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Original Research Paper

Study of Incidence of Lattice Degeneration in Patients with Myopia

Medical Science

KEYWORDS : myopes,lattice degeneration,retinal detachment

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ABSTRACT

TITLE:-Study of incidence of lattice degeneration in patients with myopia. ***PURPOSE:-****To determine the incidence of lattice degeneration in patients with myopia.To study findings associated with lattice degeneration. Early detection of retinal detachment.To prevent the occurrence of retinal detachment by giving prophylaxis.****METHOD:-*** *The study was done in 500 myopic patient at the DEPT OF OPHTHALMOLOGY, P.D.U. GOVT. MEDICAL COLLEGE, RAJKOT.All the patients were subjected to following tests:- best corrected visual acuityby snellen'schart,Slit lamp examination,Schiotztonometery,A-scan,B-scan,Direct ophthalmoscopy, indirect ophthalmoscopy.****RESULTS:****40 patients out of 500 patients studied showed the evidence of lattice retinal degeneration.31 cases out of 40 patients showed unilateral lattice degeneration. In remaining 9cases the lattice was bilateralThe lattice retinal degeneration was found in 17 patients in 370 Low myopes(myopia < 6D) and 23 patients in 130High myopes (myopia > 6D).****CONCLUSION:****Incidence of lattice degeneration was 8% in patients of myopia.Unilateral lattice degeneration is more common than bilateral*

PURPOSE:-
To Study of incidence of lattice degeneration in patients with myopia have following objectives.1.To determine the incidence of lattice degeneration in patients with myopia.2.To study findings associated with lattice degeneration.Early detection of retinal detachment.3.To prevent the occurrence of retinal detachment by giving prophylaxis.

METHOD:-
The study was done in 500 myopic patient attending the OPD at the DEPARTMENT OF OPHTHALMOLOGY, P.D.U. GOVT. MEDICAL COLLEGE, RAJKOT.

Inclusion criteria:-all myopic patients, No specific age group.

Exclusion criteria:- (1) Patient in whom dilatation of pupil contraindicated for example, angle closure glaucoma. (2)Patient with the media which impair the visualization of fundus for example cataract, corneal opacity, etc.

All the patients were subjected to following tests:Uncorrected visual acuity(UCVA) and best corrected visual acuity(BCVA) by snellen'schart,Slit lamp examination,Schiotztonometery,A-scan,B-scan,Directophthalmoscopy,Binocular indirect ophthalmoscopy with sceralindentation.

RESULTS:-
Forty patients (8%) out of 500 patients studied showed the evidence of lattice retinal degeneration.Eighteen (45%) were male and Twenty two (55%) were female.Eleven(27.5%) were less than 20 years of age, Twenty two(55%) between 20-40 years and Seven(17.5%) were more than 40 years. Thirty one(77.5%) cases out of 40 patients showed unilateral lattice degeneration. Right eye was involved in 18 (45%) while left eye in 13 (32.5%). In remaining 9(22.5%) cases the lattice was bilateral.Among 40 cases of lattice degeneration, 32(80%) patients having lattice without break. Atrophic holes within lattice were seen in 6(15%) patients, Tears seen in 2(5%)patients. The lattice retinal degeneration was found in 17 patients (4.59%) in 370 Low myopes(myopia < 6D) and 23 patients (17.69%) in 130High myopes (myopia > 6D).The highest incidence lattice degeneration (32.5%) observed in 13 cases with axial length of 28.01- 30 mm corresponds to refractive error up to -9 to -14D followed by (15.78%) in 12 cases having axial length 26.01-28mm corresponds to refractive error up to -5 to -9 D.**CONCLUSION:**-Incidence of lattice degeneration was 8% in patients of myopia. Which was significantly higher in myopia > 6D (17.69%).-Lattice degeneration was found to be higher in age groups of 20-40 years of age (55%).-Highest number of cases of lattice degeneration was found for myopia with axial eye length between 28-30 mm (32.5%).-Unilateral lattice degeneration is more common than bilateral and Lattice degeneration was found to be higher in temporal quadrant.

AIM OF THE STUDY:-
To study of incidence of lattice degeneration in patients with myopia.

OBJECTIVES:-
-To determine the incidence of lattice degeneration in patients with myopia.
-To study findings associated with lattice degeneration.
-Early detection of retinal detachment.
-To prevent the occurrence of retinal detachment by giving prophylaxis.

MATERIAL AND METHODS
Study Design:
A study of incidence of lattice degeneration in 500 patients with myopia.

Recruitment of the subjects:-
all myopic patient attending the OPD at the DEPARTMENT OF OPHTHALMOLOGY, P.D.U. GOVT. MEDICAL COLLEGE, RAJKOT.

The study was planned to be done during the period of November 2013 to October 2015.

