Original article:

Pterygium: an epidemiological study in India

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Abstract:

Introduction: Pterygium appears as a triangular fold of vascularized conjunctiva, the apex of which lies towards the cornea and base merges with the sub-conjunctival tissue.

Methodology: This prospective observational study was undertaken in patients with pterygium to analyze its epidemiological trends especially age, sex incidence, effect of living conditions and occupation etc. on the occurrence of this problem.

Observations & results: In the present study, a total number of 50 cases of pterygium were selected from out-patient department. After history and general examination, they were subjected to slit lamp biomicroscopy, keratometry and automated refraction. The age incidence of the group showed that the incidence of pterygium was 4% in the age group of less than 30 years. It rises to a maximum of 32% in the age of 30-39 years and then gradually declines. There is a male preponderance of 60%, the incidence being more in rural areas (72%). The incidence was found to be maximum among farmers (40%) followed by labourers (20%), office staff (10%), students (4%) and housewives (10%).

Conclusion: People who work outdoors are subjected to involuntary U.V. B exposure. The highest exposure will occur during the two hours on either side of noon. Workers must be aware of this and they must take appropriate precautions like wearing protective glasses, caps etc.

Keywords: Pterygium, Conjunctiva, Cornea.

Introduction:

Pterygium is a fairly common condition of the eye, the existence of which was well recognized at the time of Hippocrates (460-375 BC) and Celsus who described it as ‘Urigus’ in his manuscripts. The earliest description of pterygium is available in the texts of the great surgeon of ancient India, Sushruta (3000 BC) who called it as ‘Armans’. In India, it is called ‘Nakoona’ in Hindi, due to its resemblance to a nail, in its shape. Although in its early stages, this condition is symptomless, bothering some patients cosmetically but in later stages, it may cause impairment of vision due to two reasons, one by covering the pupillary area of the cornea and second by altering the curvature of the cornea due to fibrosis, with resulting astigmatism. Once it invades the cornea, it causes a corneal opacity. For management of this condition, surgery is done like Bare sclera technique with or without mitomycin C, Conjunctival autograft, Amniotic membrane graft etc.

Material & Methods:

The present study was conducted at the Department of Ophthalmology at the Government Medical College, Kannauj, UP. A total number of 50 cases with pterygium were selected from out patient department. The following points were tabulated as under name, age, sex, address, occupation, history, general examination, local examination, and investigation. Specific examination of the pterygium was performed as under following:
(a) Side- Right eye / left eye / both eye
(b) Position-Nasal / Temporal / Double
(c) Nature of growth – Progressive/ Stationary
(d) Autorefractometry
(e) Keratometry

Observations & Results:
The incidence of pterygium was found to be 4% in the age group of less than 30 years. It then rises to maximum of 32% in age group of 30-39 years and then gradually declines .This is shown in Fig-1. There is a clear cut male preponderance of 60% as compared to females (40%).This fact has been represented in Fig-2. The effect of living surroundings on the occurrence of pterygium showed more cases of rural areas that is 72% , than urban areas which are 28%. This is seen in Fig-3. A distinct epidemiological data was found regarding effect of occupation on pterygium cases .This condition was maximum in farmers( 40%) followed by labourers ( 20%), office workers ( 10% ) and housewives (10%).Pterygium was much more prevalent among those who had not used glasses or any protective measures for their eyes ( 84%) than among those who protected their eyes with either spectacles or sunglasses (16%). This is represented in Fig-4.
The incidence in the side of pterygium follows no definite predilection and it was bilateral in only 4% cases. Most of the pterygium cases were seen on the nasal side (92%); 4% were on the temporal side and only 4% were seen on both sides .This fact has been represented in Fig-5. The present study outlines all the prominent epidemiological features involved in the occurrence of pterygium. This condition, which is more prevalent in rural areas was maximum in outdoor workers due to environment irritants like heat, dust & fumes. Besides cosmetic problems, pterygium can cause diminution of vision.

Photo 1- Showing the examination process by Slit Lamp

Photo 2- Showing Pterygium encroaching upon the corneal area

Photo 3- Showing Preoperative view of the pterygium

FIG. 1 (Age Incidence)
Discussion
In the present study the patients were distributed under the following age groups :- i.e.=<30 yrs; 30 -39 yrs; 40-49 yrs and >=60 yr. Maximum percentage i.e 64% was noticed in age group 30-39 yrs. This is in close age concordance with findings Michele Gerundo(1) . The prevalence of pterygium increases with age(2). Osahon et al(3) in their study in Benin city found the peak prevalence rate to be in the age group 31-40 yrs. Mackenzie et al(4) found that the risk of pterygium was increased in patients who are in their third decade of life work outdoor in an environment with high surface reflectance compare with those who work indoor.

It was found from the observation that males are affected more i.e. 60% than females (40%). Higher incidence in males is due to more exposure to incidence dust , wind ,heat and sun to which they are exposed while outdoor activities for their livelihood. Thus the chief factor in the etiology was exposure to atmospheric irritants leading to chronic irritation of the conjunctiva. Parthasarthy & Gupta(5) also concluded that males suffered more than females.

In this study , it was found that higher incidence of pterygium was in rural folk who are exposed of pterygium more to heat ,dust, sun glare and atmospheric irritants. In the present study, out of 50 cases , the maximum number were farmers (40%). This confirms the role of dry, dusty, hot climate in the incidence of pterygium,Farmers & labourers are constantly exposed to these conditions .This correlate with the findings of Elliot(6) & Talbot(7) .Mackenzie et(4) al study on the risk factors in the development of pterygium suggest a strong causal relationship exposure to ultra violet light in the early years of life & a cumulative exposure over next 2 or 3 decades in occupation where reflected U.V. light has also been found to be important in development of pterygium(8) certain occupations with higher exposure to U.V. light B, radiation have been shown to have higher prevalence of pterygium (9,10). Pterygium was also associated with certain outdoor occupations such as Stockman, Labourers in the aboriginal population.

Chronic Uveitis has many complications and can lead to reduced vision, hence early diagnosis and treatment is necessary.(11)

These measures taken while at work & outdoors to protect the eyes from sunglare, dust, heat, wind
smoke and gases are important in preventing pterygium. In this study, 84% patients were not using glasses & only 16% used glasses. Mackenzie F.D.(4) & Cameroon(1964)(11) also showed that incidence of pterygium can be reduced by regular use of glasses. Persons wearing spectacles made of plastic/glass appears to be relatively protected from developing pterygium due to blocking of U.V. radiation by these materials. Thus they should be educated about the importance of wearing them together at work.

92% cases of pterygium belonged to nasal side and 4% temporal side. Higher incidence of incidence of pterygium on nasal side was due to flow of tears towards medial canthus carrying with it sand & dust particles towards nasal side. Nasal presentation being more common Archilla et al(12) explained that due to transmission of UV light from temporal side of cornea through the stroma on to the nasal aspect of eye, perhaps explaining why these lesions are more common nasally. Incidence of pterygium was maximum in outdoor workers due to environmental irritants like heat, dust, fumes, gases & U.V Radiation which are the main aetiological factors.

Innovative medical technology & health education is essential for helping patients so that diseases or complications can be cured rather than be managed.(14)

Conclusion:
From present study we may conclude that most of the cases of pterygium were seen in young and middle-aged people. Incidence of pterygium was more in males (60%) than in females (40%). Incidence of pterygium was maximum in outdoor workers due to environmental irritants like heat, dust, fumes, gases & U.V Radiation which are the main aetiological factors.

References:
1995:14:543-544

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