

Patient's with Age Related Macular Degeneration may improve their vision by low vision devices – A case report

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ABSTRACT

Age related macular degeneration is a common ocular disease in which gradually loss of vision during old age life. A case of 61years old retired Bengali male post graduate teacher was referred from state referral hospital with the provisional diagnosis of age related macular degeneration to the low vision clinic. Since 2 and half years he was losing his vision slowly. Before that, he was wearing traditional spectacles from the age of 39 years with bifocal correction. He had the history of high blood pressure and frequent smoker. On examination her distance visual acuity was 6/36 in BE; near visual acuity was N12 in BE. Patient was improving his vision with mixed power correction for distance and +3.00D addition in both eyes for near. He was prescribed table lamp along with 5X self illuminated magnifier, reading stand, reading slit for book and news paper reading, signature guide for bank and other official signature.

Keywords - *Age related macular degeneration; mixed power; self illuminated magnifier; reading stand; reading slit; signature guide.*

INTRODUCTION

Age related macular degeneration (ARMD) is the leading cause of blindness in individuals over the 50 years of age in the developing countries. ARMD is a progressive disease of the central area in the ocular posterior segment, which leads to deterioration of central vision and thereby affecting the performance of daily living activities of aged people ^[1]. Visual deterioration can occur within months, or over many years, depending on the type and severity of ARMD ^[1]. Gradual central vision loss may occur with dry macular degeneration but not as severe as wet ARMD symptoms ^[1]. The early evolutions of ARMD which occur in the macula are the presence of pigmentation and yellowish deposits known as drusen ^[2]. These early clinical signs are usually not accompanied by vision loss ^[2]. However, people with drusen and pigmentary changes will progress of advanced ARMD with the development of choroidal neo-vascularisation which can have devastating effects on central visual function ^[2]. Low vision can interfere with simple everyday activities such as the ability to see faces, drive, read, write, or do close work, such as cooking ^[3]. People with ARMD have been found to experience difficulty with the activities of daily living, which pose serious financial burden on their family in terms of high medical and societal costs that are due to increased risk of falling, need for vision-enhancing equipment, and assistance with activities of daily living ^[4].

CASE REPORT

A 61-year old retired Bengali male post graduate teacher was referred from state referral hospital with the provisional diagnosis of age related macular degeneration to the low vision clinic. His visual acuity was 6/36 in BE. The anterior segments were normal but on fundus examination presence of pigmentation and yellowish deposits of Age related macular degeneration disease found by State referral hospital (figure 1).

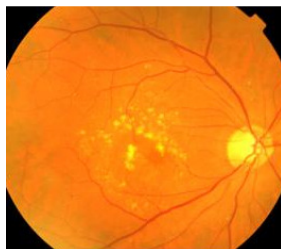


Fig. 1 Fundus of patient

After attending in low vision clinic, detail history was taken. He was complained that since 2 and half years he was losing his vision gradually. Before that, he was wearing traditional spectacles from the age of 39 years with bifocal correction. He was unable to read small text, which had been an important part of his life. He also taught school students and worked

extensively on the computer at home, even he could not communicate with others by cell phone. He could not watch TV program, and sometimes he could not recognize faces. On further questioning, he had the history of high blood pressure and frequent smoker. After diagnosis it was found that his visual acuity 6/36 in BE, he had loss central visual field and reduced contrast sensitivity (figure 2).

Diagnosis: ? Age related macular degeneration (ARMD)

Chief visual complaints: D/V (N) with existing Spect.

D/V Abnormalities	Yes	No	Board works in institute	Yes	No	Recognizing Faces	Yes	No	Watching TV	Yes	No
	✓							✓			
N/V Abnormalities	Yes	No	Writing Ability	Yes	No	Extra Illumination	Yes	No	Glare Affect	Yes	No
	✓				✓			✓			✓
Colour Sensation	Yes	No	Food Identification	Yes	No	Mobility Problem	Yes	No	Currency Identification	Yes	No
								✓			

Visual Acuity Assessment :

Distance Visual Acuity		Right Eye	Left Eye
By Snellen's Chart [Unaided]		6/36	6/36
By Snellen's Chart [Aided]		—	—
By Log MAR Chart [Unaided]		—	—
By Log MAR Chart [Aided]		—	—
Near Visual Acuity		Right Eye	Left Eye
Single Letter Chart [Unaided]		—	—
Single Letter Chart [Aided]		—	—
Crowded Letter Chart [Unaided]		N18	N18
Crowded Letter Chart [Aided]		—	—

Other Essentials Test:

