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Evaluation of Causes of Permanent Visual Impairment in Bastar District of Chhattisgarh

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Abstract

Purpose: *To evaluate the causes of permanent visual impairment in Bastar District of Chhattisgarh.*

Materials and Methods: *This was a prospective study carried out during the period of January 2014 to December 2014 by the patients attending outpatient department of ophthalmology in a government Medical college jagdalpur .Disability camps were organized in nearby primary health centres. Cases came for visual disability certificates are also included in this study .Patients with visual acuity less than 3/60 in better eye were included in this study.*

Results: *Total number of cases were 234 Out of this 146 Males (62.40%), 88(37.60%) Females, age group 5-18 years were46.15%,19-40 years 41.88% and more than 40 years were 11.96 %.Congenital microphthalmos (36.752%) was the commonest cause of permanent visual disability followed by corneal scar (19.658%),optic atrophy (11.11%), strabismus with amblyopia (9.401%), nystagmus with amblyopia (8.547%),diabetic retinopathy (4.7%),Retinitis pigmentosa (3.846%),bilateral chronic healed iritis with complicated cataract (3.418%) ,age related macular degeneration (2.564%).*

Conclusions: *Malnutrition and vitamin A deficiency are very common in this area and maternal infections are also common which may be a contributory factors for visual disability in this area therefore health education and awareness about maternal and child health care is required .*

Key words: *evaluation, visual, disability*

INTRODUCTION

Visual impairment is a decreased in ability to see a degree that additional it causes problems that are not fixable by usual means, such as glasses or medication.

In India about 12 million people blind, 28.5 million have low vision. Visual disability can be prevented and controlled to some extent it cannot be totally eradicated .Today the expectations of the disabled people in India, like in other progressive countries of the world are higher than ever before .Instead of pity and charity they demand and win their civil rights^[1]

Eye disorder which can lead to visual impairment includes retinal degeneration, cataract, glaucoma, corneal disorder, diabetic retinopathy, congenital disorder and infection ,it can also be caused by brain and nerve disorder ,in which case it is usually termed as cortical visual impairment .the American medical association guides to the evaluation of permanent visual impairment attempts to provide criteria of visual system as it affects an individual's ability to perform activities of daily living. The guide has estimated the loss of one eye equals 30%impairment total loss of vision in both eyes is considered to be 100%.

Visual impairment has considerable economic impact on even developed countries.

An update based on census data of 2010 in U.S. projects that 13 million American aged more than 40 years will have a visual impairment or be blind by the year 2050^[2]

Tribal people are the most marginalized sections of the Indian society. 8 to 10% population of India 80to 100 million stay in tribal areas.

Barriers such as accessibility awareness, affordability, and accountability affect eye care services in such areas The magnitude of visual disabilities and unattended curable eye conditions are therefore high among the tribal population. To reach the goals of vision 2020, this underprivileged population should be given due care. Information on the magnitude and determination of visual disabilities in tribal areas will therefore be crucial for better and effective planning and monitoring of vision2020-India.

MATERIALS AND METHODS

This is a prospective study carried out during the period of January 2014 to December 2014 by the patients attending outpatient department of government medical college jagdalpur. Disability camps were organized in nearby primary health care centres, cases from those camps came for visual disability certificate are also included in this study. All cases were examined by three ophthalmic surgeons .Patients name, age, sex, address, caste, socioeconomic status were recorded .Detailed history was taken, ocular examination was done. best corrected visual acuity was recorded with the help of snellens chart. Slit lamp examination, direct ophthalmoscopy was also done. Purpose for certificates noted. Cases with visual acuity in better eye less than 3/60 were included in this study. Criteria for visual disability certificates based on guidelines given by ministry of social justice and empowerment New Delhi.^[4]

