

Effectiveness of Aspiration Under Ultrasound Guidance in Breast Abscess in Terms of Early Resumption of Breast Feeding: A Randomized Controlled Trial

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ABSTRACT

Objective: Effectiveness of aspiration under ultrasound guidance in breast abscess in terms of early resumption of breast feeding.

Study Design: Randomized controlled trial

Place and Duration: Mardan Medical Complex and Teaching Hospital and Jinnah International Hospital, Abbottabad, from November, 2021 to April, 2022.

Methods: There were a total of 140 female participants. The patients ranged in age from 16 to 50. After obtaining the patient's written consent, demographic information including age, weight, height, and body mass index were collected. Breast abscess diagnosed on clinical examination and ultrasound breast were included. Seventy patients were assigned to Group I and treated with percutaneous aspiration, whereas the same number were assigned to Group II and underwent incision drainage. Early breast feeding was restored in both groups and compared for their respective outcomes. The entire dataset was analyzed using SPSS 20.0.

Results: We observed that the percentage of patients in group I who were able to resume breast feeding was 61 (87.1%), and in group II was found in 42 (60%) patients. The level of comfort experienced by patients in group I 60 (85.7%), as compared to group II 35 (50%), was significantly greater.

Conclusion: In this study, we came to the conclusion that percutaneous aspiration in breast abscess was successful and effective in comparison to incision drainage, with less problems and a high percentage of satisfaction among the women.

Keywords: Incision drainage, Breast abscess, Percutaneous aspiration

INTRODUCTION

When antibiotic therapy fails to clear up acute bacterial mastitis, a pyogenic abscess can develop in the breast. Abscesses in the breast are more common in non-puerperal mastitis than in puerperal mastitis and can be very painful and difficult to treat for a number of reasons. For tiny abscesses deep inside the breast, where clinical detection and differentiation from mastitis might be challenging, ultrasonography (US) is the preferred method of diagnosis [1, 2].

A surgical incision under general anaesthesia and the subsequent injection of antibiotics is the standard treatment for breast abscesses [3]. However, this course of therapy may prevent breastfeeding and lead to unsatisfactory aesthetic outcomes. Recent studies have indicated that catheter drainage or US-guided needle aspiration can be effective in treating breast abscesses [4]. The purpose of this study was to conduct a retrospective analysis of diagnostic outcomes and treatment approaches.

The standard treatment for breast abscesses in Uganda is incision and drainage. There is a lack of research comparing the efficacy of ultrasonography-guided needle aspiration for breast abscesses to surgical incision and drainage.

Breast abscess treatment is a challenging therapeutic dilemma. Acute mastitis can be treated with antibiotics if caught early enough, according to [5]. Once an abscess has formed, incision and drainage under general anaesthesia are the only options for treatment, but they come with their own set of complications, including the need for constant dressings, a lengthened recovery time, challenges with breastfeeding, an unsatisfactory cosmetic outcome, and even the possibility of the abscess rupturing or returning. [6] As a result, repeated needle aspiration, with or without ultrasound guidance, has emerged as a viable option for treating breast abscesses in recent years. [7] There is a lower risk of recurrence, better aesthetic outcomes, and lower overall expenditures with this method. [8]

Needle aspiration is less intrusive and has a high success rate for curing the condition. Ineffective therapy may be delayed by metabolic problems such as diabetes, dyslipidemia, and obesity.

The recovery period for this treatment is around 10 days. 8 The areola of the nipple should be cleaned and the medicine taken on time to considerably speed up the healing process once the small duct for milk production has been emptied, either artificially or spontaneously. The infection might return. [9] Abscesses in the breast can range in severity from mastitis to full-blown abscesses. Abscesses in the breasts can occur in the periphery or the periocular tissue in the centre. Chronic stages require surgery, although acute stages are quickly cured. [10] Breast abscesses can be treated with a number of methods, the most common of which is incisional drainage, which is also regarded the gold standard. A second treatment, subcutaneous aspiration with a series of medications, is effective in curing this condition and restoring lactation in affected mothers. [11]

Furthermore, the post drainage is also required in certain patients for various reasons, such as the development of granules or scars filled with fluid, the poor dressing, or the uneven dressing. These symptoms compound over time, causing the patient more pain and an ever-increasing medical bill. Increased costs and longer recovery times sometimes come from factors like patients needing to stay in the hospital for more than a few days, receiving many medications or infusions, etc. [12] There is a substantial risk of illness recurrence, with or without complexity, when treated in this manner. A large body of research indicates that this kind of treatment is ineffective and can often be reversed. When it comes to treating breast abscesses, the more advanced method is strongly favoured because to its high success rate (87 percent) and low risk of recurrence. The majority of societies allow moms to breastfeed their children. [13]

Breast abscesses are often treated by incision and drainage or some similar surgery. In cases when recovery takes a while, this kind of treatment is least successful. Most mothers also have trouble providing adequate nutrition for their infants. Contrarily, the fluid aspiration method of therapy is cutting-edge and is thought to have a high curative and decreased reoccurrence rate. Eighty-seven percent of moms were successful in breastfeeding their babies after the recommended time frame. [14]

This research may lead to the suggestion that a method with better outcomes in terms of continued breastfeeding be offered to patients.

MATERIAL AND METHODS

This comparative study was conducted at Mardan Medical Complex and Teaching Hospital and Jinnah International Hospital, Abbottabad, from November, 2021 to April, 2022 and comprised of 140 patients. Patients baseline details were recorded after taking written consent. Patients with other medical illness and those did not give written consent were excluded from this study.

