Resolve to move forward

Case Studies

Prescribing information

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Which patient story shall we resolve today?

CONTINUE TO PS CASE STUDY

CONTINUE TO DLB CASE STUDY

CONTINUE TO PS CASE STUDY

CONTINUE TO DLB CASE STUDY

CONTINUE TO PS CASE STUDY

CONTINUE TO DLB CASE STUDY

CONTINUE TO PS CASE STUDY

CONTINUE TO DLB CASE STUDY

Resolve to provide a timely, accurate diagnosis

Frederick

This patient presents with a long-standing asymmetric tremor that has responded to treatment with levodopa. However, he doesn't present with bradykinesia, and suffers from anxiety.*

History

- 64-year-old, right-handed male
- Receiving carbidopa/levodopa 25 mg/100 mg every eight hours
- No clear progressive bradykinesia or gait changes
- Responsive to medication
- 'Finger-nose-finger' test results have been equivocal
- No history of complaints of non-motor symptoms
- History of depression and anxiety, currently treated and well controlled

What are your initial thoughts

*Image is not of the actual patient. The patient's name has been altered. Based on a real patient profile provided by Dr. John C Morgan, Associate Professor at the Medical College of Georgia, US.

Resolve to provide a timely, accurate diagnosis

Frederick

This patient presents with a long-standing asymmetric tremor that has responded to treatment with levodopa. However, he doesn't present with bradykinesia, and suffers from anxiety.*

Examination

- Alert and orientated, with normal facial expression and no hypophonia
- Cranial nerves II-XII appear intact
- Presents with resting tremor of the upper-right extremity, which becomes less intense upon distraction
- Foot taps and finger taps appear to be deliberate and irregular on the right extremities
- Strength was normal through both the upper and lower extremities
- Sensation was equal to light touch throughout
- No observable typical bradykinesia with decrement in amplitude/sequence effect
- Negative Romberg and pull-test results, indicating normal casual gait

What are your initial thoughts

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Resolve to provide a timely, accurate diagnosis

Frederick

This patient presents with a long-standing asymmetric tremor that has responded to treatment with levodopa. However, he doesn't present with bradykinesia, and suffers from anxiety.*

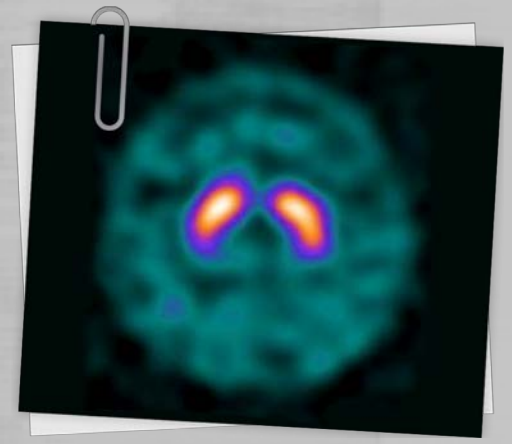
Discussion

Frederick has a long-standing diagnosis of PD and has been responding to treatment with levodopa. However, he has not presented with typical slowing of movement or gait changes, or reported any non-motor symptoms that could indicate a diagnosis of PD. He also has a history of anxiety and depression, for which he has received treatment. Frederick's symptoms overlap with those of many different conditions, and his response to levodopa cannot definitively confirm a diagnosis of PD.

What are your initial thoughts

*Image is not of the actual patient. The patient's name has been altered. Based on a real patient profile provided by Dr. John C Morgan, Associate Professor at the Medical College of Georgia, US.
PD: Parkinson's disease

See inside to see ahead



How would this scan result affect your clinical diagnosis?

Interpretation

The scan results revealed normal bilateral tracer uptake in the caudate and left putamen. Frederick's normal dopamine transporter status indicates a diagnosis of ET as opposed to PD.

The patient's name has been altered. Based on a real patient profile provided by Dr. John C Morgan, Associate Professor at the Medical College of Georgia, US.
ET: essential tremor; PD: Parkinson's disease

Actions after receiving scan results

Impact of scan results

The scan results helped to confirm a diagnosis of ET. Based on the diagnosis, Frederick's treatment with carbidopa/levodopa was discontinued.

Frederick was offered additional work-up for anxiety but refused and requested to remain on current medication. He was then referred to a primary care physician without further follow-up.

Scan impact

How could DaT SPECT imaging scan results influence clinical management for your patients?

Image is not of the actual patient. The patient's name has been altered. Based on a real patient profile provided by Dr. John C Morgan, Associate Professor at the Medical College of Georgia, US.
DaT: dopamine transporter; ET: essential tremor; SPECT: single-photon emission computed tomography

Resolve to provide a timely, accurate diagnosis

Paul

75-year-old patient presenting with significant behavioural changes. Over the previous two years, this patient has become impatient and stopped participating in social events.*

History

- Reports that he feels very sleepy
- Experiences fatigue between 11:30am-12:30pm, independent of when he wakes up
- Has experienced a diurnal fluctuation in vigilance for about two years
- Barely participates in family and social events, although he was previously sociable
- Stopped reading and watching television because of poor concentration
- Symptoms developed two years ago and rapidly deteriorated in the last six months
- Rigidity in his feet and legs has developed over the last six months
- His wife says that over the last six months he's seemed at a higher risk of falling
- Suffered from severe head trauma years ago

What are your initial thoughts?

*Image is not of the actual patient. The patient's name has been altered. Based on a real patient profile from the Mannheim Neurology Centre, Germany.

