Unconventional Treatment of Breast Abscess: Case Report

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Abstract
We describe the case of two lactating mothers with breast abscesses who refused invasive interventions. In the first case, a mother developed a 10 mm abscess and refused needle aspiration. Under ultrasonography (US) follow-up she was treated with antibiotics until the abscess disappeared on the US scan, while fully breastfeeding. In the second case, a woman with a large abscess refused invasive interventions. We followed the recommendations in case of breast Adenitis, first to nurse the baby from the affected breast and then squeezing regularly the lump to drain the pus. In this study, we demonstrate that this procedure is also beneficial in the case of breast abscesses. Under antibiotic treatment, the abscess was completely resolved on the US scan after 23 days. In conclusion, when invasive intervention is refused in the case of breast abscess, successful treatment can be applied by using effective breast drainage, US follow-up, and aggressive antibiotic therapy.

Keywords: abscess; breast; breastfeeding; treatment; mother

Introduction
A breast abscess is a well-defined area of the breast, which appears hard, red, and tender,1 and includes a localized collection of pus and stagnant breastmilk,2 spanning an encapsulated infected breast area.3 The abscess occurs in about 3% of women with mastitis4 because of the latter’s delayed or inadequate treatment.2 In some women, it can also occur without being preceded by mastitis, in case of excessive milk stasis and infection in the breast. Most abscesses develop just under the skin,5,6 which often opens spontaneously to the skin (thus being cured without specific treatment).5,7 They can also be localized in the retro areolar region due to the convergence of ducts and milk stasis.2 Clinically it is difficult to detect and distinguish the breast abscess from mastitis,9 ultrasonography (US) being the best imaging option for detecting abscessual lesions.8

Traditional treatment with surgical incision and drainage is no longer the recommended treatment.9,10 This may only be necessary if the abscess is very large or if there are multiple abscesses present.1 The

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first-line treatment is US-guided percutaneous drainage, with US follow-up to monitor treatment. US percutaneous guided management is effective even for abscesses >5 cm and allows continued breastfeeding. In case of small abscesses, aspiration with a needle and syringe is recommended.

Some authors obtained decreased redness, softening of the breasts, decreased pain, and increased milk removal after treatment with US continuous frequency of 1 MHz, 2 W/cm² for 10 minutes; however, the abscesses lingered on. Treatment with the appropriate antibiotic allows for the continuation of breastfeeding although antibiotics are unable to reach the resulting pus-filled cavity (drainage is mandatory). A review concluded that “there is insufficient evidence to determine whether an antibiotic should be routinely added to women undergoing incision and drainage for lactational breast abscesses.”

Objective
Case description of two mothers with breast abscess who refused invasive interventions, successfully treated by breast emptying and antibiotics.

History
Case I
A Gesta 2 Para 2 mother developed a staphylococcal dermatitis together with her infant 7 days after delivery. The diagnosis was considered based on the positive culture for *Staphylococcus aureus* from the pustules. She presented a well-defined lump just under the skin in the right breast, 11 days postpartum (Fig. 1). US scan revealed a 10 mm abscess. She refused needle aspiration and was treated with oral amoxicillin clavulanic acid 1 g/day for 21 days and an anti-inflammatory agent for 5 days, under US follow-up, while fully breastfeeding. Owing to the presence of staphylococcal dermatitis, no milk culture was performed. After 7 days of treatment, the redness disappeared, but the lump persisted until 14 days of treatment. Because the US scan was possible only 7 days after the clinical resolution of the lump, the mother decided to continue the antibiotic treatment for another 7 days. The abscess disappeared completely on the US scan and no recurrence occurred.

Case II
A Para 1, Gesta 1 woman developed a large abscess at 6 weeks postpartum, deep in her left breast. She presented at our clinic after a week of evolution, with the sensation of a large mass in the sternum area, somewhere inside, associated with a fever, chills, and a general feeling of unwellness. The US image showed a heterogeneous irregular collection that measured a total volume of ~120 mL.

Because of the posterior localization of the abscess, the consulted surgeons noticed that breast surgery will compromise breastfeeding. The mother, therefore, refused invasive interventions.

