

ULTRASOUND-GUIDED MANAGEMENT OF LACTATIONAL MASTITIS COMPLICATED WITH BREAST ABSCESS – CASE REPORT

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Abstract: Lactational mastitis often occurs in younger primiparous women. Most cases occur between 3 and 8 weeks postpartum. If mastitis results in the formation of a breast abscess, surgical drainage is most commonly performed. We report a case of a large breast abscess in a primiparous 22-year-old woman, which presented 6 weeks postpartum. Catheter drainage was performed, with local antibiotics injection, and systemic antibiotic therapy was administered. Two weeks later, the abscess cavity is gone at which time the catheter was removed. That procedure in the treatment of breast abscess prevents unnecessary surgical treatment.

Introduction

Mastitis is the inflammation of the breast tissue. It is the clinical term for a breast inflammatory condition. Breast inflammatory conditions are fairly common during the childbearing period and are usually associated with breast feeding. Accordingly mastitis may be broadly classified clinically into lactational (puerperal) mastitis or nonlactational (nonpuerperal) mastitis. Inflammatory has symptoms very similar to mastitis and must be ruled out [1,2]. Nonlactational mastitis is similar to it but it presents in a non lactating adult as an evolution of periductal mastitis, a complication in diabetic patients or in patients on cortisone or immunosuppressive therapy. It can also be secondary to an abrasion of skin or areola [3].

Lactational mastitis is pathology typical of the lactation period. Mastitis is a complication most often encountered in primiparous women and develops in 1%–24% of breast-feeding women [4]. Breast abscesses develop as a complication of mastitis in 5%–11% of cases, generally in the first 12 weeks after birth or at the time of weaning, and are referred to as puerperal or lactational abscesses. They are caused by bacteria. Most often staphylococcus aureus that enter via a small skin laceration and proliferate in the stagnant lactiferous ducts [5, 6]. Breast abscesses can be classified according to clinical presentation, location, or pathogenic organism. Most abscesses result from secondary bacterial infection from skin contamination. Although *Staphylococcus aureus* is by far the main pathogen, other microorganisms can be encountered, for example *Staphylococcus epidermidis*, *Streptococcus pyogenes*, and anaerobes such as *Peptostreptococcus* and *Bacteroides*. A sterile culture with absent growth of bacteria are reported in 21%–45% of cultures, although this may be a false-negative finding due to previous treatment with antibiotics [7, 8, and 9]. Common clinical symptoms of mastitis include pain, redness, and heat, while fever is infrequently encountered. It may be difficult for the clinician to differentiate an abscess from mastitis, especially if the collection is small or situated deep in the breast. When there is clinical suspicion of an abscess, for example in the setting of a palpable mass or a localized area of

tenderness, the woman should be referred for ultrasound (US) evaluation. [10, 11]

At ultrasound (US), mastitis appears as an ill-defined area of altered echotexture with increased echogenicity in the infiltrated and inflamed fat lobules, hypoechoic areas in the glandular parenchyma, and associated mild skin thickening with occasional distended lymphatic vessels. Inflammatory axillary lymph nodes may also be encountered and demonstrate mild to moderate circumferential cortical thickening and increased flow at Doppler US. The diagnosis of abscess requires identification of a hypoechoic collection of variable shape and size, multiloculated in most cases, often with a thick echogenic periphery where increased vascular flow is identified. There should be no vascularity in the collection, and acoustic enhancement is present due to fluid content [11, 12, and 13].

Ultrasound-guided aspiration can be accomplished to obtain material for culture. As surgery runs the risk of transecting ducts and causing even secondary abscesses, ultrasound drainage may be safer to speed treatment [14]. Mammography should not be performed in diagnosing acute abscess in lactating women because mammography may be difficult to perform because of pain. Likewise, changes that are caused by inflammation may result in increased radiographic density, which can mask focal lesions [15].

Case Report

A 22-year-old woman who noticed reddish discoloration, hotness and swelling associated with severe pain of the right breast while breast-feeding her infant. She was referred for ultrasound (US) evaluation.

US examination of the right breast (Figure 1) revealed a large well-defined complicated cystic lesion - heterogeneous collection- occupying the medial half of the right breast, of lobulated margin with mobile internal echoes and casting posterior acoustic enhancement. It measured 9.0 x 5.5cm. Thickening of the overlying skin as well as edematous fat lobules are seen.



Figure 1: Lactational abscess: A well-defined cystic lesion with internal echoes. It has a thick wall and showing acoustic enhancement.

US examination of the right axilla (Figure 2) revealed enlarged lymph nodes of benign nature oval in shape with preserved echogenic fatty hilum. It measured 2.3 x 1.0 cm.