Resolve to provide a timely, accurate diagnosis

Paul

75-year-old patient presenting with significant behavioural changes. Over the previous two years, this patient has become impatient and stopped participating in social events.*

Examination

- Normal cranial nerve status
- Normal coordination
- Bradykinesia is present
- Significant psychomotor slowing
- Slight impairment of the short-term memory
- Not fully orientated in time
- Parkinsonism with rigidity of the extremities, hypomimia, typical gait with small steps
- UPDRS motor score of 47 points

What are your initial thoughts?

*Image is not of the actual patient. The patient's name has been altered. Based on a real patient profile from the Mannheim Neurology Centre, Germany.
UPDRS: unified Parkinson's disease rating scale

Resolve to provide a timely, accurate diagnosis

Paul

75-year-old patient presenting with significant behavioural changes. Over the previous two years, this patient has become impatient and stopped participating in social events.*

Clinical evaluation

- Cerebral MRI results revealed non-specific atrophy, possibly caused by an incipient neurodegenerative process. No evidence of traumatic lesions from the patient's previous head injury
- Frontal assessment battery test results revealed a significant impairment of frontal brain function
- CERAD battery test results revealed clearly pronounced deficits in almost all of the tests performed. The results met the criteria of dementia, the profile of cognitive performance was compatible with Alzheimer's dementia
- CSF investigations revealed no signs of tauopathy or amyloid pathology
- FDG PET scan results revealed pathologic changes in cerebral glucose metabolism of the parieto-occipital cortex. Glucose metabolism is well preserved in the cerebellum

What are your initial thoughts?

*Image is not of the actual patient. The patient's name has been altered. Based on a real patient profile from the Mannheim Neurology Centre, Germany. CERAD: Consortium to Establish a Registry for Alzheimer's Disease; CSF: cerebrospinal fluid; FDG PET: fluorodeoxyglucose positron emission tomography; MRI: magnetic resonance imaging

Resolve to provide a timely, accurate diagnosis

Paul

75-year-old patient presenting with significant behavioural changes. Over the previous two years, this patient has become impatient and stopped participating in social events.*

Discussion

Over the last two years, Paul has presented with behavioural and cognitive complaints, which could be caused by a number of different conditions. Paul's records show that he suffered from a head trauma; however, results from a cerebral MRI scan revealed that no traumatic lesions are present. Paul's CERAD battery test results met the criteria of dementia, but further investigation is required to identify which type of dementia he may be suffering from.

What are your initial thoughts?

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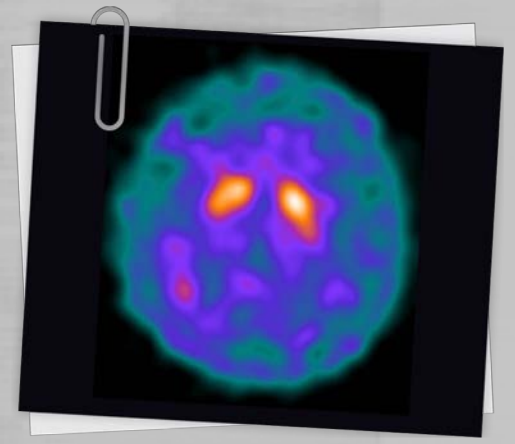
CERAD: Consortium to Establish a Registry for Alzheimer's Disease; MRI: magnetic resonance imaging

See inside to see ahead



How would this scan result affect your clinical diagnosis?

Interpretation

The scan revealed decreased activity of the presynaptic dopamine transporter in the putamen, and at either side of the caudate nucleus. The abnormal scan result together with the presence of core clinical features, such as parkinsonism and fluctuations in wakefulness and vigilance, indicated a diagnosis of probable DLB.*

*According to the DLB Consensus Criteria 2005. The patient's name has been altered. Based on a real patient profile from the Mannheim Neurology Centre, Germany.
DLB: dementia with Lewy bodies

Actions after receiving scan results

Impact of scan results

After the DaTSCAN results were used to help confirm a diagnosis of DLB, Paul began to receive levodopa treatment to alleviate his motor symptoms. After the levodopa dose was increased, the patient's daytime fatigue decreased and he became less impatient.

Treatment with rivastigmine was arranged and Paul also received ergotherapy and physiotherapy in order to improve help his movement.

Scan impact

How could DaT SPECT imaging scan results influence clinical management for your patients?

After the DaTSCAN results were used to help confirm a diagnosis of DLB, Paul began to receive levodopa treatment to alleviate his motor symptoms. After the levodopa dose was increased, the patient's daytime fatigue decreased and he became less impatient.
Treatment with rivastigmine was arranged and Paul also received ergotherapy and physiotherapy in order to improve help his movement.

Resolve to provide a timely, accurate diagnosis

Roy

79-year-old patient experiencing visual hallucinations, which have worsened over time. A number of diagnostic tests have been performed, however little progress has been made.*

History

- 79-year-old patient presenting with psychiatric complaints
- Minor forgetfulness resulting in acute confusion related to his wife's accidental death
- Reports experiencing mild visual hallucinations, in which he claims to see people standing and listening but not saying anything
- Visual hallucinations have worsened over time, becoming more disturbing and occasionally frightening
- Developed paranoid delusions, which led to acute psychiatric hospitalisation
- History of leg pain, depression, poor hearing and visual impairment
- Received treatment with risperidone, which led to severe side effects

What are your initial thoughts?

*Image is not of the actual patient. The patient's name has been altered. Based on a real patient profile provided by Professor Aarsland, Professor of Geriatric Psychiatry at the University of Oslo, Norway.

