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Original Research Article

Patterns, etiology and surgical intervention in cases of epiphora referrals in a tertiary care centre

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ABSTRACT

Purpose: To analyse the etiology of epiphora in the adult age group in a tertiary care centre in a developing country and the type of surgical intervention needed in those not amenable to medical management.
Materials and Methods: Ninety-eight adult patients with primary complaint of epiphora were analysed retrospectively. The patients included were those who had either some obstruction in the lacrimal drainage pathway or had poor apposition of punctum to the globe. Reflex tearing or primary hypersecretion as a causative factor was excluded from the study. Descriptive statistics of the continuous data was presented using mean± standard deviation / median (interquartile) and range while categorical data in frequency (%). To compare the proportions between the groups, Fisher exact test was used where the expected frequency in at least any cell was less than 5. P value <0.05 was considered as statistically significant.
Results: Mean± standard deviation and median (interquartile) of the patients age (in years) was 53.37±13.71 and 57(42-65) respectively with range of 20-77 years. External dacryocystorhinostomy (with or without intubation) was the most common surgery performed (n=50, 51%) followed by punctal surgeries (n=21, 21.4%) and lower lid ectropion correction (n=17, 17.3%).
Conclusion: In the 98 patients studied, external dacryocystorhinostomy was the most performed surgery for lacrimal passage obstruction. Older female patients are more susceptible to nasolacrimal blockage than the male patients while obstruction in the upper lacrimal apparatus is more common in younger males. Lateral tarsal strip is the most performed surgery for lower lid ectropion.

1. Introduction

One of the most common complaints of patients visiting the ophthalmology outpatient department is epiphora.[1–5] Epiphora can be either due to increased secretion or impaired drainage of tears.[1,2,5,6] Primary hypersecretion of tears from lacrimal gland is quite rare. The more common causes of epiphora are either reflex tearing or impaired drainage.[1–5] Reflex tearing is secondary to dry eyes, allergy, inflammation or ocular surface disorders. Reduced tear drainage or true epiphora is caused by eyelid malposition as in lower lid ectropion, eyelid laxity causing loss of punctal apposition or by lacrimal pump failure, but most commonly due to nasolacrimal duct obstruction.[4]

The purpose of our article is to report the causes and treatment for reduced tear drainage (true epiphora) for patients referred to a tertiary eye care centre in a developing country.

2. Materials and Methods

This study is a retrospective observational analysis of the adult patients who attended the outpatient department of our institute with the primary complaint of epiphora between June 2017 and December 2018. A retrospective chart review of 98 patients from our operation room records

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was done. All epiphora patients who underwent any surgical intervention for impaired drainage were included. Epiphora was defined as overflow tearing running down the cheek over a period of 6 months. In cases of bilateral involvement each eye was studied separately. All cases of reflex tearing or primary hypersecretion were excluded from the study. Demographics, medical and ocular history was obtained for all subjects. Slit lamp examination, dye disappearing test, Schirmer test, tear breakup time, diagnostic probing and syringing data were collected for all subjects.

We classified the common aetiology for impaired secretion as;

1. Upper lacrimal apparatus causes.
2. Lower lacrimal apparatus causes.

Upper lacrimal apparatus causes included lid malposition, punctal and canalicular causes while lower lacrimal apparatus causes included anomalies in lacrimal sac or nasolacrimal duct obstruction. Patients were considered surgical candidates if they were diagnosed with significant upper or lower lacrimal apparatus obstruction, eyelid malposition, pump dysfunction.

The type of surgical intervention was decided upon as per etiology. Ectropion correction procedures such as lateral tarsal strip alone or in combination with medial spindle, ectropion correction with inverting sutures was done for lower lid ectropion. For entropion correction wedge resection, double breasting of orbicularis oculi or tarsal fracture was done. Punctal pathology was addressed by punctal exploration, punctoplasty with 2 or 3 snip procedure or mini-Monoca tube insertion.[7,8] Canalicular block was treated by conjuntivo-dacryocystorhinostomy. In cases of encysted mucocele dacryocystectomy was performed. For nasolacrimal duct obstruction external dacryocystorhinostomy with or without silicone tube intubation was done.

Descriptive statistics of the continuous data was presented using mean± standard deviation / median (interquartile) and range while categorical data in frequency (%). To compare the proportions between the groups, Fisher exact test was used where expected frequency in at least any cell was <5. Clustered bar diagram was used to show the distribution of the patients between two categorical variables. P value <0.05 was considered as statistically significant. Statistical package for social sciences, version -23 (SPSS-23, IBM, Chicago, USA) was used for statistical analysis.

3. Results

In this study, a total of 98 patients who underwent surgical correction for epiphora were included. Mean± standard deviation and median (interquartile) of the patients age (years) were 53.37±13.71 and 57(42-65) respectively with range of 20-77 years. Maximum participants were female (n=52, 53.1%). Upper lacrimal apparatus causes (n=53, 54.1%) of epiphora outnumbered the lower lacrimal apparatus causes (n=45, 45.9%). DCR was the most common surgery (n=50, 51%) performed followed by punctal procedures (n=21, 21.4%) and surgeries for ectropion correction (n=17, 17.3%).

Distribution of surgeries as per etiology, gender and age group is given in Table 1. Table 2 shows gender and age distribution for the classes of obstruction.

Figure 1 shows the distribution of etiology with respect to age groups highlighting the fact that upper canalicular block is more common in younger age group while lower canalicular block is significantly higher in older age group. It is observed that dacryocystorhinostomy is the most commonly performed surgery at our institute followed by punctual procedures, ectropion surgeries and others. Table 1 also shows the distribution of surgery type as per etiology suggesting that punctal surgery is more commonly performed in younger patients and dacryocystorhinostomy is most common in older age group.

