Video will be taken at this clinic and potentially used in Project ECHO promotional materials. By attending this clinic, you consent to have your photo taken and allow Project ECHO to use this photo and/or video. If you don’t want your photo taken, please let us know.

Thank you!
Please **DO NOT** disclose any Protected Health Information (PHI)

PHI includes, but is not limited to:
- Patient name
- Date of birth
- Address
- Occupation
- Name of patient’s friends/family
- Other identifiable features, i.e., scars, tattoos, hair/eye color
Differentiating Causes of Dementia

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Conflicts of Interest

Jennifer Hagen, MD
I have no conflicts of interest to disclose
Learning Objectives

• Increase understanding of different subtypes (diseases causing) of dementia
• Discuss diagnostic features useful in the differentiation of dementia subtypes
Patient case

Mr. M., a 69 yo male is concerned that he might have dementia because he has lost his keys a number of time over the past few years. Recently he has also had trouble remembering the names of new acquaintances.

He is a nonsmoker, nondrinker who exercises regularly. He is independent in his ADLS and started managing his own finances when his wife died 9 months ago.

Physical examination reveals no focal neurological findings. He recalls 3/3 words after 5 minutes and accurately draws a clock. His PHQ 9 is normal.

Physical exam CBC, chemistry panel, B12 and TSH are normal.
Quick review: Cognitive decline what is normal, abnormal

• Physiologic changes of aging:
  slowed processing speed, trouble with multitasking

• Mild cognitive impairment:
  abnormal in one cognitive area

• Dementia:
  progressive decline of cognition in two or more cognitive areas, results in loss of independent functioning
Quick review: First rule out

- Depression
- Delirium
- Sensory: vision and hearing!
- B12 deficiency
- Thyroid, liver, renal dysfunction
- Sleep disorder
- ETOH or other toxins
- MEDS
Why is dementia a challenging diagnosis?

• Insidious onset
• Often a syndrome of mixed diseases (Alz. + Vasc. dementia)
• Often occurs in medically complex patients with other syndromes and diseases (dementia + polypharmacy + CKD)
• Emotionally charged, life-changing implications
Patient case

Mr. M., now 74 years old, comes to see you accompanied by his niece who notes that he has forgotten to pay several bills over the past few months. Over the past year or so, he calls her repeatedly on the phone because he forgets that he has already spoken with her. Last week he called her for assistance because he got lost on his daily walk. He stopped driving last year after a few fender benders in his driveway.

His physical exam is normal. He recalls 1/3 words and his clock drawing is abnormal.
Subtypes of dementia

- Alzheimer Disease
- Lewy Body Disease
- Vascular Dementia
- Other Neurodegenerative
General principles for differentiating the diseases that cause dementia

• Historical:
  • Patient age at onset
  • Timeline and progression
  • Which cognitive areas affected in what order
  • Sleep, hallucinations, falls, incontinence
  • Family history of dementia

• Physical:
  • Focal/lateralizing neurological findings
  • Parkinsonism
  • Gait

• Key point: *engage a close contact for the history*
General principles for differentiating the diseases that cause dementia (cont’d)

• Testing
  • Cognitive measures such as MOCA
  • Brain MRI or CT without contrast
  • Functional brain scanning
  • Biomarkers blood and CSF
  • Neuropsychiatric testing

• Key point: testing beyond basic bloodwork and MRI/CT often in the realm of dementia consultants
Alzheimer Disease: key findings

• Usually over 65 years old
• Gradual onset, slowly progressive course, over years
• Starts with memory loss (core feature)
• Affects memory, language and visuospatial
• Learning and retaining new information, short term memory
• Lack of insight about memory loss
• Later affects executive function, apraxia
Alzheimer Disease: diagnostics tests

- MRI/CT generalized atrophy, hippocampal atrophy
- Functional scans: PET scan, SPECT scan
- Genetic testing – inherited forms of AD rare
- Biomarkers
  - CSF decreased Aβ42, increased Tau
  - APOE ε4 allele
Lewy body disease

• Gradual onset
• Presents with hallucinations and REM disorder
• Parkinsonian features concurrent with onset of other features
• Fluctuating symptoms
• Memory, visuospatial
Vascular Dementia

• Sudden or stepwise course in patient with vascular risk factors
• Cognitive domains affected relate to location of lesions
• May or may not have focal neurological findings
• MRI infarctions or lacunes
Neurodegenerative: Parkinson disease

• Dementia onset preceded by many years of Parkinson’s disease
• May also have hallucinations, fluctuating symptoms
• Memory, visuospatial
Frontotemporal

• Gradual onset, age at onset younger, under 60 yo
• Executive, language, personality changes
• 3 variants:
  • Behavioral: disinhibition, impulsivity, hyperorality
  • Semantic: impaired comprehension with fluent speech
  • Progressive non fluent aphasia: impaired speech production
• MRI regional atrophy
Dementia with rapid course

• Normal pressure hydrocephalus
  • Abnormal gait, incontinence and cognitive changes
  • Disproportionately enlarged ventricles
  • Gait assessment pre- and post- LP

• Creutzfeld-Jakob Disease
  • Progressive over a period of months
  • Testing: EEG, CSF for protein 14-3-3
Questions?
Survey

Please complete this brief survey. Your feedback is vital to our continued improvement of Project ECHO Nevada programming!

Thank you!
References


• MKSAP Neurology 2018, American College of Physicians.

• The Dementia episode you won’t forget, The Curbsiders Internal Medicine podcast interview with Dr. Stephen Dekosky, April 3, 2017.