



PREVALENCE AND CHARACTERISTICS OF PERIPHERAL RETINAL DEGENERATION IN MYOPIC INDIAN ADULTS

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ABSTRACT

Objective: To evaluate the relationship between peripheral retinal lesions and axial length of the myopic patients.

Material and Methods: A sample of 360 eyes from 224 myopic patients was examined at eye out patient department of tertiary care hospital from July 2008 to March 2010. Sonography was used for measurement of axial length of Eye ball and peripheral retina was studied by indirect ophthalmoscope examination and slit lamp microscopy.

Chi square test for these qualitative variables with 5% significance was used for statistical analysis.

Results: The average age was 45.32±11.34 years and the myopia was between 0.5 and 20 dioptres. The peripheral retina showed benign changes including pigment clumps in 128 eyes (35.55%), paving stone degeneration in 102 eyes (28.33%). Snowflakes degenerations were present in 40 eyes (11.11%) and white without pressure degeneration was found in 18 eyes (5%) of patients While 36 eyes (10%) of patients had lattice degeneration, and only 36(10%) patients had normal peripheral retina.

Conclusions: Myopia is a pathological condition associated with peripheral retinal lesions and it can also predispose to various retinal disorders, so it important to diagnose early and treat these patients so that future complications can be minimize.

Key Words: Peripheral Retinal lesions, Paving stone degeneration, Snowflakes degenerations, Lattice degeneration

INTRODUCTION

Elongation/ increased axial length of globe are associated with refractive error, usually more than 6 diopteric myopia. (1, 2, 3) In Asian population prevalence of myopia is quite high. (1, 2)

Due to elongation of globe in myopic patients choroid and retina tends to stretch continually *which* leads to thinning of these layers which ultimately results in retinal degenerative changes. (4)

Peripheral retinal degenerations, retinal tears, retinal detachment, posterior staphyloma, chorioretinal atrophy, retinal pigment epithelial atrophy, lacquer cracks, choroidal and macular haemorrhage are certain common complications to which myopes are usually susceptible. (4, 5, 6)

Some of these retinal lesions may be associated with severe irreversible visual loss and therefore it is important for clinicians to be aware of the retinal pathologies in high myopia.

MATERIAL AND METHODS

This was a cross sectional, observational, descriptive analytic study conducted in department of Ophthalmology at tertiary health care medical institute. The study included 360 myopic eyes of 224 patients. Immersion technique of sonography was used for measurement of axial length of eye ball and peripheral retina was studied by indirect ophthalmoscope examination and slit lamp *bio* microscopy.

Inclusion Criteria

1. Age above 10 years
2. Ability to cooperate in retinal examination
3. no symptoms of light flashes and floaters
4. no history of retinal disease, uveitis, vascular retinopathy, glaucoma
5. no history of ocular surgery, antiglucoma treatment

Exclusion Criteria

1. Patients of age less than ten years
2. Patients who rejects to participate in study.

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Procedure

1. Institutional Ethics Committee permission and approval was taken before starting the study.
2. OPD - Patient of ophthalmology department were contacted personally and study was explained to them in brief in their own language.
3. Informed Consent of participants was taken.
4. Appropriate statistical tests were used for analysis of results

RESULTS

The 360 eyes from 224 patients included in this study ranged in age from 20-70 years (mean age 45.32±11.34 years for females and 38.22±12.3 years for males). 192 patients were females while 168 patients were males (Table 1).

Table 1: Age and sex distribution of patients

years	Male		Female	
	No. of eyes	%	No of eyes	%
20-30	16	9.5	28	14.5
31-40	58	34.5	38	19.79
41-50	44	26.2	61	31.77
51-60	26	15.5	43	22.39
61-70	24	14.3	30	15.6
Total	168	100	192	100

The myopic refractive error ranged from -0.5 diopter to -20 diopter (mean refractive error is 10.21±5.43 D (Table2).

Table 2: Degree of refractive error in examined patients

Refractive error	No of eyes	%
-0.5D to -5.0D	52	14.44
-5.0D to -10D	126	35
-10D to -15D	116	32.22
-15D to -20D	66	18.33
	360	100

Examination of the peripheral retina revealed the following retinal changes:

The peripheral retina showed benign changes including pigment clumps in 128 eyes (35.55%), paving stone degeneration in 102 eyes (28.33%). Snow-flakes degenerations were present in 40 eyes (11.11%) and white without pressure degeneration was found in 18 eyes (5%) of patients.

While 36 eyes (10%) of patients had lattice degeneration, and only 36 (10%) patients had normal peripheral retina.

Table 3: Type of retinal lesions in patients

Retinal lesions	Number	%
Pigment clumps	128	35.55
Paving stone degeneration	102	28.33
Snow-flakes degeneration	40	11.11
White without pressure	18	5
Lattice degeneration	36	10
normal	36	10
Total	360	100

DISCUSSIONS

In accordance with our study Lai YY et al found that prevalence of peripheral retinal degenerations were increased in association with high myopia and increased axial length.^[7]

In a cross-sectional community-based epidemiological study in HongKong, 56.1% and 11.3% of subjects with myopia were found to have one or more peripheral retinal degenerative lesion or posterior pole lesion respectively.⁽⁷⁾

This study shows that 66% of patients had posterior vitreous detachment (PVD). This value is very close to that obtained by Hikichi et al, in which it was 62.3%.^[8]

One hundred patients (28.33%) in the current study had paving stone degeneration, which are benign yellowish, white area surrounded by hypertrophied retina, which is little higher than revealed by Rasheed et al, in which it was 22%. In this study another type of degeneration that was found in (12%) of patients is snow-flakes which is an almost similar with our study (11%). In our study, Prevalence of white without pressure (5%), is also near same as (3%) other international studies.^(9, 10, 11)

In the current study, 36 patients (10%) had lattice degeneration which is in close accordance with study of Lam et al in Hong Kong demonstrated that the prevalence of lattice degeneration is 12.2%. Normal peripheral retina is found in 10 % case, which was near similar from study of Shehab et al (10%).⁽¹²⁾

CONCLUSION

Myopia is a pathological condition associated with peripheral retinal lesions and it can also predispose to various retinal disorders, so it important to diagnose early and treat these patients so that future complications can be minimize.

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Conflict of Interest: None

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