CORTICOBASAL DEGENERATION PET AND DATSCAN

Guglielmo La Torre[1], Guven Kaya[2], James Hunter[2], Romi Anirban Saha[2], Nitasha Singh[2], Malgorzata Raczek[2], Sabina Dizdarevic[1,2]

[1]Brighton and Sussex Medical School, Brighton, UK,

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THE ROYAL
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OUTLINE

- Purpose
- Corticobasal degeneration (CBD)
- Methods
- Images: PET vs DaTSCAN
- Results and Conclusion

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Purpose

- We present a series of 3 cases of patients presenting symptoms indicative of a Parkinsonian syndrome where a combination of DaTSCAN and PET-CT was needed to reach diagnosis of CBD
- 3 patients
- 3 DaTSCANs
- 3 PETs

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CORTICOBASAL DEGENERATION

- Cortical + basal ganglia signs

  and usually unilateral

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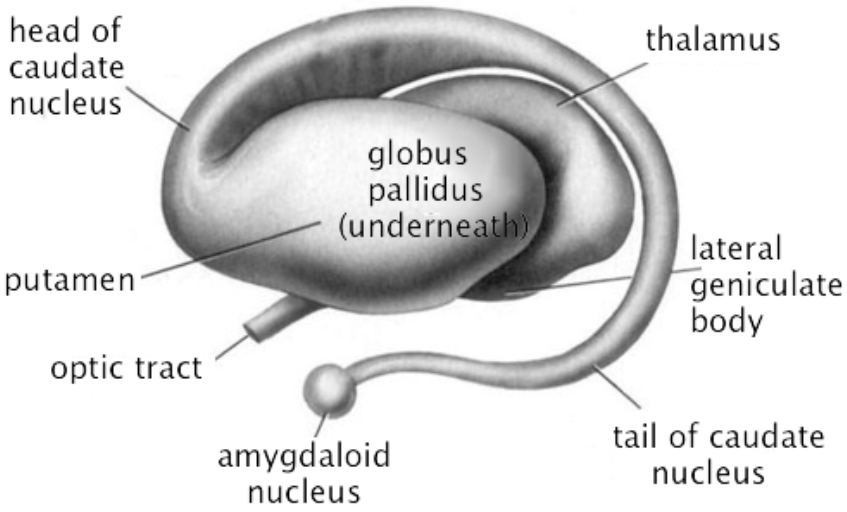

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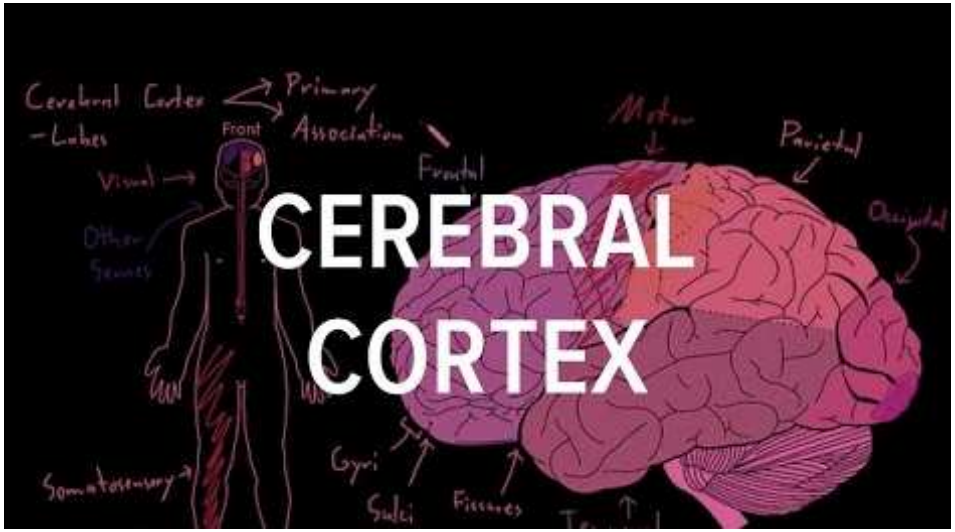

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CORTICOBASAL DEGENERATION

- Cortical + basal ganglia signs and usually unilateral
- "Tauopathy"
- Cortical signs:
  - *apraxia/aphasia*
  - *frontal dementia*
  - *myoclonus*
- Basal ganglia signs:
  - *rigidity*
  - *akinesia*
  - *limb dystonia*
  - *postural instability*

