

Respiratory Distress in the Newborn - An Ophthalmologic Diagnosis

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ABSTRACT

The presence of a congenital dacryocystocele is rare, the presence of two with nasal extension compromising respiratory function, make this an atypical case that requires immediate action by the ophthalmologist.

We present the case of a newborn that during the first hours of life presented respiratory distress. Dacryocystocele resolution and symptomatic improvement were observed after conservative treatment.

Keywords: congenital dacryocystocele; newborn; respiratory distress; conservative treatment.

RESUMO

A presença de um dacriocistocelo congénito é rara, a presença de dois com extensão nasal a comprometer a função respiratória, fazem deste um caso atípico que exige ação imediata do oftalmologista.

Apresentamos o caso de um recém-nascido que durante as primeiras horas de vida apresentou um quadro de dificuldade respiratória. Verificou-se resolução do dacriocistocelo e melhoria sintomática apenas com tratamento conservador.

Palavras chave: dacriocistocelo congénito, recém-nascido, dificuldade respiratória, tratamento conservador

INTRODUCTION

The congenital dacryocystocele (CD) is rare, and is usually diagnosed and treated by ophthalmologists.⁵

At the third month of gestation begins the canalization of the epithelial cell cord destined to be the nasolacrimal duct. At the sixth gestational month, the communication between this duct and the inferior nasal meatus is

completed.^{9,15} Distal obstruction of the lacrimal drainage system at the level of the valve of Hasner is frequent and usually results in a simple nasolacrimal duct obstruction (NLDO). The formation of the CD occurs after a functional, proximal obstruction at the level of the valve of Rosenmuller due to a significant enlargement of the lacrimal sac.

Epiphora and increase of the tear meniscus in a newborn (NB) is often related to a simple congenital NLDO. The presence of an enlarged bluish cystic lesion below the medial canthal tendon is suggestive of CD. In NB the nasal cavity is narrow and easily obstructed, even by small lesions. Bilateral CD with nasal extension may cause respiratory distress, because in the first three weeks of life the NB are obligate nasal breathers.^{4,5,9}

There is no treatment algorithm globally accepted for CD.^{7,9,14} In most cases conservative management with lacrimal sac massage helps the drainage.² Dacryocystocele recurrence or the development of acute dacryocystitis (AD) can occur in approximately 20% of cases. The major indications for surgical treatment are: 1. concomitant presence of infection; 2. respiratory distress caused by bilateral CD and 3. absence of drainage with conservative treatment.⁹

CASE REPORT

We present the case of a male, full-term NB, with no relevant family history and no complications during gestation. The delivery was by caesarean due to pelvic fetal incompatibility. He presented weight, length and cephalic perimeter proper for the gestational age.

At the 21st hour of life he started an episode of respiratory distress associated with peribuccal cyanosis, wheezing aggravated by crying and refusal to feed. He was admitted to the Neonatal Intensive Care Unit for monitoring and study.

At the objective examination there was an increase in the inner (ICD) and outer (OCD) canthal, and interpupillary (IPD) distances. The nasal fibroscopy identified a bilateral oval lesion, filling both inferior nasal meatus. Maxillofacial magnetic resonance imaging (MRI) demonstrated the presence of cystic areas in both lacrimal sacs (Fig. 1). It was evaluated by Ophthalmology at the third day of life. Although the classic bluish cystic lesion was not visualized, the palpation of the medial canthal region made us suspect of cystic dilations in both lacrimal sacs. It was concluded that bilateral CD was the cause of respiratory distress. Immediately, the necessary measures were taken for the urgent marsupialization by nasal endoscopy, meanwhile, bilateral lacrimal sac massage was attempted. The quick nasolacrimal clearance on the right side and consequent improvement of respiratory distress motivated the

prolongation of conservative management. Three days later, the resolution of the nasolacrimal obstruction on the left side was also achieved, and few days later the NB was discharged. At the third month of life, he was asymptomatic, with no signs of dacryocystocele recurrence. The ICD, OCD and IPD were within normal values for age.

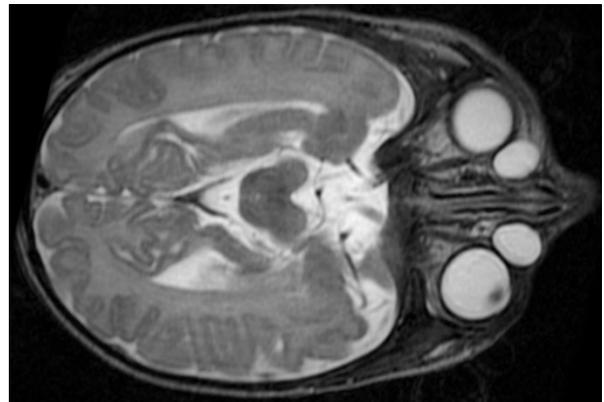


Figure 1 - Maxillofacial magnetic resonance imaging showing cystic areas in both lacrimal sacs, isointense with respect to ocular globe, corresponding to a bilateral dacryocystocele

DISCUSSION

The CD is a rare condition, presented in 0.02% of all NB 14, and in 0.1% of NB with congenital NLDO.¹⁰ There is a female predominance possibly due to a greater narrowing of the lacrimal pathways in this group. Most cases (75-88%) are unilateral.⁹

The diagnosis is usually clinical. The presence of epiphora, increase tear meniscus and the observation of bluish cystic lesion in the medial canthal region are the classic signs. Respiratory distress may be part of the clinical presentation in cases of bilateral CD.

It is important to make the differential diagnosis with other conditions that may arise at birth or in the first days of life, adjacent to the medial canthal tendon, such as capillary hemangioma, encephalocellus, dermoid and sebaceous cysts, nasal glioma, among others.^{2,9} Computed tomography (CT) and MRI can help in this differential diagnosis.⁹ The main advantages of MRI are the characterization of the cyst content and the absence of radiation exposure. The main advantage of CT is in the detection of bone changes.¹⁵ In the literature, there are cases of CD diagnosed in the prenatal period by ultrasound.^{3,11,12}

The stasis associated with CD is the ideal environment for the proliferation of microorganisms and the development of an infection of the lacrimal pathways. The AD occurs more frequently in neonates with CD than in those with a simple NLDO.¹³ An AD at pediatric age requires immediate treatment because of the risk of quick progression to orbital cellulitis, orbital abscess, meningitis¹, sepsis, and death.⁶ Permanent canthal asymmetry, corneal astigmatism and anisometropic amblyopia are consequence of the mass effect.^{9,15}

In the scientific community there is no consensus regarding the treatment of CD. Conservative treatment consists of lacrimal sac massage and prophylactic antibiotic use. In the presence of bilateral CD, which causes respiratory difficulty, urgent surgical treatment is mandatory¹⁵ and endoscopic marsupialization and probing of the lacrimal pathway are routinely recommended.⁹ In the described case, conservative treatment with lacrimal sac massage quickly cleared one of the lacrimal pathways, consequently the respiratory function improved, and the surgical treatment was firstly deferred. With the bilateral permeability of the lacrimal pathways, it was decided not to perform invasive treatment, avoiding the risks associated with general anesthesia.^{8,15}

Due to its rarity, CD is not generally considered a primary cause of respiratory distress in the NB. The main objective of this case-report is to alert the clinics for this diagnosis. The resolution of the respiratory distress, completely with conservative management, make this an atypical case.

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Nothing to declare.
Without conflicts of interest