Original Article

The Etiology of Epiphora: Do not Forget ENT causes

Etiology of Epiphora

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ABSTRACT

Objective: There are many causes of epiphora, and treatment is different according to the cause. We aimed to find the etiology and the treatment modalities of affected patients but not forgetting ENT causes of epiphora.
Study Design: Prospective Study
Place and Duration of Study: This study was conducted at the Pak Red Crescent Medical and Dental College in the Departments of Eye and ENT from Jan 2019 to August 2019.
Materials and Methods: This study was done at Pak Red Crescent Medical and Dental College in the Departments of Eye and ENT from Jan 2019 to August 2019. Study included 50 patients. All patients were examined by EYE surgeon and later referred to ENT surgeon to rule out any ENT cause i,e sino nasal disease
Results: A total of 50 cases (32 men & 18 women) were included. The age range was 18 to 60. Bilateral epiphora was present in 5 patients (10%) and unilateral epiphora in 45 (90%). Lacrimal system disease was the commonest cause followed by ocular surface disease. ENT causes were the last including nasal polyps, DNS, allergic rhinitis; hypertrophic inferior turbinate's secondary to chronic rhinitis/ sinusitis and rhinitis medicamentosa. About 2% had previous treatment by ophthalmic surgeons but without any success.
Conclusion: Epiphora not only causes disturbance in the life of the patients but also puts them at risk for eye operations later on. There are several different causes of epiphora but don't forget Sino nasal causes. Treatment depends upon etiology after a thorough history, examination and investigations.
Key Words: Epiphora, Nasal, Polyps, DNS, Hypertrophic Inferior Turbinate's.

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INTRODUCTION

Epiphora is a common complaint of patients consulting eye department. It is not only uncomfortable for the patient but can also be a reason for several eye surgeries at risk.[1] Looking into the history of ophthalmology, epiphora is known from the era of Hippocrates.
The main cause of epiphora is obstruction that blocks the drainage of nasolacrimal duct system or even lack of drainage related to diseases of eyelid. Hyper secretion due to ocular surface diseases such as dry eye or combination of all these can be another cause.[2]
Other causes are Sino nasal diseases such as DNS, nasal polyps, allergic rhinitis, hypertrophic inferior turbinate's. Detailed examination of nose and sinuses should be done in every case of epiphora as the cause may be Sino nasal and not ophthalmic.

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However, it is noted that cases presenting with epiphora are not diagnosed early regarding etiology and also surgical intervention is also delayed due to many factors so that disease become chronic and lingers on.
In this study, we tried to find the etiology of epiphora and treatment options which can be given offered to the patients according to the etiology but not forgetting ENT causes because without ruling out ENT causes of epiphora result of any treatment will be a failure.

MATERIALS AND METHODS

This study included 50 patients who presented with complaint of epiphora from Jan 2019 to August 2019 in the department of EYE and later referred to ENT department of Pak Red Crescent Medical and Dental College Dina Nath to rule out any Sino nasal cause of epiphora.
All patients underwent complete EYE examination and related investigations done. Referral was also made to ENT department for examination of ENT to rule out any Sino nasal cause. In ENT history related to Sino nasal diseases did taken, examination comprise rhinos copy and investigations comprising x-ray PNS Done in suspected cases of chronic rhinitis / sinusitis in which hypertrophic inferior turbinate's been the culprits causing nasolacrimal duct office obstruction.

RESULTS

Out of 50 patients, 32 (64 %) were males and 18(36%) were female and age range was 18 to 60.

The duration of complain was 2 months to 4 months in 48%, 3 months in 46% and above 4 months in 6% of cases

The causes of epiphora were lacrimal apparatus disease in 46%, ocular surface disease such as blepharitis and dry eye in 36%, eyelid disorder in 4%, allergy nose in 4%, DNS in 4%, nasal polyps in 2%, hypertrophic inferior turbinate's due to chronic rhino sinusitis in 2%, hypertrophic inferior turbinate's due to rhinitis medicamentosa in 2%.

It was noted that 4% of patients had epiphora because of edematous nasolacrimal duct obstruction caused by nasal allergy. ENT examination showed pale, edematous swollen inferior turbinate's almost totally blocking nasal passages. In these patients there was history of sneezing in episodes, watery nasal discharge and nasal obstruction.

In 4% of cases, there was deviated nasal septum pressing the inferior turbinate on the side of epiphora.

In another 2% of cases, nose examination showed bilateral multiple ethmoidal polyps (mucous polyps) totally obstructing the nasal passage.

In another 4% of cases, there were hypertrophic inferior turbinate's totally occluding the nasal passages. Out of these, 2% showed hypertrophic inferior turbinate's secondary to chronic rhinitis/chronic sinusitis and in another 2% of cases the hypertrophic inferior turbinate's were secondary to rhinitis medicamentosa due to misuse and abuse of nasal decongestant drops xylometazoline.

The treatment modalities which all these patients required were medical and surgical as discussed below.

Those having lacrimal apparatus disease and eye lid diseases needed surgery and those with ocular surface disease needed medicine.

