

## A Case of Bilateral Congenital Dacryocystocele Infected with *Serratia marcescens*

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**Abstract-** Congenital nasolacrimal duct obstruction (CNLDO) is a common disorder that affects approximately 6-20% of children in the first year of their life. Here we present a case of bilateral congenital dacryocystoceles infected with *Serratia marcescens*.

A 50 day old male infant, born by caesarean section at term, presented to the clinic with a swelling and hyperemia on the region of the left lacrimal sac for 3 days, with a purulent discharge coming from both eyes. He had bilateral probing, irrigation and nasolacrimal tube silicone intubation under general anesthesia. During this procedure a heavy pus kept on coming from both canals and the ruptured area. This material was cultured in blood, MacConkey, and chocolate agar. *S.marcescens* was isolated which was shown to be susceptible to piperacillin, tazobactam, ceftazidim, cefepim, aztreonam, imipenem, meropenem, amikacin, gentamicin, tobramycin, ciprofloxacin, levofloxacin, tigecycline, trimethoprim-sulfamethoxazole; but resistant to netilmicin and colistin. The symptoms resolved in a week and the antibiotics were stopped.

Conservative approach including gentle massage and warm compresses with topical antibiotics are recommended in the management of congenital dacryocystoceles. If it progresses to acute dacryocystitis, intravenous antibiotics are indicated to prevent fatal complications like meningitis, brain abscess and sepsis. In case of failure of probing, extensive marsupialization of the cyst, silicone tube implantation or balloon dacryocystoplasty is recommended.

**Keywords:** *Serratia marcescens*, dacryocystocele

### Introduction

Congenital nasolacrimal duct obstruction (CNLDO) is a common disorder that affects approximately 20% of children in the first year of their life. It has been reported to have a prevalence of up to 6% in newborn infants (1). The obstruction in the drainage system might be located proximally, but mostly distally at the valve of Hasner of nasolacrimal duct (2). Pooling of tear, dissolved mesoderm, mucus, and amniotic fluid due to obstruction in the lacrimal drainage system leads to subsequent dilation of the lacrimal sac named dacryocystocele (3,4).

### Case

A 50 days old male infant, born by caesarean section at term, presented to the clinic with a swelling and hyperemia on the region of the left lacrimal sac for 3 days, with a purulent discharge coming from both eyes. He was given tobramycin eye drops and fusidic acid eye pomad with advice to come the following week for follow-up. The parents described a blue-grayish mass at the same region of swelling with watery discharge since birth. On examination below the left medial canthal tendon a tense, hyperemic and 3.0x6.0x5.5mm (depth×height×width) cystic lesion was

observed. After taking conjunctival swab for microbiological identification, the baby was scheduled for orbital MRI and hospitalised with a diagnosis of acute dacryocystitis and started systemic and topical antibiotics (intravenous amoclovaine clavulonate and aminoglicoside with topical moxifloxacin six times daily).

The gram stain of the swab revealed gram negative rods with pus cells; but no organism was grown in blood, Mac Conkey, and chocolate agar. Despite the broad spectrum antibiotics, two days later the lesion grew bigger and ruptured eventually to drain out some pus (Figure 1). So the baby had bilateral probing and irrigation under general anaesthesia. During this procedure a heavy pus kept on coming from both canals and the ruptured area. *S. marcescens* was isolated which was shown to be susceptible to piperasilin, tazobactam, ceftazidim, cefepim, aztreonam, imipenem, meropenem, amikasin, gentamisin, tobramisin, ciprofloksasin, levofloksasin, tigesiklin, trimetoprim-sulfametaxosol; but resistant to netilmisin and colistin. the symptoms resolved in a week and the antibiotics stopped.

Figure: 1



### Discussion

*S. marcescens* is a facultative aerobic, motile gram-negative rod, classified within the family *Enterobacteriaceae*. It is considered as a nosocomial and opportunistic pathogen that has been reported to cause outbreaks especially in pediatric wards that affects most of the human systems including the eye (5-7). Studies reported *S. marcescens* infections isolated from cases with conjunctivitis, keratitis, endophthalmitis (7) A case of a 3-month-old child with conjunctivitis due to CNLDO has

also been reported (5). However to our knowledge, there is not any report of case with dacryocystocele infected by *S. marcescens*, in the literature.

Dacryocystocele is a relatively rare congenital anomaly of the medial orbital region, that is seen in only 0.1% of children with CNLDO (8). Unlike the presented case with bilateral dacryocystoceles who was male, epidemiological studies reported a familial predisposition with a predominance of unilateral lesion and a female preponderance (9).

Dacryocystocele, also called amniocele, can be visible in the last trimester of pregnancy that can be diagnosed by ultrasound scans. It could also present with nasal obstruction leading to respiratory distress during feeding or sleeping which is a life threatening condition (9).

Conservative approach including gentle massage and warm compresses with topical antibiotics are recommended in the management of congenital dacryocystoceles. Surgical procedures should be considered when there is progression into acute dacryocystitis, cellulitis, larger cyst formation and nasal obstruction that leads to respiratory difficulties. If probing is insufficient, extensive marsupialization of the cyst, silicone tube implantation or balloon dacryocystoplasty is recommended (9).

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