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بعض الوثائق الأصلية تالفة

ENDOSCOPIC TRANSNASAL SURGERY FOR LACRIMAL OBSTRUCTION

THESIS

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بسم الله الرحمن الرحيم

﴿وما بِكُمْ مِنْ نِعْمَةٍ فَمِن ا للّٰهِ..﴾

سورة النحل آية ٥٣

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INTRODUCTION

&

AIM OF THE WORK

INTRODUCTION

Essentially the ***pumping action*** of the lacrimal sac consists in an alternate negative and positive pressure in the lacrimal sac caused by the contraction of the orbicularis muscle (Davson, 1972). Various opinions exist to explain which phase of the eye lid movements (closing or opening) are most essential for the conveyance of tears (Hill, et al., 1974).

Epiphora, the imperfect drainage of tears through the lacrimal passages so that they fall over the lid margin onto the cheek, is very common in ophthalmologic practice and constitutes an important portion of the practice of the lacrimal ophthalmologist (Song, et al., 1993). Obstruction to the outflow of tears may be due to displacement or obstruction of the lower punctum or obstruction of the lower canaliculus, lacrimal sac, or nasolacrimal duct (Lyle, et al., 1968).

Dacryocystorhinostomy (***DCR***) is performed to connect the lacrimal sac directly to the nasal cavity when there is obstruction in the sac or in the nasolacrimal duct. The first approach described in 1910 by Toti, was external. Shortly thereafter, transnasal procedure were described by West (1911) and Halle (1914). The recent development of nasal endoscopes has greatly improved intranasal visualization. A prior cadaver study demonstrated the feasibility of a transnasal approach (Rice, 1990).

The ***persistence*** of epiphora after ***external DCR*** has been recorded by various authors as between 55 and 62 %, but in hot countries the degree of epiphora is less evident owing to rapid evaporation of tears (Stallard, 1976). In skilled hands, external ***DCR*** is an effective technique in the treatment of lacrimal drainage system disorders. In reported series, both with and without silicone stent canalicular intubation, the success rate approaches 95.0 % in

adults, 83 % in children, and 71 % in secondary external ***DCR*** (Patrinely, and Gigantelli, 1988). On the other hand a wide range of success rates of endoscopic ***DCR*** were reported; 83% (Jokinen, and Karja, 1974), 95.0% (Steadman, 1985), 100 % (Rice, 1990), 82 % (Eloy et al., 1995), 85.5 % (Sprekelsen, and Barberan, 1996), and 93.3 % (Onerci et al., 1996).

A disadvantage of endoscopic DCR, compared to external ***DCR***, is the fact that the surgeons use only one hand for operative manipulations in endoscopic ***DCR*** (Metson, 1991), and the telescopes are frequently spotted by blood, bone dust and nasal secretion during the drilling procedure (Eloy, et al., 1995).

Endoscopic DCR has the advantage that it leaves no visible scar and may be used in cases of acute dacryocystitis where the external approach is not possible. There is less risk that the endoscopic operation may result in insufficiency of the normal lacrimal pump function due to post-operative cicatrization of the mobile lateral wall of the adjoining muscle fibers (Jokinen, and Karja, 1974).

THE AIM OF THE WORK

The aim of this work was to establish a precise method to measure the lacrimal sac pressure changes during blinking, forced blinking, eye movement, nasal respiration, and Valsalva's maneuver in normal subjects, patients complaining of epiphora due to nasolacrimal duct obstruction, and after external and endoscopic ***DCR***. In normal subjects the aim was to study tear elimination and which phase of the lid movement (closure or opening) are most essential for conveyance of tear. In patients, the aim was to compare the measurements with that of normal healthy subjects.

Postoperative measurements aimed at comparing manometric findings after external and endoscopic ***DCR*** in both successful and failed cases with that of normal and diseased subjects.

ANATOMY

EMBRYOLOGY OF THE LACRIMAL APPARATUS

Precursors of the lacrimal excretory system first appear during the sixth week of gestation along the cleft between the lateral nasal and maxillary processes. The excretory system appears as a cord of epithelial cells. The solid cord extends downward into the mesenchyme to form the naso-optic fissure and detaches from the surface (Fig 1). The sequestrated epithelial cord lies between precursors of the medial canthus and the nose. During the 6-12 week gestation period, the lacrimal ectodermal bud proliferates to extend towards the inner canthus and the nasal cavity. As the epithelial cord approaches the medial canthus, it splits, conforming to the medial canthal angle. The precursors of the canalicular system are thereby established. Canalization of the duct begins at around 12 weeks of gestation and is completed by 6 months. The lacrimal punctum opens onto the lid margin just before the lids separate during the seventh month. The lower end of the naso-lacrimal duct frequently remains occluded until birth or later and is separated from the cavity of the inferior meatus by a membrane. This membrane consists of the opposed mucosal linings of the nasal fossa and the lower end of the duct (valve of Hasner). The lacrimal gland similarly derives from ectodermal cords, growing into the orbit from the upper temporal conjunctiva (Fig 2), (Toledo, et al, 1994).