Complex Decision Making in PD

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39 yo LH man with tremor dominant PD

- Referred for HiFU for tremor control
- Symptom onset ~1 year ago with resting tremors in the left hand
- He was prescribed Sinemet without meaningful benefit
  - Works as a chef with difficulty preparing food
  - There are spasms in the left hand which are bothersome at night
- Endorses memory changes
- Current medications:
  - Sinemet 25/250 2 tab tid (6a-12p-6p)
  - Amantidine 100mg 1 tab bid
  - No reported motor fluctuations or dyskinesias

Exam

OFF medication

ON Medication

Notable Findings

- Obesity: 430lb at time of consult
  - Unable to fit in MRI scanner
- Genetic testing: 1 copy GBA mutation (E326K variant)
- Neuropsych testing: mild cognitive impairment with frontal subcortical dysfunction
- MDS-UPDRS part 3
  - OFF 41
  - ON 29
- He is ineligible for any interventional procedure 2/2 weight
- Nutrition consulted

1.5 year Interim Follow-up

- Medication adjusted
  - Discontinued amantadine with minimal improvement in cognition
  - Trial of topiramate 100mg qday
  - Increased Sinemet 25/250 q4hours (5a-9a-1p-5p-9p)
- Developed motor fluctuations
  - ~3-3.5hours good predictable ON time
  - Mild non-bothersome diphasic dyskinesias
- Has maintained weight of 240lb for 6months

1.5 year interim follow-up

- Acquired more disability
  - Unable to work as a chef due to left arm rigidity and bradykinesia
  - Transitioned to truck driving
  - Left hand tremors worsened in severity
  - Right hand tremor developing
- Memory complaints are worsening
- Reports depression 2/2 functional disability
- Wants to pursue neurosurgical treatment for his tremors and other PD symptoms

Additional Evaluations in 2024

- Repeat neuropsychological testing
  - Stable mild cognitive impairment
  - Significant worsening of depression
- Psychotherapy recommended
- MRI brain essentially normal
- Left body Bradykinesia and rigidity are major source of disability

Clinical Decision Making

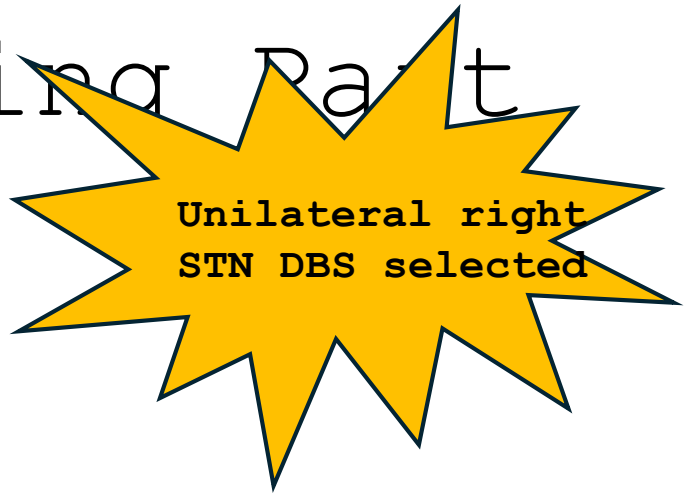
Unilateral ViM HiFU

- Pros:
  - Low cognitive & psychiatric risk
  - Treat left hand tremor
- Cons:
  - Unlikely to address disability
  - Unlikely to lower levodopa
  - Will not improve motor fluctuations & dyskinesias
  - Will not address right body
  - Young age with rapid progression

DBS

- Pro:
  - Alleviate: tremor, bradykinesia, rigidity
  - May be implanted bilaterally
  - Reduce levodopa
  - Improves motor fluctuations & dyskinesias
- Cons:
  - Cognitive impairment
  - Depression
  - GBA+

Clinical Decision Making Part 2



STN

- Pros:
  - Tremor
  - > med reduction
  - Young age
  - Rapid progression
- Cons:
  - Higher cognitive risk
  - GBA+
  - May initially worsen dyskinesias

Gpi

- Pros:
  - Lower cognitive risk
  - Improve dyskinesias
  - GBA+
- Cons:
  - <med reduction
  - Possibly less effective for tremor

Long Term Follow-up

- 6months psychotherapy with improved mood
- Maintaining weight <250lb
- Unilateral STN DBS completed 2.5 years after initial consult
  - No cognitive changes post-operatively
  - Stopped levodopa