Inclusion criteria:-
all myopic patients -No specific age group

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Exclusion criteria:-
Patient in whom dilatation of pupil contraindicated for example, angle closure glaucoma. Patient with the media which impair the visualization of fundus for example cataract, corneal opacity,etc.

Consent:-
Informed written consent taken.

All the patients were subjected to following tests:-

1. Un-corrected visual acuity(UCVA) and best corrected visual Acuity(BCVA) by snellen's chart
2. Slit lamp examination
3. Schiotztonometery
4. A-scan
5. B-scan
6. Direct ophthalmoscopy
7. Binocular indirect ophthalmoscopy with sceral indentation

EXAMINATION:
Pupils of all myopic patients are dilated with the tropicamide 0.8% in combination with phenylephrine hydrochloride 5.0%.one drop at every 10 minute for three times. After the complete dilatation of the pupil, fundus of all patients are examined by the following instruments.

-Direct ophthalmoscope&Binocular indirect ophthalmoscope.

RESULT AND ANALYSIS:
The study was carried out to find out the incidence of lattice degeneration in 500 myopic patients attending the OPD at the DEPARTMENT OF OPHTHALMOLOGY, P.D.U. GOVT. MEDICAL COLLEGE, RAJKOT

Lattice degeneration	No. of cases	Percentage (%) of cases
Present	40	8
Absent	460	92
Total	500	100

Table shows 40 cases (8%) out of 500 cases of myopia have lattice degeneration.

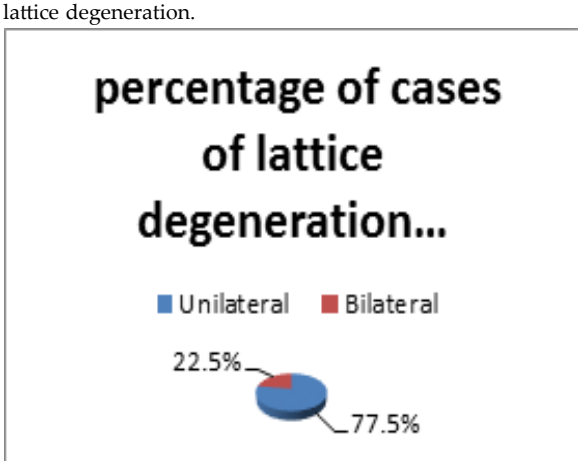
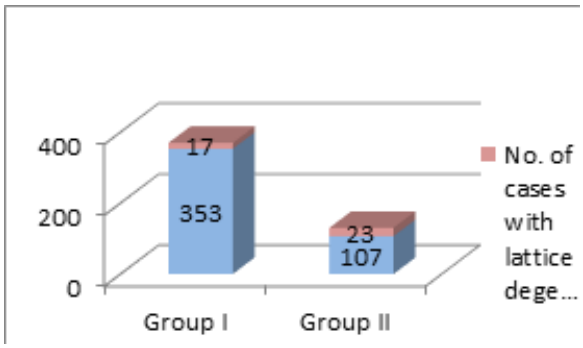


Table shows that among 40 cases of lattice degeneration 77.5% cases are unilateral and 22.5% cases are bilateral



500 cases of myopia are studied in two groups, Group I and group II. Group I : cases of myopia <6 Diopter ,Group II :cases of myopia >= 6 Diopter.

Table shows that 17 cases out of 370 cases of group I have lattice degeneration while 23 cases out of 130 cases of group II have lattice degeneration.

Table shows that more incidence of lattice degeneration-group II myopia (17.69%) as compare to group I myopia (4.59%).

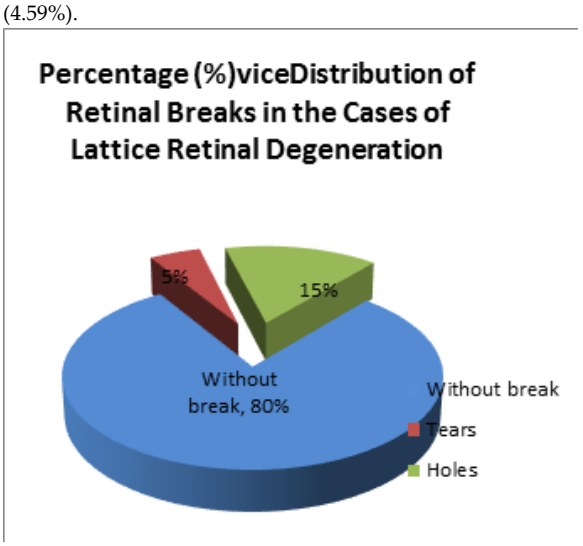


Table shows that 80 % of cases of lattice degeneration have no retinal breaks.

While 15% cases have retinal holes and 5% cases have retinal tears.

Location of lattice	No. of cases	Percentage of cases(%)
Superotemporal	16	40
Inferotemporal	13	32.5
Others	11	27.5
Total	40	100

Table shows that lattice degeneration is more commonly found on temporal retina (72.5%).

