Original Article

COMPARISON OF NEEDLE ASPIRATIONS AND INCISION & DRAINAGE OF BREAST ABSCESS

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ABSTRACT:

OBJECTIVE: The objective of this study was to compare the success of needle aspirations and incision and drainage of breast abscess.
STUDY DESIGN: It is a Randomized Control Trial
SETTING: Study was conducted in Surgical Department of Allied Hospital Faisalabad
DURATION OF STUDY: Six months (From: 01-03-2017 to 31-08-2017).
METHODOLOGY: After approval of study from ethical review committee and informed consent the patients fulfilling the inclusion criteria were subjected to complete history and clinical examination in addition to baseline investigations. Patients divided in two groups by simple random sampling. Group A underwent multiple aspirations under ASM with 18 gauge needle under cover of oral Co-amoxiclav 1g B.D for maximum of 14 days. 2% lignocaine HCl solution was used as local anaesthetic. Group B underwent incision and drainage under general anaesthesia. Each patient was given a shot of antibiotic at the time of induction of anesthesia. Post-operatively patient were kept NPO for 6 hrs and treated by IV fluids, antibiotics and analgesics, and discharged when started orally.
All procedures were performed by Assistant Professors or Senior Registrars or Senior Post graduate Residents. Post-procedure follow up was done once weekly for 2 weeks and then patients were examined for success rate {absence of symptoms (pain, swelling, redness, fever, tenderness) in case of multiple aspirations under antibiotic cover and complete healing of wound in case of incision and drainage} on the 20th post-operative day.
RESULTS: In this study, mean age was calculated as 29.74$\pm$7.636 in group A and 31.40$\pm$9.775 in group B. Comparison of success rates was done showing procedural success 97.1% (n=34) in group A and 82.9% (n=29) in group B. P-value calculated (0.046) which also showed a significant difference.
CONCLUSION: We concluded that the frequency of early success rate of multiple aspirations under antibiotic cover in terms of early healing of breast abscess is significantly higher as compared to incision and drainage.
KEYWORDS: Breast abscess, Multiple aspirations, Incision & drainage and Success rate

INTRODUCTION:

Breast abscess constitutes a significant clinical problem because of associated patient discomfort & tendency towards recurrence. The organism, commonly staphylococcus aureus gains entry via cracked nipple and the infection usually spreads rapidly as milk is a good culture medium.

Condition is usually diagnosed clinically, however, an ultrasound can distinguish cellulitis

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from well formed abscess.[1] It is the most common emergency (related to breast) requiring surgical management.[2]

Currently treatment offered for breast abscess is same as for other soft tissue abscess (i.e, incision and drainage) and at times conservative treatment in the form of needle aspiration.

There are no clear guidelines available in literature showing consensus on conservative (aspiration) or operative (incision & drainage) treatment and follow-up.

The most frequently used treatment is incision and drainage which is sometimes followed by dreadful complications.[2] Recent advances urge minimal invasive treatment for breast abscess in the form of needle aspiration under local anesthesia followed by antibiotics. At times multiple aspirations may be needed for complete recovery. Ultrasound can be used to locate deep and loculated abscesses. This procedure can be done in out- patient department (OPD) so has the advantage of minimal cost, stay in hospital, early recovery and cosmetically more acceptable. [3]

It is a simple alternative to incision drainage, which requires daily dressing of the wound, difficulty in breast feeding and prolonged healing time with ugly scar.[4]

Incision drainage can be reserved for non responders to needle aspiration (3-4) attempts and when we are dealing with recurrent, relapsing and loculated abscesses.[4]

AIM AND OBJECTIVE

The objective of this study was to:

compare the frequency of early success rate of multiple needle aspirations under antibiotic cover against incision and drainage of breast abscess.

RESULTS

A total of 70 cases (35 in each group) fulfilling the inclusion criteria were enrolled to compare multiple aspirations under antibiotic cover against incision and drainage method in terms of frequency of early success rate.

Age distribution of the patients was done. The results are showing that 11.4% (n=4) in Group-A and 11.4% (n=4) in Group-B were between 18-20 years while 82.9% (n=29) in Group-A and 77.1% (n=27) in Group-B were between 21-40 years of age, mean$\pm$sd was calculated as 29.72$\pm$7.636 years and 31.40$\pm$9.775 years in Group-A and B respectively.

Prevalence of lactational abscesses was recorded as 85.7% (n=30) in Group-A and 82.9% (n=29) in Group-B while 14.3% (n=5) in Group-A and 17.1% (n=6) in Group-B were non-lactational abscesses.

Comparison of success rate in both groups was done showing that 97.1% (n=34) in Group-A and 82.9% (n=29) in Group-B were having successful (absence of pain, fever, redness , tenderness and wound healing) results of the method performed while remaining 2.9% (n=1) in Group-A and 17.1% (n=6) in Group-B were having unsuccessful (presence of pain, fever, redness , tenderness and poor wound healing) results of the performed method, chi-square value of 3.968 was calculated and p-value was calculated as 0.046 showing a significant difference (Table No.1). Stratification for success rate with regards to age and lactation was recorded and presented in Table No.2 & 3 respectively.