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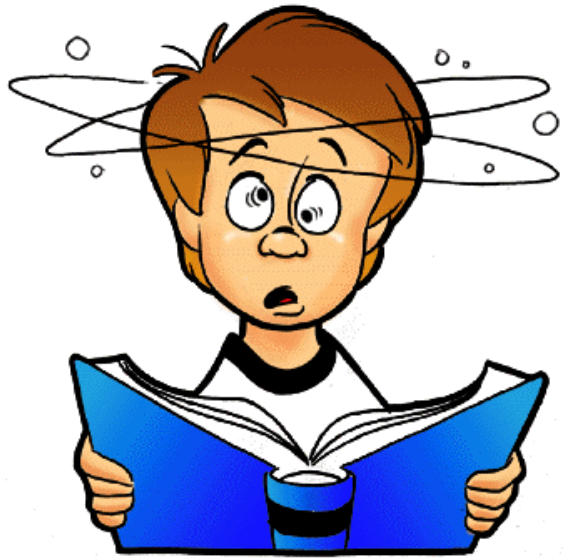

- Difficult diagnosis because:
  - *Rarely full set of symptoms*
  - *Rarely suspected*
  - *Overlap with many other parkinsonian disorders (think DD)*

- Imaging…

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RESULTS

- 3/3 DaTSCANs borderline –> minor reduction in putaminal uptake (in different clinical context, considered of doubtful significance). One borderline abnormal quantification. All 3 patients had an asymmetrical and at least mildly reduced uptake in R basal ganglia
- PET was recommended in all three cases. Comparatively to the DaTSCAN, PET showed marked hypometabolism in the temporal lobes (3/3 studies), parietal lobes (2/3) and frontal lobes (1/3). PET results were therefore clearly indicative of CBD.

