

Visual Rehabilitation with Pattern Biofeedback, Target Biofeedback and Tradizional Exercises: Comparing Three Methods

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Introduction: The present investigation compares the effectiveness of three visual rehabilitation methods in patients with central scotoma. One group underwent standard rehabilitation, with exercises, and two groups received modern rehabilitation with biofeedback, using two different stimulus presentation methods: in one group the stimulus was structured, represented by a flickering pattern, while in the other group a simple target stimulus was used. We want to evaluate, by comparing the pre and post rehabilitation assessments, the actual effectiveness of these methods in improving visual performance of patients.

Methods or Study Design: 45 randomly selected patients affected by AMD, with visual acuity between 0.4 and 1.3 logMAR(4/10-1/20) and absolute central scotoma. All patients underwent: Distance visual acuity (in logMAR), Reading near visual acuity, Contrast sensitivity (Pelli-Robson), Reading speed, Retinal Fixation measured with Microperimeter (MP1) so how the Retinal Sensivity expressed in dB. For the evaluation of fixation stability three different classification methods were considered.: 1 The MP1 classification, 2 Fujii et al. (2002) and Sawa (2006), 3 Steinman method. Average and standard deviation (\pm SD) of the samples were calculated. The paired Student t test for paired samples was used to detect changes in the data of evaluations obtained before and after the rehabilitation treatment. P values <0.05 were considered statistically significant.

Results: The initial distance visual acuity showed statistically significant differences ($p < 0.01$) between the group rehabilitated with exercises and the groups rehabilitated with biofeedback: Standard rehabilitation exercises: 0.63 logMAR (almost 2.5/10); Rehabilitation with biofeedback standard: 0.89 LogMAR (slightly more than 1.25/10); Rehabilitation with biofeedback via structured stimuli: 0.81 logMAR (less than 1.25/10).

Conclusions: The most exciting improvement was definitely that found in the group that underwent biofeedback rehabilitation with flickering pattern stimulation. The fixation appears consistently stabilized, ensuring the patient with a better visual performance.

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Keywords: Visual Rehabilitation, Microperimetry, Biofeedback, AMD.

Vitreoretinal Surgery

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Clinical Characteristics and Surgical Outcomes of Pediatric Rhegmatogenous Retinal Detachment

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Introduction: In this study we analyzed the characteristics and surgical results of pediatric rhegmatogenous retinal detachment (RRD).

Methods or Study Design: The medical records of 23 (+7) eyes of (+7) 22 patients younger than 18 years of age who underwent vitreoretinal surgery due to RRD were analyzed. The gender, age, laterality, duration of presenting symptom, etiology, ocular and systemic co-morbidities, type of breaks, lens status, presence of proliferative vitreoretinopathy (PVR) and its grade, initial and final best-corrected visual acuities, surgical management, number of operations, duration of follow up, functional and anatomical success, and complications were noted.

Results: The mean age was 12.9 ± 1.2 years. There were 23 male (76.7%) and 7 female (23.3%) subjects. The most common etiological factors were high myopia (40%) and trauma (36.6%). The most common type of retinal break was flap tear ($n = 22$, 73.3%). PVR grade C was present in 16.6% of eyes ($n = 5$). The most common primary surgery was pars plana vitrectomy ($n = 19$, 63.3%). Twenty-five eyes (83.3%) were treated with only one surgical procedure, whereas 5 eyes (16.7%) underwent the secondary operations. Anatomical success was achieved in 24 eyes (80%) after the primary surgeries and in 25 eyes (83.3%) after the secondary surgeries. Functional success rate was 70% ($n = 21$) after the primary surgeries and was 80% ($n = 24$) after the secondary surgeries.

Conclusions: Myopia and trauma were the most common etiological factors related to RRD in pediatric population. In spite of the difficulties in the diagnosis and treatment of pediatric RRD, high anatomic and functional success rates could be achieved.

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Keywords: Children, Rhegmatogenous Retinal Detachment, Vitrectomy.