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Electrophysiology

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VISUAL ELECTROPHYSIOLOGIC DIAGNOSIS: RESULTS OVER TWO YEARS.

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Purpose: To determine the frequency of diagnostic categories obtained in a clinical electrophysiology of vision laboratory at a university hospital.

Methods: Patients who underwent visual electrodiagnostic testing from October 1998 to October 2000 (N=570) were prospectively studied. Full-field and/or focal electroretinogram (ERG) were performed in 385 (68%) patients and pattern and/or flash visually evoked potentials were performed in 185 (32%) patients.

Results: After ERG assessment, the most frequent diagnostic categories identified were (in this order): retinitis pigmentosa, Stargardt disease, cone dystrophy, cone-rod

degeneration, retinotoxic effects due to several agents (chloroquine, tamoxifen, methanol, etc) and ocular trauma, besides unclear visual loss. In 23% of cases, it was impossible to obtain a final diagnosis at first exam. The largest group referred to ERG

testing was for documentation or exclusion of tapetoretinal degenerations (42%). In this group, 109 cases of RP were identified: 90 isolated cases and 19 syndromic. VEP

testing helped to identify the following diagnostic categories: diseases affecting only the optic nerve (optic nerve atrophy, optic neuritis, optic disk edema, etc); neurological conditions affecting the visual pathway (multiple sclerosis, cerebral palsy, blunt head trauma, tumors, etc): pediatric eye and/or neurological conditions (congenital cataract, cortical visual impairment, congenital glaucoma, etc) and opaque media (leucoma, ocular trauma, etc).

Conclusions: Frequent and meaningful indications for visual electrophysiologic recording and diagnostic decisions arise from this relatively large group of

studied patients. A number of diagnoses can hardly, if not all be established without visual

electrophysiologic testing. These include early stages of RP, progressive cone dystrophy, toxic retinopathy without fundus changes, optic nerve or retinal dysfunction in opaque media, optic nerve involvement in multiple sclerosis and pediatric eye disease with or without neurological damage.