

CHAPTER 10 - NYSTAGMUS

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Examination. Don't deviate the eyes more than 60 degrees from the central position when testing for nystagmus on lateral gaze, otherwise artefactual nystagmus may appear. It is best to move your finger **and** face together around the patient to make sure that both of his eyes can see your finger.

Two types, jerk nystagmus and pendular nystagmus.

Pendular nystagmus

This is where physical examination shows a "jelly-like" oscillating regular movement of the eyes with equal speed in both directions, just like the movement of a rapid pendulum. Once recognised, there are three types for your hierarchic consideration, congenital (site of lesion uncertain), ocular and cerebellar.

Congenital nystagmus can be differentiated from the history (present from birth). Oddly enough, congenital nystagmus itself, although often quite marked, does not seem to interfere with vision unless extreme.

Ocular nystagmus often occurs when there is grossly impaired vision as in albinism (absence of pigments for rods and cones), high astigmatism, cataracts, high myopia, and other retinal disease.

Pendular nystagmus is associated with congenital albinism. Acquired cerebellar pendular nystagmus can be diagnosed by the history and associated cerebellar signs. It is most commonly due to multiple sclerosis, and less commonly cerebro-vascular disease. (It is essentially a 'cerebellar tremor' of the eyes).

Jerk Nystagmus

This is nearly always acquired and may be of vestibular, cerebellar, or brain stem origin. Usually, it is only seen when looking laterally. Nystagmus of this type characteristically has a quick phase to the side to which the eyes are deviated. In severe forms, jerk nystagmus is evident when the eyes are looking straight ahead. As well as lateral nystagmus, vertical, rotary, and convergence nystagmus should be tested for - see relevance below.

The important hierarchic sub-divisions to pursue in determining a precise Anatomical diagnosis are whether the jerk nystagmus is due to a peripheral lesion (e.g. the labyrinth) or of a more central origin (brain stem/cerebellum). The clinical history and examination findings can be particularly

helpful in this regard. Thus, peripheral nystagmus, particularly of acute onset, is characteristically associated with prominent symptoms of giddiness, nausea and vomiting and examination reveals a prominent jerk nystagmus when the eyes are deviated. In central origin nystagmus, (lesions of the brain stem/vestibular nuclei/cerebellum) symptoms are often less prominent in relation to the amount of nystagmus. Nystagmus on vertical gaze almost always means a central lesion (brain stem or central cerebellum). Convergence nystagmus characteristically reflects a brain stem (mid brain) lesion as well.

Clinical Aspects.

(a) When the patient is symptomatic

This is the relatively easy case, and as a corollary to the above, severe symptoms (vertigo, nausea etc.) with jerk nystagmus on lateral gaze suggests a peripheral cause, e.g. arising from the labyrinth. Relative paucity of symptoms in association with definite lateral jerk nystagmus points more to a central origin of the problem, particularly if there is also vertical nystagmus (see above).

On examination, it is important (anatomically) to determine the side to which the nystagmus is maximal in amplitude. Normally, nystagmus is maximal to the same side as a central (e.g. cerebellar) lesion, and to the opposite side of a peripheral (e.g. labyrinthine) lesion.

(b) If the patient is symptom-free when examined, episodic symptoms of severe vertigo, nausea, vomiting etc. suggest a peripheral lesion. If there is doubt, the matter can often be clarified by Hallpike's test. In this, the patient is sat bolt upright on a couch and then suddenly placed flat with his/her head hyperextended over the end of the couch and turned to one side. Intense vertigo and nystagmus developing after a delay of some seconds suggests a peripheral lesion; if so, then the nystagmus will also typically wear off after a few seconds, but will recur when the patient is sat back upright again; however, after the test is repeated a few times, habituation occurs, i.e. the symptoms and signs tend to fade. With central lesions, nystagmus usually begins without delay on performing Hallpike's test and persists without fatigue or habituation, and often without much in the way of symptoms.

Special types of nystagmus.

1. Ataxic Nystagmus. This is due to an internuclear ophthalmoplegia . When the eyes are deviated to one side there is weakness of adduction of one eye and nystagmus in the abducting eye, no matter to which direction gaze is directed. The commonest cause of this is multiple sclerosis, but it is also seen in Wernicke's encephalopathy (secondary to alcoholism/Vitamin B1 deficiency), and occasionally in cerebrovascular disease. Very occasionally it may be seen in myasthenia gravis, due to asymmetry of weakness in eye muscles.

2. Gaze Paresis Nystagmus

Rarely, nystagmic jerking may be observed with extra-ocular muscle paresis. It develops when the eye is turned by the weakened muscle, and is simply an expression of the weakness.

Problem Solving Exercise: Not available for this chapter