DISCUSSION
Myopia is a common optical aberration. Physiological myopia is by far the most prevalent and is considered a normal biological variation[5].Lattice degeneration of the peripheral retina is perhaps the most important specific and significant degeneration associated with retinal detachment and

its prevalence has been reported as 5-10 %, 7-10% in general population5,6. Therefore peripheral retinal examination by binocular indirect ophthalmoscopy with scleral indentation is very important for early detection and treatment of possible pathological ocular conditions causing retinal detachment.We have tried to find out the incidence of lattice retinal degeneration in myopia at the Ophthalmology Department of P.D.U Gov. Medical College, Rajkot. In our study 500 cases of myopia were examined and the incidence of lattice degeneration was found to be 8%which is comparable with study conducted by rani et al who reported incidence of lattice degeneration in myopes is 11.33% of 300 eyes in his study5. Another study conducted by Yura et al reported 10.5% incidence of lattice degeneration in myopia7.As considering the age distribution for lattice degeneration the highest frequency of lattice in our study found between the ages of 20 to 40 years (55%),this finding is consistent with Rani et al5,Siyal et al2,Subedi S3.In our study out of 40 cases 18(45%) males had lattice Degeneration and 22(55%) females had lattice degeneration. as compared to Siyal et al who found lattice in 40% of males and 60% of females2.A study conducted by Rani et al5 and Celorio and pruett1 shows female are affected slightly more than male. While Yura et al reported male were more affected than females but a statistical significant difference was not recognized7. It shows that there is no sex predisposition. Our study shows that in 77.5% cases of lattice were unilateral while 22.5% were bilateral. Rani et al found lattice lesions 53% uniocular and 47% binocular5. In the study carried out by Subedi S. found that uniocular lattice degeneration were more common as compare to bilateral3.This findings also supported by Celorio and Pruett who reported lattice lesions were uniocular in 54.2% and binocular in 45.8%1. Our study also found that among uniocular lattice degeneration right eye affected in 45% and left eye affected in in 32.5%.Subedi S.44and Siyal et al reported among uniocular cases right eye slightly more affected than left eye2.In our study incidence of lattice degeneration more prevalent in cases of myopia (>=6D:high myopia) which was 17.69% as compare to cases of myopia (<6 D) which was 4.59 %.A study conducted by Siyal et al found incidence of lattice in myopia of >= 6 D is 20.37% and in myopia < 6D is 6.25%2. While study of Celorio and Pruett reported 33% incidence of lattice in myopia of 6D or more. Lam et al concluded that a high prevalence of peripheral retinal degenerations was found in adult Chinese high myopes4. As considering the relationship of lattice degeneration and axial length , in our study highest frequency of lattice also found when the axial length was between 28.01–30.00 mm which was 32.5%. In another study, Celorio and Pruett found an inverse relationship between axial length and the prevalence of lattice retinal degeneration in severly myopic eye. They found greatest frequency of lattice in eyes with axial length of 26.0 to 26.9 mm (-6.00 to -8.70 D) and least prevalence of lattice degeneration in eyes with an axial length of 32.00 mm (-24.00 D) or greater1. Siyal et al reported that highest incidence of lattice degeneration when axial length was between 28.01mm-30 mm2. Sanchezet and Roldan found that if the axial length is assessed, a greater frequency of lattice retinal degeneration is also found when the axial length is 25-27 mm and 29-30 mm, which correspond, respectively, to myopias between 3-10 D and more than 15 D12.In our study out of 40 cases of lattice retinal degeneration, atrophic holes found in 15% and 5 % case of retinal tear associated with lattice found. Siyal et al found that in our study out of 20 cases of lattice retinal degeneration, atrophic holes found in 3(15%) but no case of retinal tear associated with lattice found2. In another study conducted by Rani et al found that out of 34 cases of lattice degeneration, holes were found in 4 eyes (12%) , 50% showed no associated lesion. No cases of retinal tear associated with lattice degeneration were found5. As per study of Manjunath et al Lattice degeneration is known to be associated with secondary peripheral retinal atrophic holes. Atrophic holes are the most commonly seen type of retinal break6.In our study we found that 72.5% cases of lattice degeneration are located in temoporal retina. Similar finding are observed in study conducted by Subedi S.(70.49 % in temporal retina)3 and Rani et al (superotemporal 56%,inferotemporal 35.2%)5.

CONCLUSION

Incidence of lattice degeneration was 8% in patients of myopia. Which was significantly higher in myopia >6D(17.69%).Lattice degeneration was found to be higher in age groups of 20-40 years of age (55%).No significant association of lattice degeneration was seen between genders though a slight female preponderance was seen.Highest number of cases of lattice degeneration was found for myopia with axial eye length between 28-30 mm (32.5%).

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