ORIGINAL ARTICLE

Comparison between needle aspiration versus incision and drainage in management of breast abscess

Sahar Saeed, Ahmad Raza Naumani, Asif Kazmi, Rizwan Khalid, Mohsin Ali, Syed Asghar Naqi, Sadaqat Ali Khan

Abstract:

Breast abscess is defined as an acute suppurative inflammatory lump which yields pus on incision/aspiration. The high incidence is reported during lactation and is caused due to nipple piercing by child during feeding and bacterial colonization due to improper nursing technique and incomplete emptying of breast. Non-lactational abscesses are entirely different from those occurring during breast feeding. They occur in peri areolar tissue, has high recurrence and infecting organisms are polymicrobes. The present study compares the outcome and effectiveness of traditional technique of incision and drainage against needle aspiration in treatment of breast abscess.

Material and Methods: This is comparative study carried out in department of General Surgery Mayo Hospital, Lahore in East Surgical ward for a period of 1.5 years from 1st January 2017 to 30th June 2018 after taking approval from Institutional Ethics Committee. 50-female patients of age between 18-60 years and diagnosed breast abscess with abscess size of equal to or < 5 cm in diameter clinically or on ultrasonography were included in the study after taking written consent. Of these 25-patients had undergone percutaneous aspiration of the breast abscess (group-A) and 25 had undergone incision and drainage of the breast abscess (group-B). Follow up of both groups was done for 6-weeks.

Results: A total of 50 breast abscess were treated by these methods. In group-A 20 patients were successfully treated with needle aspiration and antibiotics after culture and sensitivity. The mean time for healing in group-A is 11.3 days for 2 cm abscess and longest is 16.1 days in 5 cm abscess. Failure rate in aspiration group is 20%. This is an outpatient procedure with no scar and does not require general anesthesia. Patient satisfaction is more in aspiration group. Group-B patients underwent incision and drainage, but it was associated with bad scars while healing time was not so different from that in group-A.

Conclusion: Breast abscess in patients with abscess size of less than or equal to 5 cm can be treated with needle aspiration successfully and with good cosmetic outcome.

Keywords: Non-lactational abscesses, percutaneous aspiration, incision and drainage, breast abscess.

Received
date: 17th November, 2019
Accepted
date : 2nd October, 2020

Mayo Hospital, Lahore
S Saeed
AR Naumani
R Khalid
SA Naqvi

Punjab Rangers Teaching Hospital, Lahore
A Kazmi
SA Khan

Doctor Hospital and Medical Centre, Lahore
M Ali

Correspondence:
Dr. Sahar Saeed
Senior Registrar, East Surgery, Mayo Hospital, Lahore, Punjab, Pakistan
Cell No: +92-333-4483073
email: saharsaeeddr@gmail.com

Introduction:

Breast abscess is one of the commonest cause of abscess surgical emergency usually seen in lactating mothers.[1,2] While they are less common in developed countries as a result of improved maternal hygiene, nutrition, standard of living and early administration of antibiotics, breast abscess remains a problem among women in developing countries.[3]

The treatment of breast abscess poses a difficult clinical problem.[4,15] Traditional management of breast abscess involves incision and drainage, however, this is associated with need for general anesthesia, prolonged healing time, regular dressings, drains (sometimes), difficulty in breast feeding, may be complicated with mammary fistula and possible unsatisfactory cosmetic outcome.[5,15] Breast abscess can be treated by

Table 1: *Comparison of age between the two groups*

Age in years	**18-25**	**26-39**	**>40**
Group A	**6**	**15**	**4**
Group B	3	13	9
Total	9	28	13
Percent	18	56	26
Cumulative Percent	18	74	100

Table 2: *Comparison of age between the two groups*

	Aspiration(days)	**I and D (days)**
2cm	**11.3**	**12**
3cm	11.6	11.75
4cm	12.6	13.6
5cm	16.1	17

Table 3: *Comparison of residual abscess between two groups*

Residuals Abscess				
	Yes	**No**	**Total**	**P-value**
Group A	**5**	**20**	**25**	
Group B	0	25	25	

repeated aspiration with or without ultrasound guidance.[3,6-9] This procedure has been used successfully and is associated with excellent cosmetic results, early recovery and early restoration of breast feeding.[10,12]

Objective: To compare the outcome of percutaneous needle aspiration with incision and drainage in management of breast abscess among lactating and non-lactating women.

