



**ORIGINAL RESEARCH PAPER**

**General Surgery**

**COMPARATIVE STUDY OF USG GUIDED ASPIRATION VERSUS INCISION AND DRAINAGE IN TREATMENT OF BREAST ABSCESS**

**KEY WORDS:** Breast abscess, USG guided aspiration, incision and drainage.

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**ABSTRACT** Breast abscess remains a morbid condition among lactating women in developing countries. The aim of this study is to compare the results of ultrasound guided aspiration and incision and drainage in the management of breast abscess. This is a comparative study between ultrasound guided aspiration and incision and drainage consist of 60 patients who underwent both the treatment alternatively. USG guided aspiration is effective method of treatment in breast abscess with good patient satisfaction.

**INTRODUCTION-**

Infection of the breast may occur as a localized phenomenon or as part of a systemic illness. The conventional treatment of breast abscess has been surgical incision and drainage<sup>1</sup>. The minimally invasive method of USG-guided aspiration/repeated aspiration of the abscess is a cost effective method of drainage of breast abscess that entails minimal morbidity and has cosmetic advantages<sup>2</sup>.

The present study intends to compare two methods- invasive method i.e., conventional incision & drainage and minimally invasive procedure i.e., USG guided aspiration/repeated aspiration in the treatment of breast abscess with reference to complications like post operative pain, residual abscess, duration of hospital stay, time required for complete healing and appearance of scar.

**AIMS AND OBJECTIVES -**

To compare management of breast abscess by incision and drainage v/s USG guided aspiration/repeated aspiration with reference to –

1. Post operative pain
2. Time required for complete healing
3. Duration of hospital stay

**MATERIAL AND METHODS** - The patients admitted in B.S. Medical College & Hospital, Bankura, West Bengal, with primary diagnosis of breast abscess was taken for this prospective study from June 2013 to May 2014 (1 year), recruited 60 cases during the 12 months period of inclusion. All new Breast Abscess patients between ages 20 – 30 years were clinically evaluated, diagnosed & managed. Each patients were followed up upto 6 months after surgical intervention or USG-guided aspiration to know about any delayed complications.

**RESULTS**

**Table No. 1: Distribution of patients according to Lactational status (n=60)**

Lactational status	Number	%
Lactational	54	90
Non-lactational	6	10
Total	60	100

Among 60 patients, 54 patients were lactational and 6 patients were non-lactational.

**Table No.2: Different clinical presentations among breast abscess patients (n=60)**

Signs	Number	%
Temperature	60	100
Tenderness	60	100
Erythema	60	100
Cracked nipples	16	26.67

100% patients had raised temperature, local tenderness and local erythema; but only 26.67% patients had cracked nipple.

**Table No.3: Distribution of patients according to Treatment given (n=60)**

Treatment given	Number	%
Aspiration	30	50
Incision and drainage	30	50
Total	60	100

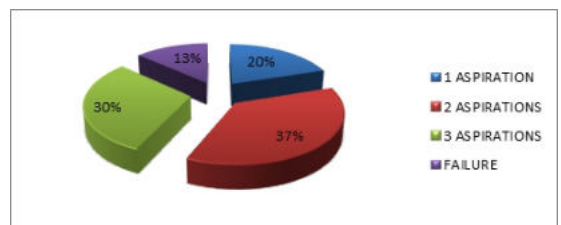
The entire patients were equally distributed in aspiration and incision and drainage group.

**Table No. 4: Number of aspirations among aspirated patients (n=60)**

No. of aspirations	No. of patients	% of aspirated
1	6	20
2	11	36.67
3	9	30
Failure	4	13.33

Among the aspirated group most, 36.67%, responded with 2 aspirations. 20% and 30% patients responded after 1 and 3 aspirations respectively. 13.33% of aspirated patients were converted to open procedure.

