



ORIGINAL RESEARCH PAPER

Ophthalmology

EFFECT OF STRABISMUS ON CONTRAST SENSITIVITY AND VISUAL ACUITY

KEY WORDS:

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ABSTRACT

AIM: - Aim of this study is to find out effect of strabismus on contrast sensitivity and visual acuity

METHOD: - To conduct this study, observational and cross section study was executed at tertiary eye hospital. Subjects who were having strabismus were included in this study and contrast sensitivity of such subjects were assessed using pelli robson contrast sensitivity chart. And visual acuity was measured using Snellen and LOGMar visual acuity chart

RESULT: - 112 subjects were included in this study out of which 43 subjects (38.4%) were females and 69 subjects (61.6%) were male. And out of 112 subjects data of 93 strabismic subjects were used and it was founded that contrast sensitivity were affected more with increasing angle of deviation. And it is affected more in exotropes subjects which is followed by then esotropes subject. Similarly visual acuity was affected more with increasing angle of deviation and it was observed that exotropes have poor visual acuity followed by esotropes

CONCLUSION: - It was concluded from the study that contrast sensitivity and visual acuity is affected more with increasing angle of deviation and exotropes were affected more followed by esotropes.

INTRODUCTION

Strabismus is one of the most common cognitive disabilities of binocular single vision. As in strabismus eyes are not aligned properly due to which objects are not placed on fovea of the strabismic eye rather it might place on extra foveal region which causes degradation of contrast sensitivity and visual acuity.

As image is relocated on parafoveal region of retina in cases of strabismus (in exo deviation image is shifted towards temporal part of retina where as in eso deviation it is shifted towards nasal side of retina) and due to arrangement of cone and rod cells in retina it effects contrast sensitivity of strabismic subjects and also due to deviation poor vision develops in deviating eye due to shifting of image in parafoveal part of retina which leads to reduced visual acuity.

METHODOLOGY

To conduct this study, observational and cross section study was performed at tertiary eye hospital. Thorough comprehensive eye examination was performed of strabismic subjects following objective refraction and fundus examination.

Visual acuity was measured using Snellen and LOGMar visual acuity chart.

And contrast sensitivity was measured using Pelli-Robson contrast sensitivity chart. Following which data analysis of the strabismic subjects were done.

RESULT

In this study data of 112 subjects were collected.

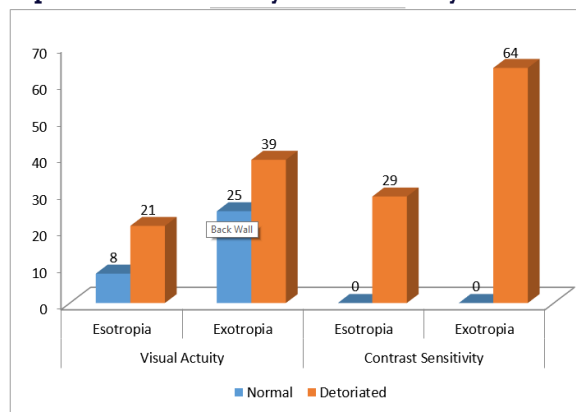
To analyse contrast and vision of strabismic subjects 93 data of strabismic subjects were used and table -1 and graph -1 shows subject distribution of contrast sensitivity and visual acuity of strabismic subjects.

And it was founded that strabismic subjects have poor contrast sensitivity. In which exotropes and esotropes both were founded with poor contrast sensitivity. Similarly visual acuity were also affected due to strabismus.

Table 1 Contrast Sensitivity and visual acuity

| Type | Visual Acuity | | Contrast sensitivity | |
|--------------|---------------|-----------|----------------------|-----------|
| Subtype | Esotropia | Exotropia | Esotropia | Exotropia |
| Normal | 8 | 25 | 0 | 0 |
| Detoriated | 21 | 39 | 29 | 64 |
| Total | 29 | 64 | 29 | 64 |

Graph 1 Contrast Sensitivity and visual acuity



DISCUSSION

From the present study it is surmise that visual acuity and contrast sensitivity both become worse with increasing angle of deviation. This is due to lack of fixation from fovea as extra foveal region of retina takes fixation of squinting eye leads to poor visual acuity along with poor contrast this is due to arrangement of cones and rods cells in retina. Where in extra foveal region of retina rod cells come in action leads to reduce contrast and vision. So it is observed for the study strabismus causes reduce visual acuity and contrast sensitivity both were affected more in exotropes followed by esotropes.

CONCLUSION

This study concludes that strabismus causes poor visual acuity and contrast sensitivity. And both these were affected more in exotropes subjects followed by esotropes.

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