Resolve to provide a timely, accurate diagnosis

Roy

79-year-old patient experiencing visual hallucinations, which have worsened over time. A number of diagnostic tests have been performed, however little progress has been made.*

Clinical evaluation

- ECG
- CSF analysis
- CT scan
- MRI
- Blood tests

The results obtained from Roy's clinical evaluation did not provide adequate evidence to allow a definitive diagnosis to be made at this point.

What are your initial thoughts?

*Image is not of the actual patient. The patient's name has been altered. Based on a real patient profile provided by Professor Aarsland, Professor of Geriatric Psychiatry at the University of Oslo, Norway.
CT: computed tomography; CSF: cerebrospinal fluid; ECG: electrocardiogram; MRI: magnetic resonance imaging

Resolve to provide a timely, accurate diagnosis

Roy

79-year-old patient experiencing visual hallucinations, which have worsened over time. A number of diagnostic tests have been performed, however little progress has been made.*

Medications

- Antihypertensives
- Acetylsalicylic acid
- Antipsychotics

What are your initial thoughts?

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Resolve to provide a timely, accurate diagnosis

Roy

79-year-old patient experiencing visual hallucinations, which have worsened over time. A number of diagnostic tests have been performed, however little progress has been made.*

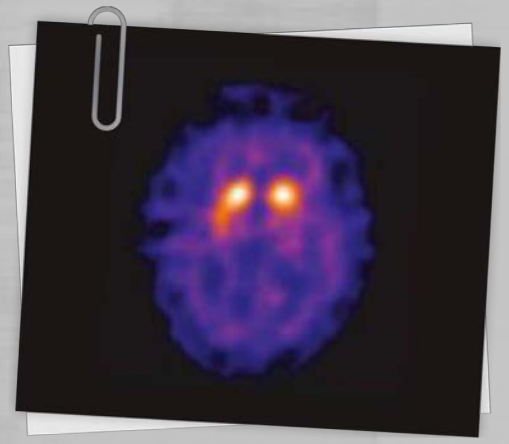
Discussion

Roy presents with psychiatric complaints, including visual hallucinations that are considered a core clinical feature of DLB. No clear motor symptoms are present that would normally be indicative of a diagnosis. There are several diagnostic possibilities, including a possible psychiatric disorder in the ICD10 F 20-29 spectrum.† You cannot definitively exclude a DLB diagnosis, yet this is important in order to ensure that the patient does not receive inappropriate treatment. Many diagnostic tests have been performed, however little progress has been made towards clarifying his diagnosis.

What are your initial thoughts?

*Image is not of the actual patient. †Schizophrenia, schizotypal disorders and delusional disorders are classified as F20-F29. The patient's name has been altered. Based on a real patient profile provided by Professor Aarsland, Professor of Geriatric Psychiatry at the University of Oslo, Norway.
DLB: dementia with Lewy bodies; ICD: International Classification of Diseases

See inside to see ahead



How would this scan result affect your clinical diagnosis?

Interpretation

The scan results revealed reduced tracer-uptake, predominantly in the left putamen. The abnormal scan result and the presence visual hallucinations indicated a diagnosis of probable DLB.*

Interpretation

*According to the DLB Consensus Criteria 2005. Based on a real patient profile provided by Professor Aarsland, Professor of Geriatric Psychiatry at the University of Oslo, Norway.
DLB: dementia with Lewy bodies

Actions after receiving scan results

Impact of scan results

The DaTSCAN results helped to confirm a diagnosis of DLB, which led to the termination of the patient's antipsychotic treatment. Roy began to receive treatment with rivastigmine and memantine, which led to a significant cognitive improvement.

Scan impact

How could DaT SPECT imaging scan results influence clinical management for your patients?

Image is not of the actual patient. The patient's name has been altered. Based on a real patient profile provided by Professor Aarsland, Professor of Geriatric Psychiatry at the University of Oslo, Norway.
DaT: dopamine transporter; DLB: dementia with Lewy bodies; SPECT: single-photon emission computed tomography

Resolve to provide a timely, accurate diagnosis

Richard

72-year-old patient, retired due to disability 10 years ago. This patient, presenting with postural and action tremors, has shown no response to PD or ET medications.*

History

- 12-year history of tremor, suspected to have originated on the right side
- Postural, rest and action tremor is present
- Initially diagnosed with ET, then received a diagnosis of PD
- Unresponsive to both PD and ET medications
- Some stiffness in hands and fingers, but believes most of his disability is due to the severity of the tremor
- Tremor shakes the patient's trunk and head
- Presumptive diagnosis is PD; the patient is being considered for deep brain stimulator placement
- History of comorbidities, including hypertension, coronary artery disease, hyperlipidaemia and gastroesophageal reflux disease

What are your initial thoughts

*Image is not of the actual patient. The patient's name has been altered. Based on a real patient profile provided by Dr. David Russell, Director of Clinical Research at the Institute of Neurodegenerative Diseases, Yale University School of Medicine, US.
ET: essential tremor; PD: Parkinson's disease

Resolve to provide a timely, accurate diagnosis

Richard

72-year-old patient, retired due to disability 10 years ago. This patient, presenting with postural and action tremors, has shown no response to PD or ET medications.*

Examination

- Mental status, cranial nerves and fundi appeared to be normal
- Minimal hypomimia and vocal tremor
- Mildly increased tone in both upper extremities, more noticeably on the right
- Axial tone and tone in the lower extremities were also mildly increased
- Large amplitude, medium frequency tremor in his arms at rest and in action
- Moderate amplitude tremor in both legs
- Able to stand from a chair and walk with a good stride
- Presented with a bilaterally diminished arm swing with prominent tremor

What are your initial thoughts

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ET: essential tremor; PD: Parkinson's disease

Resolve to provide a timely, accurate diagnosis

Richard

72-year-old patient, retired due to disability 10 years ago. This patient, presenting with postural and action tremors, has shown no response to PD or ET medications.*

Discussion

Discerning between severe ET and tremor-dominant PD is not an uncommon diagnostic dilemma. Patients with tremor-dominant PD are typically stable for many years with minimal rigidity or bradykinesia alongside variable, sometimes severe, mixed tremor. Furthermore, this type of PD tends to be resistant to levodopa therapy. An accurate diagnosis is needed to determine the disease course and select the optimal surgical targets.

