

DRY EYE SYNDROME IN PAKISTANI COMMUNITY

Pages with reference to book, From 66 To 67

Samina Jehangir (Department of Ophthalmology, Allama Iqbal Medical College, Services Hospital, Lahore.)

Abstract

Dry eye syndrome was studied in 30 Pakistani patients, 20 males and 10 females ranging from under 20 to over 60 years. The visual acuity at the time they first reported was 6/60(20/200) or less in 21(70%) patients and 6/18(20/60) or above in nine (30%). Fifteen (50%) patients were hopelessly blind and another six (20%) were with very poor prognosis. Only nine (30%) patients had a chance to escape impending blindness (JPMA 40: 66, 1990).

INTRODUCTION

Absence of tears causes keratinization of the corneal and conjunctival epithelium. The precorneal tear film consists of an outer lipid, middle aqueous and inner mucin layer¹. The outer lipid layer retards evaporation of aqueous layer. The middle aqueous layer provides atmospheric oxygen to the corneal epithelium. It has antibacterial substances, provides smooth optical surface and washes away debris. The inner mucin layer converts the corneal epithelium from a hydrophobic to a hydrophilic surface. In addition to adequate amounts of aqueous tears and mucin, a normal blink reflex², congruity between the external ocular surface and the eyelids and healthy epithelium are necessary for effective resurfacing of the cornea by the precorneal tear film³. Once the conjunctiva is scarred and cornea is opaque the chances of successful restoration of vision are very slim⁴. As the most productive area of health care is that of prevention, this study was conducted for promoting interest in the prevention of blindness in our country.

MATERIAL AND METHODS

This study of 30 randomly selected patients, 20 (66.6%) men and 10 (33.4%) women took 6 months. Twenty two (77%) of the patients were over 40 and 8 under 40, one being a child of 12 (Table 1).

TABLE I. Age Incidence.

Age group	Female	Male
01-10 Years	—	—
10-20 Years	—	1 (3.3%)
20-30 Years	—	1 (3.3%)
30-40 Years	3 (10%)	3 (10%)
40-50 Years	3(10%)	7 (23.3%)
50-60 Years	4 (13.3%)	6 (20%)
60-70 years	—	2 (6.6%)

Considering dry eye a common condition, all patients complaining of red, burning, itchy and uncomfortable eyes were suspected for KCS (Keratoconjunctivitis Sicca). The strategy in history and examination was to: (1) identify patients with lacrimal disorder, (2) locate the part of system involved (secretion, distribution, excretion), (3) assess the functional impact on corneal integrity and health of external eye and (4) determine the etiology. General medical history was obtained. External examination and slit lamp examination of anterior segment was carried out for evaluation of lower lid tear meniscus, precorneal tear film⁵ and presence or absence of complications. Schirmer's test and tear film break up time were carried out to evaluate relative deficiency of aqueous or mucin⁶.

RESULTS

Eighteen (60%) patients when first reported had corneal opacification of varying degree. Another 9 (30%) were affected with keratitis leading to spacification. Twelve (40%) were having trichiasis and another 5 (20%) presented with entropion. Mucous threads and diminished tear meniscus was present among 15 to 25 (50 to 80%) patients. Bitot's spot were found in 6(20%) patients (Table III).

TABLE III. Clinical Ocular Findings

Ocular Findings	No. of cases
Lid Scales	6 (20%)
Trichiasis	12 (40%)
Punctal Stenosis	4 (13.3%)
Entropion	6 (20%)
Papillary Conjunctivitis	6 (20%)
Bitot's Spots	6 (20%)
Mucous Threads and Filaments	15 (50%)
Diminished Tear Meniscus	25 (83%)
Epitheliopathy	20 (66%)
Keratitis	9 (30%)
Corneal Opacification	18 (60%)
Uveitis	3(10%)

Corneal staining was positive in 20 (66%) patients. Aqueous deficiency tested by Schirmer's test for basic secretion was present in 18 (60%) and mucin deficiency tested by tear film break up time in 15 (50%) patients (Table IV).

TABLE IV. Special Clinical Tests.