We followed the recommendations in case of breast adenitis (infection of milk ducts): first to nurse the baby from the affected breast to empty it as much as possible, because “nursing dilates the mammary blood vessels improving the flow of blood to the area” and “the flow of milk... helps to clear milk ducts of infective organism” and then to strip the milk ducts, to drain the pus and to restore milk flow and facilitate the effectiveness of antibiotics concentrated in milk.

The mother followed our protocol: (1) At first, the baby was suckling from the affected breast, because there “is no documented evidence of harm to the infant from nursing at the affected breast.” Frequent nursing from the affected breast was, therefore, encouraged. (2) After breastfeeding, the lump was regularly squeezed to drain the pus, until only milk was expressed, stripping after every feeding. (3) The mother was treated with oral amoxicillin+clavulanic acid (according to milk culture, which was positive for methicillin-resistant *Staphylococcus aureus*), 1 g/day for 17 days, and anti-inflammatory medication with oral and topical administration, under US follow-up.

![FIG. 1. Superficial breast abscess case I.](image-url)
Procedure. (1) The breast is squeezed distal to the abscess between the thumb and the rib cage, then maintaining the pressure while the thumb is moving up to the areola; (2) maintaining downward pressure, the index is placed on the opposite side of the areola, the periphery of the areola is squeezed between the thumb and index; (3) the pus is squeezed out between the thumb and index finger.

We repeated the same procedure on the other sides of the lump, rotating fingers around the lump. The procedure is painful but, as the squeezing of the pus progresses, the pain decreases.3 After 8 days of treatment, a thinner yellow-green fluid was expressed from the breast and the drain of the pus became easier. There was also a clinical improvement: inflammatory symptoms dissipated, the intensity of the pain during breast squeezing decreased, and fever decreased. Follow-up US image showed a decrease in the size of the collection.

After 17 days of treatment the expressed milk became clearer, the mother's general condition was good, and she decided to discontinue antibiotic therapy. She continued hand expressing until the US examination. The abscess was completely resolved on a US scan after 23 days.

At follow-up, no recurrence was observed, the mother breastfed for 2 years, and breastfed the second child as well, without any problem.

Discussion
Because, in the case of breast abscess, breastfeeding cessation has a high rate (41%),15 our main goal in the two presented cases was to maintain lactation. An abscess is generally considered a surgical emergency, owing to the risk of internal rupture and sepsis.5 In our cases, the mothers refused any instrumental interventions. We, therefore, searched for an alternative treatment, under serious clinical and US monitoring, to avoid putting their health in danger.

Breast abscesses rarely resolve with antibiotics alone and abscesses generally require drainage in conjunction with antibiotics.16 In our first case, we obtained the resolution of the abscess, without drainage, only with prolonged antibiotic therapy, using a medium dose (1 g/day). This is perhaps because the abscess was small and superficial.

In case of breast abscess, a proper US diagnosis by an experienced radiologist is needed. In our second case differentiation of breast abscess from breast phlegmon (extensive complex fluid collection, interdigitating between edematous and hyperemic parenchyma17) was clinically impossible, US examination becoming mandatory. Importantly, the treatment of breast abscess and breast phlegmon is different. Extensive (~1 month) antibiotic therapy (with or without drainage catheter) and prolonged US follow-up (3 months) are indicated in the case of the phlegmon.17

In our second case, the success was due to a motivated mother, keeping the breast well drained, and proper antibiotic therapy until the abscess disappeared at the US scan. Maintaining the flow of milk in the ducts (cleared from pus) improved the antibiotic effect and cleared the breast of bacteria.3 Although a previous study reported this treatment in the case of mastitis (“adenitis”),3 we succeeded to demonstrate that it is also beneficial in case of breast abscess, as diagnosed by US scan.

Conclusion
In breast abscess, in the case of invasive intervention refusal, successful treatment could be obtained with effective breast drainage, US follow-up, and aggressive antibiotic therapy.

Ethical Approval
The protocol to study human subjects was approved by the Local Ethics Committee (approval no. 5/C E/10.04. 2014).

Author Disclosure Statement
No competing financial interests exist.

Funding Information
No funding was received for this article.

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Cite this article as: Muresan M, Chiorean A (2022) Unconventional treatment of breast abscess: case report, Women’s Health Reports 3:1, 194–197, DOI: 10.1089/whr.2021.0087.

Abbreviation Used
US = ultrasonography