

Investigation of the Functional Impact of Amblyopia on Visual Skills in Children

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Abstract : Purpose: To assess the efficiency of visual functions and visual skills in strabismic & anisometropic amblyopes and to assess visual acuity and contrast sensitivity in anisometropic amblyopes with spectacles & contact lenses. Method: In a prospective clinical study, 32 children ageing from 5 to 15 years presenting with amblyopia in a pediatric department of Shri Ganapati Netralaya Jalna, India, were assessed for a period of three & half months. Visual acuity was measured with Snellen's and Bailey-Lovie log MAR charts whereas contrast sensitivity was measured with Pelli-Robson chart with spectacles and contact lenses. Saccadic movements were assessed with SCCO scoring criteria and accommodative facility was checked with ± 1.50 DS flippers. Stereopsis was assessed with TNO test. Results: By using Wilcoxon sign rank test p-value < 0.05 (< 0.001), the mean linear visual acuity was 0.29 ($\approx 6/21$) and mean single optotype visual acuity found to be 0.36 ($\approx 6/18$). Mean visual acuity of 0.27 ($\approx 6/21$) with spectacles improved to 0.33 ($\approx 6/18$) with contact lenses in amblyopic eyes. The mean Log MAR visual acuity with spectacles and contact lens were found to be 0.602 ($\approx 6/24$) and 0.531 ($\approx 6/21$) respectively. The contrast threshold out of 20 amblyopic eyes shows that mean contrast threshold changed in 9 patients from spectacles 0.27 to contact lens 0.19 respectively. The mean accommodative facility assessed was 5.31 (± 2.37). 24 subjects (75%) revealed marked saccadic defects on the test applied. 78% subjects didn't show even gross stereoscopic ability on TNO test. Conclusion: This study supports the facts about amblyopia and associated deficits in visual skills which are claimed in previous studies. In addition, anisometropic amblyopia can be managed better with contact lenses.

Keywords : strabismus, anisometropia, amblyopia, contrast sensitivity, saccades, stereopsis

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