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ORIGINAL RESEARCH

Needle aspiration and incision and drainage in the management of breast abscess

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Abstract

Background: Breast abscess is a common problem in lactating mothers causing significant morbidity. The present study was conducted to compare needle aspiration and incision and drainage in the management of breast abscess.

Materials & methods: 60 breast abscess patients were randomly divided into 2 groups of 30 each. Group I were treated with needle aspiration and group II with incision and drainage. All aspiration procedures were performed under ultrasound guidance. Pus sample was sent for culture and sensitivity.

Results: Group I patients were treated with needle aspiration and group II with incision and drainage. The mean size of abscess was 3.24 cm in group I and 3.86 cm in group II. Left size abscess was seen in 8 in group I and 12 in group II and right abscess in 22 in group I and 18 in group II. Staphylococcus in pus culture was seen in 24 in group I and 19 in group II. The difference was non- significant (P> 0.05). The mean healing time was 8.1 days in group I and 17.5 days in group II, continued breast feeding rate was seen in 28 in group I and 22 in group II. Recurrence rate was seen in 1 in group II and cosmetic outcome/Scar was seen in 5 in group I and 30 in group II. The difference was significant (P< 0.05).

Conclusion: Needle Aspiration is a better management option with good healing time, healing rate, and continued breast feeding rate with better cosmetic outcome in patients with breast abscess.

Key words: Breast abscess, cosmetic outcome, Staphylococcus

Introduction

Breast abscess is a common problem in lactating mothers causing significant morbidity. The incidence of breast abscesses in lactational mastitis ranges from 0.4 to 11% in Indian subcontinent.[1] Risk factors for lactational breast abscess are primipara, gestational age >40 weeks and history of mastitis. A stage of mastitis precedes abscess formation. Sonography became an important diagnostic modality in the diagnosis of breast abscess which differentiates between mastitis and abscess.[2]

The most commonly applied treatment strategies in the management of breast abscess include symptomatic treatment like simple analgesia, warm and cold applications, antibiotics and encouraging continued milk flow from the affected breast. Pus removal is the cardinal principle of medical intervention as soon as a breast abscess is formed.[3] The conventional

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first line treatment of breast abscesses is Incision and Drainage (I & D) with antibiotic therapy which is carried out under general anesthesia. The abscess cavity is left open and packed with gauze and subsequent dressings may last up to 6 weeks while the wound granulates.[4] Wounds do heal eventually but this approach requires regular dressings, a lengthy healing time, problems in breast feeding and many a times an unsatisfactory cosmetic outcome.Needle aspiration with antibiotic therapy has ousted I & D as the first line management in many clinical situations and has been validated as an effective treatment choice.[5] The present study was conducted to compare needle aspiration and incision and drainage in the management of breast abscess.

Materials & methods

The present study comprised of 60 breast abscess patients. All gave their written consent for the participation in the study.

Demographic data such as name, age etc. was recorded. All were randomly divided into 2 groups of 30 each. Group I were treated with needle aspiration and group II with incision and drainage. All aspiration procedures were performed under ultrasound guidance. Pus sample was sent for culture and sensitivity. The wounds were left open and dressed daily to allow drainage until they were clean and granulating. Healing time was calculated from the day of intervention till the day the abscess was completely healed. Data was tabulated in both groups. P value less than 0.05 was considered significant (P< 0.05).

Results

Table I Distribution of patients

Groups	Group I	Group II
Method	Needle aspiration	I and D
Number	30	30

Table I shows that group I patients were treated with needle aspiration and group II with incision and drainage.

Table II Characteristics of Breast Abscess in both groups

Parameters	Group I	Group II	P value
Size (cm)	3.24	3.86	0.92
Left breast abscess	8	12	0.01
Right breast abscess	22	18	
Staphylococcus in pus Culture	24	19	0.82

Table II, graph I shows that mean size of abscess was 3.24 cm in group I and 3.86 cm in group II. Left size abscess was seen in 8 in group I and 12 in group II and right abscess in 22 in group I and 18 in group II. Staphylococcus I pus culture was seen in 24 in group I and 19 in group II. The difference was non- significant (P> 0.05).

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Graph I Characteristics of Breast Abscess in both groups

