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Prevalence and categories of pterygiums in rural area of Dhalai District in Tripura

By

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Abstract

Introduction: A pterygium is a wing appearance like vascular, fleshy growth with whitish-yellow colour that actually originates from the conjunctival tissue and extends up to the limbal area or at times spreads beyond limbus onto cornea, causing visual impairment. It is a degenerative condition. **Aim:** To study the prevalence and categories of pterygiums in rural area of Dhalai District in Tripura **Materials and Methods:** A descriptive cross-sectional study was done for a period of December 2024 to June 2025, in different rural eye camps of Dhalai district in Tripura. Out of the 602 patients who had registered, the clinical records of 105 patients with pterygium were retrieved and analysed using MS office Excel sheet **Results:** The results depict that males 62(59.05%) were more affected than the females 43(40.95%) and nasal pterygium was more common than the temporal pterygium. It was also found that unilateral pterygium 83 (79.05%) is more common than bilateral pterygium 22 (20.95%) and progressive pterygium 62 (59.05%) is more common than atrophic or recurrent types. Analysis also revealed that Grade 1 pterygium 56 (53.33%) is more common **Conclusion:** The prevalence of pterygium increased with increasing age and long-term exposure to sunlight. It can be decreased by using protective measures.

Keywords: *Nasal pterygium; Prevalence; Progressive pterygium; Rural Area; Dhalai District; Tripura;*

Introduction

A pterygium is a wing appearance like vascular, fleshy growth with whitish-yellow colour that actually originates from the conjunctival tissue and extends up to the limbal area or at times spreads beyond limbus onto cornea. A pterygium, also known as surfer's eye, is a non-cancerous, fleshy, triangular growth of the clear membrane that covers the white of the eye and can extend onto the cornea. It is often caused by excessive exposure to UV B rays and wind and can lead to symptoms such as eye irritation, redness, dryness, a feeling of something being in the eye, and blurred vision if it grows large enough to affect the cornea. Treatment ranges from non-surgical approaches like lubricating eye drops for mild cases to surgical removal for more severe cases or cosmetic concerns. The pterygium causes corneal distortion can lead to induced astigmatism, visual impairment occurs due to interference with visual axis, it can cause double vision and it also causes obvious cosmetic problems. Progressive pterygium is thick, fleshy and vascularised whereas an atrophic pterygium is less vascular and thin. Type I pterygium shows 4 mm encroachment on to the cornea[1,2]. Use of protective goggles can retard the progression of pterygium. The recurrence rate after pterygium excision with limbal conjunctival autograft was lower than that of bare sclera[3].

Aim

This study was performed to provide informative resources on prevalence and categories of pterygium, which helps to create awareness about pterygium in the rural area of Dhalai District in Tripura.

Materials and Methods

A descriptive cross-sectional study was done for a period of December 2024 to June 2025, in different rural eye camps of Dhalai district in Tripura. Total of 602 patients with various ocular disorders who attended in the different rural eye camps of Dhalai district in Tripura, 105 (17.44%) patients were diagnosed to have pterygium.

Binocular loupe and torch light was used to find out the development of pterygium in both eyes. The clinical case records of all the 105 patients with pterygium (17.44%) were retrieved and analysed for demographic data.
Inclusion Criteria: Patients in the age group of 30 to 70 years with pterygium were included in the study.
Exclusion Criteria: Patients with pseudo pterygium were excluded from the study.
All patients fulfilling the above criteria were included in the study. The data were tabulated in MS office Excel sheet and analysed statistically.

Results

Out of the 105 pterygium affected patients, 62(59.05%) were males and 43(40.95%) were females. It was also found that males were more affected than females. Most of the cases 83 (79.05%) had unilateral pterygium and 22 (20.95%) had bilateral pterygium [Table – 1].

Pterygium	Affected patients	Percentages
Male	62	59.05%
Female	43	40.95%
Total	105	100.00%

Table – 1: Gender wise pterygium affected Patients

In the study, out of 105 pterygium affected patients, 17 (16.19%) were found in the age group of 30–40 years, where 9 (8.57%) were males and 8 (7.62%) were females; 41 (39.05%) were found in the age group of 41–50 years, where 23 (21.90%) were males and 18 (17.14%) were females; 36 (34.29%) were found in the age group of 51–60 years, where 24 (22.86%) were males and 12 (11.43%) were females; 11 (10.48%) were found in the age group of 61–70 years, where 6 (5.71%) were males and 5 (4.76%) were females [Table – 2].

