

An Obstruction of “Pus-tice”: A 38-day-old with periorbital erythema and swelling

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Learning Objectives

1. Recognize the clinical presentation for nasolacrimal duct obstruction and dacryocystitis.
2. Understand the systemic complications of dacryocystitis.

Case Presentation

History of Present Illness

A 38-day-old former 32-week male presented 1 week after discharge from the NICU with central left nasolacrimal duct swelling, drainage, erythema, and warmth for 3 days. The initial presumed diagnosis was nasolacrimal duct obstruction, and warm compresses were prescribed with the expectation of full resolution. On the day of presentation, erythema and swelling had progressed to the left cheek.

Physical Examination

The infant was well-appearing and afebrile despite left periorbital swelling and erythema, which extended down the infraorbital margin and into the left cheek and nasolabial fold. Tense edema and warmth were palpable without appreciable fluctuance.

Labs and studies

Given the extent of the infection and the patient's age, blood cultures, CSF studies, and infectious workup was performed revealing a slight thrombocytosis (platelets 446), elevated CRP (126 mg/L, normal < 10), normal CSF studies, and MRSA from his blood culture. An MRI revealed left periorbital edema without orbital inflammation, a prominent fluid-filled left nasolacrimal duct and a 2.2 x 0.4 cm abscess in the premaxillary soft tissues (Figure 2). Given the extent of this infection, neutrophil function testing for chronic granulomatous disease was performed and was negative.



Figure 1. Profile at initial presentation with outlined extension of left periorbital edema and erythema down to left cheek and nasolabial fold.

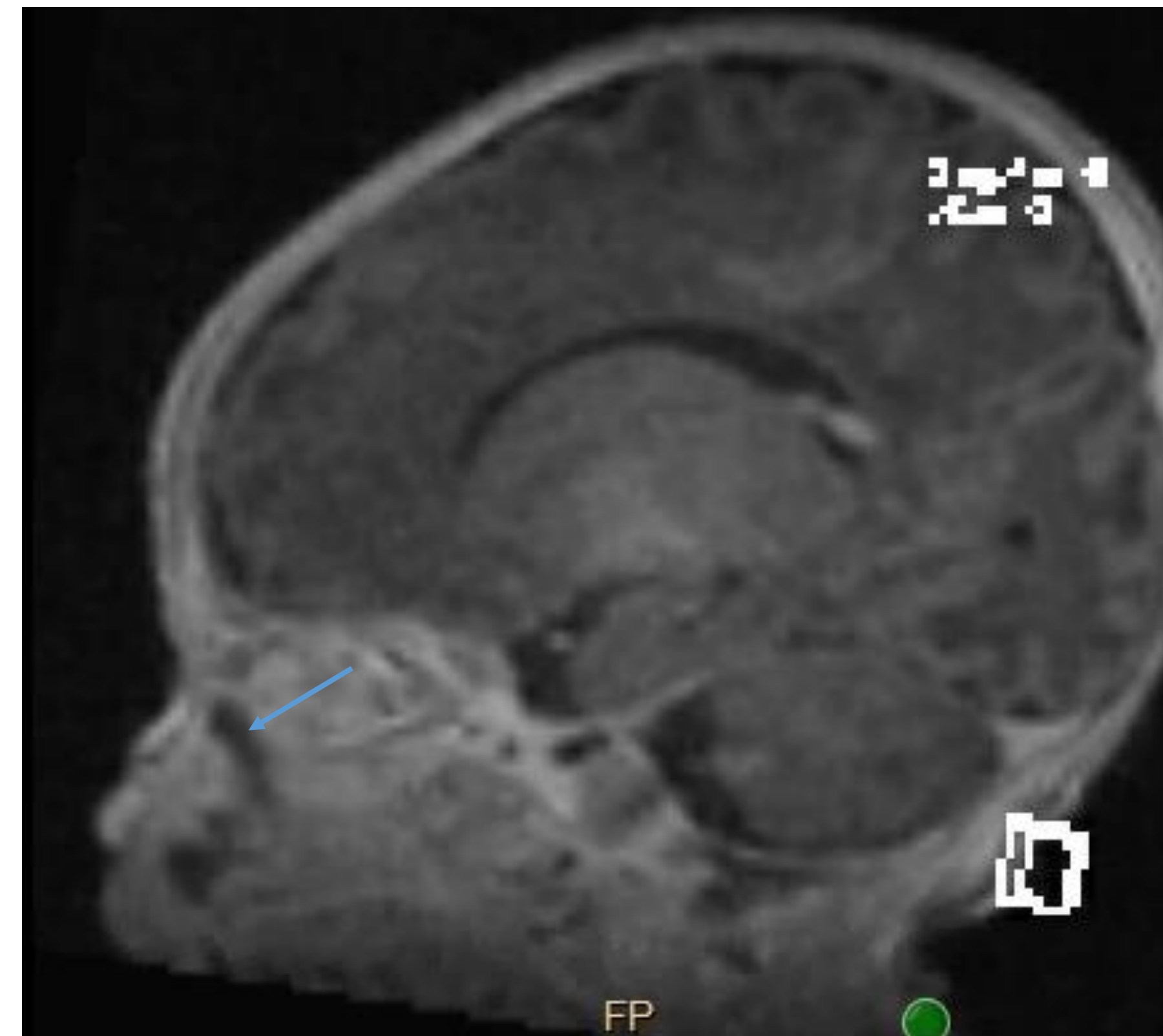


Figure 2. Sagittal MRI showing left periorbital edema without orbital inflammation, prominent fluid-filled nasolacrimal duct, and 2.2 x 0.4 cm abscess in the premaxillary soft tissues.

Hospital Course

This patient's final diagnosis was MRSA dacryocystitis complicated by periorbital cellulitis and soft tissue abscess. The infant responded well to vancomycin with resolution of the swelling and erythema. Repeat imaging noted persistence of a prominent left nasolacrimal duct representing a cyst or small mucocele.

Discussion

- Congenital nasolacrimal duct obstruction is characterized by mild swelling of the nasolacrimal duct and frequent tearing.
 - Occurs in about 6% of newborns.
 - Most common cause of frequent tearing and ocular discharge in infants.
 - Almost always resolves with massage, warm compresses, and time.
- Dacryocystitis, however, presents with erythema, swelling, warmth, and purulent discharge.
 - Complications include periorbital and orbital cellulitis, bacteremia (in 22% of infants), sepsis, and meningitis.
 - Prompt recognition and initiation of systemic antibiotics is essential.
 - Common pathogens include alpha-hemolytic streptococci, *Staphylococcus epidermidis*, and *Staphylococcus aureus*.
- This patient likely developed these complications as a result of MRSA colonization (potentially acquired in NICU) and a predisposition to obstruction from a congenital nasolacrimal cyst.

Take Home Points

1. Dacryocystitis should be on the differential for infants presenting with swelling of nasolacrimal duct.
2. Infants with dacryocystitis are at risk for serious systemic complications if not diagnosed and treated promptly.

References

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