What are your initial thoughts

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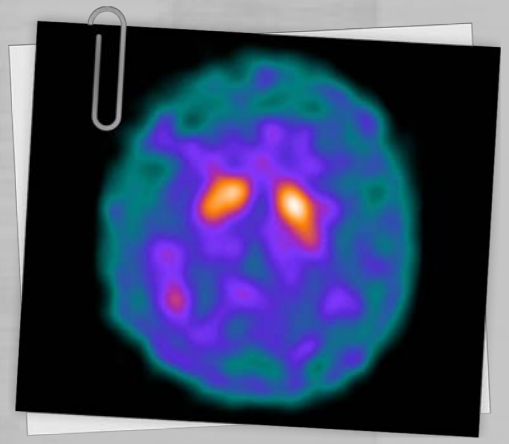
ET: essential tremor; PD: Parkinson's disease

See inside to see ahead



How would this scan result affect your clinical diagnosis?

Interpretation

At first glance, this DaTSCAN image appears to show signal bilaterally in the putamen and caudate nuclei. However, it is clear from the high background signal throughout the other brain regions that the ratio of signal in the striata is quite low.

This scan reveals bilaterally reduced dopaminergic terminal density, consistent with a PS and, hence, with tremor-dominant PD.

Based on a real patient profile provided by Dr. David Russell, Director of Clinical Research at the Institute of Neurodegenerative Diseases, Yale University School of Medicine, US.
PD: Parkinson's disease; PS: Parkinsonian syndrome

Actions after receiving scan results

Impact of scan results

The scan results helped confirm a diagnosis of tremor-dominant PD. Six months later, Richard underwent placement of bilateral subthalamic deep brain stimulator electrodes. This led to a significant reduction of his tremor, less exhaustion and improved function.

Scan impact

How could DaT SPECT imaging scan results influence clinical management for your patients?

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DaT: dopamine transporter; PD: Parkinson's disease; SPECT: single-photon emission computed tomography

Resolve to provide a timely, accurate diagnosis

David

"I don't want to take prescribed medication for my tremor until you are sure I don't have Parkinson's disease."

64-year-old male has long-standing, worsening ET and the recent emergence of what may be parkinsonian features.

History

- 64-year-old right-handed male presenting with familial essential tremor
- Initial onset occurred in the patient's thirties, precipitated by mental stress and moderately resolved with alcohol
- While David was in his forties, he began to present with bilateral tremor
- Intolerant to beta-blockers due to dizziness
- Intolerant to benzodiazepines due to somnolence
- Difficulty getting out of chairs
- Lack of interest in daily activities
- History of vivid dreams
- Lifelong constipation

What are your initial thoughts?

*Image is not of the actual patient. The patient's name has been altered. Based on a real patient profile provided by Dr. Stuart Isaacson, Parkinson's Disease and Movement Disorders Center of Boca Raton, US.
ET: essential tremor

Resolve to provide a timely, accurate diagnosis

David

"I don't want to take prescribed medication for my tremor until you are sure I don't have Parkinson's disease."

64-year-old male has long-standing, worsening ET and the recent emergence of what may be parkinsonian features.

Examination

- Presented with significant postural tremor, most noticeably on the right-hand side
- Tremor increased in the wing position, more so with intention
- At rest, intermittent tremor emerged on the right hand
- Handwriting and spiral tests revealed bilateral tremor, right-hand side dominant
- Mild head tremor was observable, however the patient was unaware
- Voice seemed slightly low, but without tremor
- Bradykinesia and rigidity were difficult to assess due to action tremor
- Finger taps were low on the right-hand side with no tapering amplitude
- Cogwheel rigidity was difficult to distinguish
- Reduced facial expression and blinking was observable
- Arose from the chair only with the use of his arms
- Stood with a mild stooped posture, took two steps to recover on the pull test
- Gait was narrow-based, slow, and with reduced arm swing symmetrically

What are your initial thoughts?

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ET: essential tremor

Resolve to provide a timely, accurate diagnosis

David

"I don't want to take prescribed medication for my tremor until you are sure I don't have Parkinson's disease."

64-year-old male has long-standing, worsening ET and the recent emergence of what may be parkinsonian features.

Family history

- Several maternal relatives with a history of ET
- Father (now deceased) was diagnosed with levodopa-responsive PD

What are your initial thoughts?

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Resolve to provide a timely, accurate diagnosis

David

"I don't want to take prescribed medication for my tremor until you are sure I don't have Parkinson's disease."

64-year-old male has long-standing, worsening ET and the recent emergence of what may be parkinsonian features.