Gender	30 – 40 years	41 – 50 years	51 – 60 years	61 – 70 years	Total
Male	9 (8.57%)	23 (21.90%)	24 (22.86%)	6 (5.71%)	62 (59.05%)
Female	8 (7.62%)	18 (17.14%)	12 (11.43%)	5 (4.76%)	43 (40.95%)
Total	17 (16.19%)	41 (39.05%)	36 (34.29%)	11 (10.48%)	105 (100%)

Table – 2 Gender wise prevalence of pterygium in different age groups

High prevalence of pterygium was seen in farmers 49 (46.67%), where males were 31 (29.52%) and females were 18 (17.14%); followed by labourers 25 (23.81%), where males were 13 (12.38%) and females were 12 (11.43%); street vendors 23 (21.90%), where males were 13 (12.38%) and females were 10 (9.52%); and low prevalence was seen in House hold Workers 08 (7.62%), where males were 05 (4.76%) and females were 03 (2.86%) [Table – 3].

Occupations	Male	Female	Total
Farmers	31 (29.52%)	18 (17.14%)	49 (46.67%)
Laborer	13 (12.38%)	12 (11.43%)	25 (23.81%)
Street vendors	13 (12.38%)	10 (9.52%)	23 (21.90%)
House hold Workers	05 (4.76%)	03 (2.86%)	08 (7.62%)
Total	62 (59.05%)	43 (40.95%)	105 (100%)

Table – 3 Occupation wise prevalence of pterygium among both gender

In the study, it was also found that 62 (59.05%) of the pterygium were progressive, 39 (37.14%) were atrophic pterygium and 4 (3.81%) had recurrent type of pterygium. Amongst these, 56 (53.33%) were Grade 1 pterygium; 43 (40.95%) were Grade 2 pterygium and 6 (5.71%) were Grade 3 pterygium.

Discussion

Our study showed that the prevalence of pterygium was more in males than females. A study by Lu et al reported that women were at higher risk than men[4]. Some studies found that men have higher prevalence than women,[5,6,7] where as some studies show that there is no significant difference in the prevalence between men and women.[8,9] This variability could be due to the difference in risk factors in different areas. In the study, prevalence of pterygium increased with age, but was found to be almost the same in patients more than 60 years of age. Most of the studies also show that the prevalence of pterygium increased with age[10,11]. Highest prevalence was seen in farmers, and labourers and street vendors as they spent most of their day time outdoors and increased exposure

to UV rays from sun, dust and dryness increased the prevalence of pterygium. Similar observation was done by Chavan WM et al[12] and Maharjan IM et al.[13] Their studies reveal that (82%) patients who were farmers and 64.66% of the outdoor workers had pterygium respectively. 79.05% of our cases were unilateral. This was similar to the findings of Krishnaram[14] who found that the prevalence of nasal pterygium was 99%. A study by Chavan WM et al[10] found that 100% of pterygium were nasal and Rohatgi S[15] found that 92% cases of pterygium belong to nasal side, while only 4% were temporal side. The higher incidence of pterygium on nasal side was due to flow of tears towards the punctum and the sand and dust particle moved towards nasal side. It is also thought that the predominance of nasal pterygium is due to reflection of UV light from the nose to nasal conjunctiva. Durkin SR et al.[16] in Meiktila eye study in Australia showed that 8% of cases had bilateral pterygium where as in our study showed that 20.95% of the pterygium were bilateral. In our study, it was also found that 62 (59.05%) of the pterygium were progressive, 39 (37.14%) were atrophic pterygium and 4 (3.81%) had recurrent type of pterygium. Amongst these, 56 (53.33%) were Grade 1 pterygium; 43 (40.95%) were Grade 2 pterygium and 6 (5.71%) were Grade 3 pterygium. In a study by Shrestha P[11] et al Grade I lesions were more commonly seen while grade II lesions were observed more in patients with predominantly outdoor occupation.

Conclusion

It can be concluded that pterygium is a degenerative condition which is a significant visual problem. Pterygium is more common in patients who do outdoor work which can be decreased by wearing photo protective goggles while working.[17] These types of descriptive analytical studies are important from various regions of our country so as to improve the health care services with speciality care in all government/private sectors so as to prevent visual impairment. An appropriate protective sunglass can prevent to develop and growth of pterygium in younger ages to older ages. Strengthening of awareness in rural area also an good initiative to prevent pterygium and development of astigmatism in rural area as well as urban area.

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