

Pearls and oysters in the evaluation of Parkinson disease

Presidential Perspective Webinar Series 2020

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- Pearls: clinical insight and tips
- Oy-sters: advice for avoiding mistakes

“Clinical pearls are rarely evidence-based, yet we remember them well, searching for them as trainees, then passing on these same pearls to new generations”

Two semiology issues in parkinsonism

- Bradykinesia
- Eye movements examination

Table 1 Parkinson's disease symptoms

Motor symptoms

Tremor, bradykinesia, rigidity, postural instability

Hypomimia, dysarthria, dysphagia, sialorrhoea

Decreased arm swing, shuffling gait, festination difficulty
arising from chair, turning in bed

Micrographia, cutting food, feeding, hygiene, slow activities
of daily living

Glabellar reflex, blepharospasm, dystonia, striatal deformity,
scoliosis, camptocormia

Bradykinesia in Parkinson disease

- James Parkinson...paralysis agitans
- Kinnier Wilson (1940) "classic triad": tremor, rigidity and flexion attitude"
- Russell Brain (1962) lists tremor, rigidity, and enfeeblement of movements and emotions but rigidity and tremor are the most striking features

Occasional review

The relevance of the Lewy body to the pathogenesis of idiopathic Parkinson's disease

W R G GIBB, A J LEES

From the Department of Neuropathology, National Hospitals for Nervous Diseases, Maida Vale, London, UK

Table 1 *UK Parkinson's Disease Society Brain Bank clinical diagnostic criteria*

STEP 1. Diagnosis of PARKINSONIAN SYNDROME.

BRADYKINESIA (slowness of initiation of voluntary movement with progressive reduction in speed and amplitude of repetitive actions).

And at least one of the following:

- a. muscular rigidity
- b. 4–6 Hz rest tremor
- c. postural instability not caused by primary visual, vestibular, cerebellar or proprioceptive dysfunction.

32 year later

MDS criteria for clinically established PD

Bradykinesia is defined as slowness of movement and decrement in amplitude or speed (or progressive hesitations/halts) as movements are continued.

Although bradykinesia also occurs in voice, face, and axial/gait domains, **limb bradykinesia must be documented to establish a diagnosis of PD.**

MDS criteria for clinically established PD

Bradykinesia is evaluated following the MDS-UPDRS recommendations by using finger tapping, hand movements, pronation-supination movements, toe tapping, and foot tapping.

If these UPRDS item scores normal one can not diagnose PD

Documenting hand bradykinesia

- A.Codina told me that the “Garcin maneuver” was the most sensitive one to “detect early PD” and I have used it since.
- “Garcin maneuver”: ask the patient to move the fingers as if playing the piano

- The “Garcin maneuver” is a sensitive test to assess hand agility abnormalities in PD
- It can be applied to the feet as well as the hands

Absent limb bradykinesia in PD

- video

Limb “bradykinesia” may be absent in PD

- Other motor signs and symptoms can be present at the time of diagnosis:
 - Reduced facial expression
 - Slow gait; short steps; reduced arm swing
 - Reduced gesticulation
 - Hypophonia
 - Trunk flexion when walking
 - Rest tremor

My pearls on “diagnostic “ bradykinesia

- There are many ways of testing hand agility. The “Garcin maneuver” is at times more sensitive than the finger tapping test
- Hand bradykinesia does not have to be present to diagnose Parkinson disease
- Bradykinesia **symptoms** may be more revealing than the findings on exam

Inclusion Criteria (PD)

