

ORIGINAL ARTICLE

Comparison of Outcome between Percutaneous Aspiration, Incision and Drainage In Case of Lactational and Non-Lactational Breast AbscessSYED IRFAN ALI SHAH¹, SADIA RASHEED², WALI UR REHMAN³, KASHAN SHAIKH⁴, FARAN HAMID⁵, ZAINI AZAM⁶¹Senior registrar, Lady reading hospital MTI Peshawar²Assistant professor, Plastic Reconstructive Surgery and burns unit, LUMHS, Jamshoro/Hyderabad³Surgical Medical Officer, Surgical B, Lady Reading Hospital, MTI, Peshawar⁴Designation senior registrar. Institute lumhs Jamshoro⁵Senior registrar, General surgery RLKU Medical & Dental College, Lahore⁶Registrar Breast Surgery CMH RawalpindiCorresponding author: Wali Ur Rehman, Email: Waliwazir88@gmail.com**ABSTRACT**

A breast abscess is a localised collection of purulent material within the breast. Its first-line treatment was incision and drainage under general anaesthesia. But it prolonged the morbidity, whereas aspiration developed as a less invasive solution to the problem. Therefore, this study was conducted to compare the outcome of breast abscess management with both aspiration and incision and drainage techniques. It comprised 60 patients presented at LRH, Peshawar and LUMHS, Jamshoro, (July 2021 to December 2021). The mean age of the presented gyne patients was 34.78+10.55 years. Females with breast abscesses were allocated into two groups carrying 31 and 29 patients in lactational and non-lactational phases, respectively. Results revealed that post-surgical complications including scarring, breast asymmetry, mammary fistula and sepsis were significantly higher ($p < 0.05$) in patients treated with incision and drainage as compared to the aspiration-managed women. Therefore, percutaneous aspiration was found more successful and effective than incision drainage.

Keywords: Breast scarring; Mammary fistula; Pus drainage; Surgical complications.

INTRODUCTION

A breast abscess is a frequent ailment, particularly among nursing mothers and is characterized by a painful and tender abscess, constitutional symptoms, and trouble breastfeeding¹. A complication of mastitis, a breast abscess is a localised collection of purulent material within the breast. Most breast abscesses affect women between the ages of 18 and 45. In women of reproductive age, these abscesses are usually lactational, however premenopausal older women also get non-lactational abscesses².

Staphylococcus aureus is described as the most prevalent infection known to acquire entry through the skin flora of a nursing woman or the mouth of a nursing infant. *Streptococcus* and *Escherichia coli* are responsible less frequently³. As soon as a breast abscess has occurred, pus removal is the primary objective of medical care⁴. The standard first-line treatment for breast abscesses was incision and drainage with antibiotic therapy, performed under general anaesthesia. While the wound granulates, the abscess cavity was left open and packed with gauze for up to six weeks. Eventually, wounds do heal, but this method involves frequent coverings, a lengthy healing period, breastfeeding difficulties, and frequently a poor cosmetic finish².

Conventional incision and drainage prolong morbidity, whereas aspiration is developing as a less invasive solution to the problem. A breast abscess is a localized infection characterized by pus buildup in the breast tissue. Breast abscesses are widespread during lactation and continue to be a common reason for women to discontinue breastfeeding, with symptoms including mastitis and abscess formation. In Pakistan, the incidence of breast abscesses is approximately 10.2%. This is associated with nipple piercing by a kid while breastfeeding, bacterial colonisation as a result of the incorrect nursing technique, and partial breast emptying⁴.

The treatment of breast abscesses is a challenging clinical issue. At an early stage, suitable antibiotics can be used to treat acute mastitis. Once an abscess is established, it is treated by incision and drainage under general anaesthesia; however, this is accompanied by constant dressing, delayed healing time, difficulty in breastfeeding, possible unsatisfactory cosmetic results, rupture, and recurrent breast abscess. Consequently, repeated needle aspiration with or without ultrasound guidance has acquired importance in the treatment of breast abscesses nowadays. This method has been utilised effectively and is related to fewer recurrences, superior cosmetic outcomes, and lower expenses³.

This study aims to assess the efficacy and outcomes of traditional incision and drainage with needle aspiration in the treatment of breast abscess in terms of healing time, scar

formation, cosmetic appearance, and complication of the procedure used.

MATERIAL AND METHODS

This cross-sectional and interventional comparative study was conducted at the surgical Department of the Lady Reading Hospital, Peshawar and Surgery and Burns Unit at Liaquat University of Medical and Health Sciences, Jamshoro, Pakistan, from July 2021 to December 2021. The study comprised 60 women affected with the breast abscess, presented at the surgical units of the former hospitals. These women were placed into two equal groups at random i.e. aspiration, incision and drainage.

A patient's baseline information was recorded after obtaining written consent from the patient. Patients ranged in age from 11 to 50 years old. The patient's age, weight, height, and body mass index were documented after receiving informed consent in writing. Women with breast abscesses were included in the study.

Exclusion criteria included patients between the ages of 11 and 50, recurrent breast abscess, suspicious lesions or malignancy, immune-compromised, ruptured abscess, tuberculosis, particularly inflammatory breast carcinoma and complicated breast abscess manifesting with skin changes, ulceration, necrosis, and gangrenous abscess.

