

# Management of Acute Nasolacrimal Sac Abscess in an Infant: Case Report

## Akut Nazolakrimal Kese Absesi Olan Bir Bebeğin Yönetimi

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**ABSTRACT** Two months old female infant was brought to our outpatient clinic with a red acutely inflamed swelling near the inner canthus of the right eye. On physical examination a tense, fluctuating swelling was found in the region of lacrimal sac of the right eye and diagnosed as acute dacryocystitis with nasolacrimal sac abscess. Her lacrimal sac abscess was drained by a small incision in the operating theatre. She was hospitalized for intravenous antibiotic treatment. Acute inflammation resolved and nasolacrimal duct was probed under sedoanalgesia 15 days after the first abscess drainage. There was no epiphora and other complaints during the follow up for 6 months. Pediatric acute dacryocystitis is a distinct entity with unique features of its own. Careful evaluation, immediate treatment and close monitoring are important in proper patient management.

**Key Words:** Dacryocystitis; lacrimal duct obstruction; infant

**ÖZET** İki aylık kız bebek polikliniğimize sağ göz iç kantus yakınında kırmızı akut inflame şişlik ile başvurdu. Fizik muayenede lakrimal kese bölgesinde gergin, fluktuant şişlik, akut dakriyosistit ve nazolakrimal kese absesi olarak tanı aldı. Lakrimal kese bölgesindeki abse ameliyathanede küçük bir insizyonla boşaltıldı. Damar yoluyla antibiyotik tedavisi almak için hospitalize edildi. Akut inflamasyon geriledikten sonra sedoanaljezi altında nazolakrimal kanala sondalama işlemi uygulandı. Başarılı bir sondalama sonrası inflamasyon düzeldi. Takipler esnasında hastanın gözyaşı akıntısı ve başka şikayetleri olmadı. Pediatrik akut dakriyosistit kendi benzersiz özellikleri olan farklı bir entitedir. Dikkatli bir değerlendirme, acil tedavi ve yakın takip uygun hasta yönetiminde önemlidir.

**Anahtar Kelimeler:** Dakriyosistit; lakrimal kanal tıkanıklığı; bebek

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Acute dacryocystitis has been comprehensively defined as ‘a medical urgency, which is clinically characterized by rapid onset of pain, erythema and swelling, classically below the medial canthal tendon, with or without epiphora, mainly resulting from the acute infection of the lacrimal sac and persac tissues.’ Pediatric acute dacryocystitis is a special subset with features that are unique and distinct from adults.<sup>1</sup>

We would like to present the treatment and surgical management of a 2 months old baby with acute dacryocystitis and lacrimal sac abscess. An informed consent was obtained from the parents.

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## CASE REPORT

Two months old female infant was brought to our outpatient clinic with a red acutely inflamed swelling near the inner canthus of the right eye. She was suffering from bilateral epiphora and purulent secretion of both eyes since birth. The parents mentioned that the swelling has occurred a week ago and increased rapidly during the last 2 days. On physical examination a tense, fluctuating acute inflammatory swelling was found in the region of lacrimal sac of the right eye (Figure 1A). There was oedema and erythema of the adjoining skin and eyelids. Anterior segment examination revealed no pathology other than conjunctival hyperemia. Her fundoscopic examination revealed no pathology. Her lacrimal sac abscess was drained by a small incision in the operating theatre and culture of pus obtained. She was hospitalized for intravenous antibiotic (iv) treatment. Her complete blood cell count revealed 9.1 g/dL hemoglobin, WBC 9300/mm<sup>3</sup> and platelet count was 481.000/mm<sup>3</sup>. The peripheral blood smear revealed 22% lymphocytes and 78% neutrophils. C-reactive protein was 3.5 mg/dl (normal 0-6 mg/dL) and serum biochemical tests were within normal limits. Her blood culture revealed no pathogens and streptococcus species were cultured from the abscess. She was treated with iv claritromycine (15 mg/kg/d) and ceftriaxon (75 mg/kg/d). After a week she was discharged from the hospital with minimal collection, continued her treatment with oral ampicilline sulbactam (50 mg/kg/d) and topical antibiotic eyedrops. In her follow up the abscess enlarged one more time and drained spontaneously (Figure 1B). Acute inflammation gradually resolved and nasolacrimal duct was probed (Bowman's lacrimal probes 00/0) under sedoanalgesia in the operating theatre 15 days after the first abscess drainage. Presence of the tip of the probe in the nasal cavity was confirmed by direct visualization using a nasal speculum. It was immediately followed by syringing serum with flourescein dye. After a successful probing procedure the inflammation resolved. No fistula occurred. There was no epiphora and other complaints during the follow up (Figure 1C).



**FIGURE 1A:** A tense, fluctuating acute inflammatory swelling was found in the region of lacrimal sac of the right eye.



**FIGURE 1B:** In her follow up the abscess enlarged one more time and drained spontaneously.



**FIGURE 1C:** After a successful probing procedure the inflammation resolved.

## DISCUSSION

Nasolacrimal duct obstruction (NLDO) is one of the most common problems encountered in pediatric ophthalmology. Approximately 6-20% of infants develop some symptoms of this disorder.<sup>2</sup> A small number of infants with NLDO present within the first few weeks of life with a more severe infection: acute dacryocystitis.<sup>3</sup>

In children, the most frequent origin of dacryocystitis is congenital obstruction at the level of nasolacrimal duct, usually at the valve of Hasner. Although large series of cases of chronic dacryocystitis in infancy have been recorded in the literature, acute dacryocystitis in infancy has rarely been observed.<sup>4-7</sup>

In our case, 2 months old baby presented with acute dacryocystitis. Pediatric acute dacryocystitis may be associated with dacryocele in neonates and infants in general tends to show much rapid and progressive course to evolve into a lacrimal abscess and if untreated can potentially threaten vision and life in the form of orbital cellulitis, orbital abscess and meningitis.<sup>8,9</sup> Occasionally, external incision and drainage of lacrimal abscess may be required in severe cases.<sup>8</sup> Because the commonest cause of pediatric acute dacryocystitis is congenital nasolacrimal duct obstruction probing is the surgical intervention of choice. Baskin et al. correlated the preceding use and duration of intravenous antibiotics to the success of probing.<sup>8</sup> Campolattaro et al. reported 18 cases of pediatric acute dacryocystitis who underwent probing after systemic antibiotics for a mean duration of 2.2 days.<sup>4</sup> They reported high success with initial probing (83.3%).

Differential diagnosis of neonatal acute dacryocystitis included encephaloceles, tumors, hemangioma, dermoid and epidermoid cysts and

lymphangiomas.<sup>3</sup> Chohan and associates reported a 6-month-old male with a medial left orbital lesion that was present shortly after birth and which gradually enlarged to involve the upper and lower eyelids.<sup>10</sup> The patient had undergone several lacrimal probings for presumed NLDO. At surgery the patient was found to have encephalocele communicating with the lacrimal sac. Imaging in infants with dacryocystitis is usually not necessary. Imaging studies may be useful in patients with atypical features in whom the diagnosis is in question.

In our case we preferred to treat our patient with proper antibiotics and performed an external drainage of the abscess to resolve the acute inflammation and achieved to open the lacrimal drainage system by probing.

In conclusion pediatric acute dacryocystitis is a distinct entity with unique features of its own. It is a serious infection that warrants careful evaluation, immediate treatment and close monitoring.

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