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PROFILE OF PTERYGIUM AT TERTIARY CARE CENTRE OF KUMAON REGION(UTTARAKHAND)

Ophthalmology

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ABSTRACT

BACKGROUND: Pterygium is a fibrovascular wing or triangular-shaped tissue that develops from the subconjunctival tissue and encroaches onto cornea destroying superficial layers of stroma and bowmans membrane.

METHODS : This cross-sectional study was conducted at the outpatient department of ophthalmology of Government Medical College Haldwani, Uttarakhand. A total of 215 pterygium patients were selected to analyse various sociodemographic factors especially age, sex, residence, occupation, position etc on the occurrence of this problem.

RESULTS : In the present study, out of 215 pterygium patients, 46% patients were in the age of 36-50 years,followed by 18% in 51-65 years. There was a female preponderance(65%) as compared to males(35%). 77 percent of patients belonged to rural areas. The incidence was found to be maximum among agriculture worker (43%) followed by industrial labourers 26%.Left eye was involved in 83% cases while the majority 96% of pterygium patients were nasal. Progressive pterygium was found in 81% cases whereas atrophic pterygium was found in 19% cases.

CONCLUSIONS: People who work outdoors are subjected to involuntary U.V. B exposure, dust. Workers and farmers must be aware of this and they must take appropriate precautions like wearing protective photochromatic glasses, caps etc.

KEYWORDS

Conjunctiva, Incidence, Occupation, Pterygium, Demographics

INTRODUCTION

Pterygium is a growth of fibrovascular tissue on the cornea and conjunctiva. It occurs in the palpebral fissure, much more often nasally than temporally, although either or both ("double" pterygium) occur. Pterygium is associated with ultraviolet light exposure.[1] It occurs mostly in tropical areas near the equator and to a lesser degree in cooler climates.[2,3]Outdoor work and both blue and ultraviolet light have been attributed in its causation. The use of hats and sunglasses is protective.[2,3] In the past, the pathogenesis of pterygium was thought to be related to disturbance of the tear film spread central to a pinguecula. Recent theories implicate the possibility of damage to limbal stem cells by ultraviolet light and by activation of matrix metalloproteinases.[4,5] In pterygium Bowman's membrane is destroyed within the corneal component and vascularization is seen[6].

Histopathology of the pterygium tissue shows both degenerative and proliferative changes. In addition to elastotic degenerative changes in collagen, epithelial hyperplasia,hyalinisation of conjuctival stroma, granular deposits, newly formed blood vessels and fibrous connective tissue component are also demonstrated. Both proliferative and degenerative changes are caused by chronic exposure to UV radiation. Pterygium must be differentiated from pseudopterygium. Pseudopterygium is fold of bulbar conjunctiva attached to cornea. It is formed due to adhesions of chemosed bulbar conjunctiva to the marginal corneal ulcer. It usually occurs due to chemical burns to the eye.

AIMS

To study demographic profile of pterygium cases at tertiary health care centre of Kumaon region Uttarakhand.

OBJECTIVE

To determine the demographic and clinical profile of pterygium at tertiary health care centre of Kumaon region and to identify prophylactic factors to avoid formation of pterygium.

METHODOLOGY

The present study was conducted on patients attending the outpatient department of Ophthalmology, Government Medical College, Haldwani Uttarakhand India.

Study design: This study is a cross sectional study.

Study population: The study population included all pterygium patient at outpatient Department of Ophthalmology, Government Medical College Haldwani.

Study Procedure: The informed consent from all the patients was taken before inclusion in the current study. All the diagnosed cases of pterygium were selected from outpatient department of ophthalmology and studied as under name, age, sex, address, occupation, side of pterygium (right/left eye), position of pterygium (nasal/temporal/both), nature of growth of pterygium (progressive/ stationary), history, general examination, local examination, and investigations.

Place of study: Department of Ophthalmology Government Medical College Haldwani.

Period of study: July 2019 to April 2020

Sample size: All the diagnosed cases of pterygium patient attending the outpatient department of ophthalmology Government Medical College Haldwani.

REVIEW OF LITERATURE

Pterygium was well recognized at the time of Hippocrates (460-375 BC) and Celsus 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 who called it as 'Armans'. . Due to high chances of recurrence even after excision(just like a nail) it is called 'Nakhoona among general population of India' [7]Pterygium is a common disease of the ocular surface characterized by the invasion of fibrovascular tissue from the bulbar conjunctiva onto the cornea. It can cause chronic ocular irritation, induced astigmatism, tear film disturbances, and decreased vision secondary to growth over the visual axis.[8,9]It is mainly caused by environmental risk factors.

