

Severe visual impairing pterygia in ten adult eyes in Osun State, Nigeria

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Abstract

Background: Pterygium is described as a wedge-shaped fibrovascular, non-malignant growth of the conjunctiva. It could extend across the limbus. Severe visual impairment and blinding of eyes by pterygia are not seen often in hospitals.

Methods: A community outreach was conducted within Osun State, South Western Nigeria from February to April 2023. Eight adult patients were seen with severe visually impairing pterygia. They all had pterygial excision using bare sclera technique with 50mg/ml of 5 fluorouracil (5-FU) cotton bud dab

Results: Eight patients aged 40years and above had severe visually impairing pterygia, two were bilaterally blind making 10 eyes. Six (75%) out of the eight were males while 2 (25%) were females. They all had stages 3 to 4 pterygium, 2 eyes (20%) were stage 3 while the remaining 8eyes (80%) were stage 4.

Conclusion: Severe visually impairing pterygium is a cause of avoidable blindness that is seen in our community. There is need for community awareness and education on this needless cause of blindness.

Ptérygion avec déficience visuelle sévère dans dix yeux d'adultes dans l'État d'Osun, Nigéria

Resume

Contexte: Le ptérygion est décrit comme une croissance fibrovasculaire non maligne en forme de coin de la conjonctive. Cela pourrait s'étendre à travers le limbe. Les déficiences visuelles graves et la cécité des yeux causées par la ptérygie ne sont pas souvent observées dans les hôpitaux.

Méthodes: Une sensibilisation communautaire a été menée dans l'État d'Osun, dans le sud-ouest du Nigéria, de février à avril 2023. Huit patients adultes ont été vus avec une ptérygie sévèrement déficiente visuelle. Ils ont tous subi une excision de ptérygie en utilisant la technique de la sclère nue avec 50 mg/ml de tampon de coton-tige au 5-fluorouracile (5-FU).

Résultats: Huit patients âgés de 40 ans et plus présentaient une ptérygie sévère avec déficience visuelle, deux étaient aveugles bilatéralement soit 10 yeux. Six (75 %) sur huit étaient des hommes, tandis que deux (25 %) étaient des femmes. Ils avaient tous un ptérygion de stade 3 à 4, 2 yeux (20 %) étaient au stade 3 tandis que les 8 yeux restants (80 %) étaient au stade 4.

Conclusion: Les ptérygions malvoyants graves sont une cause de cécité évitable observée dans notre communauté. Il est nécessaire de sensibiliser et d'éduquer la communauté sur cette cause inutile de la cécité.

INTRODUCTION

Pterygium is described as a wedge-shaped fibrovascular, non-malignant growth of the conjunctiva. It could extend across the limbus, thereby invading the cornea surface (1).

It is believed to result from actinic damage to the limbal stem cells, thereby, regarded a focal limbal stem cell deficiency (1). Ultra violet rays, dusty and dry environment have been associated with its development. (2). It can be clinically graded into stage one to four. Stage one as fibrovascular growth reaches the limbus, stage 2 beyond limbus to mid iris, stage 3 from mid iris to pupil margin and finally stage 4 as it covers the whole pupil. (4). Visually-impairing pterygium is usually found in stage 3 to 4, where it has extended beyond the pupillary margin (4,8). Pterygium is one of the common disorders of the conjunctiva and cornea that affects vision (4).

It usually occupies the nasal side of the palpebrae conjunctival extending towards the limbus from the canthus and it may also occur on the temporal side. Occasionally, it may involve both the nasal and temporal sides of the conjunctival simultaneously (double pterygia). (1,4). A fully-developed pterygium has a cap which is a whitish infiltrate in front of the head, head which the apical part on the cornea, neck which is the constricted part in the limbal area and finally the body which is the sclera part extending between the limbus and canthus (1). Pterygium may be progressive, regressive or membranous. Progressive pterygium is fleshy, thick and vascular with a few whitish infiltrate in front of the head of the pterygium known as Fuch's spots whereas regressive pterygium is atrophic, thin with very little vascularity. The regressive pterygium may become membranous but it never disappears (1).

Globally, prevalence of pterygium varies from 1.1% to 53% depending on different environmental conditions (4). It is between 7.9% to 33.11% in Nigeria. (10). However, according to the Nigeria National Blindness and Visual Impairment survey, a prevalence of 1% was seen accounting for the principal cause of moderate visual impairing pterygia and none was found accounting for severe visual impairing pterygia (11). Pterygium causes visual impairment in various ways. It may cause significant astigmatism or block the visual axis.(6). Significant astigmatism may be with or against the rule and it is usually due to steepening of the cornea (6,7).

Pterygium-induced astigmatism is often irregular and usually leads to reduced vision

(6,7). Reduction in contrast sensitivity and glare occurs when the head of pterygium moves close to the visual axis.(7)

Therefore, pterygium left untreated can progress to potentially blinding disease which has personal, social, and economic cost implications.

It is seen more in countries that are closer to the equator due to a higher level of outdoor UV exposure (5), accounting for 2.2% of total blindness causes in at least one eye (10).

It is believed that severe visually impairing or blinding pterygium is uncommon (8).

We report eight cases of severe visually impairing pterygia seen during community outreach in Osun State, South West, Nigeria.

