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A comparative study between incision and drainage and USG guided multiple aspiration of breast abscess

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Abstract: *Aims and objectives:* This study was aimed to compare the outcome and effectiveness of traditional treatment incision and drainage against needle aspiration in the treatment of breast abscess in terms of time required for the procedure, duration of hospital stay, healing time, cosmetic outcome and postoperative pain. *Material and method:* It was a randomized control trial study done in Dr. D Y Patil hospital, Nerul with 60 subjects. Simple random sampling method was used out of which 30 underwent multiple fine needle aspiration (Group A) and 30 underwent I & D (Group B). *Results:* In present study mean age of group A was 32.56 and 29.73yrs in group B. Majority subjects were lactating, most were primigravida, upper and outer quadrant more involved, left side more commonly affected, duration of pain was less in multiple fine needle aspiration and hospital stay was also less healing time and evidence of scar also less in fine needle aspiration. *Conclusion:* Fine needle aspiration of breast abscess with USG guidance combined with antibiotics has a great value in treatment of breast abscess, that can be done on OPD basis, lesser investigations and lesser wait time is required.
Keywords: Breast Abscess, Fine Needle Aspiration, Incision, Drainage.

Introduction

Most prevalent abscess in surgery is breast abscess which is typically observed in lactating women. More common in women in underdeveloped or developing nations because of poor maternal hygiene, inadequate nutrition, disregard for breast feeding mothers and delayed treatment [1-2]. Breast infections are divided into lactational and non lactational or puerperal and non puerperal categories can be associated with superficial skin and or an underlying lesion [3].

The study is to compare results of effectiveness of I & D with Fine needle aspiration. I&D is effective treatment for breast abscess but in recent years Fine needle aspiration has been widely used owing to its advantages of minimal changes in breast appearance [4-6]. Use of Fine needle aspiration or I&D in the treatment of breast abscess is controversial and lacks high level of evidence based medical information [5-6].

Material and Methods

Randomised control trial study done in Dr. DY Patil hospital, Nerul with 60 subjects. Random sampling method was used out of which 30 underwent Fine needle aspiration (Grp A) and 30 underwent I & D (GrpB). Study was conducted over duration of 1yr after ethical committee approval.

Inclusion criteria:

- Female patient of age 18-65yrs.
- Diagnosed breast abscess with abscess size of less than 10cm in diameter on USG.

Exclusion criteria:

- Female pt of age<18yr or>65yrs.
- Immuno compromised status.
- Recurrent breast abscess
- Ruptured, tubercular and complicated breast abscess presenting with skin changes, ulceration, necrosis and gangrenous abscess.
- Diagnosed breast abscess with abscess size of more than 10 cm in diameter on ultrasonography.

*Material***:** The subjects were examined, clinical history was recorded, examination findings were recorded with the help of standard, semi-structured, pre-validated case record proforma. The data was collected from all patients attending surgery OPD.

Methods: Subjects fulfilling set inclusion criteria were selected after approval from ethical committee and consent were obtained from all the subjects. The data was collected with the help of standard, semi structured, pre validated case record proforma.

Statistical analysis: Data was collected and entered in Microsoft excel spreadsheet. Statistical analysis of descriptive parameters and strength of association was analysed using the Chi-square test. Statistical software SPSS (statistical package for social sciences) was used for the above analysis. P value less than 0.05 were considered statistically significant.

Results

In the present study the mean age of group A was 32.56 years, whereas 29.73 years in group B.

Table-1: Age distribution

Age distribution	Aspiration group		Incision and drainage group	
	No of subjects	%	No of subjects	%
18-25yrs	8	26.67	13	43.33
26-35yrs	7	23.33	8	26.67
36-45yrs	8	26.67	7	23.33
46-55yrs	7	23.33	2	6.67
56-65yrs	0	0	0	0
Total	30	100	30	100
Significance	The t-value is 1.07415. The p value is 0.143603. Result is not significant at p<0.05.			