In each instance, an 18 G needle and a 20 ml syringe were utilised. Without employing anaesthetic, the abscess was targeted and a needle was put into it from the area of normal skin. The abscess was aspirated and the syringe was removed. For incision and drainage (under general anaesthesia), the abscess was targeted and excised around the areolar edge and along skin lines. All pus was extracted, and the loculi were dissected digitally or with artery forceps. The wounds were kept open to drain and were treated every other day until they were granulated and clear.

The study was started after obtaining ethical approval from the Ethical Review Committee of LRH Peshawar and LUMHS, Jamshoro. Additionally, descriptive statistics were employed in the study. The Chi-square test was used to evaluate the distribution of lactating and non-lactating women, as well as problems from the surgical techniques under research. The one-way ANOVA test was used to analyse the age groups. The P value 0.05 was considered significant.

RESULTS

The study included 60 women presented at the surgical departments of LRH Peshawar and LUMHS, Jamshoro, with the

complaint of breast abscess. After informed consent from the concerned patients, they were treated using two surgical interventional techniques 1) Aspiration and 2) Incision and drainage of the pus. The age of the patients ranged from 11 to 50 years and all the women were in the cycling phase. The mean age of the presented gyne patients was 34.78±10.55 years and there was a statistically significant difference ($p<0.05$) among different age groups (Table 1). All the females with breast abscesses were allocated into equal groups carrying 31 and 29 patients in lactational and non-lactational phases, respectively and there was a non-significant correlation ($p>0.05$) between the two treatments (Table 2).

Out of 31 lactating women, 16 were managed using incision and drainage techniques while 15 were treated with the aspiration method. Similarly, 29 non-lactating females, were also treated with incision, drainage and aspiration techniques by 14 and 15 individuals, respectively (Table 3). Again the correlation between the treatments was non-significant ($p>0.05$). The results revealed that post-surgical complications including scarring, breast asymmetry, mammary fistula and sepsis were significantly higher

($p<0.05$) in the patients treated with incision and drainage as compared to the aspiration-managed women (Table 4).

Table 1: Age-wise distribution of the patients

S. No	Age distribution (years)	No. of patients	Percentage (%)	p-value
1	11-20	11	18.33	0.00001* (Significant at $p<0.05$)
2	21-30	25	41.66	
3	31-40	16	26.66	
4	41-50	8	13.33	
	Total	60	100	

Table 2: Distribution of patients according to Lactation status

Lactation Status	No. of Patients	Percentage (%)	Chi-square value	p-value
Lactating	31	51.66	0.0028	0.9579 (Non-significant)
Non-Lactating	29	48.33		
Total	60	100		

Table 3: Distribution of lactating and non-lactating females between incision, drainage and aspiration groups

Lactation Status	Incision and Drainage	Percentage (%)	Aspiration	Percentage (%)	Chi-square value	p-value
Lactating	16	53.33	15	50	0.0057	0.9399 (Non-significant)
Non-Lactating	14	46.67	15	50	0.0054	0.9412 (Non-significant)
Total	30	100	30	100		

Table 4: Comparison between incision, drainage and aspiration techniques in the management of lactation breast abscess

Sr. No	Post-procedure Complications	Incision and Drainage	Percentage (%)	Aspiration	Percentage (%)	p-value
1	Scarring	17	56.67	1	3.33	0.00194*
2	Breast asymmetry	4	13.33	2	6.66%	0.7259
3	Mammary fistula	3	10	1	3.33	0.6512
4	Sepsis	1	3.33	1	3.33	0.4722
5	None	5	16.66	25	83.33	0.0046*
	Total	30	100	30	100	-

*indicated that the p-value is significant

DISCUSSION

The majority of breast abscesses are caused by lactational mastitis, a frequent source of breast infection. In roughly 3% of instances of lactational mastitis, an abscess develops⁵. Breast abscesses are one of the most prevalent causes of morbidity in women. Due to improvements in maternal cleanliness, nutrition, and standard of living, breast abscesses are less prevalent in wealthy nations, but they continue to be a significant concern for nursing women in developing nations⁶. A study reported that the age range of patients who found that breast abscesses are most prevalent among women aged 18 to 50 years³.

Our findings were strongly supported by a study, revealing the 30 patients who underwent aspiration, 26 were successfully treated without postoperative complications. The success percentage was 86.66 percent^{3,7}. A similar nature study reported that ultrasonography needle aspiration was an effective form of treatment for uninfected puerperal breast abscesses⁸.

Our findings were in accordance with the study whereby the average age of patients in group A (aspiration) was 29.79 years, while the average age of patients in group B (incision and drainage) was 29.04 years. The average intervention time in group A was 18.05 minutes, while the average intervention time in group B was 12.92 minutes. Group A experienced less discomfort than group B on the second and third postoperative days. In group A, all patients were pleased with the cosmetic results, however, in group B, only 54% of patients were pleased with the cosmetic outcome. In group A, the recurrence rate was 11.8%, and the success rate was 70%, but in group B, the success rate was 100% and there was no recurrence².

CONCLUSION

Breast abscesses are one of the most prevalent causes of morbidity in women. In breast abscesses, percutaneous aspiration

was more successful and effective than incision drainage, with fewer complications and a high rate of patient satisfaction. But it is pertinent to mention here that aspiration of the breast abscess can be performed successfully as the initial way of treatment, although incision and drainage remain the last resort for curing the condition.

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Conflict of Interest: Declared none

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