Idiopathic paralysis agitans

Epidemiology

Affects ≈ 1% of Americans >age 50 yrs, [1] it is frequently underdiagnosed. [2] Male: female ratio is 3:2. Not clearly environmentally or genetically induced, but may be influenced by these factors.

Pathophysiology

Degeneration primarily of pigmented (neuromelanin-laden) dopaminergic neurons of the pars compacta of the substantia nigra, resulting in reduced levels of dopamine in the neostriatum (caudate nucleus, putamen, globus pallidus). This decreases the activity of inhibitory neurons with predominantly D2 class of dopamine receptors, which project directly to the internal segment of the globus pallidus (GPi), and also increases (by loss of inhibition) activity of neurons with predominantly D1 receptors which project indirectly to the globus pallidus externa (GPe) and subthalamic nucleus [3]

The net result is increased activity in GPi which has inhibitory projections to the thalamus which then suppresses activity in the supplemental motor cortex among other locations.

Histologically: Lewy bodies (eosinophilic intraneuronal hyaline inclusions) are the hallmark of IPA.

Clinical

Classical Parkinson's disease AKA shaking palsy.

Other signs may include postural instability, micrographia, mask-like facies. Gait consists of small, shuffling steps (marche á petits pas) or festinating gait.

Differential diagnosis

Clinically distinguishing IPA from secondary parkinsonism:

May be difficult early. IPA generally exhibits gradual onset of bradykinesia with tremor that is often asymmetrical and initially responds well to levodopa. Other disorders are suggested with rapid progression of symptoms when the initial response to levodopa is equivocal, or when there is early midline symptoms (ataxia or impairment of gait and balance, sphincter disturbance…) or the presence of other features such as early dementia, sensory findings, profound orthostatic hypotension, or abnormalities of extraocular movements [4] [5].

References

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