Lactating vs Non lactating: In the present study we assessed Lactating Vs non lactating among the study subjects. We observed that majority of the subjects were lactating (73.33% and 63.33% in either study groups.), whereas rest were non lactating (26.67% and 36.67% in either groups) [table-1].

Gravida: In the present study we assessed Gravida among the study subjects. We observed that majority of the subjects were primigravida (60% and 63.33% in either group). The study subjects were comparable with respect to gravida status.

Quadrants Involved: In the present study we assessed Quadrants among the study subjects. We observed that upper and outer quadrant was most commonly involved (43.33% and 56.67% in either groups)

Side Involved: In this study we have assessed the side involved among subjects [table-2].

Table-2: Side involved

Side involved	Aspiration group		Incision and drainage group	
	No of subjects	%	No of subjects	%
Left	18	60	17	56.67
Right	12	40	13	43.33
Total	30	100	30	100
Significance	The chi square test is 0.0686. The p-value is .0793428. Not significant at p<0.05			

Duration of Pain (In Days): In the present study we assessed Duration of pain (in days) among the study subjects. We observed that duration of pain in group A was 5.8 days, while that in group B was 6.13 days.

Time Taken for Procedure: In the study we observed that time taken for the procedure was less for aspiration group than the incision and drainage group.

Mean Duration Of Hospital Stay: In the study it was observed that hospital stay was lesser in aspiration group of study.

Post Operative Pain (Day 2): Post operative pain is much lesser in the aspiration group of subjects.

Healing Time (In Days) [table-3]:

Table-3: Healing time in days is assessed in this study

Healing time	Mean	Standard deviation
Group A	5.03	0.88
Group B	6.06	1.12
Significance	The t-value is -7.76384. The p-value is <0.00001. The p-value is significant of p<0.05.	

Cosmetic Outcomes: In the present study we assessed Cosmetic outcomes among the study subjects. We observed that scar was observed among all subjects in I& D group whereas aspiration group subjects had significantly lesser evidence of scar.

Interrupted breastfeeding rate: The results showed that the interrupted breastfeeding rate in the needle aspiration group was significantly lower than that in the I & D group.

Recurrence: Out of 30 cases 6 (20%) cases had recurrence and repeated aspiration was done and after failure to respond to repeated aspiration then they underwent incision and drainage.

Discussion

The clinical entity known as breast abscess, both lactational and non-lactational, is one that is frequently encountered in daily practise. Incision and drainage are the traditional methods for treating breast abscesses, but they are also associated with the need for general anaesthesia, extended healing times, regular dressing, difficulty breast-feeding, and potentially disappointing cosmetic results. Breast abscess recurrence rates are reported to be between 10 to 38%, despite the aggressive method of incision and drainage along with the administration of antibiotics. Due to its simplicity and success, ultrasoundguided needle aspiration under antimicrobial treatment has evolved into the most recent management protocol in many institutions.

The current study was carried out at a tertiary healthcare centre to compare the outcome and effectiveness of traditional treatment incision and drainage versus needle aspiration in the treatment of breast abscess in terms of procedure time, hospital stay duration, healing time, cosmetic outcome, and postoperative pain. Fine needle aspiration was helpful for lactating mothers as it helped in continuation of breastfeeding than in incision and drainage [7-10].

Conclusion

The present study concluded that; Needle aspiration of the breast abscess with ultrasonographic guidance combined with antibiotics has a great value in the treatment of breast abscess, can be done on OPD basis, lesser investigations, and lesser wait time [11-13].

Aspiration group take significantly less operative time (6-10 mins) as compared to incision and drainage which takes about 1hr or more (anesthesia + operative) with less hospital stay (a day or less) as compared to incision group (2-4 days), less post-operative pain and Healing time with good cosmetic outcome.

Although repeated aspiration (two to three) is needed to obtain complete resolution, this therapy is a well-accepted alternative to surgical treatment provided followed by good patient compliance [14-15].

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