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Unilateral neonatal infectious mastitis: case report

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Introduction

Neonatal mastitis

Neonatal mastitis is an acute infection affecting the mammary gland and adjacent tissues manifested as cellulitis. It affects term newborns, more frequent in females with a 2-3.5:1 female-male ratio. The age of onset varies between 12 and 45 days of life with an incidence peak between the fourth and fifth week.[1] Aside from gender, it is believed that it is due to a drop in maternal estrogen levels at the end of pregnancy, which triggers the release of prolactin from the pituitary of the newborn. In general, it resolves spontaneously during the first weeks; however, the manipulation of the breasts in order to express the milk can lead to mastitis and abscesses in this region.[2]

Staphylococcus aureus is the most frequent bacterial pathogen responsible for skin and soft tissue infections, particularly in this entity. Other less common causes include gram-negative enteric organisms (e.g. *Escherichia coli, Salmonella*), anaerobes and group B *Streptococcus*. Clinically, this disorder is characterized by the appearance of inflammatory signs on the involved mammary region, which is normally unilateral with erythema, tenderness due to volume increase and, in some instances, a purulent secretion through the nipple may be observed. Other general manifestations can include fever and irritability. In up to 50% of cases, the natural course of the infection is the formation of an abscess. At times, a toxic state can ensue, almost always associated to the extension of a thoracic cellulitis that progresses in few hours and can become a necrotizing fasciitis.[3]

Generally, the diagnosis is clinical and may be complemented with acute phase reactants. Studies have shown that it is not necessary to do blood cultures or lumbar taps because most of them are reported as negative, and they should only be done when there is clinical suspicion. The use of ultrasound is reserved only for those cases where there is suspicion of a developing abscess, and where there is fluctuation or late response to antibiotics or the diagnosis of mastitis is in doubt.[4] The treatment includes antibiotics such as oxacillin, vancomycin, clindamycin or third generation cephalosporins and analgesics. Studies show that approximately half of the patients recovered only with antibiotics, indicating that an aggressive antibiotic therapy is effective in roughly 50% of cases; and if immediately initiated after the diagnosis, no additional surgical treatment is necessary. When an abscess was formed, a needle aspiration was as effective as an incision and drainage.[5]

Clinical case presentation

Term newborn, during her first hours of life, with suspicion of an early-onset sepsis without an isolated pathogen, discharged from the hospital the seventh day without complications. At eleven days of extrauterine life she presented with erythema, induration of the right mammary region and purulent secretion through the nipple, with 38°C fever and irritability, for which she was admitted to the NICU. Awake, reactive, irritable, with right breast volume increase, local temperature increase, erythema, and purulent secretion through the nipple for the second time. Multiple cultures were made and a vancomycin/cefotaxim antimicrobial regimen was given for 14 days. Surgical drainage was necessary and she was discharged with total resolution of her condition (Figure 1) (Figure 2).

Figure 1 At NICU admission.

Figure 2 Clinical course during treatment.

Laboratory and imaging tests reported leukocytosis of 17,730 with a 57% predominance of neutrophils, absence of bands, CRP 36.3mg/l, secretion culture reported growth of vancomycin-sensitive *Staphylococcus aureus*. Breast ultrasound reported a 2cm organized abscess in the subcutaneous cellular tissue and thoracic structures without alterations (Figure 3).

Figure 3 Post-treatment and drainage, NICU discharge.

Conclusion

Neonatal infectious mastitis is not common. It is due to a drop in maternal estrogen levels at the end of the pregnancy, which triggers the release of prolactin in the newborn. Generally, it resolves spontaneously, but the manipulation of the breasts in order to express the milk can lead to the formation abscesses. Most cases are due to infections caused by *Staphylococcus aureus*, gram negative bacteria (*Escherichia Coli, Salmonella*), anaerobes and group B *Streptococcus*. Clinical manifestations include erythema, increased local temperature, pain and breast induration with or without purulent secretion through the nipple. The evaluation includes a careful clinical history and physical examination with special attention to the presence of fever and findings of systemic inflammatory response. There are no controlled clinical trials for the selection of antibiotics, route of administration or duration of the treatment. Reports from literature recommend parenteral antibiotics with good *S. aureus* coverage. Complications are rare, but they have been documented, so it is essential to give an aggressive therapy including antibiotics and surgical drainage.

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None.

Conflicts of interest

The author declares there are no conflicts of interest.

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