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Recognizing Other Causes of Parkinsonism

Although the symptoms and signs of Parkinson's disease (PD) are fairly specific, a significant fraction of patients with parkinsonism do not have PD.

In an epidemiologic study of patients with parkinsonism, Schrag et al (2000) found that

- 65% had PD
- 18% had drug-induced parkinsonism
- 7% had vascular parkinsonism
- 6% had atypical but non-specific features
- 2.5 % had progressive supranuclear palsy
- 2% had dementia with parkinsonism
- 1.7 % had multiple system atrophy

Identifying patients with atypical parkinsonism is important since these patients

- respond less reliably to dopaminergic agents
- do not respond favorably to surgical treatments of PD
- develop additional clinical problems

Atypical parkinsonism should be considered particularly in patients with

- poor dopamine responsiveness
- early loss of balance
- prominent dementia
- rapid onset or progression
- prominent autonomic dysfunction
- little or no tremor

Medication-induced Parkinsonism

Although tremor and postural instability may be less prominent, this condition may be indistinguishable from PD. Medications frequently associated with the development of parkinsonism include:

- antipsychotics
- metaclopramide

- reserpine
- tetrabenazine
- some calcium-channel blockers (especially cinnarizine and flunarizine)

The parkinsonism usually resolves after some months (or longer) after discontinuing the offending medication.

Progressive Supranuclear Palsy (PSP)

Characteristic of PSP is the early onset of

- imbalance
- frequent falls
- axial rigidity
- eye movement problems

Symptoms usually begin after age 50 and progress more rapidly than with Parkinson's disease. The most characteristic eye movement abnormality is a vertical gaze paresis, but a slowing of vertical saccadic movements may often be appreciated first (Vidailhet et al, 1994). Dementia develops later in the disease.

There is no specific treatment for PSP. Dopaminergic treatment should be tried but often offers little benefit. Supportive measures such as speech therapy, physical therapy and antidepressants may help.

Corticobasal Degeneration (CBD)

CBD is the least common of the atypical causes of parkinsonism and often affects patients quite asymmetrically and progresses more rapidly than PD. The initial symptoms of CBD usually develop after age 60 and include:

- asymmetric bradykinesia
- rigidity
- limb dystonia
- postural instability

Additional features such as ideomotor apraxia, alien limb phenomenon, progressive aphasia or the development of contractures are typical (Stover and Watts, 2001).

There is no specific treatment for CBD. Supportive treatment such as botulinum toxin for dystonia, antidepressants, and speech and physical therapy may help. Levodopa and dopamine agonists seldom offer benefit.

Multiple System Atrophy (MSA)

MSA is a sporadic neurodegenerative disease of unknown cause. The mean age of onset is 54 and median survival is 6 years (Ben-Shlomo et al, 1997). Clinically, it presents with

- bradykinesia
- cerebellar ataxia
- autonomic dysfunction
- pyramidal signs

The term "multiple system atrophy" encompasses the three presentations of the illness that have overlapping clinical and pathological findings:

- striatonigral degeneration (parkinsonian presentation)
- olivopontocerebellar atrophy (ataxic presentation)
- Shy-Drager syndrome (autonomic presentation)

While at initial presentation a patient may have a rather pure phenotype, as the condition progresses other symptoms and signs develop that reflect involvement of a different system. Patients with the parkinsonian presentation typically have an asymmetrical tremor, bradykinesia, rigidity and postural instability. Men often develop impotence; both men and woman often experience urinary urgency and incontinence.

Although 30% of patients obtain a definite but short-lived benefit from levodopa and dopamine agonists, the parkinsonism is typically poorly responsive to medications. Dyskinesias and dystonia emerge in half of treated patients. There is not much experience using deep brain stimulators (DBS) for MSA, however, Visser-Vandewalle and colleagues (2003) found a modest benefit of subthalamic DBS that persisted over 2 years in 4 patients.

Vascular Parkinsonism

Multiple small strokes, particularly if located adjacent to the internal capsule, can cause parkinsonism. Winikates and Jankovic (1999) found that patients with this disorder are more likely to present with gait difficulty than tremor and are more likely to have symptoms that are worse in the lower extremities than upper extremities. Some will also report an abrupt onset of symptoms. Signs on neurological exam may include bilateral slowing, impaired fine movements, increased tone, and a gait disturbance.

Treatment for this condition is the same as for PD.

Dementia with Lewy Bodies (DLB)

This disorder is characterized by

- early dementia
- prominent hallucinations

- fluctuations in cognitive status
- parkinsonism

In a study comparing DLB with PD, the absence of rest tremor, the presence of myoclonus, the symmetry of the extrapyramidal symptoms, and the lack of response to levodopa were more common in DLB (Louis et al, 1997). The neuropsychological profile is characterized by deficits in attention, executive function and visuospatial function (Hansen et al, 1990). Clock drawing is often helpful in demonstrating the visuospatial deficit.

Treatment with cholinesterase inhibitors may reduce delusions, apathy, agitation and hallucinations (McKeith et al, 2000). A severe extrapyramidal reaction to antipsychotic medication is another feature of this disease. If behavioral problems do not respond to cholinesterase inhibitors, low-dose treatment with atypical antipsychotic medications (quetiapine or clozapine) may be considered (Swanberg, 2002). Although motor symptoms may respond to levodopa, treatment may be limited by hallucinations.

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