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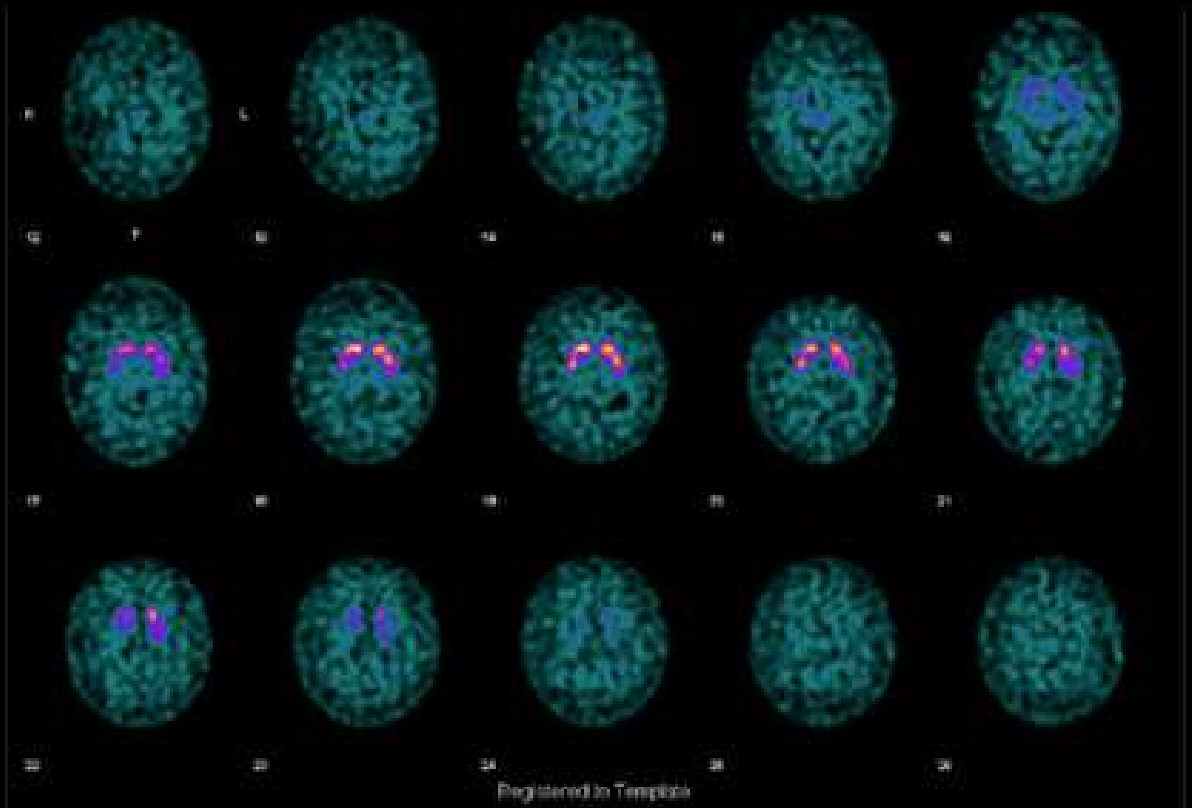
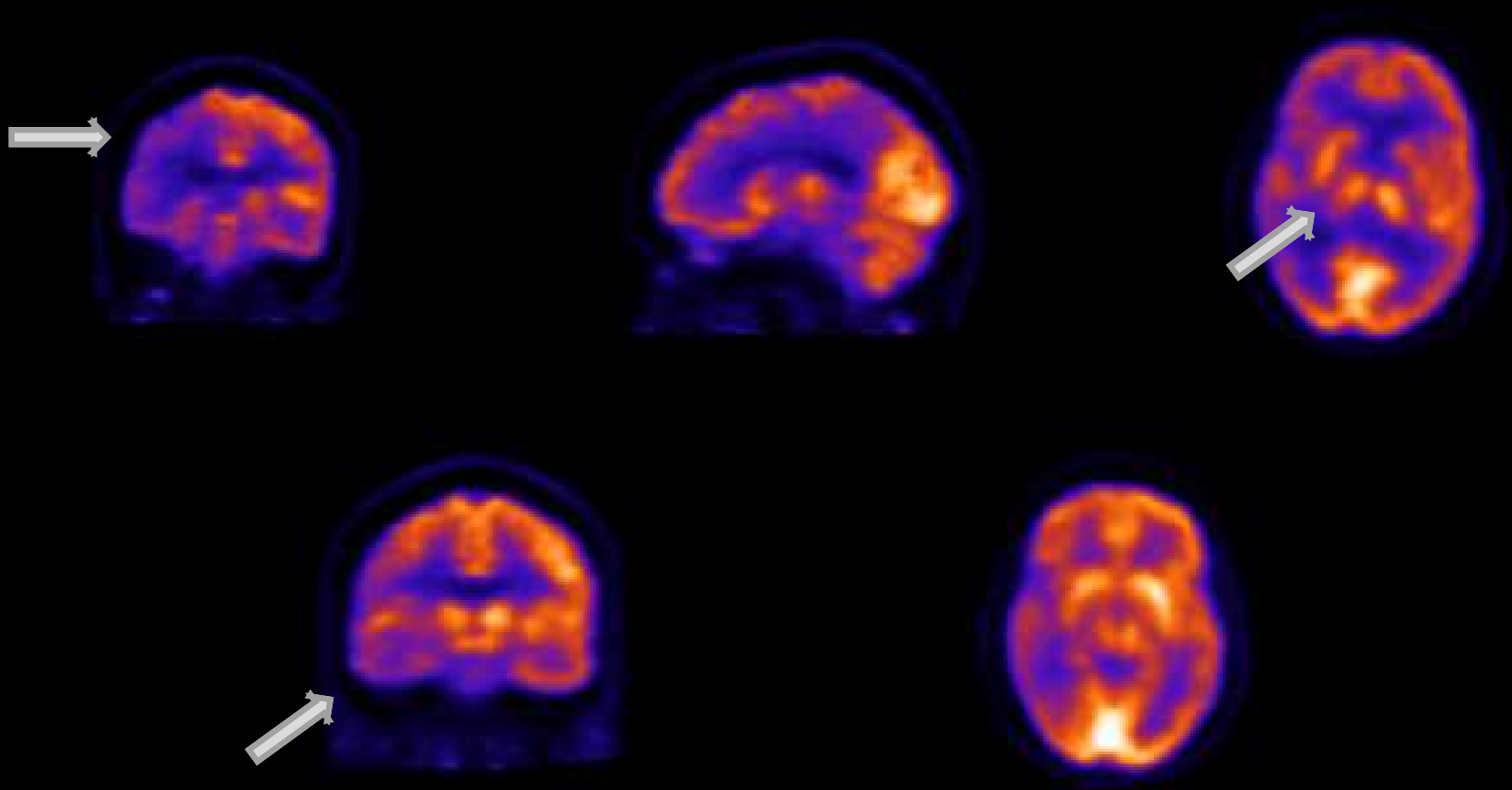
Patient 1 DaTSCAN

