Original Article-General Surgery

Comparison of Outcome of Closed and Open Drainage of Breast Abscess

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Abstract

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. To compare outcome of closed and open drainage of breast abscess. 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. As the condition occurs in young women, scar is a major concern in comparison the approach of closed drainage which leaves behind a better scar, breast feeding is started very early and breast ragains it suppleness very fast. Furthermore Post operative pain, Scar formation, Residual abscess, time for complete healing is better with closed drainage of breast abscess.

Key words: *Breast abscesses, Drainage, postoperative pain, Incision Drainage, Hospital stay,*

Introduction

Breast abscess is an acute inflammatory process resulting in the formation and collection of pus under the skin in breast tissue. To compare outcome of closed and open drainage of breast abscess. 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. Breast abscess is the result of underlying inflammation (mastitis) in the breast skin. Injury may happen either during the lactation process from the infant or in the non-lactaionstate of the patient as a cracking in the breast skin. This injury accelerates the entry of the causative bacteria which by its role form the abscess.(1)

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In neglected cases, there may be necrosis in the abscess location leads to fibrosis, scarring and nipple retraction. According to Haagensen(1971) "The conventional treatment of breast abscess has been surgical incision and drainage under general anaesthesia, a curved incision in the skin line is used and a penrose drain is left in a place for 72 hours". The gold standard of puerperal breast abscess drainage described by Haagensen is supported by Webster with addition of gauze packing. (1)

Previous study described (2) 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

it suppleness very fast. The primary closure technique was superior to the conventional technique in terms of duration of healing, post operative pain, number of dressings required, length of hospitalization and post operative complications and quality of healing.[3]

For the treatment of breast abscesses, surgical incision and drainage are usually carried out under a general anaesthesia, is a traditional method of treatment. [4].Breaking down any loculi and draining the pus material from the cavity by incision of the swelling is the most common method which follows the irrigation of cavity and either left open and packed with gauze or approximated around a drain.[5] Our aim is to compare management of breast abscess by open drainage versus closed drainage with reference to Post operative pain, Residual abscess, Time required for complete healing, Appearance of scar

Material and Methods:

The patients attending outpatient department & admitted to Aarupadai veedu medical college and hospital, with diagnosis of breast abscess will be taken for this study by period sampling for the period October 2017 to October 2019. In the present study of 60 cases of breast abscess admitted in Aarupadai Veedu Medical College & Hospital were divided and study in 2 groups. Group – I (30 patients) – closed drainage Group – II (30 patients) – open drainage. All the 60 cases will be taken up for study following inclusion and Exclusion criteria. By period sampling. The patients selected for this study are those who are with primary diagnosis of breast abscess .Based on detailed history, thorough clinical examination, the diagnosis of breast abscess will be made. These patients will be subjected to the required preoperative investigations. Patients will be alternately undergoing incision drainage and percutaneous placement of suction drain. Each case will be analysed with reference to post operative complications like post operative pain (based on visual analog scale), residual abscess, duration of hospital stay, time required for complete healing and appearance of scar and cost spent for treatment. Each patient will be followed up in the outpatient department at 1 week, 2 weeks and 4 weeks after discharge with regard to wound healing. A minimum of 60 cases with the following inclusion and exclusion criteria will be selected for the study and will be allocated alternatively to each of the comparative study groups.

Results

Table.1: shown Post operative pain

Postop pain	Closed		Open		Total		Chi-square test	p-value
	N	Percentage	N	Percentage	N	Percentage		
No	24	80.0%	12	40.0%	36	60.0%	10.000	0.0010
Yes	6	20.0%	18	60.0%	24	40.0%		
Total	30	100.0%	30	100.0%	60	100%		

Table.2 shown Residual abscess

Residual	Closed		Open		Total		Chi-square test	p-value
	N	Percentage	N	Percentage	N	Percentage		
No	30	100.0%	18	60.0%	48	80.0%	15.000	<0.001
Yes	0	.0%	12	40.0%	12	20.0%		
Total	30	100.0%	30	100.0%	60	100%		

