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Prisms in the treatment of strabismus: Our experience of the use of prismatic correction in children with small angle of strabismus

Background & Aim: Prisms in patients with strabismus are used for: dimension of deviation angle; its compensation; conservative treatment of strabismus (provocation of diplopia, development of fusional reserves etc.). The data about efficiency of prismatic correction for compensation of deviation in patients with strabismus are contraries. Aim of this study is to estimate the efficacy of prismatic correction in children with strabismus.

Materials & Methods: 63 children with concomitant convergent squint, 5-16 y/o, with deviation 10-25 pr. dptr, were observed. Methods used were viso, refracto-, deviometry, investigation of binocular functions, ophthalmoscopy. Visual acuity in 45 patients was 1.0, in 18-0.5-0.9. 2-3-divisible investigation during 1 hour was performed on prism tolerance test (for exclusion of phenomenon of secondary increase of deviation).

Results: Orthophoria and binocular vision (BV) were noted in all children in spectacles after prism selection. Every 2-3 months the control of visual acuity, state of eyes and binocular functions was performed. Long-term follow up observations were conducted during 5-28 months. Normal BV in prismatic spectacles saved in 45 children (71.4%). Asymmetrical BV in spectacles developed in 6 (9.5%), that affirmed about late appearance of phenomenon of secondary increase of deviation. Power of prisms was diminished on 4-8 pr. dptr with preservation of BV in 25 children. Complete abolition of prisms was possible only in three children (4.8%). 20 children with normal BV in prisms were operated; after surgery BV was noted (BV without prisms or with weak prisms).

Conclusion: Prisms are so useful for making a prismatic orthophoria and development of binocular vision in free space. It is necessary to follow-up the patients and to control the eye position, state of BV.

Biography

V I Serdiuchenko is a Doctor of Medical Science, Professor and, Chief of Laboratory of Disturbance of Binocular Vision at Filatov Institute of Eye Diseases and Tissue Therapy of National Academy of Medical Science of Ukraine. In 1985, with co-author I Viazovsky, the new device for investigation of accommodation in different meridians of the eye was proposed. With help of this device the possibility of irregular accommodation was demonstrated. In 1995, she has completed Doctoral dissertation entitled "New dynamic methods of investigation of visual functions in children with anomalies of refraction and disturbance of binocular vision". She has authored 200 scientific works, two monographs (in 2014, 2015). Main direction of her scientific activities include: diagnostic and treatment of complicated forms of strabismus; creation of devices for treatment of accommodative disturbances and; studying of visual functions in children living in radioactively contaminated regions. She is member of European and International Associations.

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