Discussion

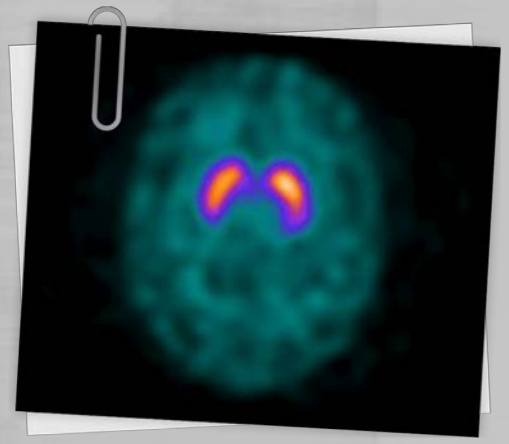
David has a long-standing diagnosis of ET. Recently he has presented with what may be parkinsonian features, however David is reluctant to take prescribed medication until a diagnosis is confirmed. Diagnostic clarity is required to help this patient move forward and receive appropriate treatment.

Could this patient have a PS, ET, or both conditions?

What are your initial thoughts?

*Image is not of the actual patient. The patient's name has been altered. Based on a real patient profile provided by Dr. Stuart Isaacson, Parkinson's Disease and Movement Disorders Center of Boca Raton, US.
ET: essential tremor; PD: Parkinson's disease

See inside to see ahead



How would this scan result affect your clinical diagnosis?

Interpretation

The scan results revealed normal bilateral tracer uptake. David's normal dopamine transporter status indicates a diagnosis of ET as opposed to a PS.

The patient's name has been altered. Based on a real patient profile provided by Dr. Stuart Isaacson, Parkinson's Disease and Movement Disorders Centre of Boca Raton, US.
ET: essential tremor; PS: Parkinsonian syndrome

Actions after receiving scan results

Impact of scan results

The scan results helped to confirm a diagnosis of ET. Depression was also diagnosed following the scan and treatment with antidepressants was initiated, leading to an improvement in mood. After confirming the ET diagnosis, David complied with his ET medication, which resulted in improved control of his tremor.

At David's follow-up assessment, his right-hand movements were still slow, but stable. His gait was unchanged and no rigidity was noted. A postural tremor was noticeable but no rest tremor was identified.

Scan impact

How could DaT SPECT imaging scan results influence clinical management for your patients?

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DaT: dopamine transporter; ET: essential tremor; SPECT: single-photon emission computed tomography

Resolve to provide a timely, accurate diagnosis

Simon

70-year-old patient, admitted to hospital after experiencing a series of visual and auditory hallucinations.*

History

- 70-year-old male presenting with a history of cognitive impairment and feelings of persecution
- Reports concentration deficits and memory disturbances
- Hypomimia, tremor, reduced walking-speed and hypokinesia have been present for one year
- Has experienced increasing visual hallucinations over the past year
- Denies experiencing auditory hallucinations
- Claims that someone wants to harm him; this worries him considerably
- Was involved in a car accident because he believed that people were signalling for him to get off the road, although he later discovered that nobody was there
- Expresses confusion over whether he is still alive, or if he died in the accident
- Occasionally feels that his thoughts are not his own
- Has fallen more frequently over the past year
- Reduced appetite and libido

What are your initial thoughts

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Resolve to provide a timely, accurate diagnosis

Simon

70-year-old patient, admitted to hospital after experiencing a series of visual and auditory hallucinations.*

Examination

- Partially limited vertical eye movement
- Hypomimia
- Cogwheel rigidity in the limbs
- Gait with moderate step-length
- Diminished arm swing while walking
- Slight resting tremor
- Mild-to-moderate concentration loss and memory deficits
- Claimed to hear a friend's voice from the neighboring ward, despite denying auditory hallucinations
- UPDRS motor score of 50 points
- Cerebral MRI results revealed moderate microangiopathic changes; significant neurodegenerative atrophy was present, most likely of the Alzheimer's type
- Impaired recognition and naming of objects
- Spontaneous speech slowed, with longer response latencies
- CSF investigations revealed signs of tauopathy

What are your initial thoughts

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CSF: cerebrospinal fluid; MRI: magnetic resonance imaging; UPDRS: unified Parkinson's disease rating scale

Resolve to provide a timely, accurate diagnosis

Simon

70-year-old patient, admitted to hospital after experiencing a series of visual and auditory hallucinations.*

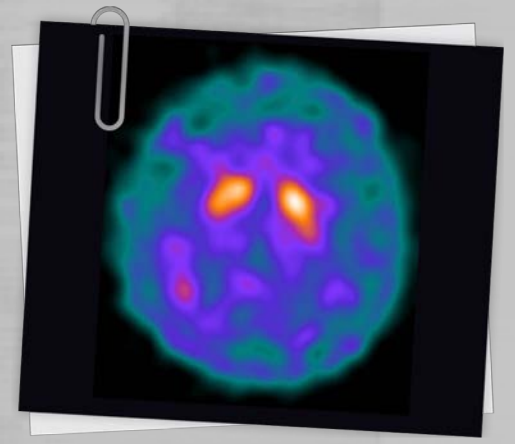
Discussion

Simon presents with a history of hallucinations and cognitive complaints. Previous investigations have not been able to provide a definitive diagnosis. As the use of typical antipsychotics to treat delusional symptoms and hallucinations is contraindicated over the course of DLB, excluding a diagnosis of DLB is a priority, in order to avoid potential adverse events.

What are your initial thoughts

*Image is not of the actual patient. The patient's name has been altered. Based on a real patient profile from the Mannheim Neurology Centre, Germany.
DLB: dementia with Lewy bodies

See inside to see ahead



How would this scan result affect your clinical diagnosis?