The objective of this study is aimed at reporting the rare cases of severe visually impairing and blinding pterygia,

METHODS

Osun state was carved out of the old Oyo state and it is located in the South-Western part of Nigeria with an area of 9.251km² and an estimated population of 4.7 million as of 2016 (9).

It shares boundaries with Kwara state in the North, Ekiti and Ondo states in the East, Ogun state in the South and Oyo state in the West.

Osun state has 3 senatorial districts namely Osun East, Osun West and Osun central. These senatorial districts have ten Local Government Areas (LGA) each. A state-wide community outreach was conducted within Ede, Iwo, Ila-Orangun,, Ile-Ife, Ikirun, Ilesha, Ikire,, Ipetu-Ijesha and Osogbo metropolis in Osun State, South-West Nigeria from February to April 2023.

Blindness and severe visual impairment (VI) were defined as presenting visual acuity (VA) of <3/60 to NPL and presenting VA <6/60 to 3/60 respectively (12).

The cases in this report were part of the participants at the state-wide community outreach which was sponsored by the Osun state government. All patients that turned up in each of the senatorial districts were screened and treated accordingly. A total of 9,133 participants were screened, 7,124 (78%) were adults while the remaining 2,009 (22%) were children. All the participants had distant visual acuity done with Snellen distant acuity chart. Anterior segment were examined with pen touch and posterior segment examined with direct ophthalmoscope. Refraction were done for those in which their visual acuity improves with pin hole (PH). A total of 705 participants verbally consented to

surgeries which includes cataract and pterygium surgeries. Eight of the participants had severe visually impairing pterygium.

Ethical considerations: Only participants that consented to surgery verbally were included in the report. The study was done in line with the declaration of Helsinki on research on human subjects (13).

Results

Eight adult patient aged 40 to 89 years with mean age 64.20 ± 0.001 years were seen having severe visually impairing pterygium in at least one eye. They all had stages 3 to 4 pterygium, two were bilaterally blind from the pterygium making a total of 10 eyes with severe visually impairing pterygia. Eight (80%) eyes had a grade 4 pterygium while 20% had grade 3 nasal pterygium. There were six (75%) males giving a male to female ratio of 3:1. A total of 7,124 adult were seen giving a prevalence of 0.11% of severally visually impairing pterygia.

They all had pterygia excision using bare sclera technique. A cotton bud dab soaked in a 50 mg/ml of 5-fluorouracil (5-FU) was applied on the bare sclera for 5 minutes, followed by copious irrigation with 0.9% normal saline.

Figure 1 shows some of the preoperative and postoperative pictures of the eyes.

DISCUSSION

Globally, prevalence of pterygium varies from 1.1% to 53% depending on different environmental conditions (4). In a hospital-based study in Osogbo, Osun state, Nigeria 6.1% out of 2420 patients had pterygium. (14). Pterygium commonly causes mild to moderate visual impairment. It rarely causes severe visual impairment and blindness, especially if eye-care services are available and patients seek care early (8). However, ignorance, economic hardship as we have it currently and non-availability of specialist eye services in rural areas may make the patients not seek treatment (8).

There were six (75%) males with a male to female ratio of 3:1. The mean age was 64.2 ± 0.001 . A total of 7,124 adult were seen during the two months community outreach in Osun State giving a prevalence of 0.11% of severally visually impairing pterygia. However, according to the Nigeria National Blindness and Visual Impairment survey, a prevalence of 1% was seen accounting for the principal cause of moderate visual impairing pterygia and none was found accounting for severe visual impairing

pterygia (11). Reporting these cases of severally visually impairing pterygia within the two months of community outreach in Osun State, South West, Nigeria shows that severe visually impairing pterygia is not as uncommon or totally absent as initially thought. Waiting for free surgical outreach before seeking treatment might account for these patients presenting late with severe visually impairing pterygia. This may be due partly to ignorance or poverty. There is a great need for community awareness and education on this avoidable cause of blindness.

Limitations: Detailed history and follow up of the patients were rather difficult as this was a community outreach.

CONCLUSION

Visually impairing pterygium is a cause of avoidable blindness as seen in our community. There is need for community awareness and education on this needless cause of blindness.

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Authors contribution: Adeoti Caroline Olufunlayo did recruitment of patients, conception of article, work up of patients and write up of article. Adejumo Olubusayo Olubukola performed the surgeries, conducted data collation, did data analysis and write up of article.

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Table 1: Demographic characteristics (N=8)

Variables		Frequency	Percentage
Gender	Male	6	75.0
	Female	2	25.0
Age	40-49	1	12.5
	50-59	2	25.0
	60-69	0	0.0
	70-79	4	50.0
	80-89	1	12.5

Table 2: Presenting visual acuity (VA) in the patient eyes(N=8)

RE	LE
2mcf	2mcf
6/36	2mcf
6/36	1mcf
6/60	6/9
6/12	HM
HM	LP
6/9	6/60
6/24	LP

Table 3: Characteristics of pterygium in the patient eyes (n=10)

Characteristics	Frequency (percentage)
Grading	
Grade 1	0(0)
Grade 2	0(0)
Grade 3	2(20)
Grade 4	8(80)
Position	
Nasal	2(20)
Temporal	1(10)
Double	7(70)



Figure 1: Some pre-operative and post-operative pictures

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