishna Hospital and Medical Research Center, Karad having breast abscess and are breast feeding were taken in the study.
- A total of 50 patients were taken in the study.



Procedure done: needle aspiration. Open surgical drainage

RESULTS

- Needle aspiration and antibiotics healing is a procedure done in the surgical outpatient department and is less expensive compared to incision and drainage and budget friendly.
- Patient belonging to group A showed greater level of relief and results. Mean time of healing is 15-20 days.
- Incision and drainage were done in patients in group B, but it is related with some complications like big scar, breast feeding has to be stopped for few days in some cases and delayed healing. Mean time of healing is 25-30 days.

CONCLUSION

- Conclusion derived from this study is that in small and uniloculated breast abscess percutaneous needle aspiration along with antibiotic cover is better method for treatment.
- When patients condition does not improve by needle aspiration or the abscess is large, then incision and drainage should be done.

Keywords: **Needle Aspiration, Breast Abscess, Lactating Mothers**

INTRODUCTION

- Breast abscess is a common problem in women and especially in mothers who are breast feeding causing complications to the mother.
- The average of number of cases of breast abscesses occurring in breast feeding mothers in India is approximately 0.4 – 11% **[1]**

- The factors that play important role in development of breast abscess in breast feeding females are:
  - Late pregnancy
  - Age of female more than 30 years
  - Females pregnant for first time.
  - gestational age more than 41 weeks.
  - Previous history of inflammation and infection of breast.
  - Females abruptly stopping breast feeding due to mastitis.
- Mastitis

  ⬇

  Breast abscess
- An important tool used for diagnosing breast abscess is ultrasound (USG) of breast. It helps us to identify whether patient is suffering from mastitis or breast abscess **[2]**.
- Other than lactating females, if breast abscess occurs it is known as non-puerperal breast abscess.
- More commonly seen in obese females, females with large breast, smokers **[3]**.
- Factors other than breast feeding causing breast abscesses are tuberculosis, fungal infection of breast.
- Earlier, the primary treatment for breast abscess was incision and drainage but this procedure showed lot of complication and satisfaction of the patient was also less.
- Also for doing incision and drainage the patient has to get admitted to the hospital and undergo this procedure in the operation theatre under general anaesthesia.
- So, now the primary treatment for breast abscess have changed to needle aspiration along with antibiotics coverage from incision and drainage.
- Ultrasound guidance may or may not be required in doing needle aspiration of the abscess **[4]**.
- For needle aspiration the patient does not need to get admitted to the hospital and it can be done in OPD of department of general surgery.
- But regular and proper follow-up is needed.
- Needle aspiration is more pocket friendly to the patient as it is less expensive compared to incision and drainage **[5-8]**.
- Majority of breast abscess cases observed in KIMS, karad are in lactating females.

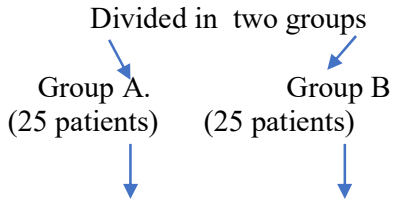
- In this study our main emphasis to find out the usefulness of needle aspiration in treating breast abscesses.
- Is this study comparison is made between results of incision and drainage and needle aspiration of breast abscess on basis of:

1. Recurrence of abscess
2. Pain experienced to the patient
3. Time required for complete healing
4. Scar

- And to study the most common organism causing breast abscess and to study the sensitivity of the organisms seen in breast abscess.
- We also studied the most common organisms responsible for breast abscess and it's sensitivity to various drugs.

MATERIAL AND METHODS

- Patients who attend OPD of general surgery or coming to the emergency department of Krishna Hospital and Medical Research Center, Karad having breast abscess and are breast feeding were taken in the study.
- Out of the patients coming to the general surgery, 50 patients showing signs and symptoms of breast abscess were taken in the study.
- Signs and symptoms included- swelling in the breast, local rise of temperature on the swelling, rubor, pain on palpation.
- This clinical diagnosis was further confirmed by doing a USG of the breast.
- USG will show the sit of the abscess, number of abscess and sometimes volume of pus.
- A total of 50 patients were taken in the study.