Figure.1: Shown Scar formation

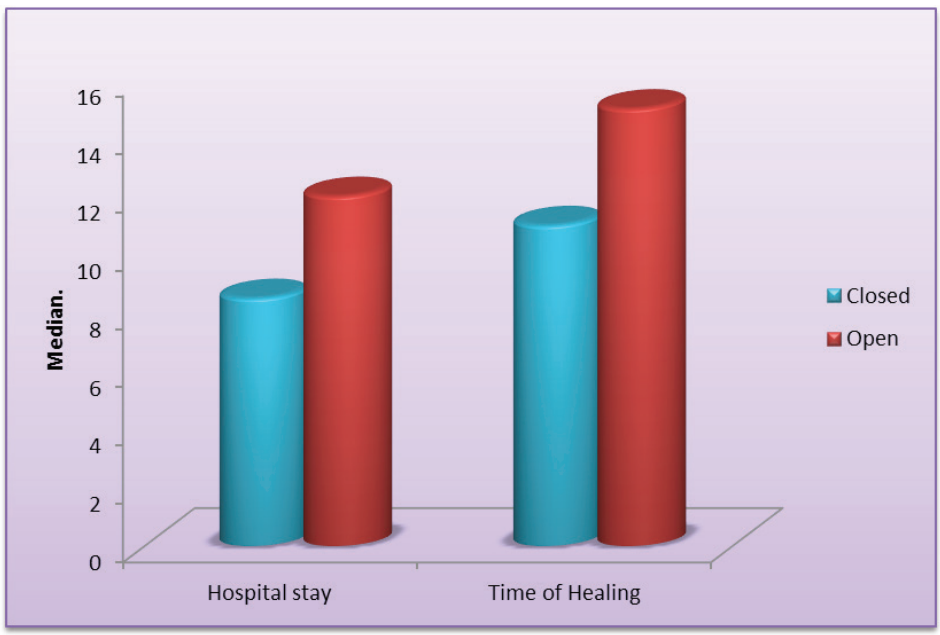

Figure.2: Shown Time for complete healing

Discussion

A comparative prospective study was designed to compare open and closed drainage in breast abscess and the outcomes in the various modalities for betterment. In the study the youngest patient was 18 years old and oldest patient was 42 years old. The mean age was 34 years in the patient of study groups. In the study right sided breast abscess is of 55% (33 patients) and left sided breast abscess is of 45% (27 patients). In present study post operative pain is measure according to visual analogue scale and analgesic requirement. In group I (closed drainage) has reduced post operative pain (80%) when compared to patient underwent open drainage 40% with significant in P value of less then 0.001. similar findings were observed in Edino et al [6] and also co-relates with other study [7]. In post-operative period open incision and drainage had more pain give to due repeated dressings and closed drainage was void of it.

In our present study closed drainage (Group I) had no residual abscess when compared to open drainage there was 20% residual abscess 12 patients. It is due to continous negative section created in the walls of abscess cavity that thus not allow residual secretions. With significant p value of 0.001 Khanna et al [8] reported residual abscess in 3% of cases in their study. Macfic et al [9] documented of 11.4% in their respective study. Kaushal S et al [10] in their study found 3 patients with residual abscess. Chandika et al [11] in their study noticed no residual abscess in closed drainage but had in incision and drainage. Other author [12] in their study said the importance of ultrasound in the follow up to sec for residual abscess in the absence of clinically evident abscess. Khanna YK et al [8] which show residual abscess in 6% of cases of primary closure and study of Dubey V et al [13] 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 more 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 [8].

In the study closed drainage group I had better and minimal cosmetics scarring went compared to group II open drainage which had ugly and maximum scarring thesis due to minimal exposure and handling of tissues. With significant P value 0.001 which is also supported by Abraham et al [14] and Khanna et al [8] Imperiable et al in their study said the cosmetic result was optimal in all cases. Kaushal S et al said that all the patients who underwent incision and drainage complained of an ugly scar. Dieter Ulitzsch et al [15] and Singh et al [16] in their study reported 96% of patients treated by closed drainage was satisfied by the cosmetic results. According to Chandika et al [11] needle aspiration was a highly accepted modality. The high acceptance rate may be because of the convenience of the procedure which was an minimum scar.

In the study mean duration of hospital stay and time required for complete healing is of significance < 0.001. Similar finding was observed in a study conducted by Abraham et al [14] they found that hospitalization was reduced by 40-60% in closed drainage (group I). In the study closed drainage group I had no secondary infection when compare to open drainage Group II which is due to exposure of tissues to external environment. With a secondary infection of 30% in the open drainage with significant P value 0.001. Overall 65% of patients who underwent procedure for breast abscess either closed or open drainage had follow up. Previous studies described [1]a minimally invasive palpatory method of drainage of breast abscess is percutaneous placement of suction drain but in trochar only so there were still chances of remaining loculi and recurrent abscess. Avoidance of repeated aspiration was the advantage of antibiotics into abscess cavity is probably beneficial. Resolution time is faster in percutaneous drain placement as compared to incision and drainage. Moisture is maintained and antibiotic instillation in cavity can be done.

Conclusion

In the Present study of open and closed drainage of breast abscess cases in that right side of affected in 55% of patients. From this study it can be concluded that, the commonest age group affected was between 21-32 years. All patients complaint of swelling, pain and all and showed signs of inflammation. Closed drainage is effective alternative method of treatment to incision and

drainage in properly selected patients. 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 closed drainage which leaves behind a better scar, breast feeding is started very early and breast ragains it suppleness very fast. Furthermore Post operative pain, Scar formation, Residual abscess, time for complete healing is better with closed drainage of breast abscess.

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Conflict of Interest: Nil

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Ethical Clearance: Institutional Ethical Clearance No-C: 081/2017

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