Causes of visual disability in various age group

| Causes | Age5-18years | | | 19-40years | | | 41-60years | | | Total | | |
|--|--------------|----|----|------------|---|----|------------|---|---|-------|----|-------------|
| | M | F | T | M | F | T | M | F | T | M | F | T% |
| Microphthalmos | 22 | 30 | 52 | 20 | 8 | 28 | 2 | 4 | 6 | 44 | 42 | 86[36.752%] |
| Corneal scar | 14 | 6 | 20 | 22 | 0 | 22 | 2 | 2 | 4 | 38 | 8 | 46[19.658%] |
| Optic atrophy | 4 | 6 | 10 | 8 | 2 | 10 | 2 | 4 | 6 | 14 | 12 | 26[11.11%] |
| Srabisumuswith amblyopia | 4 | 4 | 8 | 8 | 4 | 12 | 2 | 0 | 2 | 14 | 8 | 22[9.401%] |
| Nystagmus with amblyopia. | 12 | 6 | 18 | 0 | 2 | 2 | 0 | 0 | 0 | 12 | 8 | 20[8.547%] |
| Diabetic retinopathy | 0 | 0 | 0 | 2 | 3 | 5 | 3 | 3 | 6 | 5 | 6 | 11[4.700%] |
| Retinitis pigmentosa. | 4 | 1 | 5 | 3 | 1 | 4 | 0 | 0 | 0 | 7 | 2 | 9[3.846%] |
| Bilateral chronic iritis with complicat.cataract | 4 | 1 | 5 | 3 | 0 | 3 | 0 | 0 | 0 | 7 | 1 | 8[3.416%] |
| ARMD | 0 | 0 | 0 | 2 | 0 | 2 | 3 | 1 | 4 | 5 | 1 | 6[2.564%] |
| Total | | | | | | | | | | 146 | 88 | 234[100%] |

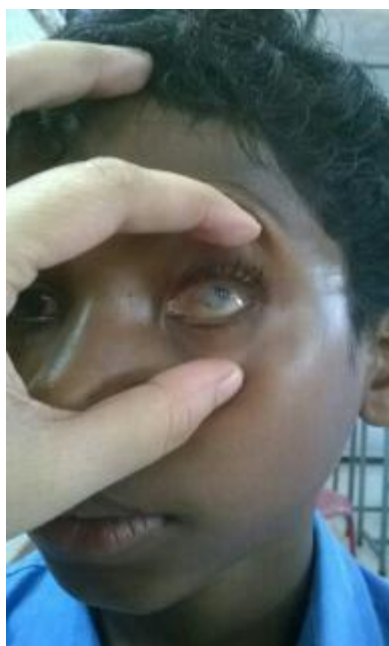


Fig.1 Microphthalmos with corneal scar

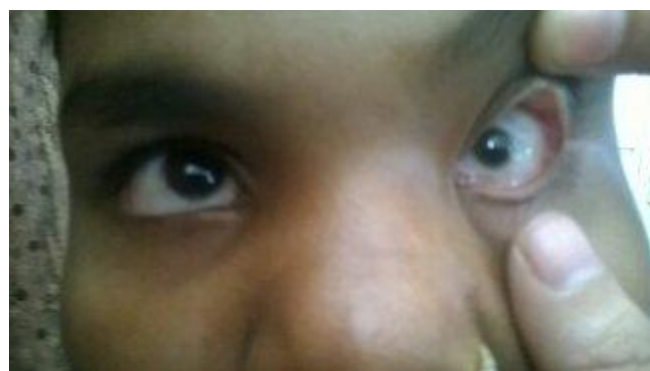


Fig.2 Right eye strabisumus amblyopia, Left eye microphthalmos with microcornea

RESULTS

Above table Shows total number of 234 cases age ranged from 5-60 years, out of this 146 were males [62.40%] and 88 females [31.60%], age group between 5-18 were 46.15%, between 19-40 years 41.880%, and more than 40 years 11.96%. Congenital microphthalmos (36.752%) was the commonest cause of permanent visual disability followed by corneal scar (19.658%), optic atrophy (11.111%), strabismus with amblyopia (8.547%), diabetic retinopathy (4.70%), retinitis pigmentosa (3.846%), bilateral healed iritis with complicated cataract (3.418%), age related macular degeneration (ARMD) (2.564%). Purpose for certificate in age group 5-18 years mostly for education scholarship, in age group 19-40 years for travel concession, age group more than 40 years for pension

DISCUSSION

Planning and implementing a range of services aimed at making those independent in all respects can help to restore the rights and dignity of the disabled person. The government of India has developed national, regional and district level support centres to provide services to effectively meet their requirements for aids and appliances, education, training, employment and other suitable rehabilitation services.