Procedure done: needle aspiration. Open surgical drainage

- Patients having other condition – DM, hypertension, ischemic heart disease etc were not included in the study.
- In some patients needle aspiration cannot be treated at once, so multiple needle aspiration might be required.
- The interval between two aspirations should be four to seven days.
- USG is used to confirm the status of breast abscess post aspiration.
- Pus aspirated is sent for culture and sensitivity. Antibiotic is decided on

the basis of the report of culture and sensitivity.

- Till the report is available Tab clavum 625 mg is started for the patient
- Antibiotic has to be given for a period of 1 week, twice a day after meal.
- If the signs and symptoms does not resolve even after multiple aspiration, then we consider it as the failure of the treatment modality.
- Incision and drainage were done in patients in group B.
- For doing incision and drainage the patient has to get admitted to the hospital and undergo this procedure in the operation theatre under general anaesthesia.
- Pus drained is sent for culture and sensitivity. Antibiotic is decided on the basis of the report of culture and sensitivity.
- Till the report is available patient is started on inj. Clavum 1.2 gm, twice a day.
- Regular dressing with betadine +H_2O_2+ normal saline was done and betadine soaked gauze was kept inside the wound.
- Regular dressing was done till the wound was completely filled by healthy granulation tissue.
- But if incision and drainage was done then patient can not breast feed from that side of the breast,
- Breast feeding was encouraged from the opposite breast till complete healing occurs.
- In both the methods adequate pain killers were given to the patients and was noted.

INCLUSION CRITERIA

- The size of the breast abscess should be more than 5 cms.
- Abscess occurring in females who are breast feeding.

EXCLUSION CRITERIA

- Breast abscess caused because of tuberculosis.
- Chronic granulomatous mastitis
- Galactocele
- Fungal infection of the breast.
- Abscesses occurring in females who are not breast feeding.

SAMPLE SIZE:

- A total of 50 patients were taken in the study.

Divided in two groups

Group A. (25 patients) Group B (25 patients)

RESULTS

- From our study we could say that breast abscess is more common in females above the age of 30 years

- Commonly the size of abscess various between 2 to 5 cms.
- Left sided breast abscess (32 patients in our study showed pathology on left side) is more common than right sided breast abscess (18 patients in our study showed pathology on right side).
- Lower quadrant is the most common site for development of breast abscess.
- Breast abscess is more common in primi patients.
- Maximum females who developed breast abscess showed symptoms in the first 6 weeks after child birth.
- Culture report of the pus sent showed the following bacteria in the below given order:

Methicillin resistant Staphylococcus aureus (MRSA) > Staphylococcus aureus >others (c.diptheria, staph. epidermidis)

- Out of the all the patients treated with needle aspiration, 5 out of them showed no improvement which indicated failure of this treatment modality in these patients.

Pain

- Pain various from patient to patient.
- To reduce the pain in all the patients taken as the sample size (patients belonging to both the group), painkillers were given.
- Patients belonging to the 1st group i.e group A were given painkillers 8th hourly on the day which aspiration was done followed by "sos" dose (to be taken only when pain is present).
- Patients belonging to the group in which incision and drainage was done was given analgesics for continuous 5 days 8th hourly as these patients also had to undergo daily dressing which is very painful.
- Preferred analgesic was tablet combiflam (ibuprofen + paracetamol).

Scar

- Post-procedure scar is seen in patients undergoing incision and drainage
- While patients undergoing needle aspiration and in which positive result was seen with this procedure showed no scar.

Sensitivity of drugs

- Antibiotic has to be given for a period of 1 week, twice a day after meal in all the patients
- Pus aspirated is sent for culture and sensitivity. Antibiotic is decided on the basis of the report of culture and sensitivity.

- Till the report is available inj/tab. Clavum is started for the patient
- If the report showed MRSA then patient is shifted to linezolid 600 mg twice a day after meals for 1 week.
- Rest all the bacteria showed sensitivity to amoxiclav antibiotic.
- In patients who showed c.diptheria and the organism for them first 7 days amoxiclav is given and then erythromycin for the next 1 week.

DISCUSSION

Age

- The mean age group of the females developing breast abscess is 30 years.
- Youngest patient seen in the study have breast abscess – 24 years.
- Oldest patient seen in the study have breast abscess – 39 years.