**Fig. No. 1: Showing number of aspirations among aspirated patients (n=60)**



**Table No. 5: Comparison of discharge from the wound between aspirated and incised group (n=60)**

Discharge from the wound	Aspirated group (n=30)		Incised group (n=30)		Total		Chi-square	P-value
	Number	%	Number	%	60	%		
Present	3	10.0	29	96.67	32	53.33	45.27	<0.001
Absent	27	90.0	1	3.33	28	46.67		

Discharge was present in 96.67% of patients in incised group, whereas 10.0% in aspirated group. The difference was statistically significant (p<0.001).

Fig. No. 2: Showing comparison of discharge from the wound between aspirated and incised group (n=60)

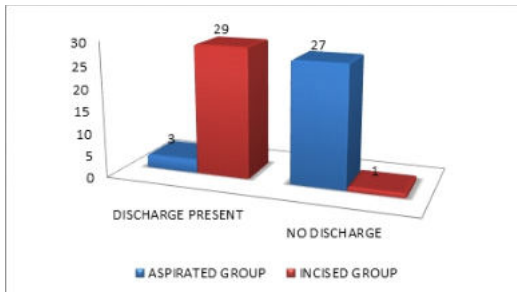


Table No. 6: Comparison of Post-treatment pain between aspirated and incised group (n=60)

Post-treatment pain	Aspirated group (n=30)		Incised group (n=30)		Total		Chi-square	P-value
	Number	%	Number	%	60	%		
Present	17	56.67	6	20.0	23	38.33	8.53	0.003
Absent	13	43.33	24	80.0	37	61.67		

Pain was present in 20% of patients in incised group, whereas 56.67% in aspirated group. The difference was statistically significant (p=0.003).

Fig. No. 3: Showing comparison of Post-treatment pain between aspirated and incised group (n=60)

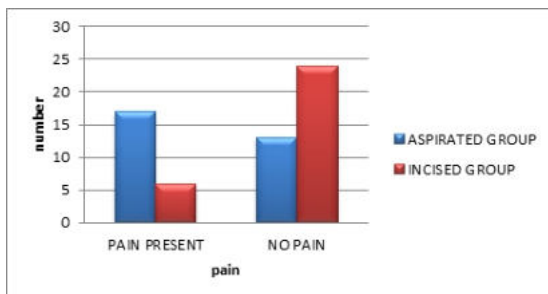


Table No. 7: Comparison of Healing time between aspirated and incised group (n=60)

Healing time (in days)	Aspirated group (n=30)		Incised group (n=30)		Total		Chi-square	P-value
	Number	%	Number	%	60	%		
1-5	6	20.0	0	0	6	10.0	43.5294	<0.0001
6-10	14	46.67	0	0	14	23.33		
11-15	10	33.33	7	23.33	17	28.34		
16-20	0	0	14	46.67	14	23.33		
21-25	0	0	9	30.0	9	15.0		

Most cases of aspirated group, 46.67%, healed between 6-10 days; whereas majority of incised group, 46.67%, healed between 16-20 days.

The healing period of incised group was 11-25 days, mean = 18.67 (+/-3.96) days. The healing period of aspirated group was 3-7 days,

mean = 8.33 (+/-2.09) days. The difference is statistically significant, p-value<0.0001.

Fig. No. 4: Showing comparison of Healing time between aspirated and incised group (n=60)

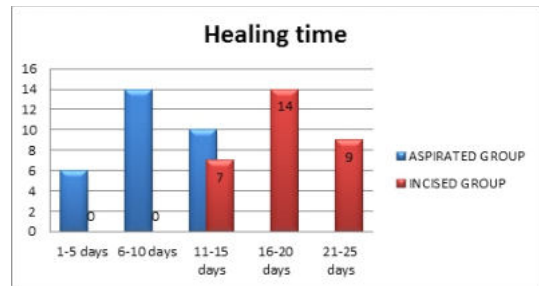


Table No. 8: Comparison of Duration of hospital stay between aspirated and incised group (n=60)

Duration of hospital stay (in days)	Aspirated group (n=30)		Incised group (n=30)		Total		Chi-square	P-value
	Number	%	Number	%	60	%		
4-7	19	63.33	6	20	25	41.67	15.05	0.0005
8-11	11	36.67	17	56.67	28	46.67		
12-14	0	0	7	23.33	7	11.67		

Most cases of aspirated group, 66.33%, discharged between 4-7 days; whereas majority of incised group, 56.67%, discharged between 8-11 days. The hospitalization period of incised group was 6-14 days, mean = 9.32 (+/-2.11) days. The hospitalization period of aspirated group was 4-9 days, mean = 6.67 (+/-1.67) days. The difference is statistically significant, p-value=0.0005.

