View metadata, citation and similar papers at core.ac.uk
brought to you by CORE
provided by Elsevier - Publisher Connector

MYOPIA AND SUBRETINAL NEOVASCULARIZATON

1321

DEFOCUS INDUCED AMETROPIA IN CHICKS - ROLE OF MAGNIFICATION AND ORBITAL CHANGES

SIVAK, J.G., CURRY, T.A., WILSON, K.T., CALLENDER, M.G. and IRVING, E.L.
School of Optometry, University of Waterloo, Waterloo, Canada N2L 3G1

Purpose We have shown that the hatchling chick eye will become myopic or hyperopic by amounts equal to the defocus induced by lenses of wide ranging powers. Virtually no attention has been directed to 1) The effects of these changes on the orbital bones 2) the effect of magnification (or minification) as a possible cue to the sign of the developing ametropia.

Methods 1) Convex (+15 D) and concave (-15 D) lenses were mounted over one eye of day old chicks (n=25). Refractive states and ocular diameters were measured by retinoscopy and ultrasound. The eyes were enucleated, weighed and measured after the birds were sacrificed on the 7th day. The remaining heads were cleaned and placed in 2% NaOH to remove all soft tissues. Orbital dimensions were measured to 0.01 mm with vernier calipers. 2) Day old chicks (n=13) were treated unilaterally for seven days with afocal goggles designed to produce 10% retinal image magnification, an amount comparable to the magnification produced by +10D lenses used to induce 10D of hyperopia. Eye diameters and refractive states were measured during the experiment while the eyes were weighed and measured after the chicks were sacrificed on the 7th day.

Results 1) After one week of defocus, the treated eyes were longer or shorter as well as more myopic or hyperopic than the contralateral eye by amounts close to those of the defocussing lenses (-12.3 and +11.8 D). Orbital axes corresponding to myopic eyes were, on average, 1.29 mm longer and those corresponding to hyperopic eyes were, on average 0.65 mm shorter than contralateral orbits. Other orbital axes showed similar differences. 2) After one week of afocal lens wear there was no difference between the eyes in spite of the magnification produced.

Conclusions 1) Ametropia development in chicks involves tissues beyond the eye itself. 2) Factors other than magnification make it possible for the developing eye to respond to the sign of defocus.

1322

TITLE: LONG TERM NATURAL HISTORY OF CHOROIDAL NEOVASCULARIZATION IN PATHOLOGIC MYOPIA.

KUHN D., SOUBRANE G., SECRETAN M., COSCAS G.

Eye University Clinic of Créteil, France

Purpose Previous reports of visual outcome in eyes with choroidal neovascularization (CNV) associated with pathologic myopia are conflicting. This study was designed to precise the visual prognosis during long term follow-up of untreated myopic CNV.
Methods 50 eyes of 48 patients with myopic chorioretinal degeneration complicated by CNV were studied retrospectively. Inclusion criteria were age less than 60 years, recent onset of symptoms (less than 6 months), active CNV well identified on fluorescein angiography and at least five years of follow-up.
Results At presentation 72% of the CNV were subfoveal, 20% were juxtafoveal, 6% extrafoveal and 2% at distance. At 5 years 100% of the CNV involved the fovea. Overall visual outcome was poor: an initial sudden loss of visual acuity (VA) was followed by a relative stabilization. But after 2 years of follow-up VA decreased progressively and loss of three lines or more occurred in 62% of the eyes. 72% of the eyes reached legal blindness.
Conclusion This study confirms that CNV in degenerative myopia have a severe visual prognosis in natural history. Spontaneous scarring of new vessels with development of fibrous tissue and progressive enlargement of the pigment epithelium atrophy area surrounding the CNV membrane lead to legal blindness in the long term.

1323

FUNDUS CONTROLLED EXAMINATION AS ADDITIONAL TOOL IN EYES WITH CHOROIDAL NEOVASCULARISATION

ROHRSCHNEIDER K, BECKER M, GLÜCK R, KRUSE FE, HOLZ FG, VÖLCKER HE
Dep. of Ophthalmology, University of Heidelberg, Germany

Purpose It is often difficult to predict the functional outcome in patients suffering from juxta- or extrafoveal choroidal neovascularisation (CNV). Nevertheless function is the only aim for the patient. In order to improve the possibilities of clinical judgment we previously have developed a kinetic and static fundus perimetry behaviour which enables to precisely test the function at fundus locations with morphological changes. Purpose of this study was to prove whether these examinations may give additional information concerning the functional outcome and enable to more precisely document the function in accordance to morphology.

Methods 10 eyes with CNV were examined using our SLO fundus perimetry with documentation of fixation before and after laser treatment was performed.

Results Knowledge of the center of fixation as well as of the stability of fixation enabled an easier orientation during laser treatment. In some eyes with juxtafoveal CNV sparing of the documented fixation area during laser treatment provided better stability of fixation and visual outcome. Location of the mean fixation point on the left side of the CNV leads to minor functional results, in these eyes beneficial of treatment may be questionable. The corresponding examinations during follow-up enabled evaluation of the development of fixation stability.

Conclusions Fundus examination using the SLO allows to preserve best reading possibilities and therefore is very helpful in patients prior to laser treatment of CNV associated with AMD. Different types of fixation with different prognosis can be separated.

supported by DFG Vo 437/2-1

1324

INDOCYANINE GREEN ANGIOGRAPHY AND PATHOLOGICAL MYOPIA.

Quaranta M, Arnold JJ, Soubrane G, Coscas G.
Clinique Ophtalmologique Universitaire de Créteil, France.

Purpose: Visual loss in pathological myopia may be due to degenerative changes in the posterior pole or to choroidal neovascularization (CNV). Fluorescein angiography (FA) is normally used to diagnose these complications however the interpretation is not always easy due to associated hemorrhages, pigmentary disturbances, lacquer cracks and chorioretinal atrophy which can simulate or mask the mild hyperfluorescence seen in CNV in myopic eyes. This study was designed to analyze the indocyanine green (ICG) angiographic findings of pathological myopia and to compare them with those of FA, with particular reference to the usefulness of ICG in managing neovascular complications.

Methods: Thirty-two patients (52 eyes) affected with pathological myopia were included in the study. All patients underwent a complete ophthalmologic examination, fluorescein and ICG angiography.

Results: Retrobulbar arteries and veins were visualized in 64% of eyes on ICG angiography only. Choroidal arteries apppeared to be attenuated and reduced in number. In the staphyloma, choroidal veins were less numerous, and in all eyes an absence of the normal flush due to choriocapillaris filling was observed, with only rare zones of perfused choriocapillaris in the most marked cases. Subretinal and retinal hemorrhages were present in 28 eyes. CNV were diagnosed in 16 on FA and 18 on ICG angiography. In a further 7 eyes, ICG angiography demonstrated uncomplicated lacquer cracks, visualised in the late phases as hypofluorescent lines, to be the cause of the hemorrhage. In only 1 eye ICG failed to disclose a CNV visualized on FA, and in 2 eyes neither dye could clarify the origin of the hemorrhage.

Conclusion: ICG angiography is a useful diagnostic tool in the management of high myopic patients.