

TEACHING FILES (GRAND ROUNDS)

UNILATERAL BREAST MASS IN A NEWBORN

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ARTICLE HISTORY

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Clinical Problem:

A female full-term newborn, with 26 days of age, was brought to the Emergency Department for edema and right nipple redness with a 2-day evolution; the mother reported discomfort since that day. Pregnancy and delivery were uneventful. No fever, nipple exudate or associated skin lesions were reported.

On physical examination, nipple swelling was observed on the right with associated erythema and no apparent fluctuation (Figure 1). The remaining physical exam was normal. The laboratory tests results were unremarkable and the peripheral blood culture was sterile.

Figure 1. Right breast with edema and redness on admission to the Emergency Department.



What is the diagnosis?

Discussion:

The patient was diagnosed with neonatal mastitis and started on antibiotic treatment (intravenous flucloxacillin 150 mg/kg/day). On the third day of hospitalization, the inflammatory signs worsened and nipple peeling was noted. A breast ultrasound was performed and revealed a hypoechoic area with a rounded morphology of about 15 mm, consistent with

a breast abscess, and surgical drainage was performed. The microbiological analysis of the drained pus revealed a methicillin-susceptible *Staphylococcus aureus*.

It was decided to perform an antibiotic course of 14 days and the patient was discharged with complete symptom resolution.

In this case, despite the early administration of parenteral antibiotics, it was not possible to prevent an abscess formation and consequent surgical drainage.¹

Mastitis is an inflammatory process of the breast, which may or may not be accompanied by infection.¹

Clinical manifestations include edema, flushing, swelling, and tension in the affected breast.^{1,2} Most cases are unilateral and localized. More than one-half of infants develop abscesses.³ The most frequent agent is *Staphylococcus aureus* followed by gram negative, anaerobic bacteria and group B *Streptococcus*. During the first 2 weeks of life, it occurs with equal frequency in males and females. After that, it is more common in girls.^{2,3} It is important to differentiate neonatal mastitis and neonatal breast enlargement which is a common and benign hormone-related condition, in neonatal period that usually occurs in early weeks of life, and resolves within a few weeks.⁴

Diagnosis is essentially clinical, being important the additional assessment of the general state and association of systemic manifestations to assess the severity of the infection, the need for a broad diagnostic approach and therapeutic guidance.³ Analytically, complete blood count with differential and systemic inflammatory markers to determine the need of additional cultural tests (urine culture and lumbar puncture).³ Blood culture and culture of nipple drainage (spontaneous or by aspiration/surgical incision of an abscess) for etiological diagnosis and subsequent adequacy of antimicrobial therapy.³ Breast ultrasonography is used if clinical uncertainty of diagnosis, to guide abscess drainage and to exclude alternative diagnoses.³

The therapeutic approach includes supportive care (application of warm compresses) and parenteral antibiotic therapy. The choice of empiric antibiotic regimen depends on the most frequent causative pathogens, gram stain and the presence of severe complications. The most frequently empiric regimen used in mastitis and breast abscess without associated severe complications should cover *Staphylococcus aureus* and gram-negative enteric organisms- nafcillin-oxacillin in association with an aminoglycoside or third-

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generation cephalosporin for 7-14 days. Changing the route of administration to oral should be performed if clinical improvement and resolution of systemic symptoms. Clinical improvement occurs within 24-48 hours after starting antimicrobial therapy. If it doesn't occur or worsens, it may be indicative of abscess formation/recurrence, inadequate empiric therapy, or alternative diagnosis.³

In breast abscesses, in addition to intravenous antibiotic therapy, aspiration/surgical drainage should be performed.³ The prognosis is excellent in the majority of cases.^{2,3}

Compliance with ethical standards

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Conflict of Interest: None

References:

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