Patients were aged between 16-50 years of age. Patients details demographics age, weight, height and body mass index were recorded after taking informed written consent. Women had breast abscess diagnosed on clinical examination and ultrasound breast were included. Patients were equally divided into two groups, I and II. Group I had 70 patients and received percutaneous aspiration while in group II 70 patients were underwent for incision drainage. Outcomes among both groups were compared in terms of early restoration of breast feeding. Complete data was analyzed by SPSS 20.0 version. Chi-square test was done to compare the outcomes between both groups. P-value <0.05 was considered significantly.

RESULTS

Among 140 cases, 85 (60.7%) patients were aged 18-30 years, 50 (29.4%) cases had age 31-40 years and 5 (3.6%) patients had age >40years. Mean BMI was 26.10+9.30 kg/m² and mean weight was 70.7+10.30 kg. The mean height of the patients was 155.7+4.60 cm. (table 1)

Table 1: Characteristics of enrolled cases

Variables	Frequency	Percentage
Mean BMI (kg/m ²)	26.10+9.30	
Mean Weight (kg)	70.7+10.30	
Mean Height (cm)	155.7+4.60	
Age (years)		
18-30	85	60.7
31-40	50	29.4
>40	5	3.6

We observed that the percentage of patients in group I who were able to resume breast feeding was 61 (87.1%), and in group II was found in 42 (60%) patients. The difference was statistically significant with p-value <0.05. (Figure 1)

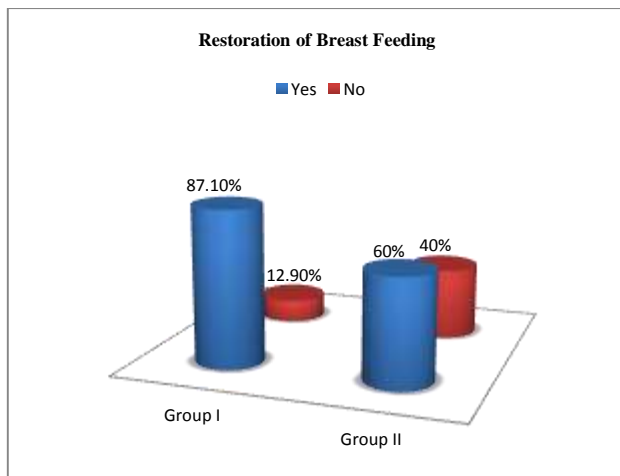


Figure 1: Analysis of the results for both groups

The level of comfort experienced by patients in group I 60 (85.7%), as compared to group II 35 (50%), was significantly greater. (table 2)

Table 2: Analyzing patient satisfaction levels in both groups

Variables	Percutaneous Aspiration	Incision Drainage
Overall Satisfaction		
Yes	60 (85.7%),	35 (50%)
No	10 (14.3%)	35 (50%)

DISCUSSION

Incision and drainage are the traditional treatments for breast abscesses; however, recent research has shown that these procedures are associated with a potentially unsatisfying cosmetic results, difficulty in breast feeding, and the requirement of general anaesthesia. Additionally, these procedures take a longer amount of time to heal and require regular dressing. [15]

In this comparative study 140 women with ages between 18-50 years were presented. Among 140 cases, 85 (60.7%) patients were aged 18-30 years, 50 (29.4%) cases had age 31-40 years and 5 (3.6%) patients had age >40years. Mean BMI was 26.10+9.30 kg/m² and mean weight was 70.7+10.30 kg. The mean height of the patients was 155.7+4.60 cm. The findings of this study were consistent with those of the previous studies.[16] Breast abscesses can be treated in a variety of ways, from non-invasive to invasive surgical procedures. [17] Incision and drainage under general anaesthesia has traditionally been the treatment of choice for breast abscesses. However, this procedure has the potential to lengthen the healing process, require frequent dressing changes, and interfere with a woman's ability to breastfeed. Additionally, the cosmetic results of this procedure aren't always to everyone's liking. [18] Considering that the majority of the breast parenchyma is found in the upper and outer quarter, it seems sense that this is also where abscesses in the breast tend to form. [19] Half of the breast abscesses in our sample were detected in the breast's upper and outer quadrant, while the other half were found on the left side. Breast abscesses on the left side and those in the upper and outer quadrants are rather common, which is consistent with the findings of both Eryilmaz et al. and Chandika et al. [20,21] Hamid et al findings 's that abscesses tend to form on the body's periphery rather than its core are supported by our own. [22]

In our study the percentage of patients in group I who were able to resume breast feeding was 61 (87.1%), and in group II was found in 42 (60%) patients.[15-18] The majority of nursing mothers kept breastfeeding successfully throughout the therapy time in Christensen et al trial, 's but in Chandika AB et al research, 's just 66.2 percent of lactating patients achieved the same thing. [21,23] The success rate was found to be 84% in a research that was carried out by Garg and his colleagues. [24] According to the findings of Elagili F. et al., the success rate was 83.3%. [25]

To prevent future complications, a woman who has had an abscess surgically removed should be urged to breastfeed on the unaffected side. The infected breast should be emptied either by manual expression or with the aid of a breast pump. Some institutions in 2010 still use general anaesthesia for wounds involving the insertion of drainage tubes [26]. The risks of "incision and drainage" include the development of a painful breast wound (the breast is a strongly innervated organ), the need for frequent bandages, the incapacity to breastfeed, and the chance for severing a milk duct, resulting in a "milk fistula" [27].The level of comfort experienced by patients in group I 60 (85.7%), as compared to group II 35 (50%), was significantly greater

CONCLUSION

In this study, we came to the conclusion that percutaneous aspiration in breast abscess was successful and effective in comparison to incision drainage, with less problems and a high percentage of satisfaction among the women.

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