

## Ultrasound guided aspiration of breast abscess as an alternative to surgical incision and drainage

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**Objective:** To evaluate the outcome and assess the success rate of ultrasound guided aspiration of breast abscess as an alternative to surgical incision and drainage.

**Methodology:** A prospective descriptive study was carried out at Department of Surgery, Chandka Medical College Hospital, Larkana, Pakistan, from January 2015 to December 2015. A total of 111 patients of breast abscess who underwent ultrasound guided aspiration without anesthetics with oral antibiotic cover were studied. Females with breast abscess within seven days, and the abscess size was <3cm were included in the study. Males, anti-bioma and inflammatory carcinoma were excluded from the study. Outcome of success or failure was observed within two weeks and recorded.

**Results:** Out of 111 patients, 68.46% were lactating and 31.53% were non-lactating women, with ages ranging from 18 to 60 years (mean 36.5 years). The successful rate with complete resolution after ultrasound guided aspiration was observed in 94.5%. 80.82% responded after single aspiration, 12.38% after two times aspiration, and 6.66% after multiple aspirations, while 5.4% of patients required incision and drainage.

**Conclusion:** Ultrasound guided aspiration of breast abscess is an effective treatment option with a diameter of <3cm, which can be recommended as a routine outpatient procedure. (Rawal Med J 201;43:84-86).

**Key Words:** Breast Abscess, U/S guided aspiration, surgical drainage, outcome.

## INTRODUCTION

Breast abscess is one of the common benign lesions of the breast. It is an acute, painful condition that may cause breast destruction and eventual disfigurement, and may discourage breast feeding. The prevalence of breast abscess ranges from 5-16% in our country.<sup>1</sup> It is the most common condition among lactating mothers which account for 80 percent of cases.<sup>2</sup> The most common causative organisms are staphylococcus aureus, which gains entry via a cracked nipple.<sup>3,4</sup> Patients present with short history within 7 days of painful swelling associated with fever. Conventional treatment of breast abscess is surgical incision and drainage, which has proven efficacy, however it has disadvantage of poor cosmetic results and general anesthesia exposure, hospitalization and termination of breast feeding.

Recently, ultrasound guided multiple aspirations of breast abscess under antibiotic cover has been better treatment option when abscess is less than 3cm.<sup>5</sup>

This also provides specimen for culture and sensitivity and cytology. It minimizes the risk of mammary fistula, which is a known complication of surgical incision and drainage.<sup>6</sup> Success rate of this procedure as reported in different studies ranges from 83-91%,<sup>7</sup> although it failed in providing relief in 9-17% patients.<sup>8</sup> This is an ideal treatment option for breast abscess, however very few studies are available and national studies are lacking. In some institutions the standard treatment still remains early incision under general anesthesia.<sup>9,10</sup> In recent years ultrasound guided drainage has been described as method of choice.<sup>11,12</sup>

A number of reports on breast abscess drainage under ultrasound guidance have also been reported with 90% success rate, without anesthesia or hospitalization with no interruption in breast feeding.<sup>8,13,14</sup> The purpose of this study was to evaluate and assess the success rate of ultrasound guided aspiration of breast abscess >3cm as an alternative to surgical incision and drainage.

## METHODOLOGY

This prospective descriptive study was conducted at the Department of Surgery, Chandka Medical College Hospital, Larkana, Pakistan from January 2015 to December 2015. A total of 111 patients who underwent ultrasound guided aspiration of breast abscess were included in the study. Age ranged from 18 to 60 years, female gender and abscess that was less than 3 centimeters in diameter with less than seven days duration. Male gender, having anti-bioma, inflammatory carcinoma and mastitis were excluded. Permission was sought from hospital Ethics committee and a written informed consent was taken from all patients.

Data regarding patient demographics and results were recorded. Patients were given oral antibiotics (first generation cephalosporin) before starting the procedure of ultrasound guided aspiration, without anesthesia. All the patients were advised to continue oral antibiotics for seven days and asked to come for follow up on 3<sup>rd</sup> day, 7<sup>th</sup> day and at two weeks. Outcome in terms of success or failure was noted. Stratification with respect to age, duration was done and Chi-square test was applied post stratification. P value <0.05 was considered significant.

## RESULTS

Out of 111 females, 76 were lactating.. The age ranged from 18 to 60 years (mean 36.5±1.2). The mean size of abscess was 2.05±0.573 cm. The highest success rate was found in the age group ? 40 years, while the highest failure rate was observed in ?40 years (p=0.005) (Table 1).

**Table 1. Out by age.**

Age groups in Years	Outcome		P value
	Recovered	Failure	
≤ 40	62	0	0.005
≥ 40	43	06	

**Table 2. Success rate.**

	Number	Percent
Recovered/success	105	94.6
Failure	6	5.4
Total	111	100.0

**Table 3. Number of aspirations required.**

	Number	Percent
Single aspiration	85	80.92
2 times aspiration	13	12.38
Multiple aspirations	7	6.66
Total	105	100.0

Duration of symptoms ranged from 1 to 7 days. Those patients whose complaints were between 5-6 days duration, 51 out of 111 recovered and failure was in 2 patients. The patients whose complaints were between 1-4 days duration, 50 out of 111 recovered and failure was in 4 patients. The success rate was observed in 105 patients (94.6%) (Table 2). The complete resolution of breast abscess was observed in 105 patients, 85 patients (80.92%) responded with complete resolution, 13 (12.38%) after 2 times aspiration, while 7 patients (6.66%) responded after multiple aspirations (Table 3).

## DISCUSSION

Breast abscess remain a problem among women in developing countries. From various studies it has been shown that results of ultrasound guided aspiration yielded the best treatment outcome with efficacy of more than 90% after single aspiration.<sup>5,14</sup> In our setting, the conventional surgical procedures like Incision and drainage and manual manipulation and draining of abscess are in vogue. Ultrasound guided aspiration is innovative and yields promising results.

In our study, this procedure has proved to be efficacious with failure rate of 5.4% only. The rate of success in our study was more than 94%, which corresponds closely to other studies.<sup>8,14</sup> In 1993 Karstrup et al reported 18 out of 19 patients were managed successfully with ultrasound-guided needle aspiration.<sup>15</sup> In 1997 Garg et al reported 25 consecutive cases of breast abscess drained under ultrasound guidance.<sup>13</sup>

As our study was conducted on abscess ?3 cm and success rate in these cases is very high as compared to the abscesses ?3 cm, as observed by Ulitzsch et al.<sup>16</sup> Results of our study are consistent with study by Ozseker et al, where the success rate was 91% and no recurrence occurred.<sup>7</sup> The failure rate in our study

was 5.4% that was found in non-lactating women. The reason why lactating women carried zero failure rate in our study is yet to be determined, while the results from Denmark showed that 59% were lactating and 41% were non-lactating.<sup>8</sup>

The complete resolution of the abscess after single aspiration was seen in 85 patients out of 111, thus showing robust results. The failure rate in our study stood around 5.4% that could be attributed to skin necrosis around the abscess, central abscess, multi loculations, and non lactational abscess. Negligible complications, high acceptability of this procedure on part of patient may lead to the fact that the procedure surpasses and remain to be preferred method over conventional procedure, which is in vogue these days.

## CONCLUSION

Ultrasound guided aspiration of breast abscess is an effective treatment option with a diameter of <3cm, which can be recommended as an outpatient procedure. An incision and drainage of breast abscess, which is invasive method done under general anesthesia, requires hospitalization and having chances of developing mammary fistula, should be discouraged when the abscess is  $\geq 3$  cm.

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