

Management of Breast Abscesses in Jamaican Women Is There Need for a Paradigm Shift?

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ABSTRACT

A paradigm shift from operative to non-operative management of breast abscesses has occurred in surgical centres worldwide. The recent experience in managing these patients at the University Hospital of the West Indies (UHWI) was examined. Data were obtained retrospectively from docketts retrieved from the UHWI medical records department, and were analysed using the SPSS version 11.0 software package for Windows.

Seventy-seven patients with breast abscesses presented during the 66-month study period, but complete data were unavailable for seventeen cases. The mean age of the remaining sixty patients was 32 years. There was one male patient. There were no cases of bilateral disease, and the majority was right-sided. Mean white blood cell count at presentation was mildly elevated at $11.9 \times 10^9/L$, and had no relationship to method of management or length of stay. There were two cases treated with aspiration and antibiotics only. All other cases were treated with incision and drainage. Culture results were available in forty-four cases, and in 80%, Staphylococcus aureus was identified, with one case of methicillin resistant Staphylococcus aureus. The mean delay to the operating theatre was one day after presentation and the mean length of stay was 4.5 days. Seventeen patients had a 'non-cosmetic' incision.

The traditional management of breast abscess provides challenges in terms of delay to the operating theatre and prolonged hospital stays. There is increased expense, as well as loss of productive work hours, associated with this line of treatment. Non-operative management has not traditionally been undertaken in our institution, but it is documented elsewhere to be safe, practical, and results in improved cosmetic outcomes. Prospective protocol-based trials are necessary to identify the patients most suitable for this line of management in a setting with limited resources.

Keywords: Abscesses, aspiration, breast, incision, management

Tratamiento de Abscesos Mamarios en Mujeres Jamaicanas. ¿Es Necesario un Cambio de Paradigma?

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RESUMEN

Un cambio de paradigma de tratamiento operatorio a tratamiento no operatorio de los abscesos mamarios, se ha producido en los centros quirúrgicos a nivel mundial. Se examinó la experiencia reciente en el tratamiento de estos pacientes en el Hospital Universitario de West Indies (HUWI). Se obtuvieron datos tomados retrospectivamente de listas de casos archivados en el Departamento de Historias Clínicas de HUWI, los cuales fueron analizados usando la versión 11.0 del software SPSS para Windows. Durante el período de 66 meses de estudio, se presentaron setenta y siete pacientes con abscesos de mama, pero en diecisiete casos no pudo disponerse de todos los datos. La edad promedio de los otros sesenta pacientes fue 32 años. Hubo un paciente varón. No hubo ningún caso de enfermedad bilateral, y la mayoría se trataba del lado derecho. El conteo promedio de leucocitos a la hora de la presentación fue ligeramente elevado en $11.9 \times 10^9/L$, y no guardaba ninguna relación con el método de tratamiento o duración de la estancia. Hubo dos casos tratados con aspiración y anti-

bióticos solamente. Todos los otros casos se trataron con incisión y drenaje. Los resultados del cultivo se hallaban disponibles en cuarenta y cuatro casos, y en el 80% se identificó el estafilococo dorado, con un caso de Staphylococcus aureus resistente a la meticilina. La demora promedio para entrar al salón de operaciones fue de un día después de la presentación y la duración promedio de estancia eran 4.5 días. Diecisiete pacientes tenían una incisión 'no cosmética'. El tratamiento tradicional del absceso mamario presenta retos en términos de demora para ingresar al salón de operaciones y estadía prolongada en el hospital. Esta línea de tratamiento conlleva un aumento de los gastos así como pérdida de horas de trabajo productivo. El tratamiento no operatorio no ha sido tradicionalmente practicado en nuestra institución, pero sí en otras partes donde se documenta que es seguro, práctico, y produce mejores resultados cosméticos. Se requieren ensayos protocolares prospectivos a fin de identificar a los pacientes más convenientes para esta línea de tratamiento en un contexto de recursos limitados.

