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Neonatal Mastitis and Breast Abscess due to Meticilin Resistant Staphylococcus Aureus

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Abstract

Infection of breast tissue (mastitis) rarely occurs during neonatal period. It is mostly caused by bacteria that colonize the skin: Staphylococcus Aureus is the most common identified cause of mastitis.

Diagnosis is based on the medical history and physical examination. Its most frequent complication is an abscess formation that may even require surgical intervention. There is no universal consensus for the treatment, although all authors agree on the need for intravenous antibiotherapy.

We present the first published case of mastitis with breast abscess caused by Methicillin Resistant Staphylococcus Aureus in a 15 day-old baby.

Case Presentation

Female newborn of 15 days of age comes to emergency room presenting inflammation and erythema of the right breast. Obstetric history: she was born at 40+3 gestational weeks by normal birth. There was no history of risk for infection. APGAR was 9 and 10 at 1 and 5 minutes respectively. Birth weight was 3190 grams. She was on exclusive brest-feeds and she presented good weight gain with the actual weight of 3500 grams.

The mother describes 4 day history of inflammation and erythema of the right breast, which has gotten worse even though she was applying cold packs locally. In the last 24h she started with the white secretion through the nipple. Overall, she presented good well-being, she was afebrile and she presented no irritability or lethargy. She maintained good appetite.

Physical exploration reveals inflamed right breast with local erythema, hot and firm, with no central suppuration. On palpation there was 2 by 2 cm node that was inmovil and nonfluctuating (Figure 1). The rest of the exploration was normal.

The complete blood work showed hemoglobin levels at 13 g/dl with hematocrit of 34%. White blood count was 20700 (59.8% of neutrophils). Procalcitonin levels were 0.14 ng/ml and CRP was 5.4 mg/l. The rest of the complete blood work was normal. We solicited blood culture and culture of the mammary excretion.

Echography was preformed that showed heterogeneous collection made primarely of hipoecogenic area mixed with anecoic and other hiperecoic areas. Overall it was 1.4cm on anterioposterior plane by 2cm on axial plane. It suggested edematous glandular tissue with abscessed collection in its interior (Figure 2).

The pediatric surgeon was involved and decided to drain the abscess. Afterwards, the lesion was covered with topic antibiotic and sterile dressing that was to be changed every 8 hours. Systemic antibiotic therapy was suggested.

Evolution

The patient was admitted and i.v. Amoxicilin with clavulonic acid was started. The dressing was changed every 8 hours with local application of Mupirocin. The culture came possitive to Meticilin Resistant Staphylococcus Aureus (MRSA) that was sensitive to Clindamycin. With this result the antibiotic was changed to Clindamycin. The baby presented good evolution and 48h after the change of antibiotic therapy the lesion was resolved, the local erythema and induration disappeared

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Figure 1: Inflamed right breast.

Figure 2: Echography.

Figure 3: Resolved lesion after antibiotic therapy.

and local temperature was back to normal (Figure 3). There was no need for posterior drainage. There was no systemic affection at no time. She was sent home 72 h after admittance to continue with oral antibiotic therapy at home.

Discussion

Breast hypertrophy is a common finding in newborns (70%), and it is due to maternal hormones. It is self-limited and at times there can even appear milk with no pathological implication [1]. On occasion it can be complicated with infection of glandular tissue (mastitis), usually provoked by Staphylococcus Aureus, although several cases of infection with Streptococcus type B, enterococcus and anaerobic Gram negative bacteria were described [1-6]. Up to our best knowledge there are no infections caused by MRSA described in pediatric population, although it was hypothesized as one of the possible culprits [4]. It primarily occurs in female newborns 15 days after birth (ratio female: male = 2:1) [1,3-7].

In the most of the cases there is only local infection and systemic manifestation of the disease (poor appetite, fever, irritability etc.) are rare [4-6]. Other systemic manifestations described are: osteomyelitis [8], cerebral abscess [9] and necrotizing fasciitis [10]. Even though our patient didn't have any systemic manifestations, the local complication was suspected and later confirmed by echography. In most of the cases, the in hospital care is suggested with iv antibiotic therapy and previous blood culture as well as culture of the secretion should be preformed [1-7]. If possible Gram staining should be preformed [5] and echography to help differentiate the lesion. There are no evidence about optimal antibiotic treatment [5,6] although intravenous antibiotic therapy to cover Streptococcus Aureus is recommended [1-4,7] with association of aminoglycoside antibiotic if there is systemic affection [2-5]. The normal course of antibiotic therapy is 10 to 14 days with oral therapy as soon as clinical findings permits [1-4,6]. If there is poor evolution abscess should be suspected and drained [3,4,7].

It is our firm belief that proper intravenous therapy along with previous abscess drainage was the key to fast clinical improvement. It is therefore important to look for the causing bacteria in the culture while starting with empiric antibiotic therapy covering the usual bacteria. Surgical drainage in cases of abscess is another important part of the overall good medical treatment in the cases of abscessed neonatal mastitis.

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