

Primary cesarean section delivery a risk factor for congenital nasolacrimal duct obstruction

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Abstract

Background and Aim: Congenital nasolacrimal duct obstruction (CNLDO) is the most frequent ocular pathology of the newborn and may lead to complications such as chronic dacryocystitis and amblyopia.

Material and Methods: We analyzed the delivery type of 65 infants aged 0-1-year-old.

Results: From the 65 patients, 38 (58.48%) were male. The mean age was 4.58 months. The persistent tearing was the most common symptom (72.54%) in infants aged until 6 months. After the age of 6 months, in 85.71% of the cases, the yellowish discharge was present. Bilateral CNLDO was identified in 43.07% of the patients. In our study, from 65 infants, 40 (61.53%) of them were born by cesarean section, and 25 (40.32%) had a normal birth type. The primary cesarean section delivery was identified in 28 (70%) of the cases.

Conclusion: We identified that primary cesarean section delivery might be a risk factor for CNLDO.

Keywords: Congenital nasolacrimal duct obstruction; Risk factors; Cesarean section delivery

Introduction

The congenital nasolacrimal duct obstruction (CNLDO) is a frequent pathology for which parents bring their newborns to ophthalmological examination. In the majority of cases, the pathology is the incomplete canalization of the valve of Hasner at the distal part opening [1]. CNLDO is the most common cause of epiphora in infants and may resolve spontaneously within the first year of life [1]. Then the epiphora persists after 1 year of life, the child is exposed to complications such as chronic dacryocystitis and amblyopia [2]. Different risk factors for CNLDO were cited in the medical literature, such as maternal infections during pregnancy, radiation exposure, use of medications and delivery by cesarean section [2]. The aim of this study was to analyze the association between delivery by cesarean section and CNLDO.

Material and Methods

The study was carried out between May-December 2017, in the Ophthalmology Unit of the Pediatric Surgery Department at Louis Turcanu Children Emergency Hospital in Timisoara, Romania. We evaluated 65 children aged 0-1-year-old who were brought by their parents for chronic epiphora or mucopurulent conjunctival

secretions. After obtaining informed consent, the parents underwent a medical interview. The medical interview consisted of questions regarding the number of pregnancies and the type of delivery (normal or cesarean birth section). The statistical analysis was performed using Microsoft Excel and Epi Info version 3.5.1.

Results

From 65 children, 38 (58.48%) were male and 27 (41.53%) female. The patients were aged between 0 to 1 year old, with an average age of 4.58 months. We divided the patients into 4 groups:

- group I aged 0-3 months-33 patients (50.70%),
- group II (3-6 months)-18 patients (27.69%),
- group III (6-9 months)-10 patients (15.38%),
- group IV (9-12 months)-4 patients (6.15%).

In group I and II the persistent tearing was the most common symptom in 37 (72.54%) of 51 patients. The epiphora commenced within the first 6 months of life in the absence of upper respiratory

tract infection. In group III and IV, the epiphora was associated with yellowish discharge in 12 (85.71%) of the 14 patients. None of them had signs of an acute attack of dacryocystitis. Unilateral CNLDO was reported in 37 of the cases (56.92%): the right eye was involved in 18 (48.64%) cases and the left one in 19 (51.35%) of them. Bilateral CNLDO was present in 28 (43.07%) of the cases. In our study, from 65 infants, 40 (61.53%) of them were born by cesarean section, and 25 (40.32%) had a normal birth type. From 40 infants born by cesarean section delivery, 28 (70%) was the first child in the family. In the group of normal birth type, 14 (56%) of them represented the primiparous cases.

Discussion

In our study, the mean age of children with persistent epiphora or purulent conjunctival secretion was 4.58 months. A cross-sectional study from the King Khalid University Hospital, Riyadh, Saudi Arabia identified a mean age of 3.2 months which correlated to the nature of the congenital disease [3]. We identified that the male gender is more involved in the CNLDO cases: 58.48% compared to 41.53%. Aldabash et al. investigated 756 cases of CNLDO and reported that 51.9% of the infants were male [3]. Bilateral CNLDO was identified in 43.07% of the 65 cases. The Pediatric Eye Disease Investigator Group reported bilateral CNLDO in 33% of the cases, Lim et al. in 17% [4-5]. Higher values were cited by Kashkouli et al-36.6% and by Aldabash et al-42.6% [6]. In our study, from 65 infants with CNLDO, 40 (61.53%) were born by cesarean delivery section. The primary cesarean delivery section was identified in 70% of the cases. In a retrospective cohort study of 386 children with CNLDO, the primary cesarean section was significantly more frequent among patients with CNLDO-73.15% [2]. This study concluded that primary cesarean section might be a risk factor for CNLDO. Kuhli-Hattenbach et al. examined 107 children, 51 children with cesarean section delivery and 56 with spontaneous vaginal birth. They observed a significant association between nasolacrimal duct obstruction and primary cesarean section ($p=0.00004$) [7]. Our study has several limitations,

due to the small size of our study group, the statistical conclusions cannot be extended. Another limitation of the study is that we didn't take into account other risk factors cited by the medical literature: maternal infections, radiation and medication exposure.

Conclusions

In summary, we have observed that primary cesarean section delivery may be a risk factor for CNLDO. However, further investigation is needed to identify and to clarify the association between these possible risk factors and CNLDO.

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