

# Bilateral Antepartum Mastitis

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## Abstract

Antepartum mastitis is a rare condition, whereas postpartum or lactation mastitis is a common problem. This report introduces a case of complicated bilateral antepartum mastitis, which was treated successfully by drain insertion and antibiotic therapy. The patient was a 23-year-old woman in the 23<sup>rd</sup> week of her first pregnancy. Her chief complaint was progressive swelling, redness and radicular pain in both breasts, which had been started gradually from the 18<sup>th</sup> week of pregnancy. The patient was admitted to hospital, and received oral and intravenous antibiotics empirically, which was not effective. The patient was treated by drainage and oral antibiotic therapy. Based on the approaches employed and the outcomes achieved it is suggested that early surgical insertion in the presence of fluid collection in antepartum mastitis will shorten hospitalization and course of intravenous antibiotic therapy.

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**Keywords** • Mastitis • drainage • anti-bacterial agents • antepartum

## Introduction

Mastitis is an inflammatory condition of the breast, which may or may not be accompanied by infection.<sup>1</sup> Postpartum or lactation mastitis in breast feeding women is a common problem. The incidence of this problem is 2% to 33%.<sup>2</sup> The occurrence of mastitis in antepartum patients is named antepartum mastitis. To our knowledge Wong and colleagues were the first to report the first two cases of antepartum mastitis in 1986.<sup>3</sup> Thereafter, there have been a few reports about antepartum mastitis.<sup>4,5</sup> Mastitis has some severe complications such as abscess formation, if inadequately treated. It also noticeably influences the mothers' and neonates' lives, and has a large amount of costs.<sup>1</sup> Therefore, early diagnosis and treatment of the disease is very important. Unfortunately our knowledge about antepartum mastitis is not sufficient. The present case report introduces a case of complicated bilateral antepartum mastitis, which was well treated using surgical and medical therapies.

## Case Description

The patient was a 23-year-old housewife living in a town. She was in the 23<sup>rd</sup> week of her first pregnancy. Her chief complaint was progressive swelling, redness and radicular pain in both breasts, which had been started gradually from the 18<sup>th</sup> week of pregnancy. The patient had been admitted in another hospital because of this problem, and according to her summary sheet she had received oral and intravenous antibiotics empirically (Cephazolin Amp. 1 gr/Q8h/IV and after that Cephalexin Cap. 500 mg /Q6h/ PO), which was not effective. No other significant

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point was found in her past medical history.

She was admitted in the place of the study (Moradi Hospital, Rafsanjan, Kerman, Iran) with vital signs including respiratory rate 15/min, oral temperature 36.5°C, blood pressure 100/60 mmHg, and pulse rate 70 beats/min. Physical examination revealed severe erythema, swelling, warmth, mottling and tenderness without any discharge or scratch sign on both breasts (figure 1). No other clinical sign was found in the examination. Uterine fundus was palpated, and was compatible to pregnancy age without tenderness however, other physical examination was normal. Primary laboratory tests showed a leukocyte count of 10100/  $\mu$ l with 52% neutrophils, 45% lymphocytes, 1% monocytes and 2% eosinophil. The hematocrit was 33%, and the hemoglobin was 11 g/dl. The platelet count was 180000/ $\mu$ l. The chemistry and electrolyte values were normal. Blood culture after 48 hours was negative. Erythrocyte Sedimentation Rate (ESR) was 36 min. Qualitative C-Reactive Protein (CRP) test was negative. Hepatitis B (HBs) Ag was Non reactive. In sonography, a unique breech fetus with normal movements and heart rate was seen. The placenta was posterior, and amniotic fluid volume was normal. Estimated pregnancy age was 23 weeks and 2 days. Breast sonography showed a diffuse free fluid in the parenchyma of both breast. The dilation of milk duct and a collection of fluid were observed in inferiomedial zone of left breast. The patient was admitted to the hospital with primary diagnosis of antepartum bilateral mastitis. Breast Fine Needle Aspiration (FNA) was done, and samples were sent to laboratory. The results of culturing were negative. Considering the available literatures,<sup>6</sup> and endemicity of brucellosis in Iran, Wright test for brucellosis was done, and the titer was 1/80.



**Figure 1:** The patient's breasts before drain insertion. Erythema, swelling and mottling without any discharge or scratch sign can be seen on both breasts.