Interpretation

The scan results revealed reduced tracer-uptake, particularly in the left putamen. The abnormal scan results and the presence of core clinical features, such as visual hallucinations, indicated a diagnosis of probable DLB.*

*According to the DLB Consensus Criteria 2005. Based on a real patient profile from the Mannheim Neurology Centre, Germany.
DLB: dementia with Lewy bodies

Actions after receiving scan results

Impact of scan results

The scan results helped to confirm a diagnosis of DLB. Confirming a diagnosis of DLB helped to avoid the use of inappropriate medications. Simon received treatment with quetiapine and lorazepam, which led to a full remission of the hallucinations and delusional symptomology. Treatment with a rivastigmine patch was initiated and the dosage was increased to 9.5 mg per day.

Scan impact

How could DaT SPECT imaging scan results influence clinical management for your patients?

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DaT: dopamine transporter; DLB: dementia with Lewy bodies; SPECT: single-photon emission computed tomography

Resolve to provide a timely, accurate diagnosis

Alison

77-year-old patient with a history of comorbidities. She has developed a bilateral tremor and is eager to receive appropriate treatment.*

History

- 77-year-old, right-handed female
- Tremor originated in her right hand, but is now present in both hands
- Increasing difficulty with precise motor tasks such as buttoning shirts
- Stiffness in her limbs, particularly on the right-hand side
- Handwriting is small, messy and cramped
- Posture is stooped, her stride is small and she walks slowly
- History of comorbidities including osteoporosis, osteoarthritis, depression and hypertension

What are your initial thoughts?

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Resolve to provide a timely, accurate diagnosis

Alison

77-year-old patient with a history of comorbidities. She has developed a bilateral tremor and is eager to receive appropriate treatment.*

Examination

- Normal mental status
- Mildly reduced facial expression
- Soft voice with a slight tremor
- Moderate kyphosis
- Reduced finger taps
- Bilaterally reduced hand movements, slightly more on the right side
- Increased tone in the wrists, elbows and knees
- Bilateral rest, postural and action tremor in her hands
- Normal deep-tendon reflexes
- Needs to push herself up from her chair
- Walks with small steps
- Reduced arm swing, predominantly on the right-hand side

What are your initial thoughts?

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Resolve to provide a timely, accurate diagnosis

Alison

77-year-old patient with a history of comorbidities. She has developed a bilateral tremor and is eager to receive appropriate treatment.*

Medications

- Risedronate
- Acetaminophen
- Lamotrigine
- Lisinopril
- Aspirin

What are your initial thoughts?

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Resolve to provide a timely, accurate diagnosis

Alison

77-year-old patient with a history of comorbidities. She has developed a bilateral tremor and is eager to receive appropriate treatment.*

Discussion

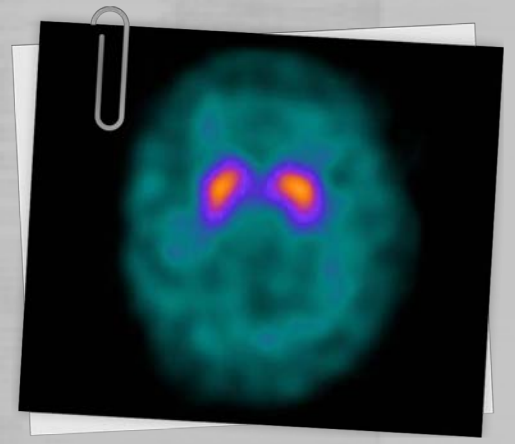
Alison presents with symptoms that are common in many conditions associated with aging. She presents with tremors and her walking-pace has slowed, suggesting that she may have developed a PS. Diagnostic clarity is required in order to help move forward with her case and initiate an appropriate treatment plan.

Would you be concerned about initiating a levodopa trial with Alison's history of comorbidities?

What are your initial thoughts?

*Image is not of the actual patient. The patient's name has been altered. Based on a real patient profile provided by Dr. David Russell, Director of Clinical Research at the Institute of Neurodegenerative Disease, Yale University School of Medicine, US.
PS: Parkinsonian syndrome

See inside to see ahead



How would this scan result affect your clinical diagnosis?

Interpretation

The scan results revealed normal tracer-uptake, and therefore no deficits in dopaminergic function. The normal scan results indicate that a diagnosis of PS should be excluded.

Interpretation

Based on a real patient profile provided by Dr. David Russell, Director of Clinical Research at the Institute of Neurodegenerative Disease, Yale University School of Medicine, US.
PS: Parkinsonian syndromes

Actions after receiving scan results

Impact of scan results

The normal scan results allowed the diagnosis of a PS to be excluded, leading to the avoidance of unnecessary follow-up visits. Alison was referred to orthopedics for further management of her skeletal disease.

Scan impact

How could DaT SPECT imaging scan results influence clinical management for your patients?

Image is not of the actual patient. The patient's name has been altered. Based on a real patient profile provided by Dr. David Russell, Director of Clinical Research at the Institute of Neurodegenerative Disease, Yale University School of Medicine, US.
DaT: dopamine transporter; PS: Parkinsonian syndrome; SPECT: single-photon emission computed tomography

Resolve to provide a timely, accurate diagnosis

Ruth

74-year-old patient with a long-standing diagnosis of ET. In recent years, she has developed cognitive complaints and reports experiencing sleep disturbances.*

History

- 74-year-old patient, presenting with bilateral tremor and cognitive complaints
- Action tremor has been present since her youth, but worsened after renal transplantation
- Initiated immunosuppressive therapy at the age of 63
- Received a diagnosis of ET and pharmacological tremor; showed response to treatment with propranolol
- Remained stable until she noticed an increase in tremor and memory loss at the age of 71
- Impaired dexterity causes difficulty with activities of daily living, including writing, eating and buttoning clothing
- Husband reports that she sometimes shouts and moves vigorously in the night

What are your initial thoughts?

