

Analytical study of drainage of breast abscess by open drainage with primary suturing with negative suction drain and conventional incision and drainage

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Abstract

Aim And Objectives: To compare and study efficacy of open drainage with primary suturing with negative suction drain over conventional incision and drainage in regards to Post operative pain, Duration of hospital stay, Size of scar at time of discharge, Cost of treatment, Recurrence **Material and Methods:** In total 50 patients were admitted in our hospital with primary diagnosis of breast abscess were randomly divided in 2 groups. Group 1 included 25 patients treated by open drainage with primary suturing with negative suction drain and Group 2 included 25 patients treated by conventional incision and drainage. **Result and Conclusion:** Out of 50, the highest incidence of breast abscess was in the age group 21 - 30 years. Lactation history was present in 74% (37). In 54% (27) right breast was affected. Mean duration of hospital stay, postoperative pain and cost of treatment is significantly less in group 1 and better scar as compared to group 2 though incidence of residual abscess is bit more recurrence rate is less in group 1 as compared to group 2


Key Words: Breast Abscess, Incision, Drainage, Primary suturing, Negative suction drain.

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INTRODUCTION

Breast abscess is an acute inflammatory process resulting in the formation and collection of pus under the skin in breast tissue. Typically, there is painful erythematous mass formation in the breast occasionally with draining through the overlying skin of nipple duct opening. Breast abscess if not treated in time and in proper way, can result in deformation of breast which ultimately can result in loss of self-esteem of the female who suffers from abscess. For the treatment of the breast abscess, options include repeated aspiration, incision and drainage, incision and drainage with primary closure and

conservatively treated by giving antibiotics. The established principle of surgical management of abscess has been incision and free drainage; this permits healing by secondary intention or treatment by secondary closure. This modality of treatment has been challenged with the introduction of antibiotics. Ellis taught that the abscess wall prevented access of blood-borne antibiotics to the abscess cavity and that if this wall was curetted away the cavity could fill with antibiotic-laden blood clot, permitting safe primary closure. The primary closure technique is supported by many surgeons who showed its effectiveness in the treatment of breast abscess⁵. Advantages of primary closure technique are faster healing rate, less hospital stay and early return to work, no greater recurrence than the conventional method, better scar formation and finally reduced cost of labor and material and may be recommended as an alternative treatment that is superior to the orthodox technique⁶. In our study, we compared the outcome of conventional incision and drainage of acute abscess versus incision and drainage with primary closure of wound with negative suction drain in breast abscesses. Hence, we performed a comparative study of the conventional method of incision and drainage with open drainage and primary closure of

the wound with negative suction drain in breast abscesses with regards to wound healing with appearance of scar, postoperative pain, duration of hospital stay, cost of treatment, and recurrence.

MATERIAL AND METHODS

The dissertation ‘analytical study of drainage of breast abscess by open drainage and primary suturing with negative suction drain and conventional incision and drainage’ was conducted in our hospital (GMCH) from January 2015 to September 2016. All the patients were initially examined in the outpatient department and were admitted. A detailed history comprising of age, date of birth of baby, presenting complaints of swelling in breast, pain, fever, discharge and breast feeding practices were taken. A careful past history regarding previous similar complaints, previous operations on breast were recorded. Associated diseases if any were noted too. After a complete general examination, a careful local examination of the breast was done according to proforma for any signs of inflammation, tenderness, induration, fluctuation and ulceration over swelling. Amount, colour and quantity of any discharge are also noted. All the patients were investigated for haemoglobin percentage and total leucocytes counts. Blood sugar levels, renal function tests, reactivity for HIV, chest X-ray and ultrasonography of breast was done. Throat swab for culture and sensitivity of babies who were breast fed were taken in patients having lactational breast abscess. A final diagnosis was made correlating the clinical features and ultrasonography. Further according to protocol followed in hospital, patients were subjected to treatment method, either open drainage with primary suturing with negative suction drain or conventional incision and drainage randomly. Odd numbered patients were subjected to open drainage with primary suturing with negative suction drain and even numbered patients were subjected to conventional incision and drainage. Proper consent was taken before operation. All patients were operated under general anaesthesia.

Inclusion Criteria

1. Clinical diagnosis of breast abscess with fluctuation present
2. Abscess cavity size greater than 3 cm

Exclusion Criteria

1. Breast abscess associated with other co-morbid conditions like DM, HIV and malignancy
2. Abscess cavity of size less than 3 cm. (abscess cavity of size less than 3cm are difficult to treat with suction drain)
3. Antibiooma formation

Statistical analysis; Comparison between 2 groups is done by Z-test.