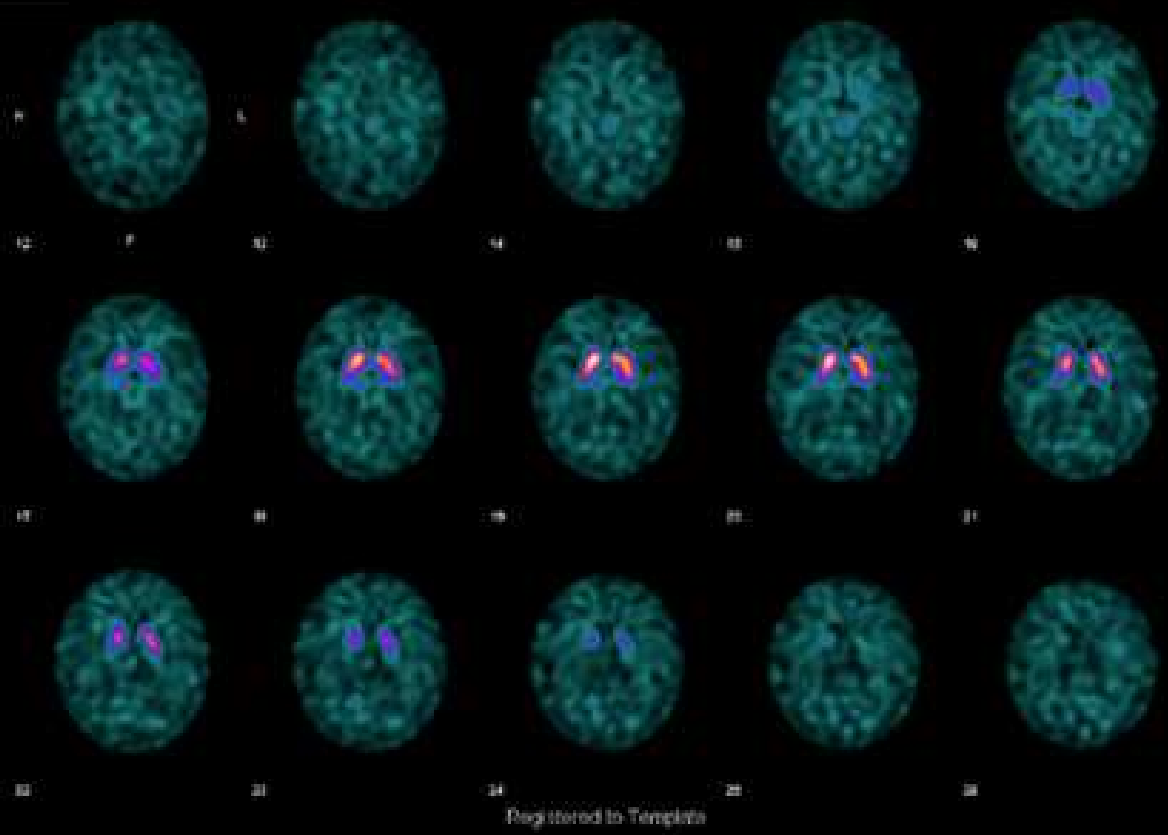


	Striatum Right	Striatum Left	Putamen Right	Putamen Left	Caudate Right	Caudate Left
Patient uptake	2.72	2.50	2.36	2.64	3.22	3.28

