Research Paper

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A Clinical Study of Myopia and Review of Literature

Medical Science

KEYWORDS : Myopia, keratometry, A scan

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ABSTRACT

A clinical study of 100 cases of myopia of 3D and >3D that attended the ophthalmicoutpatient department of ophthalmology , Siddartha Medical college, government general hospital, Vijayawada during the period from 2012 September to 2014 September in age group between 6-40 years studied

The objective of the study:

To evaluate the type of myopia, i.e. Axial or Curvature with the help of A-scan and keratometer.

To study the incidence of pathological myopia.

To study the association of myopia with other ocular and systemic diseases.

MATERIALS AND METHODS

A prospective study of myopia is conducted in Siddartha medical college, government general hospital, Vijayawada. Cases for present clinical study were collected from government hospital OP and wards attached to Department of ophthalmology, Siddhartha medical college, Vijayawada, from September 2012 to 2014 in age group between 6 to 40 years(to avoid difficulty of keratometry and A scan in children, to avoid the factor of lenticular sclerosis and there by index myopia in age greater than 40 years)

The methodology followed was:

1. A detailed case history is recorded with special reference to family history of myopia and consanguinity.

2. A systematic anterior segment and posterior segment examination was done and association with other ocular conditions and systemic diseases noted

3. Every case is subjected to retinoscopy, A scan biometry and keratometry and the type of myopia is thus determined (axial or curvature)

RESULTS

NUMBER OF PATIENTS EXAMINED (AGE WISE)

Age of the patient in years	Male	Female
6 – 10	05	02
11-20	19	15
21-30	23	17
31-40	13	06
Total	60	40

GENDERINCIDENCE

Number of males	60
Number of females	40

HEREDITARY INCIDENCE

	M	F	TOTAL
Familial	38	26	64
Sporadic	22	14	36

CLINICAL TYPES OF SIMPLE MYOPIA

	Total no. Of Patients	Simple myopias	%
Males	60	46	76.7%
Females	40	28	70%

CLINICAL OF PATHOLOGICAL MYOPIA

	Total no.of Patients	Pathological myopias	%
Males	60	14	23.3%
Females	40	12	30%

INCIDENCE OF PATHOLOGICAL MYOPIA

IN >6D MYOPIA

	Total no. Of cases >6D	Pathological myopia	%
Males	40	14	35%
Females	19	12	63%

AETIOLOGICAL TYPES

	Axial		Curvature		Mixed	
	No. of Cases	%	No. Of Cases	%	No. Of cases	%
Males	39	65%	18	30%	3	5%
Females	23	57.5%	10	25%	7	17.5%

DEGREE OF MYOPIA

Diopteric Power (D)	Male	Female
3—3.75	10	8
4—4.75	8	3
5—5.75	10	8
6—6.75	2	2
7—7.75	5	2
8—8.75	4	3
9—9.75	2	2
10 &>10	19	12

DEGREE OF MYOPIC ASTIGMATISM

Astigmatism in Diopters	No. Of Persons
0.5—1	12
1.5—2	18
2.5—3	4
3.5—4	2
4.5—5	1
5.5--6	1

VARIOUS PATHOLOGICAL CHANGES OBSERVED

Pathological Change		No. Of Cases
Vitreous Opacities		7
Lenticular Opacities		4
Degenerative Chorio Retinal Atrophic Patches		9
Degenerative Changes in Macula		7
Pathological Changes in Peripheral Retina	Lattice	8
	Cystoid	2
ForsterFuch's fleck		1
Posterior staphyloma		1
Glaucoma		1

ASSOCIATED OCULAR CONDITIONS

	Male	Female
Retinitis pigmentosa	4	2
Nystagmus	1	1
Coloboma	--	1
Microphthalmia	--	1
Microcornea	--	2
Ocular Myasthenia	1	--
Srargardt' Disease	--	1
Ptosis	2	--
Keratoconus	1	--
Glaucoma	1	--

ASSOCIATION WITH OTHER SYSTEMIC DISEASES

	Male	Female
Diabetes Mellitus	2	1

OBSERVATIONS

1. In my study the incidence of myopia is more in males (60%). Though the males are more in number, in pathological myopia females are more affected.
2. Regarding age incidence maximum number of patients are in the age group between 21—30 years (40%).
3. In the hereditary incidence, though the incidence is largely familial, in cases of sporadic occurrence, especially in those cases which developed after the growth period has passed , environmental factors seemed to have some influence in its incidence.
4. The incidence of simple myopia is relatively more in males where as pathological myopia is more in females and in pathological myopia except in case , all 25 cases have +ve family history and out of them 16 cases who are high myopias have had history of consanguinity of parents , showing that consanguinity can lead to higher incidence of pathological myopia.
5. All the pathological changes occurred in patients with myopia of >6D only and out of which clearly , the incidence of degenerative myopia is much higher in females.
6. The incidence axial myopia is more in both males and females, and in great majority of cases as especially in the higher degrees myopia is axial.
7. The incidence astigmatism is 38% and regarding the degree of astigmatism maximum number of patients are having astigmatism in between 1.5—2D and it is weel correlated with the keratomatric value.
8. Out of the various pathological changes observed , vitreous floaters and degenerative chorio retinal atrophic patches are commonly seen.
9. The incidence of uniocular high myopia is 4%.
10. Regarding association myopia with other ocular conditions , it was observed that retinitis pigmentosa is the commonest ocular condition associated with myopia and in myopia associated systemic diseases, diabetes mellitus is observed in 3 cases.

CONCLUSIONS

To conclude axial length of the eye and curvature of the cornea are the two main factors for myopia is well correlated with the axial length and keratometryvalues.

The incidence of pathological myopia is much higher in females and in patients with family history of myopia.

15% of cases are associated with other ocular conditions , out of which retinitis pigmentosa is the commonest ocular condition associated with myopia and only 3% of cases are associated with systemic diseases i.e. diabetes mellitus.

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