Size of abscess

- Commonly the size of abscess various between 2 to 5 cms
- The cut off limit of the size of the breast abscess was decided after taken into consideration various studies which was around 5 cms **[10-13]**.

Site of abscess

- In our study we found out that around that breast abscess are more common in the lower quadrant
- This can be because there is stasis of milk is more common in lower quadrant as the milk has to travel anti-gravity here

↓

Can lead to mastitis leading to abscess formation.

- Studies of Singh *et al* **[10]** and Chandika *et al* **[14]** concluded that the most common site for breast abscess is upper outer quadrant which is contradicting to our study.
- To get an appropriate conclusion a large sample size needs to be studied.

Parity and mode of delivery

Fig 1 – shows the comparison between parity

- Breast abscess is more common in primi patients.
- This result seen In our study co-relates with many other studies. **[8, 14]**.
- Kamal Kataria **[15]** *et al* concluded that the population at risk for developing breast abscess are females who are pregnant for 1st

time, females having inflammation of breast and having gestation age more than 41

- Breast abscess is more common in primi para because: They lack experience regarding the proper technique of breast feeding (improper position of the mouth of the infant on the nipple, poor hygiene of the breast)
- In our study we found out that breast abscess is more common in females undergoing c-section were at high risk of developing breast abscess.
- The reason for above statement can be that the females undergoing c-section might delay in initiation of breast feeding because of all the complications of anaesthesia, pain after the procedure, patient might be drowsy because of the sedation given during the procedure.

Onset of symptoms from breast feeding

- Maximum females who developed breast abscess showed symptoms in the first 6 weeks after child birth.

This could be due to - improper technique of breast feeding

-injury caused to the nipple by the baby (this was stated by Kamal Kataria *et al* **[15]** in his study)

Organisms identified

- Culture report of the pus sent showed the following bacteria in the below given order:

Methicillin resistant Staphylococcus aureus (MRSA) -it is the most common organism> Staphylococcus aureus >others (c.diptheria, staph.epidermidis) **[16-18]**.

Residual abscess

- Kaushal S *et al* **[12]** in his research study found out that 3 patients had recurrence of the breast abscess.
- Case study of Chandika *et al* **[14]** indicates that sufferers handled with aspiration showed no signs of recurrence inside however recurrences were observed in incision and drainage.
- Post procedure USG of the breast was done to confirm if there is abscess present in the breast even after removal (also stated by Sarhan HH in their study) **[20]**
- Results concluded by Elagili *et al* specified how multiloculated abscess showed 50% failure to therapy by aspiration.
- With the help of aspiration any length larger than 3 cm increases

the difficulty to treat abscess as concluded by Hook *et al* .

- Studies by Kaushal *et al* detected a failure rate of seventeen percent when smaller abscess sizes can be treated with the technique of aspiration whereas incision and drainage is needed when dealing with larger size of abscesses.

Scar

- In any case cosmetic result was ideal as stated by Imperiale *et al* **[22]**
- Sufferers complained about an ugly scar as a result of incision and drainage as concluded by Kaushal Set *et al* **[12]**
- Due to the treatment of aspiration 96% of the patients suffering were content with their cosmetic consequences as stated by Dieter Ulitzsch *et al* **[8]** and Singh *et al* **[10]**
- The benefits of needle aspiration are well known and is widely accepted due to no signs of wounds and scars as indicated by Chandika *et al* **[14]**.

CONCLUSION

- Finally at the end of this study we could say that abscesses that are single and small in size shows good results when treated with percutaneous needle aspiration and adequate antibiotics.
- Incision and drainage could be done if no improvement was seen by the above procedure
- If patient has multiple and large abscess then Incision and drainage is preferred method of treatment.

ACKNOWLEDGEMENT

I am thankful to Mrs. Rupali Salunkhe for secretariat help, Institute of Medical Sciences, Deemed to be University, Karad, Maharashtra (India).

REFERENCES

[1] Garg P, Rathee SK, Lal A, Ultrasonically guided percutaneous drainage of breast abscess, Journal of the Indian Medical Association, 95(11), 1997, 584-5.

[2] Hayes R, Michell M, Nunnerley HB, Acute inflammation of the breast-the role of breast ultrasound in diagnosis and management, Clinical radiology, 44(4), 1991, 253-6.