TABLE No. 1. COMPARISON OF SUCCESS RATES IN BOTH GROUPS (n=70)

Success	Group-A (n=35)		Group-B (n=35)		Total	
	No. of patients	%	No. of patients	%	No. of patients	%
Yes	34	97.1	29	82.9	63	90.0
No	1	2.9	6	17.1	7	10.0
Total	**35**	**100**	**35**	**100**	**70**	**100**

TABLE No. 2. STRATIFICATION FOR SUCCESS RATES WITH REGARDS TO AGE

Age distribution (years)	Success	Group		Total	p-value	Chi-square value
		A	B			
≤20	Yes	4 100.0%	4 100.0%	8 100.0%	----	----
	No	0 0.0%	0 0.0%	0 0.0%		
	Total	**4**	**4**	**8**		
21-40	Yes	28 96.6%	22 81.5%	50 89.3%	0.068	3.32
	No	1 3.4%	5 18.5%	6 10.7%		
	Total	**29**	**27**	**56**		
>40	Yes	2 100.0%	3 75.0%	5 83.3%	0.439	0.6
	No	0 0.0%	1 25.0%	1 16.7%		
	Total	**2**	**4**	**6**		

TABLE No. 3. STRATIFICATION FOR SUCCESS RATES WITH REGARDS TO LACTATION

Lactation	Success	Group		Total	p-value	Chi-square value
		A	B			
Yes	Yes	29 96.7%	25 86.2%	54 91.5%	0.149	2.08
	No	1 3.3%	4 13.8%	5 8.5%		
	Total	**30**	**29**	**59**		
No	Yes	5 100.0%	4 66.7%	9 81.8%	0.154	2.04
	No	0 0.0%	2 33.3%	2 18.2%		
	Total	**5**	**6**	**11**		

DISCUSSION:

The breast is one of the female secondary sex character. During treatment of breast disease, care should be taken to minimally compromise its shape and contour so as to preserve its value and function. Breast abscess is becoming less of an issue in developed countries due to improved maternal nutrition, hygiene, standard of living and early use of antibiotics. Breast abscess however, is still a considerable concern among women in developing countries.[4]

Once the breast abscess is formed, the objective is to drain the pus out, the conventional first-line management offered is incision and drainage. Incision drainage in cases of breast abscess is an invasive procedure, that can lead to difficulty for the mother to

breastfeed, more healing time[4], painful wound on the breast (breast is a very richly innervated organ especially near the nipple areola complex), a need of general anaesthesia and post-operative regular dressings, and an ugly scar. [4,5] Other possible outcomes are hypertrophic scar and keloid formation. Surgery of a subareolar breast abscess secondary to periductal mastitis has a possibility of cutting open a milk duct which may led to formation of mammary fistula.[6] Surgical drainage might result in adhesions in glandular tissue and breast deformity as well.[4]

The recent treatment offered for most abscesses is multiple needle aspirations with antibiotic cover [7]. It is a minimally invasive treatment strategy which can be used instead of surgery for the successful treatment of most of the cases of breast abscess.[8] Needle aspiration has been recognized as treatment of choice for breast abscesses.[8]

Loculations in the breast abscess is the one argument that is against the treatment by aspiration. Presence of loculi may warrant the need of frequent aspiration. In this study it is found that first aspirate consisted of pure pus, whereas next aspiration consisted of thin seropurlent aspirate and followed by serous fluid. It is more likely that the majority of breast abscesses are not loculated and importance of such loculi has been overemphasized.[9]

This study was planned with the view to create awareness among local surgeons so that a better method for breast abscess treatment can be chosen between multiple aspirations under antibiotic cover and the traditional incision and drainage method.

In the study, mean age was calculated as 29.74$\pm$7.636 in group A and 31.40$\pm$9.775 in group B, comparison of success rates was done showing that 97.1% (n=34) in group A and 82.9% (n=29) in group B had procedural success, p-value was calculated a 0.046 showing a significant difference. This shows that the success rate of multiple aspirations under antibiotic cover is significantly more than incision and drainage with better cosmetic results at the end. This is in accordance with the studies performed by David et al[10] and Giess et al. [11]

The study also showed that lactational breast abscess predominates in our population. 85.7% (n=30) of group A and 82.9% (n=29) of group B abscesses occurred in lactating females. This is in comparable with Yun-Dan Kang et al [12] and Meretoja T et al[13] which show the increased probability in fertile age group. This is also in agreement with Leung et al [14] which says that obstruction to lactational duct will lead to mastitis and breast abscess. Majority of these females were of poor families, so the increased incidence might be multifactorial including improper nursing technique, poor host resistance and delay in getting appropriate treatment.

The study also gave an idea that multiple needle aspirations under antibiotic cover was highly accepted modality in the treatment of breast abscess. This high acceptance rate may have resulted from the convenience as it is an outpatient procedure with shorter stay, having low cost to the patient and the health system, having no wound to dress and absence of any deformity or scar after the treatment. This is in agreement with Saboo A and Bennett I. [15]

In another study conducted at Department of Surgery, Benazir Bhutto Hospital and Rawalpindi Medical College, Rawalpindi; the percentage of success rate of multiple aspirations under antibiotic cover as compared to incision and drainage on 20th post procedure day is 100% as compared to 88% [12]. This is also comparable with our results.

Multiple needle aspirations under antibiotic cover is therefore an effective treatment [8,16] modality for management of breast abscesses. This is in agreement with study conducted at Jinnah Postgraduate medical Center Karachi by Hussain et al[17]

CONCLUSION:

We concluded that the frequency of success rate of multiple aspirations under antibiotic cover in terms of early healing of breast abscess is significantly higher as compared to incision and drainage.

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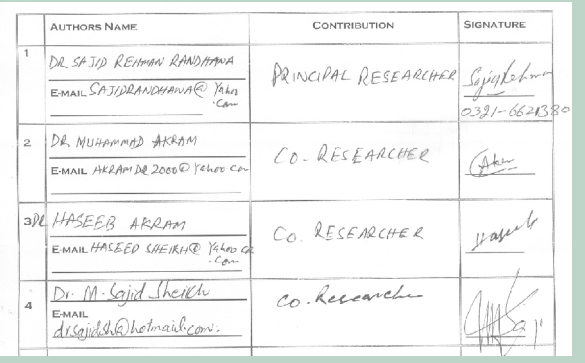

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