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Surgical Improvement of Breast Abscess in Lactating Mothers

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Abstract:

The conventional breast abscesses treatment is the surgical incision and drainage followed by digital septa disruption, contents evacuation with surgical drains placements. 60 female patients of 40 years average age with suspected breast abscesses were treated at the Department of Surgery of Liaquat University of Medical & Health Sciences, Jamshoro, Sindh, Pakistan. The minimally invasive treatment for breast abscesses was accomplished with the help of percutaneous drainage placement and ultrasound guided fine needle aspiration. During drainage placement, ultrasound guided fine needle aspiration was accomplished followed by percutaneous insertion of an ordinary drainage catheter by prick incision. They endured the forms of clinical inflammation like puerperal mastitis in 24 patients (40%), non-puerperal mastitis in 27 patients (45%) and other inflammation such as infected seromas and folliculitids in 9 patients (15%). Overall, fibrocystic variation was detected in 58% of the cohort (35/60). Among non-puerperal mastitis, 18/27 (67%) patients existing fibrocystic variations, among puerperal mastitis, 4/24 (17%) patients existing fibrocystic variations and among other patients with different inflammation forms, 5/9 (56%) were linked with fibrocystic variations. The early complications were experienced in 12/60 (20%) patients who were treated with minimally invasive techniques. It has been confirmed by this study that ultrasound guided fine needle aspiration minimally invasive therapy along with antibiotic treatment can be an effective approach for the breast abscesses treatment in the all surgical approaches and it is a safe and feasible approach in terms of the less post-operative complications and recovery time as well as hospital stay duration.

Key Words: Breast Abscess, breast surgery, lactating mothers

Introduction:

Breast abscess is a confined assemblage of inflammatory exudates in the tissues of breasts occur common in lactating females. Breast abscesses grow most frequently when cellulitis or mastitis does not resort to treatment of antibiotics and on first exposition of breast infection. It is an infrequent issue in breastfeeding mothers with an incident rate of 0.1 % and in all lactating mothers ranges from 0.4-11 % as well as 3 % among females with antibiotic treatment mastitis. It can occur de novo also called primary and it can also develop as the complications of another ongoing illnesses such as skin infection, periductal mastitis or granulomatous lobular that is called secondary (1).

The risk factors for the breast abscess development are stress, infrequent breastfeeding, sore nipples or duct blockage caused milk stasis. Moreover, the abscess formation also caused due to various other reasons like gestational age more than 41 weeks, maternal age more than 30 years and the history of mastitis. The most common pathogen *Staphylococcus aureus* enter into breasts through cracked nipple particularly in primipara because of poor and inexperience feeding ways along with less baby attachment. It is common in under developed countries because of decreased nutrition, poor maternal hygiene, delayed antibiotics administration and poor living standard. Patient with breast abscess exhibits symptoms of swelling, pain and redness on the infected breasts. There might be malaise, associated fever, and infrequently rigors (2).

The conventional breast abscesses treatment is the surgical incision and drainage that is followed by digital septa disruption, contents evacuation with occasionally placements of surgical drains. Breast abscesses are generally identified in young lactating women while non-lactational abscesses also suspected in old aged women during the termination of reproductive years. Early diagnostics and appropriate recommendation for management are essential to avert evolution to unembellished sepsis and infection. Meanwhile, less consensus concerning best administration practices might lead to interruptions in treatment and deteriorated outcomes. The routinely treatment modalities comprise surgical incision and drainage (I & D), percutaneous aspiration and antibiotics (3).

Advancement in excellence and ultrasound accessibility are also permitting for opportune access to effective treatment including for bulky abscesses. In this study, the objective was to analyze all together diagnostic and surgical outcomes in the patients with breast abscesses treated with minimally invasive techniques.

Material and Methods:

Patients Diagnostics:

The total 60 female patients with 40 years average age with suspected breast abscesses were treated at the at the Department of Surgery of Liaquat University of Medical & Health Sciences, Jamshoro, Sindh, Pakistan. The approval of the research was taken from the ethical committee of the institution. The patients had treatment and imaging them as determined to be obligatory by surgical experts. All patients diagnosed with breast abscesses and restricted acute inflammations of the breasts between May 2019 through November 2019 identified using the Radiology Information System (RIS).

The patient information regarding current study including risk factors for breast abscesses development and related therapeutics were collected from gynecological histories. Moreover, the information retrieved from external radiological checkups, cytopathological and microbiological assays were also found. In conclusion, all patients with at least 6 months documented course of disease and case history were encompassed in current study.