Patient 1 PET

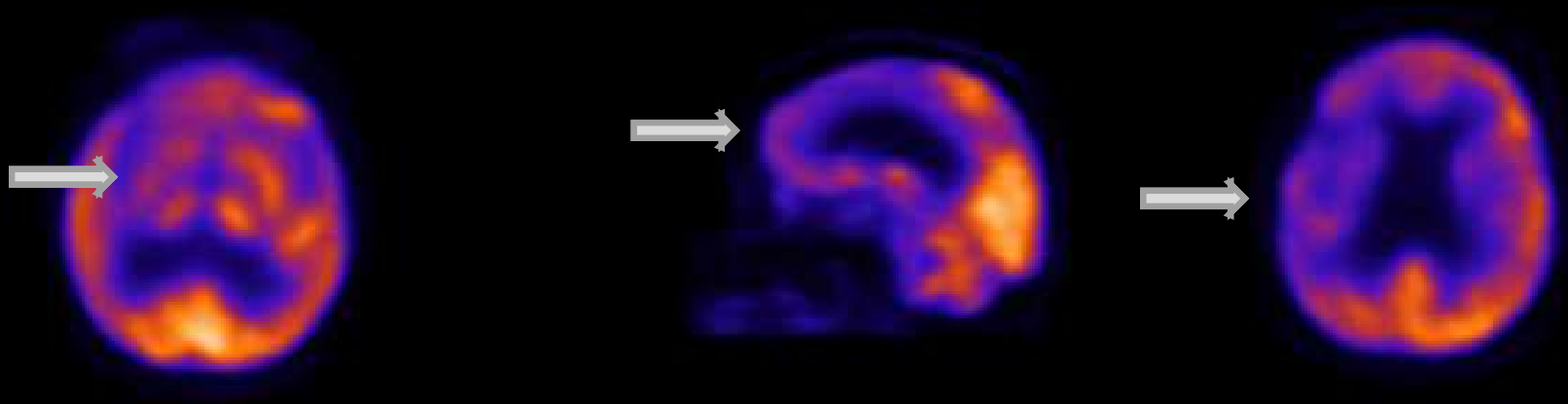


Patient 2 DaTSCAN

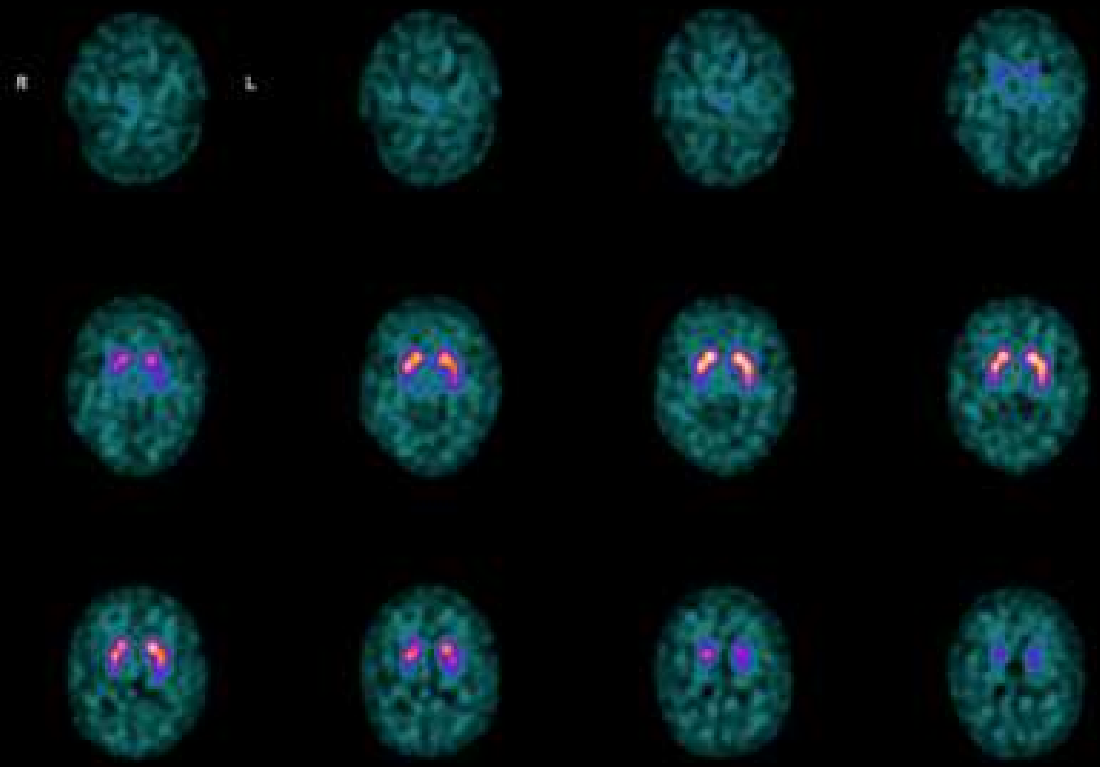


	Striatum Right	Striatum Left	Putamen Right	Putamen Left	Caudate Right	Caudate Left
Patient uptake	2.46	2.64	2.08	2.45	3.10	3.00

