A clinical and radiological approach to restrictive strabismus

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Introduction: Restrictive strabismus is the presence of an element in the orbit that interferes with muscle relaxation and contraction or prevents free movement of the globe. This element may be in or around the muscle or external as RD implant. This element also can modify the clinical picture of any type of strabismus and the outcome of any strabismus surgery.

Objective: In this study, we describe our regimen in Tanta University Eye Hospital in dealing with cases of restrictive strabismus which is a combined clinical and radiological approach. Surgical treatment is tailored according to each case as regard the etiology and the nature of restriction.

Methods: A retrospective study included 146 cases of restrictive strabismus seen and managed in Tanta University Eye Hospital during the last 10 years. Cases were classified into two groups: Group I- 64 were below 14 year age (pediatric group) and group II- 82 patient above 14 year (adult group). The clinical, radiological and surgical data were reviewed and analyzed.

Results: There were 76 males and 70 females. Group I of 82 patients were above 14 year age (adult group) and group II of 64 patients were below 14 (pediatric group). Out of 82 adult cases; 36 were dysthyroid orbitopathy, 24 were post-operative and 12 were blow-out fracture. Out of the 64 pediatric cases; 24 were Duane’s syndrome, 14 post-operative, 10 were blow out fractures, medial rectus muscle contracture secondary to long-standing six nerve palsy in five cases, brown syndrome four cases.

Conclusion: Restrictive strabismus has certain criteria common for both pediatric and adult groups as its incomitant nature, limitation of ocular motility, positive forced duction test and leash phenomena. However, the etiology is markedly different in both age groups. Surgery should be tailored for each case according to the nature of the restrictive element. In all cases resection should be avoided.

New insights in the pathogenesis and treatment of glaucoma

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Increased intraocular pressure (IOP) is a major risk factor for glaucomatous damage and reducing IOP improves prognosis. Nevertheless, there is little doubt that other risk factors besides IOP such as unstable ocular perfusion are involved. Blood flow is unstable, if either the IOP fluctuates at a high level (or blood pressure fluctuates at a low level) or if the autoregulation of blood flow is disturbed. A common cause for a disturbed OBF autoregulation is a primary vascular dysregulation (PVD) in context of the Flammer-syndrome. An unstable blood flow leads to recurrent mild reperfusion injury (chronic oxidative stress) affecting particularly the mitochondria of the optic nerve head. OBF regulation can be improved by magnesium, calcium channel blockers as well as with carbonic anhydrase inhibitors. Oxidative stress can be reduced at the mitochondrial level by ginkgo biloba.