

Imperforation of the nasolacrimal duct as a cause of nasal obstruction in the newborn

M. Góralówna and W. Tarantowicz, Warsaw Poland

INTRODUCTION

Among the congenital anomalies of the nose we can distinguish 2 groups; the first one where the malformation is clearly visible immediately after birth and the other one where the aspect of the nose is normal but its permeability is reduced or completely obstructed with such clinical consequences as dyspnoea and aspiration of fluids during feeding. In this group of anomalies choanal atresia is best known. We should like to present another form, rather rare, of nasal obstruction in the newborn, connected with retarded development of the lacrimal apparatus, strictly - imperforation of the naso-lacrimal duct with formation of an endonasal cyst.

It is well known that the full development of the lacrimal apparatus during foetal life is achieved rather late before birth; it is not rare that the process of canalization is not yet finished at birth. The consequences is distention of the lacrimal sac and, as an effect of secondary infection, dacryocystitis mucopurulenta of the newborn. When the inferior part of the unperforated nasolacrimal duct is distended, a submucous cyst may be formed with obturation of the nasal fossa. This kind of nasal obstruction resembles clinically that of choanal atresia, except for the symptoms of dacryocystitis.

In the period 1972-1976 we have observed 4 cases where the cyst of the nasolacrimal duct caused nasal obstruction in the newborn. All infants were of female sex.

CASES HISTORIES

Case 1. A newborn aged 2 days was admitted to the ORL emergency service because of respiratory troubles increasing during feeding. At the same time two bulges of a bean's shape were observed on the level of the lacrimal sacs. The skin in this region was lightly cyanotic, specially on the

left side. The child was breathing with difficulty when her mouth was closed, there was a retraction of the lips on inspiration. When crying the child was breathing without any difficulty. The ophtalmologist stated that the two bulges on both sides of the nose corresponded to the dilatated lacrimal sacs. With pressure and massage of this region copious mucus was evacuated from the lacrimal puncta. It was interesting to observe that at the same time symptoms of dyspnoe disappeared and the child began to breathe easily with

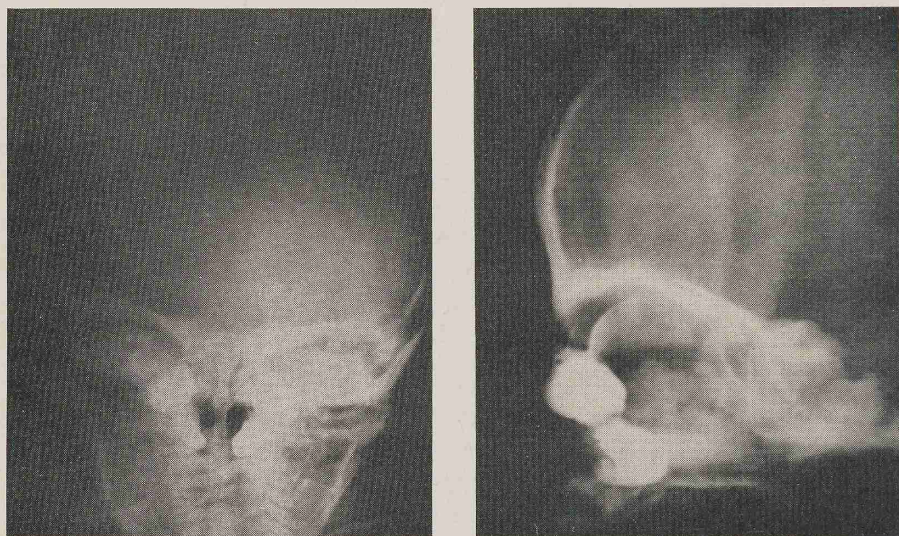


Figure 1. Lacrimal passages filled with contrast medium.
a. Antero-posterior view b. Lateral view

her mouth closed. There was a visible undulation of the anterior wall of the lacrimal sac to the rhythm of respiration. On the next day, after evacuation of the lacrimal sacs contrast medium "Uromiro" was introduced through the inferior lacrimal puncta. On radiography (Figures 1a and b), two cystic formations were observed on each side; the upper one corresponding to the dilatated lacrimal sac, the lower one – to the cyst of the unperforated nasolacrimal duct. The child was treated at the ophtalmological ward; twice daily the lacrimal sacs were evacuated from the mucus and the lacrimal passages irrigated with antibiotic solution. The distention of the lacrimal sacs decreased gradually, probing of nasolacrimal ducts restored their patency.

Case 2. A newborn aged 3 days was admitted to the pediatric ward because of diarrhea and dacryocystitis. On admission the child was breathing with difficulty and had problems with feeding. The ophtalmological diagnosis was bilateral dacryocystitis. The consulting otolaryngologist found a partial ob-

struction of the nasal fossae, persufflation of the nose with Politzer's balloon permitted the passage of air with some difficulty. On inspection of the nasal cavities with an ear speculum a cyst was stated on both sides, situated medially to the inferior turbinate. The covering mucosa was rather pale compared with the turbinate. Punction of the cysts revealed about 1 ml of opalescent fluid on both sides. After the punction the permeability of the nose was fully restored. The symptoms of dacryocystitis receded quickly.

Case 3. A newborn aged 12 days arrived at the out-patient clinic because of right-side dacryocystitis. Since some days the child presented also troubles with nasal respiration. The child was examined by an otolaryngologist who stated an obstruction of the right nasal fossa with a cyst in the bottom of the fossa. A punction was performed and the nasal patency was fully restored. There was no need for hospitalization. The symptoms of dacryocystitis disappeared quickly.

Case 4. A newborn aged 2 days was brought to the ORL emergency service because of respiratory troubles and cyanosis disappearing during crying and after insertion of an oropharyngeal tubus. Signs of bilateral dacryocystitis were present, especially on the right side. On ORL examination: nasal mucous membranes were congested, the nasal persufflation with Politzer's balloon permitted the passage of air with difficulties. After decongestion of the mucous membrane, an inspection with a nasal speculum showed a cyst on both sides in the bottom of the fossa, medially to the inferior turbinate. Punction of the cysts revealed about 0,5 ml of opalescent fluid on both sides. After punction the child could breathe and drink easily, she slept with her mouth closed. The child was returned to the newborn ward of the hospital where she was born.

DISCUSSION

Although the presented disorder is not frequent, it is worth reminding that the coexistence of nasal obstruction with distention of the lacrimal sac in the newborn can be connected with formation of an endonasal cyst of the unperforated nasolacrimal duct.

Besides the ophtalmological treatment with probing "sometimes repeated" of the nasolacrimal duct - a simple punction of the endonasal cyst leads to a rapid disappearance of the respiratory troubles as well as a quick healing of the dacryocystitis.

M. Góralówma, M.D.
W. Tarantowicz, M.D.
Children's Hospital
Nieklańska street 4/24
03-924 Wasaw, Poland