Operational Procedure:

The minimally invasive treatment for breast abscesses was accomplished with the help of percutaneous drainage placement and ultrasound guided fine needle aspiration. The local anesthesia and superficial disinfection were administered earlier to 20-gauge needle and the mandarin was incorporated for aspiration of center of the abscess. The 18-gauge needle was operated for viscous contents and the cavity of abscess was flushed using saline sterile solution where aspiration was difficult. During drainage placement, ultrasound guided fine needle aspiration was accomplished followed by percutaneous insertion of an ordinary drainage catheter by prick incision.

The drainage catheter was inserted alternatively and directly as guided by ultrasound which assisted in samples aspiration. During breast abscess surgical management, the general anesthesia was administrated before doing an incision to open the abscess cavity completely. The resection was performed of a sample tissue of abscess cavity before the extensively irrigation of the cavity and then the necrotic tissue was eliminated and by inserting a long lumen drainage catheter. Post-operatively, the cavity of wound was kept opened following drainage and irrigated at consistent intervals (4).

Characteristically, the abscesses greater than 3 cm diameter were deal with ultrasound guided drainage and surgical incisions. Other clinical parameters however including localization and inflammations in surrounding phlegmonous were also considered for further treatment. The preferences of patients were taken into considerations for the final concerning treatment (5).

Results:

The average age of the 60 female patients with breast abscesses encompassed in current study was 40 years within the ranges of 14 to 82 years. They endured the forms of clinical inflammation like puerperal mastitis in 24 patients (40%), non-puerperal mastitis in 27 patients (45%) and other inflammation such as infected seromas and folliculinitis in 9 patients (15%). Overall, fibrocystic variation was detected in 58% of the cohort (35/60). Among non-puerperal mastitis, 18/27 (67%) patients existing fibrocystic variations, among puerperal mastitis, 4/24 (17%) patients existing fibrocystic variations and among other patients with different inflammation forms, 5/9 (56%) were linked with fibrocystic variations. The early complications were experienced in 12/60 (20%) patients who were treated with minimally invasive techniques. The patients underwent operative procedure as a primary treatment did not reported any early complication in contrast to those who endured with minimally invasive treatment. The patients who underwent ultrasound guided fine needle aspiration and percutaneous drainage placement reported zero post-operative complications as well.

Discussion:

The outcomes of current study confirmed that ultrasound guided fine needle aspiration therapy of breast abscesses along with antibiotics is a minimally invasive treatment approach which can substitute open surgery for the efficacious treatment and is reliable with the outcomes of other researches (6). The little incision site linked with minimally invasive therapy for lactating females with puerperal mastitis permits them to continue routine life earlier by reducing the reoccurrent possibilities of galactostasis and is allied with an optimistic psychological consequence. Meanwhile, the aspiration was used alone for the treatment of abscesses lesser than 3 cm while un-capsulated and larger abscesses characteristically mandatory the drainage catheter insertion.

Majority of the women who endures drainage placements reported to capable to get the similar benefits as provided by ultrasound guided fine needle aspiration such as better cosmetic outcomes, not any necessity for general anaesthesia, a shorter stay in hospital, and

less treatment costs overall. Furthermore, a benefit of drainage placement as compared to fine needle aspiration has the capability to evacuate rapidly bigger abscesses along with their viscous content (7). In addition, a main drawback of catheter placement comparative to aspiration is that during complex abscess developments such as multi-septate abscesses, the drainage can not approach all of the discretely present compartments and thus preventing a whole and quick drainage (8). However, this drawback can be balanced by considering that upon drainage placement, discrete abscess septa can tear during the catheter insertion process (9).

Thus, a same outcome can be achieved by using the surgical apparatuses or manual septa breaking. The outcomes of current study also specify that larger mammae cavities such as because of galactostasis or fibrocystic alteration in the existence of formerly injured breast tissues like former radiation therapy or surgeries which can promote the incidence of inflammation in the breast abscess (10). It has been confirmed by this study that ultrasound guided fine needle aspiration minimally invasive therapy along with antibiotic treatment can be an effective approach for the breast abscesses treatment in the all surgical approaches and it is a safe and feasible approach in terms of the less post-operative complications and recovery time as well as hospital stay duration.

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Roles and Contribution of Authors:

- Dr. Jabeen Atta collected the data, references and did the initial writeup
- Dr. Zubair Ahmad Yousfani as a corresponding author helped in collection of data, and also helped in introduction writing
- Dr. Khenpal Das critically review the article and made the useful changes
- Dr. Ghullamullah Rind collected the references, and helped in discussion and conclusion writing
- Dr. Amir Iqbal Memon review the article finally

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