Material and Methods:

This comparative study after approval from ethical committee was carried out at Mayo hospital Lahore from 1st January 2017 to 30th June 2018 in total of 50-patients. Female patients presenting to surgical outpatient department and surgical emergency between age of 18-60 years with abscess size of equal to or less than 5 cm and without any skin changes like ulceration, sinus and without having any comorbid and suspected or diagnosed malignancy, both lactating n non lactating were included in study.

Data analysis Statistical analysis of the data was carried out with the help of professional SPSS (version 24). Student's test was used to test statistical significance of difference in mean time required for complete healing between two independent groups. Z-test for proportion of patients with residual abscess between two groups. The whole process was completed using different significance level Alpha (i.e. 1%, 5% and 10%). P-value < a was considered significant.

Results:

In our research a total of 50-patients with breast abscess were divided into two groups. 25-patients in group-A treated with percutaneous aspiration and 25 in group-B treated with incision and drainage. Commonly observed age was between 26 to 39 years (table -1). 12-patients required single aspiration while rest of the patients required multiple aspirations.

The mean duration of healing in group-A was 12.9 days while in group-B was 13.6 days (table-3). Out of 25 patients in group-A, 20-patients were successfully treated by aspiration while in group-B all the 25-patients were successfully treated by incision and drainage. The failure rate of needle aspiration was 20%. In our study, group A patients who were successfully treated by aspiration (n=20) had no scar, those who underwent incision and drainage had scar. In group B all patients had scar.

Discussion:

In current study most of the patients were between the age 26-40 years. The average age between aspiration and incision and drainage groups was 32.92 and 36.84 respectively. Dixon et al and Karvande et al reported maximum number of patients in age groups of 18-50 years in both groups, which is comparable to our study.[11,12]

This study was conducted to establish whether percutaneous aspiration is feasible alternative treatment option for breast abscess in Mayo Hospital, Lahore.

Healing rate of two groups had no statistically significant difference. This was similar with what was found elsewhere.[3,6] This similarity in healing rate between two treatment options could be ex-

plained by the fact that regardless of the way pus is removed from the cavity, the healing process is the same.[3]

All the patients treated with percutaneous aspiration highly accepted this modality (100%). This was consistence with other studies.[7,13-15] This high acceptance rate might have resulted from the convenience of the procedure as out patient one, no need for general anesthesia, having no wound to take care of and absence of scar after healing and early restoration of breast feeding after aspiration in case of lactating mothers.[5,15]

Conclusion:
There is no difference in terms of healing rate of breast abscess between percutaneous aspiration and surgical incision and drainage. Percutaneous needle aspiration is highly acceptable by women with breast abscess in Mayo Hospital, Lahore. Percutaneous aspiration is more feasible and cosmetically more acceptable than surgical incision and drainage in management of small breast abscess.

Conflict of interest: None

Funding source: None

Role and contribution of authors:
Dr Sahar Saeed, collected the data, references and did the initial writeup.

Dr Ahmad Raza Naumani, collected the data and helped in introduction writing.

Dr Asif Kazmi, collected the data, references and helped in discussion writing.

Dr Rizwan Khalid, collected the references and hlepd in the tabulation of the data.

Dr Mohsin Ali, collected the data, references and helped in result writing.

Prof Syed Asghar Naqi, critically review the article and made useful changes.

Prof Sadaqat Ali Khan, went through the article critically and made the final changes in the research.

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