DISCUSSION

In our study, 90% patients were lactational which is comparable with the findings in the series of Schwarz et al<sup>1</sup>. with 83% (lactational) and 17% (non-lactational).

In 1995 Crowe DJ et al<sup>8</sup> reported 21 patients presented with clinical abnormalities, including palpable mass (20; 95%), pain (11; 52%), erythema (11; 52%), warmth (7; 33%), skin thickening or fixation (4; 19%). In 2003 Leborgne F et al<sup>2</sup> published report of 73 patients, among them only 12% were associated with fever, all patients had a palpable mass; in 80% the mass was painful, and in 71% the overlying skin was red. In this study 100% patients had pain, but 55% patients had fever; 100% patients had raised temperature, local tenderness and local erythema; but only 26.67% patients had cracked nipples. These findings were also comparable with them.

In 2012 Hamid H. Sarhan et al<sup>6</sup> reported a series of 43 cases, of whom twenty-three (53.4%) of the patients obtained complete resolution (no focal collection) after one aspiration; 9 (21%) required two aspirations and 8 (18.6%) required more than two aspirations for the cure (residual collection). In 3 (7%) of the patients, the treatment failed, where symptoms had not resolved after 3 days, with further pus collection despite aspiration and antibiotics, where surgical drainage was required. In our group among the aspirated group most, 36.67%, responded with 2 aspirations. 20% and 30% patients responded after 1 and 3 aspirations respectively. 13.33% of aspirated patients were converted to open procedure. Our results showed that most of the abscesses, 86.97%, could be treated with aspiration and antibiotic therapy if the abscess cavity was completely or almost completely drained.

In our study at B.S.M.C.H; at the time of discharge, pain was present in 20% of patients in incised group, whereas 56.67% in aspirated group. The difference was statistically significant (p=0.003). Most of our cases of aspirated group, 46.67%, healed between 6-10 days; whereas majority of incised group, 46.67%, healed between 16-20 days. The healing period of incised group

was 11-25 days, mean = 18.67 (+/-3.96) days. The healing period of aspirated group was 3-7 days, mean = 8.33 (+/-2.09) days. The difference was statistically significant, p-value <0.0001. .

In this study most cases of aspirated group, 66.33%, discharged between 4-7 days; whereas majority of incised group, 56.67%, discharged between 8-11 days. The hospitalization period of incised group was 6-14 days, mean = 9.32 (+/-2.11) days. The hospitalization period of aspirated group was 4-9 days, mean = 6.67 (+/-1.67) days. The difference is statistically significant, p-value =0.0005. This proves that aspiration is more economical. This was consistent with what was found elsewhere<sup>5,10</sup>.

In their retrospective study that includes 39 patients, Juan D et al. showed that percutaneous drainage procedures in breast abscesses are a safe and effective alternative to incision and drainage<sup>11</sup>. After reviewing 36 papers, Thirumalaikkumar et al. concluded that the smaller the abscesses are, the better the outcome is and the lower the recurrence rate is following the aspiration<sup>12</sup>.

## CONCLUSION

Breast abscess still remains a common problem especially, for lactating mother and their babies who require continued breast feeding. In the past, most patients with a lactating abscess have been treated by incision and drainage of the abscess under general anesthesia. These may cause considerable distress to both the mother and baby and the final cosmetic result is often unsatisfactory.

Now, majority of the breast abscess can be effectively treated without surgery on an outpatient basis, by a combination of USG-guided needle aspiration and antibiotics with a cosmetic satisfaction. With similar reports from various centers, this technique should become the standard practice in the management of breast abscess.

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