*Image is not of the actual patient. The patient's name has been altered. Based on a real patient profile provided by Dr. Kulisevsky, Scientific Director at Sant Pau Hospital, Barcelona, Spain.
ET: essential tremor

Resolve to provide a timely, accurate diagnosis

Ruth

74-year-old patient with a long-standing diagnosis of ET. In recent years, she has developed cognitive complaints and reports experiencing sleep disturbances.*

Examination

- Expressed disorientation with time but not location
- Presented with tremor in the chin
- Moderate rest and action tremor in the hands, predominantly on the right side
- Finger-tapping was slow, but interfered by tremor; no other bradykinesia in hand or leg movements was observed
- Mild rigidity was noted in the extremities
- Postural reflexes were mildly impaired
- Gait was slightly slow, with a mildly decreased bilateral arm swing

What are your initial thoughts?

*Image is not of the actual patient. The patient's name has been altered. Based on a real patient profile provided by Dr. Kulisevsky, Scientific Director at Sant Pau Hospital, Barcelona, Spain.
ET: essential tremor

Resolve to provide a timely, accurate diagnosis

Ruth

74-year-old patient with a long-standing diagnosis of ET. In recent years, she has developed cognitive complaints and reports experiencing sleep disturbances.*

Medications

- Omeprazole 20 mg daily
- Propranolol 40 mg twice daily
- Tacrolimus 5.5 mg daily
- Spironolactone 25 mg daily
- Amlodipine 5 mg daily
- Everolimus 1.5 mg twice daily
- Prednisone 5 mg daily
- Calcifediol 266 µg every 15 days
- Calcium carbonate 500 mg daily
- Atorvastatin 40 mg daily

What are your initial thoughts?

*Image is not of the actual patient. The patient's name has been altered. Based on a real patient profile provided by Dr. Kulisevsky, Scientific Director at Sant Pau Hospital, Barcelona, Spain.
ET: essential tremor

Resolve to provide a timely, accurate diagnosis

Ruth

74-year-old patient with a long-standing diagnosis of ET. In recent years, she has developed cognitive complaints and reports experiencing sleep disturbances.*

Discussion

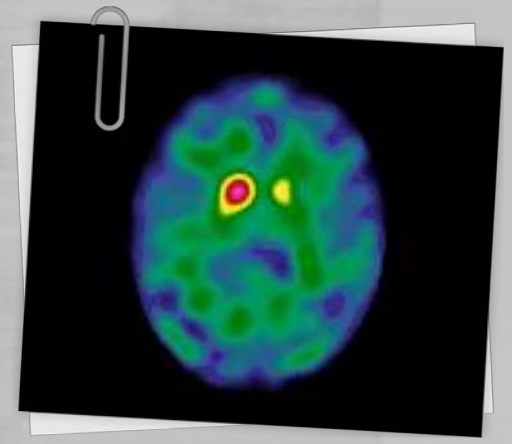
Ruth has a long clinical history of ET, which interferes with her activities of daily living and has worsened over time. However, she has also developed cognitive deficits and experiences frequent disturbances at night, suggesting that she may suffer from a DLB dementia. Ruth is eager to find out which condition she is suffering from and to receive information about her prognosis.

What condition, or conditions, do you think this patient could be suffering from?

What are your initial thoughts?

*Image is not of the actual patient. The patient's name has been altered. Based on a real patient profile provided by Dr. Kulisevsky, Scientific Director at Sant Pau Hospital, Barcelona, Spain.
DLB: dementia with Lewy bodies; ET: essential tremor

See inside to see ahead



How would this scan result affect your clinical diagnosis?

Interpretation

The DaTSCAN imaging results revealed bilaterally reduced tracer-uptake in the putamen and the left caudate. The abnormal scan result and the presence of core clinical features, such as tremor and REM sleep behaviour disorder, indicated a diagnosis of probable DLB.*

*According to the 2005 DLB Consensus Criteria. Based on a real patient profile provided by Dr. Kulisevsky, Scientific Director at Sant Pau Hospital, Barcelona, Spain.
DaT: dopamine transporter; DLB: dementia with Lewy bodies; REM: rapid eye movement

Actions after receiving scan results

Impact of scan results

After the DaTSCAN results were used to help confirm a diagnosis of DLB, Ruth was informed about her condition and the prognosis of the disease. Ruth was initiated on treatment with levodopa, which led to improvements in her tremor and postural reflexes. Treatment with rivastigmine was also initiated to help improve her cognitive impairment.

Scan impact

How could DaT SPECT imaging scan results influence clinical management for your patients?

Image is not of the actual patient. The patient's name has been altered. Based on a real patient profile provided by Dr. Kulisevsky, Scientific Director at Sant Pau Hospital, Barcelona, Spain.
DaT: dopamine transporter; DLB: dementia with Lewy bodies; SPECT: single-photon emission computed tomography

Safety profile[1]

Headache has been reported as a common adverse reaction (≥1/100 to <1/10)

The following uncommon adverse reactions have been reported (≥1/1,000 to <1/100):

- Appetite increased
- Dizziness
- Formication (paraesthesia)
- Dysgeusia
- Vertigo
- Nausea
- Dry mouth
- Injection site pain (intense pain or burning sensation following administration into small veins)

The frequency of the occurrence of hypersensitivity adverse reactions is not known

Radiation exposure: Effective dose is 4.63 mSv when the maximal recommended activity of 185 MBq is administered

Safety analysis of 10 clinical trials and 13 years after approval of DaTSCAN[2]

"Comprehensive analysis of DaTSCAN safety data, both from clinical trials database and postapproval surveillance perspectives, showed that adverse events and adverse reactions, respectively, associated with the diagnostic radiopharmaceutical DaTSCAN have been infrequent and predominately mild. DaTSCAN was well tolerated."

