

A Review of Visual Rehabilitation in CVI patients

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Abstract

Damage to the retrogeniculate route causes vision loss, which is known as cerebral visual impairment or cortical visual impairment. CVI is the primary cause of visual impairment in children due to delayed ocular developmental milestones, along with other visual abnormalities. The daily tasks of CVI patients, like writing and reading, should be improved, and the fine motor and cognitive skills should be developed by optometrists.

Introduction

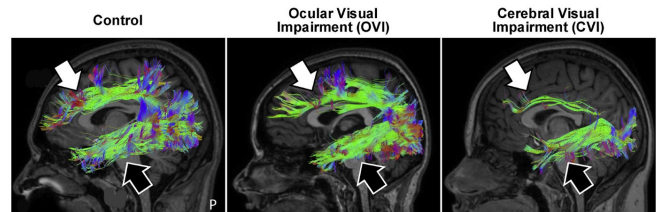
Cerebral visual impairment or cortical visual impairment is defined as vision loss resulting from damage to the retrogeniculate pathway. In the absence of damage to the anterior afferent visual pathways or ocular structures or vision loss that is greater than expected for the degree of ocular pathology. (1) Due to insults at the level of the cortex which includes geniculostriate lesions and the subcortex, which include focal white matter leukomalacia. Delayed visual development is on the spectrum of CVI, results from temporary dysfunction of higher cortical centers.



Along with other childhood visual impairments due to delayed ocular developmental milestones, CVI is the main cause of visual impairment in the developed countries.

Risk Factors:

- Hypoxia
- Meningitis
- Hydrocephalus
- Trauma
- Epilepsy
- Hypoglycemia
- haemodilalylsis
- Maternal intake of drugs
- Metabolic disorders
- Congenital neurological malformations

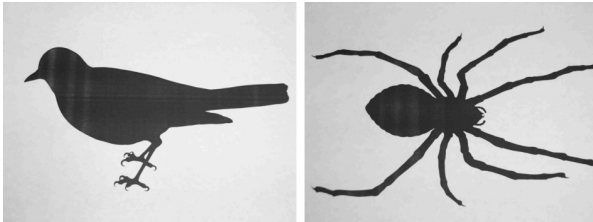


Ocular Features:

Afferent System:

Cognitive visual system gets impaired. Visual impairment in CVI can be as severe as no light perception to normal visual acuity. Vernier acuity

as the Bits, but were useful as they were illuminated and projected on a large area. Bits and slides are shown 10 times a day, as well as in time when the child is resting, so as to be able to function at the highest level.



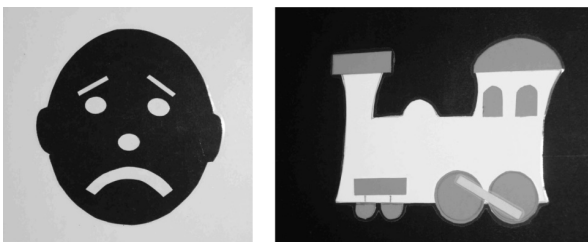
4. Developing the ability to see detail within a configuration (adding detail to the checkerboard):

Black and white or colorful outline images are added to the checkerboard environment used to develop outline perception. When colors are used they are bold and bright. This environment surrounded the child daily. The images were changed daily during the test.



5. Developing the ability to see detail with configuration (adding detail to the image)

6. Developing the ability to see detail within a configuration (word cards).(10)



Additional strategies encompass concept development, adapting print materials, organizational skills, executive function development related to visual perceptions.

Adequate refractive correction followed by amblyopia therapy leads to restore the residual vision in the child.(9)

Proper rehabilitation in the form of low vision aids and environmental modifications, need to be given to the patient according to the demand of their functional or residual visual acuity.(9)

Conclusion

Optometrist plays a vital role in helping individuals with CVI with different office based and home based vision therapies as discussed above leading to enhance the quality of their life. Optometrists should work on enhancing CVI patients' day-to-day activities, such as reading and writing, and develop fine motor and cognitive skills. This helps the patients to improve daily function and keep pace in their life.

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