[3] Benson EA, Goodman MA, Incision with primary suture in the treatment of acute puerperal breast abscess, Journal of British Surgery, 57(1), 1970, 55-8.

[4] Tan SM, Low SC, Non-operative treatment of breast abscesses, Australian and New Zealand journal of surgery, 68(6), 1998, 423-4.

[5] Scholefield JH, Duncan JL, Rogers K, Review of a hospital experience of breast abscesses, Journal of British Surgery, 74(6), 1987, 469-70.

[6] Dixon JM, Outpatient treatment of non-lactational breast abscesses, Journal of British Surgery, 79(1), 1992, 56-7.

[7] Schwarz RJ, Shrestha R, Needle aspiration of breast abscesses, The American journal of surgery, 182(2), 2001, 117-9.

[8] Ulitzsch D, Nyman MK, Carlson RA, Breast abscess in lactating women: US-guided treatment, Radiology, 232(3), 2004, 904-9.

[9] Christensen AF, Al-Suliman N, Nielsen KR, Vejborg I, Severinsen N, Christensen H, *et al* , Ultrasound-guided drainage of breast abscesses: results in 151 patients, The British journal of radiology, 78(927), 2005, 186-8.

[10] Singh G, Singh G, Singh LR, Singh R, Singh S, Sharma KL, Management of breast abscess by repeated aspiration and antibiotics, Journal of Medical Society, 26(3), 2012, 189.

[11] Karstrup S, Solvig J, Nolsøe CP, Nilsson P, Khattar S, Loren I, *et al* , Acute puerperal breast abscesses: US-guided drainage, Radiology, 188(3), 1993, 807-9.

[12] Suthar K, Mewada BN, Surati K, Shah J, Comparison of percutaneous ultrasound guided needed aspiration and open surgical drainage in management of puerperal breast abscess, Int J Med Sci Public Health, 2(1), 2013, 69-72.

[13] Eryilmaz R, Sahin M, Tekelioglu MH, Daldal E, Management of lactational breast abscesses, The Breast, 14(5), 2005, 375-9.

[14] Chandika AB, Gakwaya AM, Kiguli-Malwadde E, Chalya PL, Ultrasound Guided Needle Aspiration versus Surgical Drainage in the management of breast abscesses: a Ugandan experience, BMC research notes, 5(1), 2012, 1-7.

[15] Kataria K, Srivastava A, Dhar A, Management of lactational

mastitis and breast abscesses: review of current knowledge and practice, Indian Journal of Surgery, 75(6), 2013, 430-5.

[16] Leborgne F, Leborgne F, Treatment of breast abscesses with sonographically guided aspiration, irrigation, and instillation of antibiotics, American Journal of Roentgenology, 181(4), 2003, 1089-91.

[17] Elagili F, Abdullah N, Fong L, Pei T, Aspiration of breast abscess under ultrasound guidance: outcome obtained and factors affecting success, Asian journal of surgery, 30(1), 2007, 40-4.

[18] Munakomi S, Adhikary S, Clinical profile and methodology in the management of inflammatory benign breast lesions, Cureus, 6(9), 2014.

[19] Shaikh B, Shah AA, Sohu KM, Solangi RA, Needle aspiration in treatment of breast abscess, Rawal Medical Journal, 39(1), 2014, 58-60.

[20] Sarhan HH, Ibraheem OM, Percutaneous needle aspiration is a minimally invasive method for a breast abscess, Archives of Clinical and Experimental Surgery, 1(2), 2020, 105-9.

[21] Hook GW, Ikeda DM, Treatment of breast abscesses with US-guided percutaneous needle drainage without indwelling catheter placement, Radiology, 213(2), 1999, 579-82.

[22] Imperiale A, Zandrino F, Calabrese M, Parodi G, Massa T, Abscesses of the breast: US-guided serial percutaneous aspiration and local antibiotic therapy after unsuccessful systemic antibiotic therapy, Acta Radiologica, 42(2), 2001, 161-5.

[23] Sharma R, Drainage of puerperal breast abscess by percutaneous placement of suction drain should not be popularized as a novel surgical technique outside carefully controlled trials, Indian Journal of Surgery, 69(1), 2007.