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Step VEP visual acuity in a pediatric neuro-ophthalmological cohort

Steady-state VEPs, have been used to estimate visual acuity since the 1970s and allow responses to a range of stimulus sizes to be collected rapidly- with particular utility in infants. However, the assessment of children with cortical visual impairment is a bigger challenge that lead to the development of the Step VEP. Its initial evaluation revealed that accuracy and precision were poorer for pediatric patients than for optically degraded normal adults and that it was not necessarily successful in every child.
Statistical models generated the equations: VAO = 0.56 VAStep (r2 = 0.75, F = 60.93,
p = 0.000) and VAPL = 0.45 VAStep (r2 = 0.82, F = 156.85, p = 0.000), supported by a recent a systematic review of VA comparisons showing that recognition VA (optotypes) agrees more closely than discrimination VA (PL) with VEP VA.
In combination, Step VEPS and subjective tests allowed complete assessment in 96% of patients, with incomplete Step VEPS much more likely to be partially successful than not, and more likely to be partially successful than incomplete subjective tests. This supports the rationale that Step VEPs maintain attention by limiting the time spent stimulating away from an individual's threshold of spatial resolution. For the small number of patients in whom VA cannot be estimated, alternative stimuli and methods of presentation are proposed.

Case Report **Published Date:-2022-05-06 12:30:29**

Treatment of advance keratoconus using donor bowman layer: the zaman technique of bowman layer transplantation (Type I & Type II)

Commonly referred to as an ecstatic, non-inflammatory disease, Keratoconus, usually bilateral and asymmetric, is characterized by progressive steeping and thinning of the cornea. This results in irregular astigmatism which compromises vision [1,2]. Traditionally, early Keratoconus stages have been treated by prescribing a hard contact lens to obtain a regular anterior optical surface. This tendency was discontinued when contact lens intolerance in advanced stages required the use of penetrating keratoplasty (PKP) or deep anterior lamellar Keratoplasty (DALK). An alternative technique of corneal cross-linking was designed in 2003 as a treatment option for keratoconus. The cornea measured at least 400 um thickness after epithelium removal and pre-operative maximum keratometry (Kmax) measured 58D or less. As a result, no corneal transplantation was required or postponed [3].

Case Report **Published Date:-2022-04-25 09:29:10**

Chlorambucil induced papilledema: a serious yet reversible side effect of chemotherapy

Papilledema is optic disc swelling due to high intracranial pressure. Possible conditions causing high intracranial pressure and papilledema include intracerebral mass lesions, cerebral hemorrhage, head trauma, meningitis, hydroce-phalus, spinal cord lesions, impairment of cerebral sinus drainage, anomalies of the cranium, and idiopathic intracranial hypertension (IIH) [1].

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Profiling children with cerebral visual impairment in a tertiary eye care center

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Background: Cerebral visual impairment (CVI) is a bilateral visual impairment that affects children in all industrialized countries. It has become more common in low-income countries as a result of the increased survival rates of children who suffer from severe neurological conditions during the perinatal period. The purpose of this study was to determine the characteristics of children with CVI in a tertiary children's eye care center population.
Methods: From October 2020 to September 2021, a cross-sectional study was conducted to select all consecutive patients with a diagnosis of cerebral visual impairment aged 6 months to 16 years. On the neurological deficit, information was gathered from the patient's referral: parental interviews, observations, and direct assessment were used for functional vision characteristics, and an ophthalmic examination was performed for eye findings. The interviewees' responses were matched to the ten specific behavioral characteristics shared by children with CVI. Cortical visual impairment was diagnosed using three criteria: [the vision loss is not explained by abnormalities found on the eye examination, a neurological medical diagnosis, and the child exhibits one of the unique visual and behavioral characteristics described by Roman Lantz]. A descriptive statistical analysis (frequency, mean, and range) was calculated.
Results: Forty children with CVI (1.96% of total children) were seen. The mean age was 2.56 (? 1.98) years. There were 24 (60%) males. On a referral paper of 28, hypoxic-ischemic encephalopathy was the commonest cause mentioned (70.0%). Seizures were the most frequent neurological deficit at presentation. Ophthalmic and neurologic impairments were found in 42.5% of children with CVI. Based on Roman-Lantzy's three phases of the CVI Range, 90% of children with CVI at the test time had Phase I or Phase II vision.
Conclusion: According to the findings of this study, visual impairment is critical in the diagnosis of CVI. The prevalence of CVI as a cause of childhood vision impairment is significant. Hypoxic-ischemic encephalopathy is the most common cause of CVI. All children with CVI have serious neurological issues, and the majority have associated ophthalmic abnormalities.

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Clinical evaluation of the eye-to-visual-pathway integrity of glaucomatous neurodegeneration using 1.5T MR imaging: The integrity of glaucomatous neurodegeneration

Aim: Accumulating data imply that glaucoma may represent a neurodegenerative disorder affecting the entire visual system. We evaluated retrobulbar glaucomatous damage with favorable techniques for 1.5T diffusion-tensor magnetic resonance imaging and we compared those techniques with clinical data in a large case series.
Material and methods: This Cross-sectional study included 130 eyes of 65 patients with primary open-angle glaucoma. Patients with no known ocular or systemic concomitant disorders, neurological diseases, previous glaucoma surgeries, or antioxidant usage were selected. A decrease in thickness and deterioration in the optic nerve diffusion of severely glaucomatous eyes of patients with asymmetrical involvement was observed in optic nerve tractography. Optical coherence tomography and visual field results of the subjects were recorded. Glaucoma analysis with optical coherence tomography and standard automated perimetry results of the subjects were recorded. Diffusion-tensor magnetic resonance imaging analysis of optic nerves and radiations were performed, computing fractional anisotropy, apparent diffusion coefficient, axial diffusivity, and radial diffusivity. Correlation between the diffusion-tensor magnetic resonance imaging and clinical eye parameters of glaucomatous neurodegeneration were statistically evaluated.
Results: The correlations between diffusion parameters and age were highly significant. Statistically significant correlations were found between ganglion cell complex and apparent diffusion coefficient, axial and radial diffusivities of optic nerves.
Conclusion: Eye-brain connection in glaucoma can be evaluated with routine clinical instruments. Our study also revealed a limited correlation of retrobulbar glaucomatous neurodegeneration with ophthalmic damage. A better understanding of retrobulbar damage will enable us to develop more efficient strategies and a more accurate understanding of glaucoma.