PPMI 2.0 Clinical

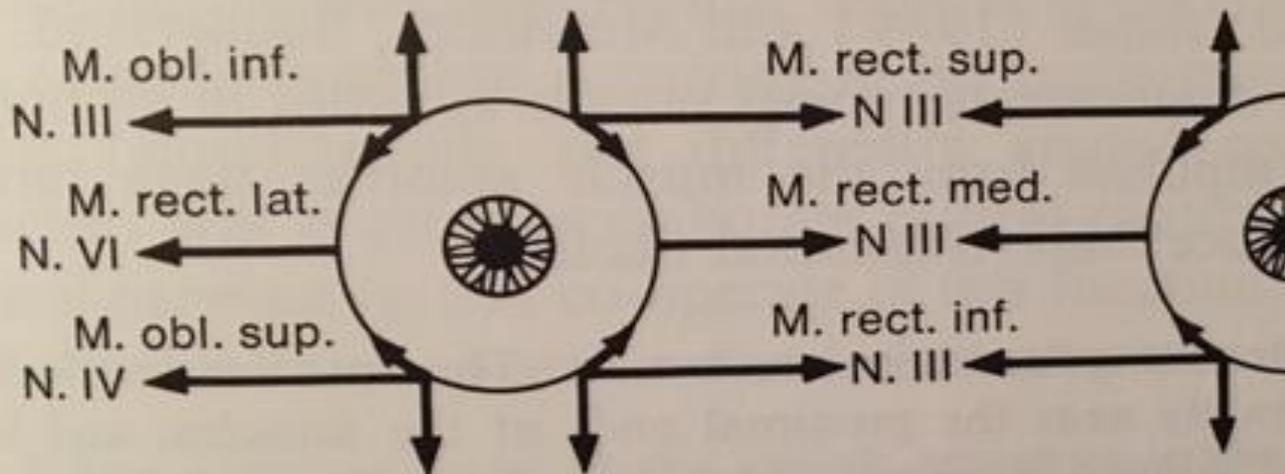
- d) Patients must have either resting tremor or bradykinesia;
OR either asymmetric resting tremor or asymmetric bradykinesia
- g) confirmation that participant is eligible based on screening DaTscan imaging

Tokyo 2020



Eye movements

FIG. 7-21 Starling's diagram of the action of the extrinsic eye muscles.



Ocular motility examination

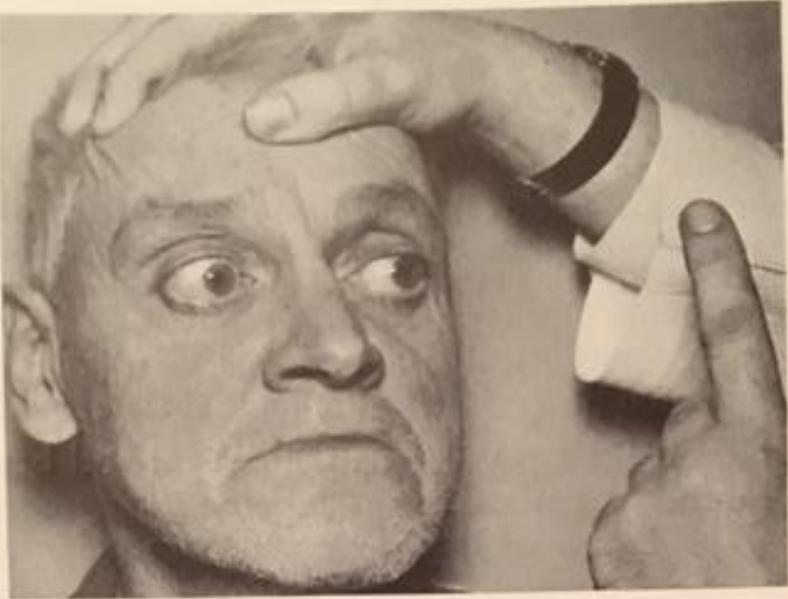
- range of eye motion
- involuntary eye movements
- gaze-evoked nystagmus
- saccades
- smooth pursuit
- the vestibulo-ocular reflex
- optokinetic nystagmus
- vergence eye movements

Testing eye movements in parkinsonism

- Generally normal in early PD
- **Abnormal saccades (fast eye movements) suggests atypical parkinsonism: PSP (slow vertical saccades) or CBD (delayed onset of saccades)**
- Testing for movements on command is the first step in eye movement examination

Issues when testing fast eye movements

- What object to use: “look at my flickering finger”, “look at your hands”, “look at tip of the pen”, etc
- Where to place the object in the visual field
- How to keep the patients head still: patients tend to move the head in the direction you request them to move the eyes
- May need to hold the head still with one hand or help from a collaborator for this



Easy test of saccades

Ask the patient to press on his/her chin with one finger when testing eye movements on command

- Frequently reduces involuntary head movements

Examination of ocular movements “pearl”

Asking the patient to press on their chin with one finger facilitates assessment of eye movements on command