Clinical Test	No. of cases with positive result
Evaluation of tear meniscus	
Diminished	16 (53%)
Absent	5 (17%)
Corneal Staining	20 (66%)
Schirmer's test for basic secretion	18 (60%)
Tear Film breakup time	15 (50%)

In 10 (33.3%) patients the cause of dry eye was chronic bacterial and viral conjunctivitis and trachoma. Six (20%) patients were affected because of pterygium and staphylococcal marginal blepharitis. Chemical burns, unsuccessful lid surgery for ptosis and hypovitaminosis A produced dry eye in 5(20%) patients. Nine (30%) patients were diagnosed as Sjogren's syndrome, Stevens Johnsons syndrome and facial paralysis (Table V).

TABLE V. Etiological Factors.

Etiological Factors	Female	Male	Total No.
Chronic Bacterial or viral conjunctivitis	2	4	6 (20%)
Trachoma	2	2	4 (13.3%)
Sjogren's Syndrome	1	3	4 (13.3%)
Stevens Johnson Syndrome	2	1	3 (10%)
Pterygium	1	2	3 (10%)
Staphylococcal marginal blepharitis with keratoconjunctivitis	1	2	3 (10%)
Chemical Burns	—	2	2 (6.6%)
Lid Surgery for ptosis	—	2	2 (6.6%)
Facial Palsy	1	1	2 (6.6%)
Hypovitaminosis A	—	1	1 (3.3%)

The visual acuity at the time they first reported was 6/60(20/200) or less in 21 (70%) patients and 6/18 (20/60) or above in nine (30%) (Table II).

TABLE II. Initial Visual Acuity.

Initial Visual Acuity	No. of cases
Perception of Light	3 (10%)
Projection of Light	3 (10%)
Hand Movements	5 (16.6%)
Counting Finger	4 (13.3%)
6/60	6 (20%)
6/36	5 (16.6%)
6/24	2 (6.6%)
6/18	2 (6.6%)

DISCUSSION

Prevention of ocular disorders includes both elimination of hazards to the eyes (e.g, accident prevention, sterility of ophthalmic solution) and recognition of disease states at a time when improvement, containment, or cure can be achieved with proper management. The updated estimates of world blindness produced by the WHO in 1987 showed that there are between 27 and 35 million blind people in the world with a visual acuity of less than 3/60 and 41 to 52 million with a visual acuity of less than 6/60. From the available data it is noted that a 1981 estimate of blindness in Pakistan gave a prevalence rate of 2.4%, resulting in a total of 1,447,400 people with a visual acuity of less than 1/60 in which cataract, trachoma, infections and corneal scarring accounted for 85%⁷. This study conducted in 1988 shows that many of these diseases are still prevalent in Pakistan. Sixteen (53%) patients with ocular diseases like chronic conjunctivitis, trachoma, marginal blepharitis and pterygium can be prevented from turning blind if ocular care is provided at an early stage. Adequate safety should be provided against industrial hazards. Measures are to be taken against malnutrition as treatments available, either medical or surgical, are unsatisfactory after the complications set in. As pointed by Professor Barrie Jones, there are four basic requirements for community ophthalmology to work, defining community ophthalmology as that "applied to eliminating avoidable blindness and improving the eye health of communities" and avoidable blindness as "blindness that could be either prevented or cured within the constraint of resources that could reasonably be made available for that purpose".⁷ Firstly, selected skills of basic ophthalmology should be available to all those in need wherever they lived requiring the training and utilizing of all relevant categories of manpower not just the training of ophthalmologists. Secondly, community ophthalmology should be closely integrated with the primary health care system and to develop and remain in close integration with the academic and referral centers of ophthalmology. Thirdly, ophthalmology services should deliver appropriate balance of preventive and curative measures aimed at the main blinding and disabling eye disease burden in the community — as defined by epidemiologically sound methods. Fourthly, the resources be allocated and distributed according to epidemiologically determined priorities based on the geographic distribution of people, disease burden and service deficits.⁷ Pakistan is a vast country, and efforts have to be coordinated in order to improve the eye health of Pakistanis. It would be appropriate if the domain of ophthalmology and community medicine make joint efforts in eliminating avoidable blindness and improving the eye health.

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