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A COMPARATIVE STUDY OF THE OUTCOME OF DRAINAGE OF BREAST ABSCESS BY USG GUIDED NEEDLE ASPIRATION/RE-ASPIRATION VS CONVENTIONAL INCISION AND DRAINAGE.

General Surgery

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ABSTRACT

Background: Breast abscess is a major cause of morbidity in developing countries, most commonly in lactating women and defined as a localised collection of pus within the breast. The aim of this study is to compare the effectiveness and outcome of USG guided needle aspiration versus incision and drainage of breast abscess. **Material and Methods:** The study involved 100 female patients of age 18-60 years and diagnosed with breast abscess (clinically and by ultrasonography) were included after taking written consent. Of these 50 had undergone USG guided aspiration (Group A) and 50 had undergone incision and drainage (Group B) of breast abscess. **Results:** The most affected age range were 21-30 years and 90% of the cases were lactating and S. aureus was most encountered organism in both lactating and nonlactating cases of breast abscess. The cure rate, mean healing time, lactation resumption, patient's satisfaction and cosmetic outcome were statistically significant ($p < 0.05$) in patients managed with USG guided aspiration compared to incision and drainage. **Conclusion:** USG guided needle aspiration is a minimal invasive procedure and better alternative in management of breast abscess than conventional incision and drainage.

KEYWORDS

Breast abscess, USG guided needle aspiration, incision and drainage.

INTRODUCTION

Breast abscess is a localised collection of pus within the breast that usually occurs as a complication of mastitis, most commonly seen in lactating women[1]. Breast abscess is less common in developed than developing countries, because of improved nutrition, puerperal hygiene, early administration of antibiotics[2]. The incidence range from 0.4 to 11% of all lactating mothers and can occur in non-lactating females as well[3]. Because of the most of breast parenchyma is found in upper outer quadrant of breast, most frequently involved[4]. Staphylococcus aureus is the most common organism for mastitis, later on develop breast abscess and manifest as breast pain, swelling, tenderness, fever with erythema[5]. Ultrasound plays an important role in confirmation of breast abscess and aids in management.

The treatment of breast abscess is still challenging. Traditionally, the treatment of breast abscess was incision and drainage under GA followed by frequent dressing which leaving scar, prolonged healing, unsatisfactory cosmetic outcomes and Lactating mothers usually avoid breastfeeding after the procedure. The recurrence rate continues to be high with this conventional method of incision and drainage[6].

This study was aimed to compare the effectiveness and outcome of USG guided needle aspiration versus incision and drainage of breast abscess in terms of cure rate, healing time, recurrence rate, resumption of lactation, functional and cosmetic outcome.

MATERIAL AND METHODS

A comparative study of 100 female patients diagnosed with breast abscess in General Surgery ward in Dr. S. N. Medical College and AGH, Jodhpur by fulfilling the inclusion and exclusion criteria, over period of 1 year after taking approval from IEC. The written informed consent was obtained before enrolment. Diagnosis based on history (breast pain, swelling, fever, local discharge), clinical examination (raised local temperature, tenderness, fluctuant swelling, erythema, discharge) and confirmed by ultrasound breast in presence of thick walled hypoechoic mass or collection with internal echoes and septations.

Patients with breast abscess having age range 18-60 years irrespective of the volume and size, diagnosed clinically and confirmed on ultrasound breast were included in this study. Exclusion criteria were immunocompromised, recurrent, chronic abscesses, complicated like skin changes (ulceration, necrosis) and ruptured breast abscesses. Of these 50 patients had undergone USG guided aspiration (Group A) and 50 had undergone incision and drainage (Group B) of breast abscess after randomization.

Data was collected from all patients included in the study and finding noted in case recording proforma including clinical history, examination, and USG findings. Lactational status of all patients was noted.

After the procedure, analgesics and antibiotics were given to all patients i.e. Diclofenac 50mg and amoxicillin + clavulanic acid 625mg 8 hourly respectively for 5 days or modified according to pus culture and sensitivity. Patients were followed on postoperative day 3rd, 7th, 14th and 30th and assessed by clinically & by Ultrasonography at every follow up. Frequency of aspiration for the Group A was noted. If treatment failure or recurrence occur then it should be converted into incision and drainage. Each patient was analysed on the basis of lactational status, size and quadrant of breast involved, healing time, recurrence, post procedure complications, lactation resumption and patient's satisfaction. Complete resolution of breast abscess is defined as both clinically (no pain, swelling, tenderness) and by ultrasound (complete absence of fluid collection and normal fibrofatty, glandular tissue).