The patient was also assessed for other possible causes and predisposing factors including intravenous drug abuse, namely skin popping via dilated mammary veins, physical sexual contact such as rough sexual contact, cigarette or other burns and human bites, dermatologic conditions such as pruritis, fungal infection, eczema, pruritic urticarial papules and plaques of pregnancy and cholestasis of pregnancy, granulomatous diseases including tuberculosis, actinomycosis and sarcoidosis, inflammatory breast carcinoma, and milk (or colostrums) stasis including idiopathic and supernumerary or axillary breast tissue. Intravenous antibiotic Piperacillin-Tazobactam 4.5 gram Q8h started. Forty eight hours after admission, the new complaint of the patient was milky-serous discharge from left breast. A sample of discharge was evaluated using gram staining, but no microorganism was observed. Due to the establishment of fluid collection by sonography and according to available literatures,<sup>4,5</sup> surgical drainage and drain insertion was done for the patient (figure 2). A sample of breast tissue was sent to laboratory for culture and pathology examination. No microorganism was grown after 48 hours, and the pathology report indicated the existence of inflammation. A period of drainage for 5 days along with changing the antibiotic to Dicloxacilline Cap (500mg Q6h PO) was ordered. Suitable clinical results including decreasing of the breast size, redness, indurations and congestion were obtained. She vaginally delivered in the 39<sup>th</sup> weeks of pregnancy, and the neonate was healthy. The patient had no a problem in 6 months after delivery that we followed.



**Figure 2:** The patient's breasts after surgical drainage and drain insertion.

## Discussion

Antepartum mastitis is a rare condition, and the knowledge about it is limited. Wong and colleagues in 1986 reported two cases of

mastitis occurring at 32<sup>nd</sup> and 34<sup>th</sup> weeks of gestation. They suggested that early aggressive therapy with parenteral antibiotics, as used in their cases, maximized breast tissue conservation and function, avoided the development of breast abscesses, and reduced both maternal and fetal morbidities.<sup>3</sup>

In a subsequent report by Levitin and colleagues in 1995,<sup>4</sup> the patient was a 14-year-old woman at 29<sup>th</sup> week of gestation with her symptoms and examinations consistent with bilateral mastitis that had worsened over 2 months. She had evidence of systemic infection. *Staphylococcus aureus* grew in breast discharge culture. She was treated with nafcillin (2 g Q 4 h), metronidazole (500 mg Q 6 h), and aggressive local care with hot soaks and twice daily wet-to-dry dressing changes. She was discharged 7 days later and was assigned to receive oral dicloxacillin (500 mg Q 6 h) and local breast care for 3 weeks, after which she gradually improved. The report,<sup>4</sup> suggested placing a drain if an abscess is diagnosed. In another case report,<sup>5</sup> by Kuo and colleagues in 2004, the patient was a 24-year-old primigravid woman at 36<sup>th</sup> week of pregnancy with mastitis, who had been treated with 25 mg cephalexin monohydrate for 7 days. In initial wound culture, *Staphylococcus aureus* grew. Two weeks later, the superior medial quadrant of the right breast developed abscesses. The patient received surgical drainage after vaginal delivery of a male infant. She was discharged after being hospitalized for 5 days with an open cavity packed with gauze. The possible mechanism causing the mastitis was a bite on the right breast by her husband.<sup>5</sup>

Breast abscess is the most common complication of mastitis. It is estimated that 11% of women with mastitis develop an abscess in breast.<sup>7-10</sup> It can be prevented by early treatment of mastitis. The diagnosis of an abscess can be confirmed by ultrasonography, and it should be treated with surgical drainage or needle aspiration.<sup>7</sup> In the present case, the drain was placed according to the sonography report. After drain placement, the patient received antibiotic empirically (Dicloxacilline Cap 500 mg Q6 h PO) because the common pathogen of such cases has been reported to be *Staphylococcus aureus*.<sup>4,5</sup> However, contrary to previous reports, the presence of the bacterium wasn't proved by gram staining, FNA and culture. The ability to demonstrate the presence of the microorganism might be due to previous treatment of the patient with antibiotics on previous admissions. Nevertheless, a negative

culture do not rule out mastitis,<sup>11</sup> which may or may not be accompanied by infection.<sup>1</sup>

Primiparous women appear to be at a greater risk for the development of breast abscess during lactation than multiparous women<sup>12</sup> but there is no information available about the risk in cases of antepartum mastitis. The use of new diagnostic techniques in microbiology like Polymerase Chain Reaction (PCR), which was not available at the hospital, can be useful to find the microorganism. In addition, we excluded the inflammatory breast carcinoma by sending a sample of breast tissue to pathology laboratory.

## Conclusion

From the approaches employed to diagnose and treat the case it might be possible to suggest that early surgical insertion in presence of fluid collection in antepartum mastitis is associated with a better outcome. This will shorten hospitalization period, and the course of intravenous antibiotic therapy. As World Health Organization has mentioned, mothers need to know how to recognize early signs of mastitis, milk stasis, blocked ducts, and what they can do at home to treat them and to prevent the condition from becoming worse.<sup>1</sup>

**Conflict of Interest:** None declared

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