35 - Trochlear nerve CN IV

Trochlear nerve - CN IV

1. Acuity using the Snellen chart (near and distant vision)
2. Visual fields using confrontation test or perimetry
3. Colour vision using Ishihara chart
4. Fundoscopy Pupillary light reflex Afferent fibres in each optic nerve (some crossing in the chiasm) pass to both lateral geniculate bodies and relay to the Edinger-Westphal nuclei (midbrain) via the pretectal nucleus. Efferent (parasympathetic) fibres from each Edinger-Westphal nucleus pass via the third nerve to the ciliary ganglion and thence to the pupil. Light constricts the pupil being illuminated (direct reflex) and, by the consensual reflex, the contralateral pupil. The convergence / accommodation reflex Fixation on a near object requires convergence and is accompanied by pupillary constriction. Afferent fibres in each optic nerve, which pass through both lateral geniculate bodies, also relay to the convergence centre. This centre receives muscle spindle afferent fibres from the extraocular muscles - principally medial recti - which are innervated by the third nerve. The efferent route is from the convergence centre to the Edinger-Westphal nucleus, ciliary ganglion and pupils. Pupils that accommodate but do not react are said to show light-near dissociation. Two important types are Argyll Robertson pupil, seen in neurosyphilis and diabetes (more common these days), and Adie pupil due to peripheral pupillary defect producing a tonic pupil. ARP (note: Accommodation Reflex Present – light reflex absent) is due to an afferent defect in pupillary reflex pathway – possibly pretectal. Oculomotor nerve - CN III The oculomotor nucleus of the nerve is located in the midbrain Supplies the levator palpebrae superioris; the superior, inferior, and medial recti; and the inferior oblique muscles. Lesions of CN III result in paralysis of the ipsilateral upper eyelid and pupil, leaving the patient unable to adduct and look up or down. The eye is frequently turned out (exotropia). Lesions of the nucleus of the third nerve cause bilateral ptosis, in addition to the findings mentioned above. Paralysis of CN III is the only ocular motor nerve lesion that results in diplopia in more than 1 direction. Pupillary involvement is an additional clue to the involvement of CN III. Pupil-sparing CN III paralysis occurs in diabetes mellitus, vasculitides of various etiologies, and certain brainstem lesions such as due to multiple sclerosis. Trochlear nerve - CN IV The nucleus of the nerve is located in the midbrain. It innervates the superior oblique muscle. Trochlear nerve typically allows a person to view the tip of his or her nose.

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