References

1. DaTSCAN Summary of Product Characteristics, GE Healthcare, (EN), December 2018.
2. Grosset DG *et al. J Nucl Med* 2014; 55: 1-7.

PRESCRIBING INFORMATION DaTSCAN™ ioflupane (^{123}I) 74 MBq/ml solution for injection

Please refer to full Summary of Product Characteristics (SPC) before prescribing. Further information available on request.

PRESENTATION Single dose vials containing 185 MBq or 370 MBq ioflupane (^{123}I) at reference time.
INDICATIONS Detecting loss of functional dopaminergic neuron terminals in the striatum.
i) in adult patients with clinically uncertain Parkinsonian Syndromes, for example those with early symptoms in order to help differentiate Essential Tremor from Parkinsonian Syndromes related to idiopathic Parkinson's Disease (PD), Multiple System Atrophy (MSA) and Progressive Supranuclear Palsy (PSP). DaTSCAN is unable to discriminate between PD, MSA and PSP.
ii) in adult patients to help differentiate probable dementia with Lewy bodies (DLB) from Alzheimer's disease. DaTSCAN is unable to discriminate between DLB and Parkinson's Disease dementia.
DOSAGE AND METHOD OF ADMINISTRATION Prior to administration appropriate resuscitation equipment should be available. For use in patients referred by physicians experienced in the management of movement disorders/dementia. Clinical efficiency has been demonstrated across the range of 111-185 MBq; do not use outside this range. Appropriate thyroid blocking treatment must be given prior to injection of DaTSCAN. The safety and efficacy of DaTSCAN in children 0 to 18 years has not been established. No data are available in patients with significant renal or hepatic impairment. DaTSCAN should be used without dilution. Slow intravenous injection (15-20 seconds) via an arm vein is recommended. SPECT imaging should take place 3-6 hours after injection of DaTSCAN.
CONTRAINDICATIONS Pregnancy and hypersensitivity to the active substance or any of the excipients.
WARNINGS AND PRECAUTIONS If hypersensitivity reactions occur, the administration of the medicinal product must be discontinued immediately and, if necessary, intravenous treatment initiated. Resuscitative medicinal products and equipment (e.g. endotracheal tube and ventilator) have to be readily available. This radiopharmaceutical may be received, used and administered only by authorised persons in designated clinical settings. Its receipt, storage, use, transfer and disposal are subject to the regulations and the appropriate licences of the local competent official organisations. For each patient, exposure to ionising radiation must be justifiable on the basis of likely benefit. The activity administered must be such that the resulting dose is as low as reasonably achievable bearing in mind the need to obtain the intended diagnostic result. DaTSCAN is not recommended in cases of moderate to severe renal or hepatic impairment. Contains 39.5 g/l (5% volume) ethanol, up to 197mg per dose, harmful for those suffering from alcoholism. To be taken into account in high-risk groups such as patients with liver disease or epilepsy.
INTERACTIONS Consider current medication. Medicines that bind to the dopamine transporter with high affinity may interfere with diagnosis; these include amfetamine, benzatropine, buproprion, cocaine, mazindol, methylphenidate, phentermine and sertraline. Medicines shown during clinical trials not to interfere with DaTSCAN imaging include amantadine, trihexyphenidyl, budipine, levodopa, metoprolol, primidone, propranolol and selegiline. Dopamine agonists and antagonists acting on the postsynaptic dopamine receptors are not expected to interfere with DaTSCAN imaging and can therefore be continued if desired. In animal studies pergolide does not interfere with DaTSCAN imaging.
PREGNANCY AND LACTATION Contraindicated in pregnancy. Information should be sought about pregnancy from women of child bearing potential. A woman who has missed her period should be assumed to be pregnant. If uncertain, radiation exposure should be the minimum needed for satisfactory imaging. Consider alternative techniques. If administration to a breast feeding woman is necessary, substitute formula feeding for breast feeding for 3 days.
UNDESIRABLE EFFECTS The following undesirable effects are recognised for DaTSCAN: Common side effects include headache. Uncommon side effects include vertigo, increased appetite, formication, dizziness, dysgeusia, nausea and dry mouth. Intense pain or burning sensation on injection has been reported uncommonly following administration into small veins. Hypersensitivity occurs with unknown frequency, as well as erythema, pruritus, rash, urticaria, hyperhidrosis, dyspnea, vomiting, decreased blood pressure and feeling hot. Exposure to ionising radiation is linked with cancer induction and a potential for hereditary defects. Because of the low radiation dose incurred these adverse events are expected to occur with a low probability.
DOSIMETRY Effective dose from 185 MBq is 4.63 mSv.
OVERDOSE Encourage frequent micturition and defecation.
MARKETING AUTHORISATION HOLDER GE Healthcare B.V., De Rondom 8, 5612 AP, Eindhoven, The Netherlands.
CLASSIFICATION FOR SUPPLY Subject to medical prescription.
MARKETING AUTHORISATION NUMBERS EU/1/00/135/001 (2.5ml) and EU/1/00/135/002 (5.0ml).
DATE OF REVISION OF TEXT 16 January 2019
UK PRICE £525.00/185MBq.

Adverse events should be reported.
Reporting forms and information can be found at https://yellowcard.mhra.gov.uk/.
Adverse events should also be reported to GE Healthcare at gpv.drugsafety@ge.com.

GE Healthcare Limited, Amersham Place, Little Chalfont, Buckinghamshire, England HP7 9NA
www.gehealthcare.com

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