Patient 2 PET

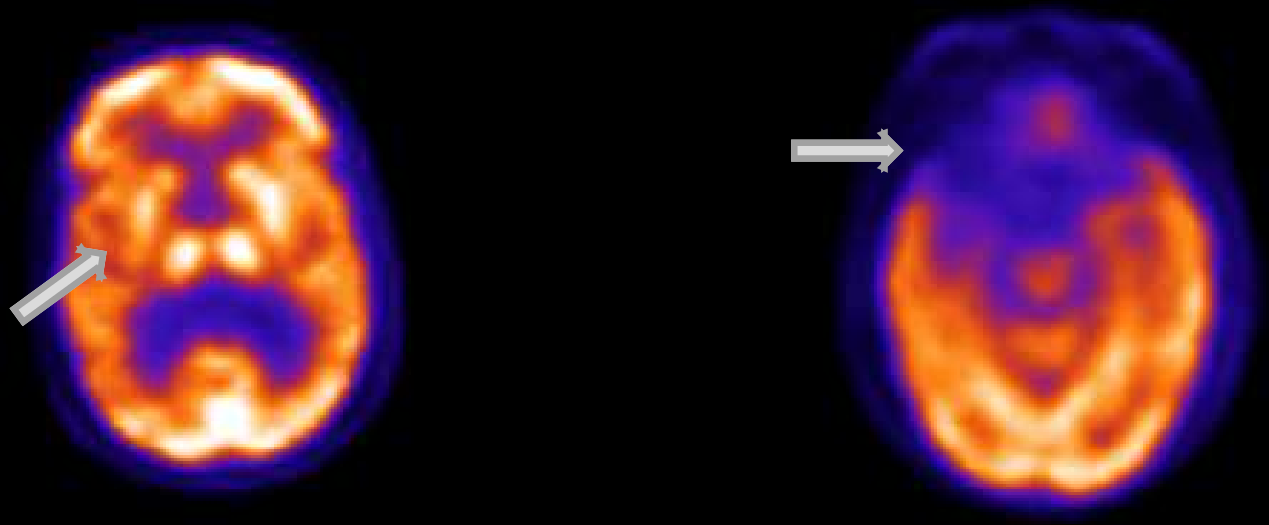


Patient 3 DaTSCAN



	Striatum Right	Striatum Left	Putamen Right	Putamen Left	Caudate Right	Caudate Left
Patient uptake	2.60	2.77	2.44	2.61	3.08	3.06

Patient 3 PET

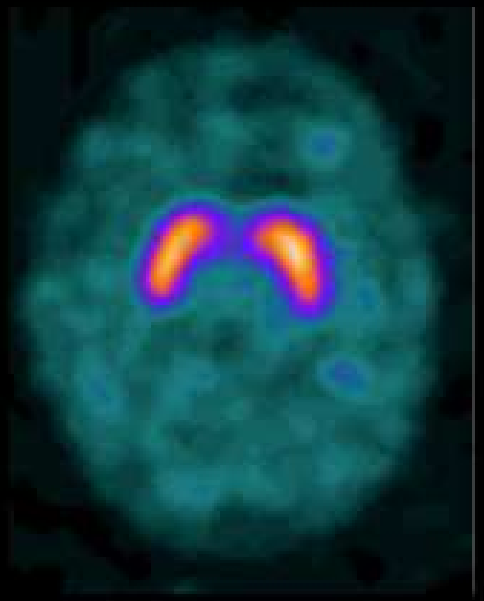


RESULTS *(recap)*

- Initial DaTSCAN normal with normal quantification with exception of one borderline R ant put (2.06)
- Review suggested CBD
- PET-CT clearly abnormal

SWEDD

- Scans without evidence of dopaminergic deficit
- CBD false negative DaTSCAN



Medical Literature *(Pirker S. et al J Parkins Dis 2015)*

- Retrospective analysis of 2 patients with corticobasal syndrome in whom diagnosis was pathologically confirmed.
- Baseline scan 1.5y after symptoms onset → mild abnormalities
- Follow up scan 4.5-5y marked decline in DaT binding
- MILD → MODERATE

CONCLUSION

- CBD diagnosis difficult to reach
- DaTSCAN – can be borderline (CBD patients can have delayed neuronal loss in the SN)
- PET – underrated tool but consider clinical picture

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