Visual disability certificate is a part of rehabilitation of a blind person. It helps the blind person to get travel concession and income tax benefit, pension and education scholarship.

Applying WHO criteria for definition of blindness, i.e. A visual acuity of less than 3/60 in better eye with best possible refractive correction.^[5]

In this study 146(62.40%) were males and 88(37.60%) were females. This gender difference may be due to lack of knowledge about advantages of visual disability certificates among females.

Patients came for disability certificates about 96% cases belong to rural areas most of them were tribal people. This may be due to lack of awareness about eye health care in rural areas.

Congenital microphthalmos (n=86,36.752%) was the leading cause for visual disability certificate. Joshi RS reported microphthalmos as the third common cause for obtaining visual handicap certificate.^[6] Microphthalmos is the congenital ocular anomaly due to defective development of optic primodium. Microphthalmos is seen with microcornea and coloboma of uvea in majority of cases. Warburg has reviewed the genetics of microphthalmos and identification of these defects are important in genetic counselling.^[7] Vitamin A deficiency in the developing embryo can produce microphthalmos which is very common in this area. Other causes of microphthalmos include intrauterine infection (TORCH), chromosomal anomalies and teratogenic drugs.^[8]

Corneal scar (n=46 19.658%) was the second cause for visual disability certificate. Joshi RS also reported in the 13.99% of cases corneal scar as the second common cause for obtaining visual disability certificate. Corneal scar was mostly bilateral due to vitamin A deficiency during

childhood. Malnutrition is very common in this area. Vitamin A deficiency is the cause of blindness in 24% of children in blind schools of NE states of India reported by Bhattacharjee et al^[9] Rahi et al reported it as 18.6% among children^[10]

Twenty six [11.11%] patients had optic atrophy which was the third common cause for visual disability certificate. Most of the cases it was post inflammatory and post traumatic.

Twenty two patients [9.401%] had strabismus with amblyopia. strabismus accounts for 33-45% cases of amblyopia. Strabismus patients are 15 times more prone for amblyopia than nonstrabismus patients.^[11] Strabismus amblyopia is due to lack of awareness about eye health care in rural area and patients are also coming late for eye problem.

Twenty cases (8.54%) had nystagmus with amblyopia .This cases can be prevented from blindness by early diagnosis and nystagmus corrective surgery.

Diabetic retinopathy (n=11 4.7%) was the cause of blindness in older age group.In India the estimated incidence of diabetic retinopathy in tertiary care diabetic center is34.1%.Lack of awareness about eye health care and longer distance of remote areas from the city may be the probable cause of blindness due to diabetic retinopathy.

Nine cases (3.846%) had retinitis pigmentosa .Joshi RS noticed retinitis pigmentosa in about 15% of cases^[6].This can be prevented by genetic counselling.

Bilateral chronic healed iritis with complicated cataract seen in about eight cases (3.418%).This may be due to delay in diagnosis and not using steroids eye drops timely.

Six cases (2.564%) had age related macular degeneration. It is the commonest overall cause of irreversible blindness in western world. Presence of macular star, drusen at macula ,geographical atrophy are the diagnostic features of ARMD .Global causes of blindness as percentage of global blindness in 2010 ARMD was the cause of blindness in 5% of cases^[12]

CONCLUSIONS

Congenital microphthalmos was the commonest cause of visual disability followed by corneal scar, optic atrophy, amblyopia, diabetic retinopathy, RP, bilateral chronic iritis with complicated cataract and ARMD.

Vitamin A deficiency ,malnutrition, maternal infections are the factors responsible for causing permanent visual loss in majority of cases.Ispite of vitamin A prophylaxis programme vitamin A deficiency persist as a public health problem especially in remote area like Bastar.

So health education and awareness about maternal and child health care is required .Periodic diagnostic eye camps should be organized to prevent the blindness in this area.

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