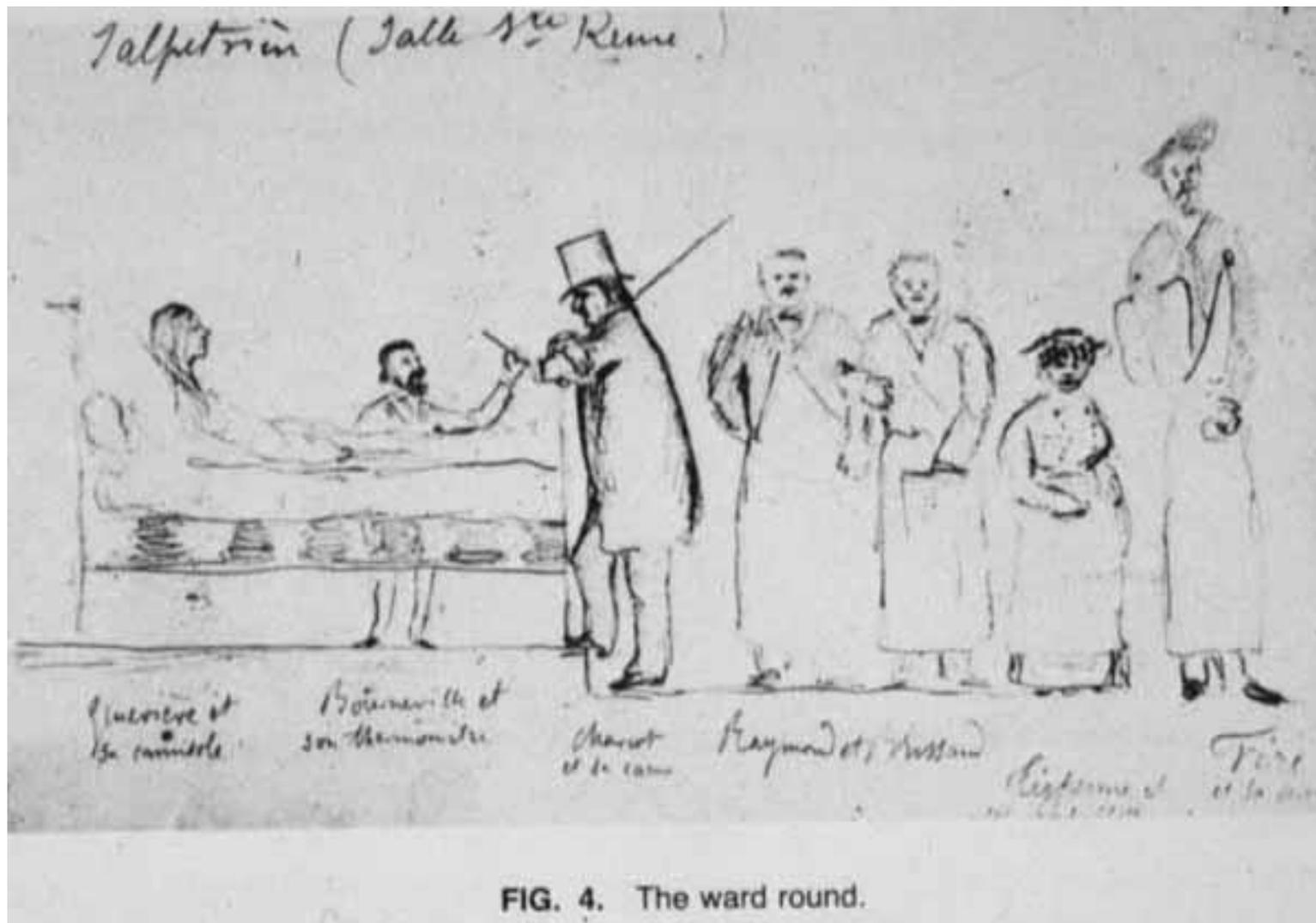
- Reduces involuntary head movements during testing
- Avoids having to hold the patients head during saccade testing; useful in pandemic times (social distance maintained)

Examination of ocular movements “pearl”

Asking the patient to press on their chin with one finger facilitates assessment of eye movements on command

- Reduces involuntary head movements during testing
- Avoids having to hold the patients head during saccade testing; useful in pandemic times (social distance maintained)
- If voluntary eye movements are considered normal, further eye movement testing not likely to help in the diagnosis of the patient parkinsonism
- Additional testing needed only if NOT normal or whether in doubt: can the slow saccades be improved with visual targets, or the vestibulo-ocular reflex?

The clinical history and neurological exam



- Thank you for your attention !