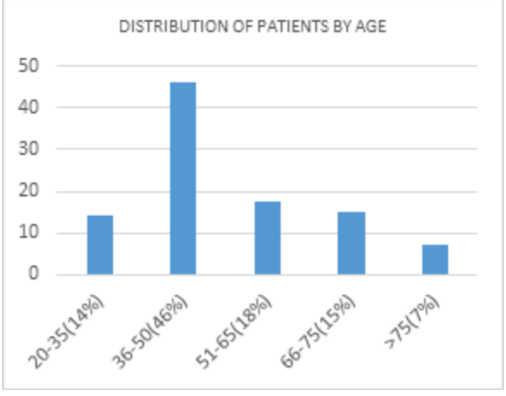
Risk of pterygium increases in patients who are in their third decade of life who work outdoor in an environment with high surface reflectance compare with those who work indoor and the prevalence of pterygium was most common in the fourth to sixth decade of life.[10,11] Pterygia warrant treatment when they cause discomfort (not responsive to conservative therapy), encroach upon the visual axis, induce significant astigmatism, or become cosmetically bothersome.

In a study done by Mahar and Manzar, they noted that a higher level of corneal involvement at presentation correlated signifcantly with recurrence. They graded pterygium based on the size of its corneal involvement. It is considered grade 1 if the fibrovascular proliferations involve less than ¼ of the corneal diameter, grade 2 if more than ¼ but less than ½, and grade 3 if it involves more ½ of the corneal diameter and obscures the visual axis (Luanratanakorn, 2006).[12]

Rajiv, et al found that pterygium was most commonly seen in males 64.29% as compared to females 35.71% between age group 30-40[13].Similar observations were made by *Manhas A et al*[14]. *Saleem M et al* in their study of 120 patients where 79.16% were males and only 20.84% were females[15].According to *Khan N et al* and *Rahman A et al* pterygium is more common in males than females.[16,17] Krishnaram K and El-Sersy TH have made the same observations.[18,19]*Ganeshpuri AS et al*had also reported that pterygium is more common in males than females[11]. In his study on 62 pterygium patients, he found that 58.06% were males and 41.94% patients were females. Prabhakar SK also concluded that males suffered more than females.[20]

RESULTS AND DISCUSSION :

A total of 215 pterygium patients were reviewed in Department of Ophthalmology , Government Medical College Haldwani from January 2019 to December 2019 . Most of the patients were females (65%) as compared to males(35%) in our study. This is in contrary to the observation made by Rajiv, et al[13] Manhas A et al[14]. Saleem M et al[15] Khan N et al[16] Maximum number of patients were in the age group 36-50 (46%), followed by age group of 51-65(18%) followed by 65-75 years(15%) (*figure1*), *Table(1)* The risk of pterygium increases in patients who are in their third decade of life who work outdoor in an environment with high surface reflectance compare with those who work indoor and the prevalence of pterygium was most common in the fourth to sixth decade of life Rajiv et al had also found that most of the cases of pterygium belong to age group 30-40 years[13]. Osahon et al in their study in Benin city found the peak prevalence rate to be in the age group 31-40 years[21]. Rohatgi S found that maximum number of pterygium patients in his study were in the age group 30- 39 years (32%)[7]. Ganeshpuri AS et al in a study on 62 pterygium patients found that maximum patients i.e. 22 were in age group of 31-40 years followed by 17 in the age group of 41-50[11]. Sharma A et al in his study on 80 eyes with primary nasal pterygium found that maximum number of patients i.e. 26 are in age group (31-40) followed by 21 in age group (21-30)[22]

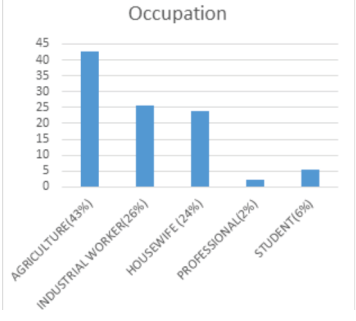


(Figure 1)

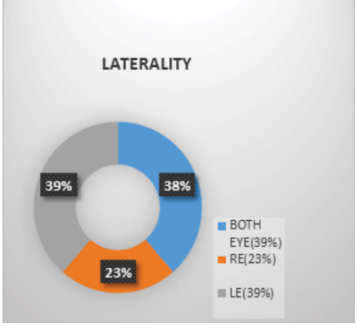
Table1: demographic profile of pterygium

	NUMBER OF	PERCENTAGE
AGE (years)		
20-35	31	14
36-50	99	46
51-65	38	18
66-75	32	15
>75	15	7
SEX		
FEMALE	140	65
MALE	75	35
OCCUPATION		
AGRICULTURE	92	43
INDUSTRIAL WORKER	55	26
HOUSEWIFE	51	24
PROFESSIONAL	5	2
STUDENT	12	6
EYE INVOLVED		
BOTH EYE	83	39
RE	49	23
LE	83	39
POSITION OF PTERYGIUM		
NASAL	207	96
TEMPORAL	4	2
DOUBLE	4	2
NATURE OF PTERYGIUM		
PRIMARY	192	90
RECURRENT	20	9
PSEDU PTERYGIUM	3	1
RESIDENCE		
RURAL	165	77
URBAN	50	23
NATURE OF PTERYGIUM		
ATROPHIC/REGRESSIVE	41	19
PROGRESSIVE	174	81
GRADE OF PTERYGIUM		
GRADEI	97	45
GRADE II	75	35
GRADE III	43	20