RESULT AND DISCUSSION

In present study 50 cases of breast abscess admitted in our hospital were studied and divided in two groups, 25 patients underwent open drainage with primary closure with negative suction drain i.e Group 1 and 25 patient underwent conventional incision and drainage. i.e Group 2 and comparison study is done in regards with postoperative pain, duration of hospital stay, cost of treatment, appearance of scar, residual abscess and recurrence. In present study 31 patients (62%) are in the age group of 21 to 30 years while according to Oliwale *et al* most common age group was 21 to 30 years which is comparable. Mean age of occurrence of breast abscess in our study is 25.28 years while Dener *et al* found mean age of breast abscess as 26 years. In present study 37 patients (74 %) were lactating suggesting that stasis of milk and carrier state of infant play key role in development of breast abscess as also supported by previous study. In present study 27 patients (54%) had breast abscess on right side while in 23 patients (46%) which is comparable to results reported by Newnham at al reported in their study that 61.7% patients had right breast abscess while 31.7% had left breast abscess. In present study mean duration of hospital stay in group 1 is 4.48 days while in group 2 is 6.44 days with (p value = 0.0002) suggestive of mean duration of hospital stay is significantly less in group 1. A similar finding was observed in a study conducted by Abraham *et al*. They found that hospitalisation was reduced by 40-60% in group with closure of superficial abscess. Also similar finding were observed in study conducted by Ajao OG *et al*. In present study post operative pain is measured quantitatively according to days of analgesic required. In group 1 mean duration of post operative pain is 2.16 days and in group 2 mean duration of post operative pain is 4.36 days with (p value = 0.0006) suggestive significantly lower duration of postoperative pain in group 1. Similar findings were observed by Edino *et al*. A study done by Dubey and Choudhary correlates with present study. In present study cost of treatment of every patient is calculated by including daily charges for number of days patient is admitted in hospital, investigation charges, OT charges, charges for material required during operation, charges for dressing materials and dressing. The mean cost treatment in group 1 is 1185 Rs and in group 2 is 1560.4 Rs with (p value < 0.0001) suggesting of significantly reduced cost of treatment in group 1 as compared to group 2. Cost of increased duration of hospital stay and cost of daily dressing resulted in increased cost of treatment in group 2 as compared to group 1. Finding in present study is consistent with study done by Edino *et al*, khanna Y K *et al*, Dubey and choudhary and Ajao OG. In present study

size and appearance of scar is measured quantitatively using Manchester scar scale in group 1 mean score is 6.8 and in group 2 mean score is 11.56 with (p value =0.0008) suggestive of better scar in group 1 as compared to group 2. Similar findings were observed in study Dubey and Choudhary with P value < 0.05. And Ajao OG *et al.* In present study there is 2 (8%) cases of residual abscess in group1 and no cases of residual abscess in group 2. It is comparable with study by khanna YK *et al* which show residual abscess in 6 % of cases of primary closure and study of Dubey V *et al* which shows residual abscess in 4.4 % of cases of primary closure. In present study no recurrence is seen in group 1 and there is 1 case of recurrence out of 25 cases (4%) in group 2 suggestive of more recurrence in group 2 as compared to group 1. Similar finding were observed in study by Anirrudha K where recurrence was 3 times more in cases of conventional incision and drainage as compared to primary closure. Similar findings were observed In study by Khanna *et al.*

CONCLUSION

Breast abscess is most common in age group 21-30 years of age. Right side is affected in 54% of patients suggesting right side is affected more than left. All patients complaint of swelling, pain and all patients showed all signs of inflammation i.e. rubor, calor, dolor and tumor. Most common etiological factor responsible for breast abscess is lactation. Open drainage with primary closure is effective alternative method of treatment to incision and drainage in properly selected patient and with timely support by sonologist. Conventional Incision and drainage of breast abscess leads to more pain, delayed healing and prolonged cessation of breast feeding. As the condition occurs in young women, scar is a major concern in comparison the approach of open drainage with primary suturing with negative suction drain leaves behind better scar, breast feeding is started very early and breast regains its suppleness very fast. Furthermore the postoperative pain,

duration of hospital stay and cost of treatment is significantly less in patients treated with open drainage with primary closure with negative suction drain though incidence of residual abscess is bit more by this method, recurrence rate is low as compared to conventional incision and drainage.

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