Patients with allergic rhinitis needed oral antihistamines and steroid nasal spray. Those with having DNS and nasal polyps needed surgery. In hypertrophic turbinate's due to chronic rhino sinusitis treatment would be antral wash out and inferior turbinectomy. In hypertrophic turbinate's of rhinitis medicamentosa treatment would be stopping nasal decongestant drops and starting steroid nasal spray. If this is not successful then inferior turbinectomy will be needed**.**

DISCUSSION

Epiphora is a common complaint in Eye clinics and it is uncomfortable and causes problems in the activities of individual such as driving, reading, watching television and working on computer.[3]

Regarding etiology of epiphora, Mainville and Jordan found that obstruction of lacrimal passage causing to epiphora is found in 48.7% of the cases, followed by dry eye related reflex tear secretion in 40%.[4] Cases of epiphora due to chronic dacrocystitis result after inflammation of lacrimal system.[8] Obstruction of nasolacrimal duct is also a common etiological factor of epiphora with a rate of 33.3%.[5] On the other hand according to Bukhari though punctum stenosis was the primary cause (37.8%), hyper secretion was the second most frequent cause.[6] Another study showed that lower lid malposition was the primary cause (33.3%).[7]

According to Kahokouli et al[9], stenosis of punctum develops due to eyelid ectropion, chronic blepharitis, senility or side effects of drugs. According to Soiberman et al, 10 ectropion and old age causing tissue atrophy also causes stenosis of punctum. Another study showed that punctum stenosis to be significantly higher in women as compared to men.[12] In several studies done, it was found that the rate of punctum stenosis without taking into account the patient complain on eye diseases was 11% to 54.3% [7,12,13]

Eye lid disorders are also responsible for epiphora and included in the list are entropion, ectropion, trichiasis / distichiasis etc which were reported by Tse et al.[14]

However in our study lacrimal pathology was seen in 46% of cases and ocular surface disease (dry eye/blepharitis) was seen in 36% of cases.

Epiphora is also seen in people with entropion which is eye lid disorder and the eye lashes cause corneal and conjunctiva damage there by causing epiphora[15]

According to Michell at al[16], with increasing age rate of entropic rises in people aged fifty and above and the rate of ectropion occurrence was 3.9%.

Diseases of ocular surface such as blepharitis and dry eye may affect the corneal and conjunctiva sensory receptors and cause reflex hyper secretion of the lacrimal gland resulting in epiphora. This is in accordance with the study by Schmazaki at al.[17]

It is to be noted that in a recent study the majority of bacteria in chronic dacrocystitis were gram (+) which was compatible with the bacterial spectrum of end opthalmitis, the most dangerous infection [18,19]

The above mentioned discussion was related to lacrimal pathway diseases, ocular surface diseases and eye lid disorders.

However, there were cases in our study in which epiphora was secondary to Sino nasal pathology. There were 2 cases of nasal allergy, 2 cases of DNS and one case of nasal polyps. Also two patients (4%) had hypertrophic inferior turbinate's. One due to chronic rhino sinusitis and one resulting from misuse and abuse of xylometazoline nasal drops (rhinitis medicamentosa) These patients had received previous nasolacrimal duct surgery which failed to eliminate epiphora.

In 2 cases (4%) of allergic rhinitis, odema of nasal mucosa and swollen pale inferior turbinate's were thought to be factor in functional obstruction of nasolacrimal duct office and responsible for the epiphora.

Allergic rhinitis and allergic conjunctivitis have similar pathogenesis. Both are mediated by immunoglobulin E and classified as type one pathological reaction. Communication pathways are thought to increase the chance like hood of inflammatory reaction at both sites following allergen exposure of nasal and ocular tissues.[20] Steroid nasal sprays are easily used, do not cause atrophy of nasal mucosa, are not systemically absorbed to any significant amount and can be considered effective in reducing nasal and ophthalmic symptoms and signs.[21]

The other medicine required will be anti-histamines in these cases of allergic rhinitis. They are very effective in blocking H_1 receptors in nasal mucosa.

In our study, 2 cases had DNS pressing over the inferior turbinate and responsible for epiphora, in addition to nasal symptoms. These patients needed SMR operation not only for relief of nasal symptoms but also for relief of epiphora. Naso lacrimal duct obstruction with ipsilateral nasal sepal deviation resulting in epiphora is in accord with the study by Taban et al and Lee at al. [22,23]

In a study by Yazici et al, [24] DNS toward the side of nasolacrimal duct obstruction was responsible for epiphora and in out study we found the same.

In our study, one case was of nasal polyps with nasal symptoms and later developed epiphora. This case needed polypectomy and post-operative antihistamines (long term) to avoid recurrence. Those with hypertrophic turbinate's secondary to chronic rhinitis / sinusitis and rhinitis medicamentosa required antral wash out and trimming of turbinate's, while in rhinitis medicamentosa required stoppage of nasal decongestants and giving steroid nasal spray to reduce bulky turbinate's**.**

CONCLUSION

It should be noted that a complaint of epiphora is not only uncomfortable for the patient but can also generate situations that may result in loss of eye sight. Epiphora has different causes and one should not forget ENT causes and patients who consult about these complaints, their causes should be found and treated accordingly. However, while finding the etiology doesn't forget ENT causes of epiphora and give necessary treatment medical or surgical in these ENT cases, otherwise trying to relieve epiphora without removing the ENT cause will be a failure**.**

Author's Contribution:

Concept & Design of Study:	Tariq Enver
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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