Out of 215 patients 147 patients worked outdoor, with famers (43%) being the most common followed by industrial worker (working in paper mill).(table 1)(figure 2). Rohatgi S had also found that maximum number of patients 40% affected with pterygium were farmers.[7]

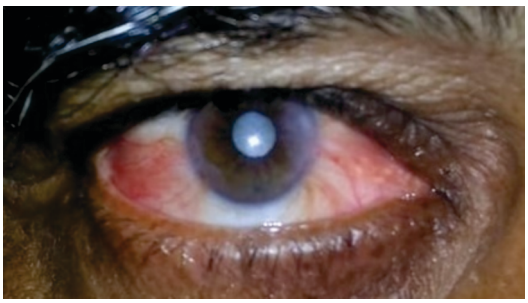


(Figure2): Occupation Of Patients



(Figure 3) : Laterality of Eye

In the present study, right eye was involved in 23% patients and left eye was involved in 39% cases. Both eye was involved in 39% cases.*(figure3).table(1)* Out of 215 patients, most of the pterygium was seen on nasal side 96%, 2% were seen on temporal side and 2% of patients had double pterygium. (*figure4*).Nasal pterygium being more common due to transmission of UV light from temporal sight of stroma on to the nasal aspect of eye23 and also due to flow of ears towards medial canthus carrying with it sand and dust particle towards nasal side7,20. Progressive pterygium was found in 81% of patients while atrophic pterygium was found in 19% patients(*table1)* Rohatgi S[7] and Prabhakar SK[20] who in their respective studies also found that approximately 92% cases of pterygium belonged to nasal side.



A case of double pterygium

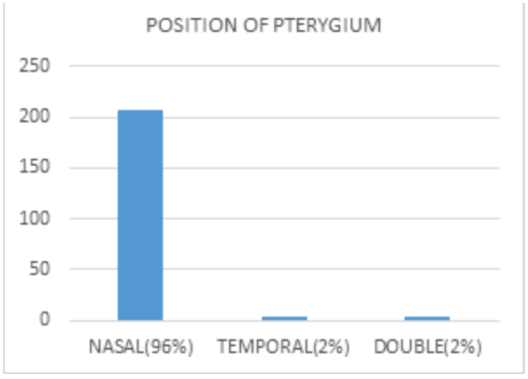


Figure4: Position of pterigium

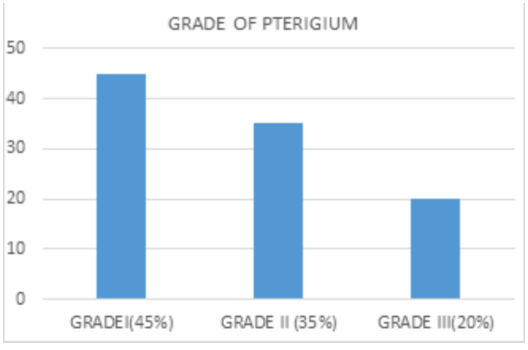


Figure5: Grade of pterigium

In our study maximum number of patients had grade I pterygium (45%),(30%) patients had grade II pterigyum and (20%) patients had grade (III) pterygium *figure5)* This study revealed that higher incidence of pterygium(77%) was found in patients who lived in rural areas as compared to urban areas (23%)*(figure6)*.This is because of constant exposure of persons to dust, fumes, heat, gases and UV radiations, which are the main etiological factors. The lifetime ocular sun exposure is an independent risk factors of pterygium. The farmers and labourers are constantly exposed to dry, dusty, hot climate and incidence of pterygium was maximum in outdoor workers due to environmental irritants like heat, dust, fumes, gases and U.V radiation which are the main etiological factors . Pandey DJ et al in a study on 1400 pterygium patients also found that maximum number of patients (929) were of rural background.[24] According to Asokan R pterygium was found more in those patients who lives in rural areas.[25] Similar observations was made by Rohatgi S in his study on 50 pterygium patients where 72% patients were from rural areas and only 28% from urban areas.[7]

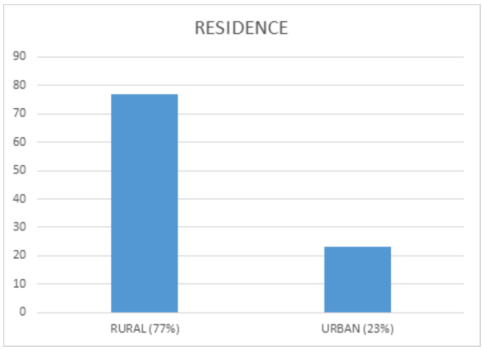


Figure 6: Distribution of patients according to Residence

CONCLUSION

From present study we may conclude that most of the cases of pterygium in middle aged people. Incidence of pterygium was common in females than in males. In our study pterygium was found to have higher occurance in female due to the fact that female in our local area spend a greater time outdoor working in fields with high exposure to UV radiation ,dust , heat for their livelihood this makes them vulnerable to develop pterygium specially primary nasal pterygium.

People who work outdoor are subjected to environmental factors like heat dust fume gases and UV radiation these people should take special precaution such as the use of UV protection glasses, hats and umbrellas to protect their eyes. They should also avoid exposure of their eyes to strong winds and heat from open flames.

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