Both groups were compared to assess the better method of management of the breast abscess and the results were tabulated and comparative chart have been documented and analysed.

OBSERVATION AND RESULTS

A total of 100 patients were included in this study with age ranging 18-60 years with mean age in Group A (USG guided aspiration) was 29.76 whereas in Group B (Incision & Drainage) was 28.72 years. Below chart evident that the most affected age group was 21-30 years.

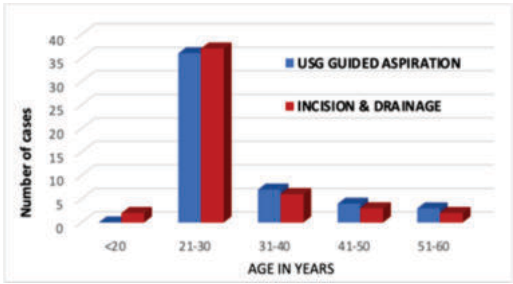

Chart 1: Age distribution of breast abscess

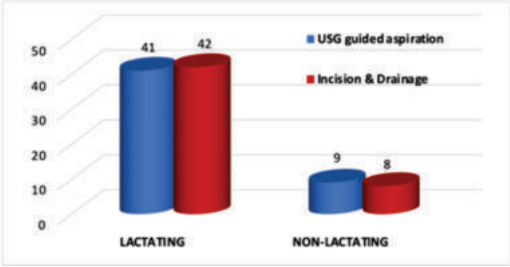

Chart 2: Distribution according to Lactational status between two groups

Above chart evident that lactating females are more commonly affected than nonlactating females.

Table 1: Distribution according to side and quadrant of breast involved

Quadrant Involved	No. of Left Breast abscess	No. of Right Breast abscess	Total
Multiloculated	5	3	8
Upper Outer	17	18	35
Upper Inner	9	8	17
Lower Outer	14	12	26
Lower Inner	8	6	14
Total	53	47	100

Table 1 reveals that the breast abscess was more on the left side (53%) and observed that upper outer quadrant of breast was mostly involved (35%) followed by lower outer quadrant (26%).

Table 2: Frequency of aspiration in USG guided aspiration group

Frequency of Aspiration	No. of Patients	Percentage
ONCE	18	36%
TWICE	24	48%
THRICE	8	16%
TOTAL	50	100%

Only 8 patients (16%) required 3 aspirations and most of the patients (48%) required 2 aspirations in USG guided aspiration group.

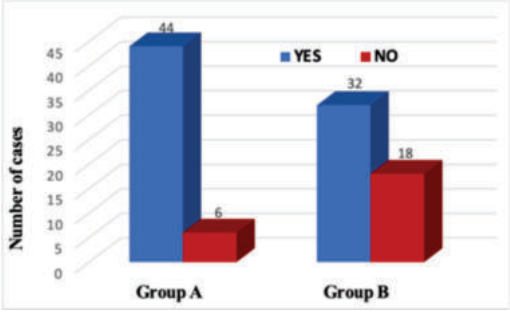

Chart 3: Comparison of Cure Rate amongst both groups

Cure rate was 88% in USG guided aspiration group whereas 64% in incision & drainage group. Which was statistically highly significant (p-value=0.005).

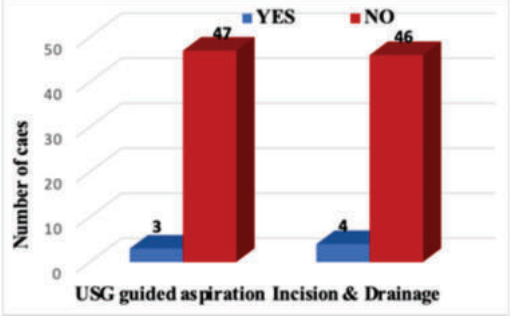

Chart 4: Comparison of Recurrence amongst both groups

There was recurrence in 3 patients (6%) in Group A and 4 patients (8%) in Group B. The resulting difference was not statistically significant.

Table 4: Comparison of Healing Time amongst both groups

Healing Time (Days)	Group A	Group B
Mean	9.96±3.80SD	18.39±6.14SD

Mean healing time was 9.96 days in USG guided aspiration group whereas 18.39 days in incision & drainage group. The resulting difference was statistically significant.

