2.18 Endoscopic Dacryocystorhinostomy: from Diagnosis to Surgery

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2.18.1 Introduction

In congenital alterations of the lacrimal pathways, which are manifest from birth, a wait-and-see policy is recommended until the age of 18 to 24 months, at which time tearing usually resolves spontaneously in about 75% of cases.

Eighty percent of the lacrimal pathways belong anatomically to the nose. It is therefore feasible that dacryocystorhinostomy (DCR) may be performed via an endonasal approach. Endoscopic DCR represents a promising approach to obstruction of lacrimal pathways located in the sac and the nasolacrimal duct. Acquired obstruction of the lacrimal pathways is a common problem of elderly female patients, which can be corrected with DCR.

DCR is indicated in patients with chronic obstruction or stenosis of the lacrimal itself (saccal obstruction) or that of the nasolacrimal duct (postsaccal stenosis), when manifestations such as epiphora or repeated infections are severe enough to be bothersome. Unresolved congenital nasolacrimal duct obstruction, congenital dacryocystoceles and other indications for surgery such as punctal agenesis, lacrimal fistula, posttraumatic and postinflammatory canalicular obstruction may need to be drained surgically, as no spontaneous opening can be expected.

Probing, included in the diagnostic rationale, or stenting may avoid surgery by solving the narrowness of the pathways, but must be performed carefully in order to avoid harm.

In 1904 Toti described external DCR, and a transnasal procedure was described by West in 1911. The introduction of rigid nasal endoscopes enabled an endoscopic approach. In a cadaver study, Rice could demonstrate the feasibility of endoscopic intranasal DCR, and the first clinical study was published by McDonogh and Meiring in 1989.

The present section discusses the experience acquired in diagnostic and surgical procedures after more than 800 cases operated endoscopically.

2.18.2 Diagnosis

The key for a correct indication is to exclude presaccal stenosis, which is not suitable for an endoscopic procedure. The best method to assess the site of obstruction consists of probing the lacrimal pathways. If it is possible to pass the proximal canaliculi (superior and inferior) and to enter the superior third of the lacrimal sac through the common canalicus, a presaccal obstruction can be excluded.

Fluorescein dye tests (Jones I and II) or dacryocystographies (of any type) are no longer performed routinely. Since dacryocystographies use a probe to apply the contrast, there is no further need for a radiological evaluation if the probe passes.

CT scan may be indicated to assess dacryocystoceles, the lacrimal sac after prior surgery or after a trauma or to exclude tumours, but it is not routinely employed.

2.18.3 Surgery

Surgery is performed under general anaesthesia. Procedures under local anaesthesia have been done in cases when general anaesthesia was not recommended or when the patient preferred a local anaesthesia. In these cases, infiltration of the supratrochlear and infraorbital nerves (approximately 2 ml of bupivacaine) is added to intranasal anaesthesia. Topical anaesthesia of the lacrimal sac may be difficult when an acute infection is present.

The nasal cavity is vasoconstricted using Cottonoids soaked in topical anaesthesia with epinephrine (1:100,000). Surgery is performed with a 30 or a 45° rigid endoscope. Occasionally, the head of the middle turbinate may need to be trimmed in order to achieve a proper approach to the lacrimal sac.

During the last 6 years, these authors have incorporated a suggestion made by Massegur et al. [3]: an inferior based mucosal flap is created and pushed towards the inferior turbinate. At the end of the DCR this flap is repositioned, partially covering the lateral wall.
This flap is created with the help of a Montserrat knife or a Freer elevator, used to make two vertical incisions through the mucoperiostium down to the bone, in the area of the agger nasi, slightly anterior and superior to the middle turbinate (Fig. 2.18.1a,b). Prior infiltration of this mucosa with local anaesthesia and epinephrine (1:100,000) may be useful, but is not routinely done.

Under irrigation with saline, an ear cutting burr is used to drill the ascending process of the maxilla, exposing a small section of the lacrimal sac surface. (Use of a