Contrast Sensitivity Test		Right Eye	Left Eye
		V. Poor	V. Poor
Visual Field Test [Peripheral]		N	N
Visual Field Test [Central]		40-22°	40-22°
Coulor Vision Test		—	—
Glare Test		Poor	Poor

Zhang
19/8/2019

Fig. 2 Low Vision Evaluation Sheet

He was assessed his best corrected distance and near visual acuity on the same day, contrast sensitivity, reading and writing ability. His visual acuity, was increased 6/18(p) in RE by +2.25 Dsph with - 1.25 Dcyl X 75° and 6/18 in LE by +2.25 Dsph with - 0.75 Dcyl X 105°. His near visual acuity was improved N10 by +3.00 Dsph in BE. After completion of low vision evaluation and to overcome his boringness he was advised to attend after two days in low vision clinic (figure 3).

Name: [redacted] Age/Sex: 61/2019 Date: 19/8/2019

HIQ: Refractor state refraction report
Hospital for L.V. Refraction

Occupation - Retired Teacher

CF: ? Age Related macular degeneration (ARMD)

Visual Acuity: V_r < 6/36
V_l < 6/36

Visual Field: T_r <

Syna: <

Blood: <

Urine: <

Reviewed after two days for Low Vision Aid

Handwritten notes:
No improvement with Spectacle.
Cannot read and write with Spectacle.
Reduce contrast and central vision.
High blood pressure and frequent smoker.
Spectacle correction as maximum as possible.
L.V. Evaluation.

Rx	Right Eye				Left Eye			
	D Sph	D Cyl	Axis	Vision	D Sph	D Cyl	Axis	Vision
Distance	+2.25	-1.25	75°	6/18(p)	+2.25	-0.75	105°	6/18
Near (Add)	+3.00	—	—	N10	+3.00	—	—	N10

P.D.: _____ mm. Lens Specification: K/W/T Refractor. Signature: Zhang 19/8/2019

Fig. 3 First day prescription

After two days later he came to the low vision clinic again. He was trailed by different low vision devices with different magnifications. But after using 5X hand held magnifier with extra illumination, he was able to read comfortably. He was also provided a reading lamp, and a reading slit, by which he was also able to read the newspaper and his writing was legible. The patient was advised to wear his bifocal glasses constantly. To read with a table lamp and reading slit, and to use a reading stand, will be comfortable for study. A signature guide helped him in bank and other official signature. He also advised to change his life style to control his hypertension and strictly restricted smoking (figure 4).

Current device used	Purpose	RE Vision	LE Vision
Distance	- N/A -	-	-
Near	- N/A -	-	-
Distance Low Vision Devices			
Low Vision Devices	Type (if any)	RE Vision	LE Vision
Multiple pin hole Spectacles	-	-	-
Telescopes	-	-	-
Filters or Tints glass	-	-	-
Near Low Vision Devices			
Low Vision Devices	Power	RE Vision	LE Vision
Near Telescope	-	-	-
✓ Hand magnifier (Illuminated)	5x	10/6	10/6
Stand magnifier	-	-	-
Spectacle magnifier	-	-	-
Self-Illuminated magnifier	-	-	-
If any other devices	-	-	-
Non-Optical Devices			
Name of Non-Optical Devices (uses if any)	Yes	No	
✓ Reading Lamp	✓	-	-
✓ Reading Table	✓	-	-
✓ Reading guide	✓	-	-
✓ Signature guide	✓	-	-
Walking Stick	-	-	-
Large print book	-	-	-
Notex	-	-	-
Needle threader	-	-	-
If any other devices	-	-	-

21/8/2019

Fig. 4 Prescription for Low Vision Device

DISCUSSION

Patient those who have no visual improvement with regular spectacles or contact lenses even surgical procedures or medical treatment, they need to manage with low vision devices. A patient have low vision, it depends on the reducing of visual acuity as well as the reduction in visual function, like decreased colour vision, contrast sensitivity, abnormality in ocular motility or glare sensitivity. Since, smokings, high blood pressure, high cholesterol, are the risk factor of ARMD, that's why strictly restricting triggers factors.

Low vision affects more than 246 million people worldwide ^[5] and over 54.5 million in India ^[6]. As the general health of the elderly continues to improve, life expectancy has increased and ARMD has become more prevalent. Older age people are more prone to ARMD as observed in other studies ^[7].

CONCLUSION

Age related macular degeneration patients are managed by small amount of magnification. Optical devices like hand held magnifier with best possible spectacle correction are very much preferable for reading purpose. Other non-optical devices like table lamp, reading slit, reading stand and signature guide also supporting devices for ARMD patient. Life style should change to control hypertension and smoking should be restricted. To know the progression of visual function, a regular follow up should be done after certain interval.

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