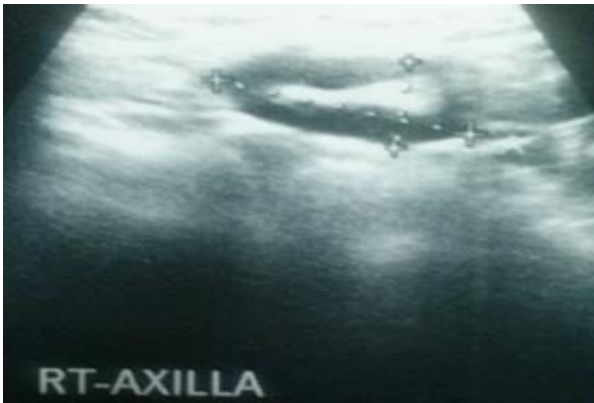


Figure 2: Inflammatory axillary lymph node: oval in shape with preserved echogenic fatty hilum.

Catheter drainage (Figure 3) was performed because the size of the abscess is larger than 3 cm. Local anesthetic was administered to the patient and a nick was made in the skin to facilitate catheter insertion. A pig-tail catheter, 8 French was placed by using the trocar technique. The catheter was irrigated several times by sterile saline. The patient was instructed to irrigate the catheter three times a day at home. Local antibiotic (augmentin) was injected. The patient was prescribed systemic antibiotic (augmentin) for one week and instructed to return for reevaluation. Follow up US performed one week later showed clinical improvement of the abscess and US image shows a decrease in the size of the collection which now measures 4.3x2.1 cm. Repeat irrigation by sterile saline and local antibiotic were performed. Additional course of antibiotic was prescribed and the patient was instructed to return one week later.



Figure 3: US-guided catheter drainage procedure: A pigtail catheter placed in a big abscess

At evaluation one week later complete resolution was observed at clinical and ultrasound examination (Figure 4).

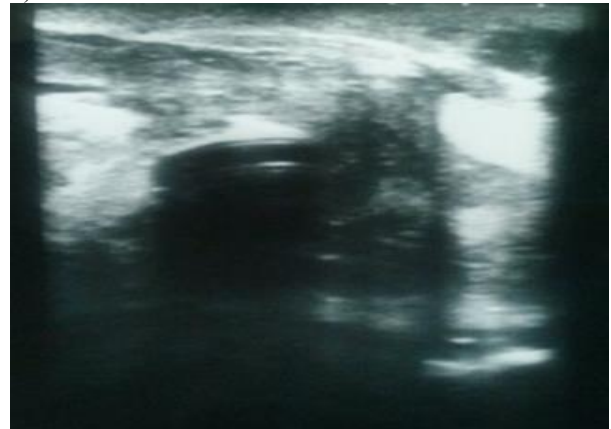


Figure 4: US-guided catheter drainage procedure: complete resolution observed

Discussion

US is the first-line investigation of the breast abscess because it is relatively painless, allows regular breast evaluations during the course of therapy, and provides guidance for percutaneous drainage. A high-frequency linear probe (7.5–14 MHz) is used, with color Doppler imaging routinely added to the evaluation [12].

Up until the early 1990s, surgical incision and drainage was the recommended treatment for breast abscesses. It was generally performed with the patient under general anesthesia, with the added procedure of excision of lactiferous ducts (microdochectomy) occasionally performed at the same time. Complications associated with these surgical interventions were not rare, with cutaneous fistulas developing in 5%–12% of patients and abscess recurrences in 10%–38% of cases [16].

US-guided percutaneous needle aspiration and irrigation is a successful method for treatment of breast abscesses. This method is more successful in abscesses with a maximum dimension smaller than 3 cm and should be preferred to the surgical drainage [17,18,19].

Catheter drainage is performed when the size of the abscesses is larger than 3 cm. It is done using a percutaneous catheter placement. After generous local

anesthetic, a pig-tail catheter, 6-8 French, is placed using the Trocar technique. The catheter is irrigated several times until the return aspirate is clear. The patient is instructed to irrigate the catheter three times a day at home. She returns for follow-up visits every 2-3 days of the breast abscesses. The injection of an adequate amount of the antibiotic has a mechanical utility (to disrupt septa) and a chemotherapeutic efficacy.

The treatment is repeated weekly until complete resolution is observed at clinical and ultrasound examination [16].

Conclusion:

US-guided drainage is now widely accepted as first line treatment. The breast abscesses are treated with US-guided drainage, by needle or catheter under local anaesthesia [21].

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