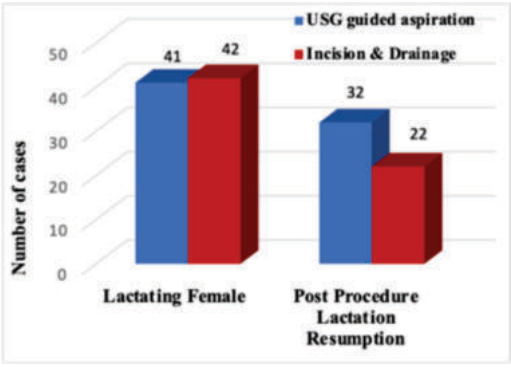

Chart 5: Comparison with respect to Resumption of Lactation amongst two group

32 patients (78%) were resumed lactation after USG guided aspiration whereas 22 patients (52.4%) after incision & drainage which was statistically highly significant (p-value=0.003).

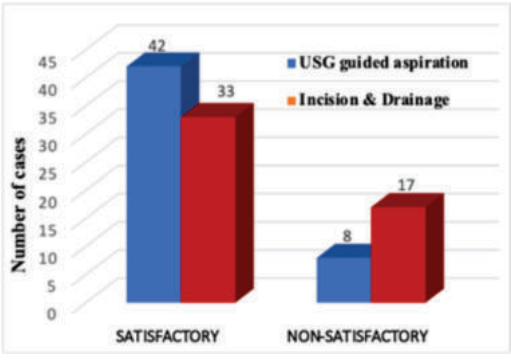

Chart 6: Comparison of patient's satisfaction amongst two group

Above chart evident that 42 patients (84%) were satisfied after USG guided aspiration whereas only 33 patients (66%) were satisfied after incision & drainage of breast abscess which was statistically highly significant (p-value=0.037).

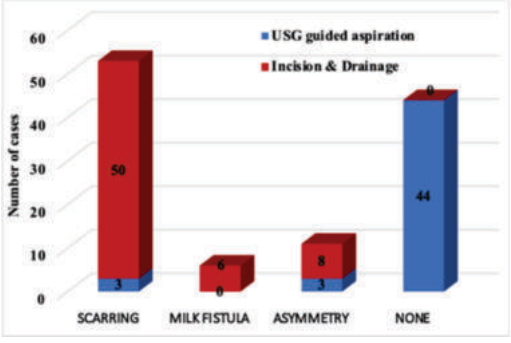

Chart 7: Comparison of post procedure complications amongst both groups

Cosmetic outcome was assessed at the time of follow up after abscess was completely healed. Only 6 patients (12%) experienced complications after USG guided aspiration whereas all patients experienced after incision & drainage which was statistically highly significant.

DISCUSSION

In our study of 100 patients, most of the patients were lactating (83%) and most of were 21-30 years age group which was comparable to the study of Shahida Parveen et al. and Chandika AB et al.[7,8].

In our study out of 50 patients of Group A , only 16% patients required 3 aspirations while most of the patients (48%) were healed after 2 aspirations which were similar to the finding of Francisco Leborgne et al. observed that only 12% patients required multiple aspirations[9].

88% cure rate was observed in Group A whereas 64% in Group B. Similar finding was significantly comparable with study of Abdul Wahab et al. of 184 patients, cure rate was 93.5% in aspiration group whereas 80.4% in incision and drainage group[10].

Resumption of lactation is indicator of functionality of breast. In the present study 78% of 41 lactating females resumed lactation and 84% were satisfied after USG guided aspiration whereas only 52% of 42 lactating resumed lactation and 66% were satisfied after incision and drainage. Similar finding was observed by Akif Amin et al. where 87.1% were resumed lactation and 85.7% experienced satisfaction after USG guided aspiration[11].

In our study only 12% patients were developed complications after USG guided aspiration while 100% patients after incision and drainage procedure. This finding was also statistically significant and comparable to the study of Pradeep Kasabe et al. where only 6.66% experienced complication after USG guided aspiration while 83.33% patients after incision and drainage procedure[12].

In our study mean healing time was 9.96 days with USG guided aspiration whereas 18.39 days with incision and drainage. It was statistically significant and comparable to the study of Dr. GV Manoharan et al. of 50 patients, mean healing time was less (15.5 days) in aspiration group than incision and drainage group (24.4 days)[13].

CONCLUSION

Our study concluded that USG guided needle aspiration is a minimally invasive procedure with lesser number of healing time, better functional and cosmetic outcome for management of breast abscess and better alternative to incision and drainage. Hence it should be the preferred first line of management in patients with breast abscess.

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