Community-acquired Methicillin-Resistant *Staphylococcus aureus* Bilateral Acute Dacryocystitis in a Neonate

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Dear Editor,

Bilateral acute dacryocystitis in neonates is a rare condition with very few cases described in literature. We present a case of bilateral acute dacryocystitis secondary to congenital nasolacrimal duct obstruction (CNLDO), caused by community-acquired methicillin-resistant *Staphylococcus aureus* (CA-MRSA). This was the first case of bilateral acute dacryocystitis secondary to CNLDO, caused by CA-MRSA in our Medline search result, hence we report the case.

A 12-day-old newborn boy (delivered at home) with bilateral acute dacryocystitis since two days was referred to us by his pediatrician. The mother had taken antibiotics for bilateral MRSA mastitis during pregnancy. Ophthalmic examination revealed bilateral lacrimal sac abscess. The size of the lacrimal sac abscess was approximately 1.5 × 1.5 cm OD and 1.5 × 1.0 cm OS [Fig. 1a]. Mild compression of the lacrimal sac resulted in regurgitation of purulent discharge from the lower puncta. Both the eyelids showed edema and erythema. The remainder of his ocular examination was normal. Blood and conjunctival swab were sent for culture and sensitivity.

The newborn was hospitalized and intravenous amoxicillin/clavulanic acid and amikacin were started. Over the next 12 h, swelling and redness increased with bilateral external fistula formation [Fig. 1b]. Bilateral incision and drainage of the abscess was performed under general anesthesia. Approximately 2 ml of thick, yellowish collection was aspirated from each site and sent for culture. Gram stain revealed Gram-positive cocci, fibrinous exudates, and both inflammatory and red blood cells. Blood culture was negative. Swab cultures demonstrated *Staphylococcus aureus*, sensitive to vancomycin, clindamycin and rifampicin, but resistant to methicillin, amoxicillin, amikacin and ciprofloxacin. Mother’s breast milk was sterile but recent breast swab culture revealed same organism with identical antibiotic susceptibility. The patient was switched to vancomycin. Topical 5% vancomycin solution was given QID. The lacrimal swelling and erythema resolved completely over the course of two days [Fig. 1c]. The mother was also re-treated for mastitis. Probing and irrigation of the nasolacrimal duct was performed in both eyes two weeks after presentation which resolved CNLDO. Patient was free from lacrimal symptoms at six month’s follow-up.

Ophthalmic CA-MRSA infections have been previously reported.[4] Neonates may acquire CA-MRSA...
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vertically from their mother’s contaminated breast milk or by skin-to-skin contact. CA-MRSA is resistant to mainly beta-lactam antibiotics e.g. penicillin and cephalosporin. On the other hand, Hospital-acquired MRSA is resistant to multiple antibiotics. In the present case, organisms were not only resistant to beta-lactams but also to quinolones and aminoglycosides. Recently, multi-drug-resistant CA-MRSA has also been observed.

The probable source of infection, in the present case, was maternal breast skin, which reached the nasolacrimal system via skin-to-skin contact during breast feeding. Isolation of MRSA with identical antibiotic susceptibility, from mother’s breast swabs, conjunctival sac as well as purulent material from lacrimal sac, supports a cause-effect relationship of vertically acquired CA-MRSA in the present case.

To avoid treatment delay, vertical transmission of CA-MRSA should be suspected even in cases of acute dacryocystitis involving otherwise healthy newborns with positive family history of MRSA infection.

References


Figures and Tables

Figure 1a
The clinical photograph of the face at the time of presentation showing bilateral acute dacryocystitis with lacrimal abscess formation

**Figure 1b**

The clinical photograph showing increased inflammatory signs with external fistula formation OU even after 12 hours of hospitalization and intravenous antibiotics
The clinical photograph showing reduced lacrimal and periocular swelling on day-2 postoperatively