Palabras claves: Abscesos, aspiración, mama, incisión, tratamiento

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INTRODUCTION

Breast abscesses are defined as localized collections of pus under the skin in breast tissue. They occur in both lactating and non-lactating breasts. The classic treatment has been to prescribe a course of antibiotics, and if this is not successful, then the abscess is treated under general anaesthesia by incision and drainage over the point of maximal fluctuance. The abscess cavity is left open, and packed with gauze which is changed daily until granulation and wound closure occurs, a process that can take up to six weeks (1). Not only is there pain of increasing severity during the development of these abscesses, in developing countries like Jamaica there are issues with access to operating theatre time in an emergency situation, and the cosmetic results are often disappointing due to scar formation. Recurrence rates with this approach have been reported to be as high as 38% (2). While the management of these abscesses can be a difficult clinical problem, there are several reports in the international literature of successful non-operative management of these patients aided by the use of ultrasound guided percutaneous aspiration (3–8).

Our series examines the recent experience and management of breast abscesses at the University Hospital of the West Indies (UHWI), discusses the options for treatment and makes recommendations based on current international practice regarding the most appropriate guidelines for the care of these patients.

SUBJECTS AND METHODS

Over a 66-month period, records of patients with breast abscesses attending the UHWI were identified using ICD-10 codes, and were subjected to a retrospective review. In addition to demographic information about each patient, data were collected on the time to operative intervention, length of hospital stay, white blood cell (WBC) count on admission and type of incision used. A 'cosmetic' incision was defined as one that was circumareolar or periareolar, whilst a 'non-cosmetic' incision was defined as one in which a transverse, or radial incision was used. Information was also recorded

on the result of the abscess culture, antibiotic usage and biopsy findings. Data were entered in a Microsoft Excel™ spreadsheet then analysed using SPSS version 11.0 for Windows.

RESULTS

During the study period, 77 patients were identified. Sixty cases were analysed as data were incomplete in 17. The mean age was 32 years (standard deviation \pm 12.8) with a range of 8–70 years. One male patient presented during the study period. Forty-six patients (76.7%) were referred from the postpartum ward. Where data were available (24), one third of patients were lactating at the time of admission. There were no cases of bilateral disease with the majority occurring on the right (61.7%).

The mean delay to operative intervention was just under 1 day (range 0–3 days) and the mean hospital stay was 4.4 days (range 1–37 days). One patient had an unusually long and complicated hospital stay of 37 days, and required repeated operations for recurrent abscesses. If this patient is removed from the analysis, the mean length of stay would be 3.4 days. The mean WBC count was 11.9 and this bore no relationship to treatment modality or length of hospital stay.

Culture data were available in 46 patients (76.7%). Amoxicillin/clavulanate was prescribed alone in 55% and in combination with other antibiotics in 88.3%. *Staphylococcus aureus* was identified as the sole organism in 41%, and was also identified in over 70% of polymicrobial infections. Eighty per cent of the organisms were sensitive to amoxicillin/clavulanate. There was one case of methicillin resistant *Staphylococcus aureus* (MRSA) that required vancomycin for eradication.

In six patients (10.0%), there was no information about the type of incision. Seventeen patients (32.7%) of the remaining 52 had 'non-cosmetic incisions'. Two patients had aspiration under ultrasound guidance along with antibiotic therapy and both resolved without the need for incision and drainage. One of these patients was discharged on the same

day, the other patient spent a single day in hospital. The single male patient developed a breast abscess after trauma. His abscess was treated by incision and drainage under local anaesthesia in the emergency room.

In over 50% of cases, no biopsy was performed. Of the twenty-seven patients who had some pathological investigation during the incision and drainage, biopsy was performed on twenty-four and fine needle aspiration in three. Pathological examination revealed granulomatous mastitis in two cases, duct ectasia in seven cases and acute inflammatory changes in eighteen. There were no cases of malignancy.

DISCUSSION

Breast abscesses, also known as acute bacterial mastitis, is a recognized complication of breast feeding but also occurs in non-lactating women and in men. The results of our study and others indicates that abscesses now occur more frequently in non-lactating women (5, 9, 10), perhaps due to improvements in postnatal care and early treatment of mastitis (3, 10). The higher mean age of 32 years is therefore not surprising in this context.

