

Albinism – Well Managed By Low Vision Devices – A Case Report

Authors

Goutam Datta¹

¹Associate Professor, Department of Optometry, Tripura Institute of Paramedical Sciences, Agartala, Tripura, India.

Abstract

Albinism is an inherited disease characterized by low production of melanin. Partial or complete absence of melanin is responsible for white color of the skin, hair, and eyes. Albinism associated with visual defects, like photophobia, amblyopia. A 19 years old Bengali boy having albinism was referred for low vision assessment. His chief complaint were blurring of distant vision, photophobia, and had no satisfaction with his exiting spectacle. He had poor visual acuity and sensitivity to glare and bright light. By investigation with objective and subjective refraction method the patient's visual acuity both eye 6/36(p) by sphero-cylindrical lens and near visual acuity was N/10(p). By Low vision assessment he had to prescribe binocular telescope with corrected spectacle and his vision dramatically increased to 6/9(p) in both eye. Prosthetic iris colour contact lens reduced his glare and photophobia, which also increased sharpness of the object.

Keywords- Albinism; melanin; Sphero-cylindrical lens; binocular telescope; Prosthetic colour contact lens;

INTRODUCTION

Albinism is a group of inherited disorders that are characterized by a reduction or absence of melanin pigment in tissues, in conjunction with ocular and visual pathway developmental abnormalities^[1]. The degree of skin and hair hypo-pigmentation varies with the type of albinism. All types of albinism have similar ocular and visual changes which include reduced visual acuity, refractive errors, iris trans-illumination, nystagmus, fundus hypo-pigmentation and misrouting of optic nerve fibers at the chiasm^[2]. Eye care professionals can play an important role in detecting and providing ongoing management and low-vision care in patients with albinism, which can be helped in various ways. High refractive errors should be corrected as early as possible^[3].

CASE REPORT

A 19 years old Bengali boy having albinism was referred by renowned Ophthalmologist to Low Vision Clinic for low-vision assessment. His chief complaint were blurring of distant vision, photophobia, and had no satisfaction with his exiting spectacle. After taking complete history he had to investigate visual acuity, glare sensitivity test, colour vision test, but his response was very poor (figure 1).

Diagnosis: ? Albinism									
Chief visual complaints: Blurring vision, photophobia									
DV	Yes	No	Board work	Yes	No	Recognizing Faces	Yes	No	Watching TV
Abnormalities	✓		in institute	✓			✓		✓
NV	Yes	No	Writing Ability	Yes	No	Extra Illumination	Yes	No	Glare Affect
Abnormalities	✓		✓		✓	✓		✓	
Colour Sensation	Yes	No	Food Identification	Yes	No	Mobility Problem	Yes	No	Currency Identification
	✓		✓		✓	✓		✓	

Visual Acuity Assessment :		
Distance Visual Acuity	Right Eye	Left Eye
By Snellen's Chart (Unaided)		
By Snellen's Chart (Aided)	6/36(p)	6/36(p)
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)	N/10(p)	N/10(p)
Crowded Letter Chart (Unaided)		
Crowded Letter Chart (Aided)		

Other Essentials Test:		
Contrast Sensitivity Test	Right Eye	Left Eye
Visual Field Test (Peripheral)	Poor	Poor
Visual Field Test (Central)		
Colour Vision Test	✓ Poor	✓ Poor
Glare Test	✓ Poor	✓ Poor

Datta
14/12/2019

Fig.-1 Low Vision Evaluation

Performing objective refraction followed by subjective refraction his spectacle correction was $-5.00/-1.25 \times 20^\circ$ for right eye and for the left eye was $-5.50/-1.50 \times 150^\circ$ with distance visual acuity of 6/36(p) in both eye. Near visual acuity for both eyes was N10 (p) at 20cm (figure 2).



Current device used	Purpose	RE Vision	LE Vision
Distance	_____	_____	_____
Near	_____	_____	_____
Distance Low Vision Devices			
Low Vision Devices	Type (If any)	RE Vision	LE Vision
Multiple pin hole Spectacles	_____	_____	_____
Telescopes	2x binocular	5/9 (0)	5/9 (0)
Filters or Tints glass	_____	_____	_____
Near Low Vision Devices			
Low Vision Devices	Power	RE Vision	LE Vision
Near Telescope	_____	_____	_____
Hand magnifier	_____	_____	_____
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		✓	

Dorothy
11/19/2010

Fig.-3 Low Visio Aids prescription

Contact Lens for	D. Sph.	D. Cyl.	Axiss	Base Curve	CL Diameter	Iris Diameter	Clear Pupil Size	Occluded Pupil Size	Iris Colour
RE	Plano -	-	-	8.6 mm	12.5 mm	11.5 mm	3.5 mm	-	Brown
LE	Plano -	-	-	8.6 mm	12.5 mm	11.5 mm	3.5 mm	-	Brown

Material Soft Manufacturer B&L

Sterilization method SGP Lens Soft Wearing Schedule Daily Disposal yearly

Date 18/10/2019 Signature [Signature]
18/10/2019

Fig.-4 Contact lens prescription

After seven days he was reported with his prosthetic contact lens and binocular telescope fitted with spectacles. He also reported that he was no glare problem with prosthetic contact lens, moreover his vision also improved with sharpness of the objects by prosthetic contact lens along with binocular telescope. The patient was advised routine follow-up in every three months interval for Contact Lens care. After three months interval the patient was attend for routine follow-up in the low vision clinic, he reported that he was very much satisfied with his prescribed devices.

DISCUSSION

Patient with albinism are sensitive to sunlight because of reduced or an absence of melanin. Therefore, a hat, sunscreen agents and tinted ultraviolet sunglasses or tinted contact lenses are advised to reduce the outdoor glare^[1]. Indoor occupations are most preferable for albinism patient. Amblyopia and Nystagmus should be treated with tinted contact lenses and spectacle fitted telescope. Albinism patient are managed by low vision care. They are prompt responding with binocular telescope. And the tinted contact lenses are reducing the glare excellently.

CONCLUSIONS

Prosthetic iris-tinted Brown color Contact Lens with a clear pupil area can benefit these patients by reducing glare entering the hypo-pigmented eye. But albinism patient have to need the rehabilitation for caring and using tinted contact lenses. The telescopes fitted to the prescription spectacles are more acceptable to the patient as it was clear his vision, and were also able to facilitate his daily activities.

REFERENCES

1. Traboulsi, El, Green, WR. Chapter 38: An overview of albinism and its visual system manifestations. 2006 Edition.
2. Gronskov, K, Ek, J, Brondum-Nielsen, K. Oculocutaneous albinism. Orphanet J Rare Dis. 2007; 2:43.
3. Bradley J. Kirkwood, "Albinism and its Implications with Vision," INSIGHT, the Journal of the American Society of Ophthalmic Registered Nurses, April-June 2009, Vol. XXXIV, No.2