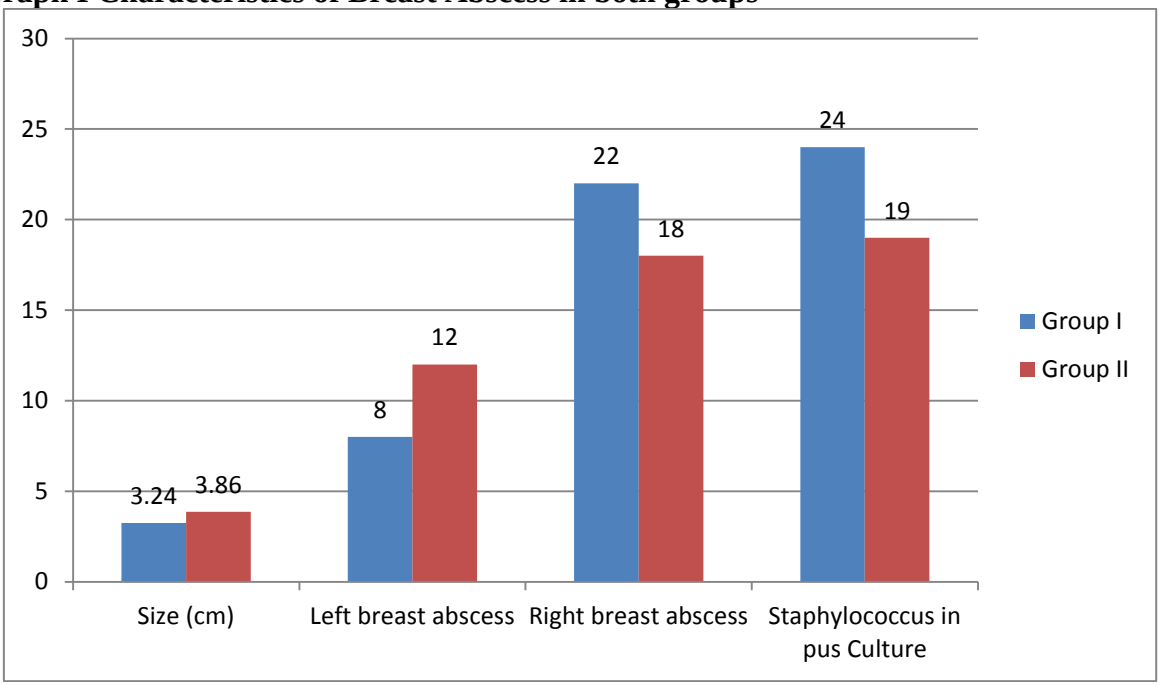

Table III Comparison of parameters

Parameters	Group I	Group II	P value
Healing time (days)	8.1	17.5	0.01
Continued breast feeding Rate	28	22	0.04
Recurrence rate	0	1	0.05
Cosmetic outcome/Scar	5	30	0.001

Table III shows that mean healing time was 8.1 days in group I and 17.5 days in group II, continued breast feeding rate was seen in 28 in group I and 22 in group II. Recurrence rate was seen in 1 in group II and cosmetic outcome/Scar was seen in 5 in group I and 30 in group II. The difference was significant (P< 0.05).

Discussion

A breast abscess is defined as a localized infection with accumulation of pus in the breast tissue.[6] Breast abscesses are common during lactation and remain a frequent reason for women to stop breast feeding, with manifestations ranging from mastitis to abscess formation.[7] Breast abscess remains the most frequent reason of morbidity in puerperal women, particularly in the developing countries.[8] The present study was conducted to compare needle aspiration and incision and drainage in the management of breast abscess.

We found that group I patients were treated with needle aspiration and group II with incision and drainage. Ranjeesh et al[9]in their study puerperal breast abscess was recorded. The patients were then divided into two treatment groups A and B with 30 patients in each group. Patients in group A underwent percutaneous needle aspiration and in group B underwent open surgical drainage. In group A 25 patients were treated successfully with needle aspiration and antibiotics. The mean time for healing is 11 days in 2 cm abscess and longest 23.5 days in 5 cm abscess. 7 abscesses showed growth of S.aureus, 17 showed MRSA, 4 showed no growth, 2 abscesses showed other rarer organisms. Success rate of aspiration is 83%. This is an outpatient procedure and is cost effective. Patient satisfaction is more in aspiration group. Group B patients underwent incision and drainage but it is associated with cessation of breast feeding, cumbersome scar, and prolonged healing times. Mean time of healing in 3 cm abscess is 25.5days and 5cm abscess is 30 days.

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We found that mean size of abscess was 3.24 cm in group I and 3.86 cm in group II. Left size abscess was seen in 8 in group I and 12 in group II and right abscess in 22 in group I and 18 in group II. Staphylococcus I pus culture was seen in 24 in group I and 19 in group II. Manzoor et al[10]compared the results of needle aspiration against Incision & Drainage in the management of breast abscess among lactating patients. One hundred and eight patients with lactational abscess less than 5 cm who agreed to participate were included, randomly assigned to "Needle Aspiration" or "Incision and Drainage" groups, and followed for four weeks. Re-aspiration and conversion to open drainage were considered for aspirated patients. The mean healing time (days) in needle aspiration group was 8.59 + 1.89 versus 18.16 + 5.00 in Incision and Drainage, which was significant. Continued breast-feeding rate was 96 % in needle aspiration versus 69.6 % of Incision & Drainage (I &D). There was scar in only 5.76 % patients of needle aspiration group who converted to I & D as compared to scar in 100 % patients of I & D. Mean healing time, continued breast-feeding rate and cosmetic outcome were significantly better in needle aspiration group (P <0.001).
We found that mean healing time was 8.1 days in group I and 17.5 days in group II, continued breast feeding rate was seen in 28 in group I and 22 in group II. Recurrence rate was seen in 1 in group II and cosmetic outcome/Scar was seen in 5 in group I and 30 in group II. Ranjeesh et al[11]patients were then divided into two treatment groups A and B with 30 patients in each group. Patients in group A underwent percutaneous needle aspiration and in group B underwent open surgical drainage. A total of 60 breast abscesses were treated by these methods. In group A 25 patients were treated successfully with needle aspiration and antibiotics. The mean time for healing is 11 days in 2 cm abscess and longest 23.5 days in 5 cm abscess. 7 abscesses showed growth of S.aureus, 17 showed MRSA, 4 showed no growth, 2 abscesses showed other rarer organisms. Success rate of aspiration is 83%. This is an outpatient procedure and is cost effective. Patient satisfaction is more in aspiration group. Group B patients underwent incision and drainage but it is associated with cessation of breast feeding, cumbersome scar, and prolonged healing times. Mean time of healing in 3 cm abscess is 25.5days and 5cm abscess is 30 days. Kang et al[12] in their study 109 has reported Staphylococcus sp. in 24 patients with 14 having Staph aureus, six coagulase negative, four multi-drug-resistant, three betahemolytic Streptococcus and 02 Pseudomonas aeruginosa in the pus cultures. The most common pathogen isolated has been Staphylococcus aureus in both lactating and non-lactating women.

Conclusion

Authors found that needle Aspiration is a better management option with good healing time, healing rate, and continued breast feeding rate with better cosmetic outcome in patients with breast abscess.

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