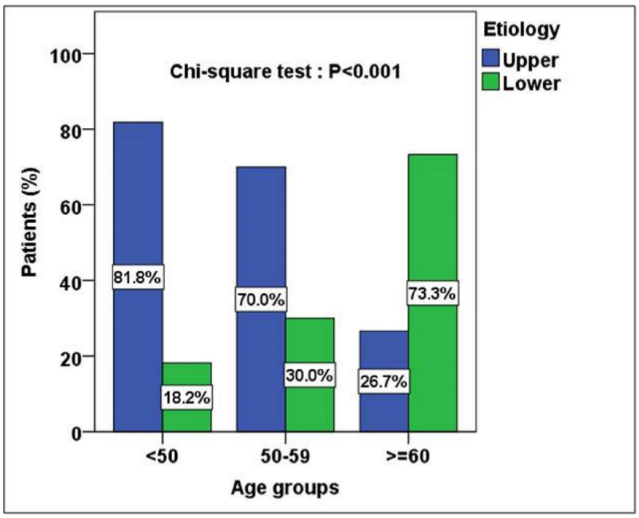

Fig. 1: Distribution of Etiology as per Age groups

4. Discussion

Patients visiting the ophthalmology outpatient department often present with the complaint of watering eyes. Cases of reflex tearing require medical management whereas surgical intervention in epiphora is done in lid malposition and in cases of nasolacrimal passage obstruction.[1,3,5,9–11] The purpose of our article is to report the causes and treatment for reduced tear drainage (true epiphora) for patients referred to a tertiary eye care centre in a developing country with the complaint of watering eye.Our study is unique as it deals with surgical management of epiphora only unlike other studies done previously. We have categorized common surgical procedures and etiological causes that

Table 1: Distribution of the surgery as per etiology, gender and age groups

Surgery Type	DCR	Ectropion	Entropion	DCT	Punctum surgery	Lid+ Punctum	Total	P Value
Etiology								
Main								
Upper	10(18.9)	17(32.1)	2(3.8)	0(0)	21(39.6)	3(5.7)	53(54.1)	<0.001
Lower	40(88.9)	0(0)	0(0)	5(11.1)	0(0)	0(0)	45(45.9)	
Gender								
Male	20(43.5)	8(17.4)	1(2.2)	2(4.3)	13(28.3)	2(4.3)	46(46.9)	0.617
Female	30(57.7)	9(17.3)	1(1.9)	3(5.8)	8(15.4)	1(1.9)	52(5.31)	
Age groups								
<50	10(30.3)	7(21.2)	0(0)	0(0)	15(45.5)	1(3)	33(33.7)	
50-59	8(40)	4(20)	1(5)	0(0)	6(30)	1(5)	20(20.4)	<0.001
≥60	32(71.1)	6(13.3)	1(2.2)	5(11.1)	0(0)	1(2.2)	45(45.9)	

Fisher exact test used, p<0.05 significant

Table 2: Distribution of the etiology as per gender and age groups

Etiology	Upper	Lower	Total	P Value
Gender				
Male	30(65.2)	16(34.8)	46(46.9)	0.037
Female	23(44.2)	29(55.8)	52(53.1	
Age groups				
<50	27(81.8)	6(18.2)	33(33.7)	
50-59	14(70)	6(30)	20(20.4)	<0.001
≥60	12(26.7)	33(73.3)	45(45.9)	

Chi-square test used, p<0.05 significant

required surgery.We found that upper lacrimal apparatus pathology was more common than lower lacrimal apparatus cause. Upper lacrimal apparatus involvement was more common in male patients while lower lacrimal apparatus involvement especially nasolacrimal duct obstruction is more common in females. This is consistent with previous studies and has been postulated that smaller diameter and longer nasolacrimal canal in females make them more susceptible to inflammation and obstruction.[3] Traumatic cause of epiphora was more common in young males. There was an overall female preponderance in cases of epiphora as reported by previous studies as well.[1,5]

In our study the mean age of patients was 53.37±13.71 years suggesting that elderly patients were more likely to have epiphora. Punctal and canalicular causes were more common in the young while nasolacrimal obstruction was more prevalent in the older age group which is comparable to previous studies.[3]

External Dacryocystorhinostomy and its modifications remains the gold standard and most commonly performed surgery for obstructive epiphora.[7–9] However, we did not perform endoscopic dacryocystorhinostomy in our patients. DCR was the most common surgery (n=50, 51%) followed by punctal procedures (n=21, 21.4%) and ectropion correction surgeries (n=17, 17.3%). Punctal pathologies were addressed with punctal exploration, punctoplasty with 2 or 3 snip procedure or mini-Monoca tube insertion, which are procedures of choice in our setup as has been reiterated in literature.[11–14] Ectropion correction procedures such as lateral tarsal strip alone or in combination with medial spindle are commonly performed procedures with a high success rate.[15–17] Ectropion correction with inverting sutures was the procedure of choice. For entropion correction wedge resection, double breasting of orbicularis oculi and tarsal fracture was done.

Canalicular block was treated by conjuntivo dacryocystorhinostomy. 12 cases were performed but 2 reported with extrusion of the tube.

Therefore,a detailed and meticulous examination of the patient to assess the site and degree of obstruction is the key factor towards successful management of all cases of epiphora.

5. Source of Funding

None.

6. Conflict of Interest

None.

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