Acute bacterial mastitis in non-lactating women may be less readily recognized as it is less common and presents with fever and increasing pain without marked overlying tenderness until abscess formation occurs. The traditional management of a breast abscess is to await the appearance of obvious clinical signs of an abscess. Antibiotics are administered and under general anaesthesia an incision is made over the point of maximal fluctuance, followed by digital disruption of abscess septae. The abscess cavity is then left open, and packed with gauze which is changed daily until granulation and wound closure occurs, a process that can take up to six weeks. This process unfortunately leaves the patient in increasing pain for an unnecessarily long period, and analgesics and antibiotics are no substitute for the prompt relief of the pus under pressure. In addition, in our study, instead of the use of a cosmetic circumareolar incision, 32.7% of the patients had non-cosmetic incisions, an unacceptable rate in the present era of minimal access surgery with its emphasis on cosmesis.

The requirement for general anaesthesia is a significant hurdle, particularly in the setting of a developing country where operating time and operating theatre space is limited, and this may mean a further, significant delay as shown by the mean time to operation of 22 hours in the present study.

Haematological studies on our patients usually included white blood cell counts but these were only mildly elevated and of little help. Of more importance is the finding in a recent review article that about 75% of non-lactating women who develop a breast abscess either have diabetes mellitus on presentation or developed it within five years (11). This suggests that a fasting blood sugar should be included in the laboratory investigations of these patients and that those with normal results should be advised of their risk of developing diabetes.

Staphylococcus aureus was the organism most frequently identified in the patients but there was one case of MRSA. Although anaerobic cultures were not performed, in most cases the combination of amoxicillin/ clavulanate was prescribed. A recent international publication supports this recommendation for empiric therapy (12).

In this present series, there was no carcinoma detected in the patients undergoing biopsy, but there was no clear trend or guideline followed in the study population. The association between breast carcinoma and breast abscesses is thought to be coincidental by some authors and is rarely observed (4, 9, 13). One of the largest published series of 206 patients documented a 4.37% incidence (14). Review of the literature revealed no clear guidelines regarding the need for biopsy apart from recommendations that when a mass persists after drainage and antibiotics, biopsy is appropriate at that point (4). There must therefore be follow-up of all patients to resolution.

As the UHWI itself is heavily government subsidized, realistic costing for these patients approximates more closely to charges of the private wing attached to the UHWI. For five days in-hospital care including operating theatre charges, the mean hospital charge would be US \$1200.00 (excluding disposables) per patient, with the minimum of US \$800.00 for the simplest of cases. Costs for daily dressings can be estimated at the visit, charges of approximately US \$15.00 per visit. A five day stay in hospital, coupled with the recovery time delay of return to work and time lost from gainful employment all need to be factored into the calculations for these patients.

There is a simpler, more cost effective and cosmetically acceptable solution which could be the therapeutic equivalent or superior modality. Percutaneous aspiration of pus was first suggested as early as 1923, but like most novel techniques was regarded as heresy in its time. Since that time there have been reports of successful aspiration under ultrasonic guidance, with upwards of 82% success rates (1, 3–5, 7, 9, 10, 13, 15, 16). Aspiration without ultrasonography has also had reasonable success rates (17). There seems to be the consensus that aspiration is appropriate for abscesses up to 3 cm (7), while others advocate attempts regardless of size (18). Post-aspiration catheter drainage may be used in selected patients depending on the size of the abscess (4, 5, 15). Surgical therapy is reserved for those patients who fail aspiration, and even in these patients, successful outpatient management has been reported (1). Oral antibiotics are usually administered in therapeutic doses and duration. Fortunately, the increasing international incidence of MRSA associated breast abscesses has not led to a decrease in the success rates of percutaneous aspiration (19).

Since only two patients in the current series were treated by ultrasound guided aspiration and oral antibiotics, there is obvious need for a prospective protocol based randomized local study to examine the advantages and disadvantages of ultrasound guided aspiration of abscesses in

the non-lactating breast compared with incision and drainage. The potential advantages may include: access to care within hours and prompt relief of pain, fewer admissions, significant improvement in the cosmetic outcome and cost savings for both the institution and the patient. With the advent of minimally invasive procedures and its clearly documented benefits, management of breast abscesses needs to undergo a paradigm shift especially in a setting of limited resources.

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