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The Prevelance of Punctal Stenosis as a Cause of Obstructive Epiphora in Ain Shams University Hospitals Ophthalmology Clinic

Thesis

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By

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INTRODUCTION

Epiphora or tearing is the presence of a watering eye, which is a common complaint to be referred to oculoplastic clinics for evaluation. Not only does it cause social embarrassment, epiphora can affect the quality of a patient's life as it may interfere with daily activities, especially reading and driving. Its etiology is usually divided into two categories: reflex tearing and reduced tear outflow which is true epiphora. Reflex tearing is usually secondary to dry eye, inflammation, allergy or other ocular surface disorders, whereas primary hyper-secretion of the lacrimal glands is rare. Reduced tear outflow is due to obstruction at any portion of the nasolacrimal drainage system, eyelid malposition or tear pump dysfunction caused by eyelid laxity. Many cases evaluated for epiphora are found to have a combination of causes.[1–3]

While epiphora is a common complaint with a broad differential diagnosis, one of the least discussed etiologies of epiphora is stenosis of the lacrimal punctum. When it occurs, the most common presenting symptom is tearing, but patients may also vaguely complain of ocular discomfort.[4]

Acquired punctal stenosis is a condition in which the opening of the lacrimal canaliculus, located in the nasal part of the palpebral margin, is narrowed or occluded. It is defined as a diameter of less than 0.3 mm or the inability to intubate the

punctum with a 26 G cannula without dilation.[5,6] Punctal stenosis frequency is more common than anticipated. The exact incidence is still unknown, with reported rates ranging from 8 to 54.3% of cases of epiphora depending on setting, demographics, and probably inter-observer variability[7]

Punctal stenosis can be congenital or acquired. Many factors have been involved with the pathogenesis of acquired punctal stenosis. Old age has been identified in several studies as a cause of punctal stenosis with the pathogenesis being involutional changes involving the lacrimal punctum leading to its narrowing or occlusion. The recorded mean age in one study was 69.4 years[4,7,8]. Chronic blepharitis remains a widely identified cause of acquired punctal stenosis with suggested pathogenesis of chronic inflammation of the punctum leading to gradual fibrotic changes in the ostium [4,7]. Other causes for punctal stenosis include infections involving the eyelid, such as trachoma[9], herpes simplex[10] and others, longstanding treatment with several topical antiglaucoma agents and other topical agents like prednisolone acetate, dexamethasone, naphazoline and various artificial tear preparations [1,11,12], mechanical trauma with secondary healing and iatrogenic trauma of repeated probing, some rare etiologies like peripunctal tumors, systemic diseases and autoimmune disorders (ocular pemphigoid and graft vs. host disease) and finally, it is not uncommon that a specific cause is not identified for punctal stenosis[5].

Punctal stenosis may in fact be a significant etiological factor that should be considered in the assessment and treatment of the tearing patient.[5] To our knowledge, no randomized, controlled studies have been published on the correlation between clinical epiphora and punctal size, so defining a clear cut-off value for punctal stenosis is difficult. Consequently, there are no uniform guidelines defining what constitutes an indication to treat punctal narrowing. As far as we know, none of the mentioned studies in the literature addressed the issue of the predictive value of epiphora in diagnosing acquired punctal stenosis. Therefore, the incidence and prevalence of punctal stenosis have yet to be determined. Nevertheless, the literature suggests that this pathology should be given special consideration while assessing the patient with epiphora, as the solution is usually easier surgically than in patients with obstruction in a more distal part of the lacrimal system [5].

Aim of the Work

The aim of this study is to assess the prevalence of punctal stenosis in patients presenting with obstructive epiphora to the outpatient ophthalmology clinic at Ain Shams University Hospitals.

Chapter 1

EPIPHORA; ITS CAUSES & PREVALENCE

Epiphora or tearing is the presence of a watering eye due to reduced or obstructed tear outflow. It is a common presenting complaint for almost every ophthalmologist and especially oculoplastic specialists. [13]It causes variable degrees of discomfort for patients in their daily lives and also increases the risk of infection in several intraocular surgeries and surgical attempts. [14]

There is relatively little literature on the epidemiology and demographic characteristics of epiphora.[3] Epiphora patients are often referred from other ophthalmologists and optometrists for dacryocystorhinostomy. Mainville[15] found many of these patients to have patent lacrimal drainage systems and to have other underlying causes for their tearing. To effectively treat these patients, it is important to take a careful history and perform a focused clinical exam and appropriate diagnostic tests to identify the cause of the tearing. [15]

The etiology of tearing can be divided into two categories: reflex tearing and reduced tear outflow which is called epiphora.

The primary cause of epiphora is usually an obstruction at any level of the nasolacrimal system that prevents the drainage or even the lack of drainage related to eyelid diseases.

While the cause of reflex tearing may be due to reflex hypersecretion related to ocular surface diseases such as dry eye or tearing may be a combination of all these situations. [14]

Due to the various possible etiological factors, different approaches for different situations are needed. However, Ulusoy et al[16] observed that cases requiring surgical intervention are delayed due to patients' fear of surgery, non-recommendation of surgery by doctors or negative view points of the society, and other similar reasons; therefore, the disease eventually becomes chronic. [16]

Causes of Tearing

A. Reflex Tearing

Hyperlacrimation is an excessive production of tears causing the complaint of a "watery" eye. Ocular irritation caused by a foreign body such as an eyelash, makeup, or other foreign material will stimulate reflex tearing. Blepharitis is another condition leading to hypersecretion by disrupting the normal three layered tear film. In blepharitis, meibomian glands are blocked inhibiting secretion of the superficial oil layer of the tear film so this results in evaporation of tears causing dryness and irritation and reflex tearing. The lacrimal gland may also be directly stimulated by inflammation in patients with Sarcoidosis or Sjogren's syndrome or by tumors .[14]