### DEMENTIA VS. PSYCHOSIS VS. MEDICAL ISSUES IN THE GERIATRIC GENERATION

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>9:15-9:30</td>
<td>History and Examination Reveals the Cause of Memory Complaints (Norman Foster)</td>
</tr>
<tr>
<td>9:30-9:45</td>
<td>Neuropsychological Testing in Alzheimer’s, Depression and Bipolar Disease (Gordon Chelune)</td>
</tr>
<tr>
<td>9:45-10:15</td>
<td>Case Discussion and Audience Participation</td>
</tr>
<tr>
<td>10:15-10:30</td>
<td>Audience Questions and Comments</td>
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**HISTORY AND EXAMINATION REVEALS THE CAUSE OF MEMORY COMPLAINTS**

Norman L. Foster, M.D.

Director, Center for Alzheimer’s Care, Imaging and Research

Professor, Department of Neurology

University of Utah
Definition of Dementia Syndrome

- A decline in intellectual function from a previous level of performance sufficient to impair daily activities in someone who is alert and cooperative

Note that there is nothing in the definition about age, reversibility or severity
Cognitive Complaint ≠ Deficit

- Memory and cognitive complaints are common; normal memory is not computer-like
- Attention problems often interpreted as memory or cognitive problem
  - Sleep disturbance
  - Psychiatric illness, especially depression
  - Medication side effects
  - Serious medical illnesses
- Examine mental status and evaluate functional ability
- If cognition normal - reassure, but reassess in 6 mo.

Dementia Syndrome ≠ Alzheimer’s Disease
Pathology of Alzheimer’s Disease

Neuritic plaques (beta amyloid protein)

Neurofibrillary tangles (tau protein)

Neurodegenerative Diseases

- Alzheimer’s Disease
- Dementia with Lewy Bodies (DLB)
- Parkinson’s Disease With Dementia (PDD)
- Frontotemporal Dementias (FTD)
- Vascular Dementia

**Disease**
- Predominant Symptoms
  - Memory Loss
  - Parkinsonism
  - Visual Hallucinations
- Pathology
  - Amyloid Tau
  - α-synuclein (Lewy bodies)
  - τ-synuclein (Lewy bodies)
- Additional Pathology
  - Stroke increasingly common with increasing age
  - AD pathology common
  - AD pathology common
  - AD pathology common
  - Cortical stroke
  - Multiple lacunar stroke
  - Strategic stroke
  - >50% WMH

AD pathology in 2/3rds

Parkinsonism

ALS

AD pathology common
Intervene Early, Before Damage Occurs

Typical FDG-PET Scans in Dementia
### Four Major Localizable Cognitive Domains

<table>
<thead>
<tr>
<th>Domain</th>
<th>Deficit</th>
<th>Localization</th>
<th>Bedside Test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Memory</strong></td>
<td>Amnesia, often more noticeable to others</td>
<td>Bilateral; hippocampus, thalamus, cerebral hemispheres</td>
<td>Recall of 3 words after a 5-minute delay</td>
</tr>
<tr>
<td><strong>Language</strong></td>
<td>Aphasia</td>
<td>Dominant hemisphere</td>
<td>Name objects, verbal fluency</td>
</tr>
<tr>
<td><strong>Visuospatial Processing</strong></td>
<td>Apraxia</td>
<td>Non-dominant hemisphere</td>
<td>Difficulty mimicking movements, copying drawings</td>
</tr>
<tr>
<td><strong>Executive Function</strong></td>
<td>Impaired judgment, change in personality and behavior</td>
<td>Frontal lobes</td>
<td>Appropriateness during interaction, attending to task</td>
</tr>
</tbody>
</table>

### Non-Localized Domains

<table>
<thead>
<tr>
<th>Domain</th>
<th>Deficit</th>
<th>Implications</th>
<th>Bedside Test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level of Consciousness</strong></td>
<td>Somnolent, Difficult to arouse</td>
<td>Bilateral cortex, thalamus, RAS</td>
<td>Activity, attentiveness to stimuli</td>
</tr>
<tr>
<td><strong>Affect</strong></td>
<td>Sad or Euphoric</td>
<td>Cortex</td>
<td>Inquire about mood</td>
</tr>
<tr>
<td><strong>Orientation</strong></td>
<td>Disoriented to person, place, or time</td>
<td>Bilateral cortex</td>
<td>Name, location, year, month, day of week, day of month, time of day</td>
</tr>
<tr>
<td><strong>Attention / Cooperation</strong></td>
<td>Distractible</td>
<td>Delirium, frontal lobe</td>
<td>Digit span</td>
</tr>
</tbody>
</table>
Common Causes of Attentional Deficits

- CNS-active medication side-effects
  - The most common cause of reversible dementia and delirium
  - Anticholinergics, sedatives, OTC sleep aids, pain meds, anti-convulsants
- Mood disturbance
- Sleep disturbance
- Significant medical illnesses

Definition of Delirium Syndrome (Metabolic Encephalopathy)

- A disorder of attention fluctuating in intensity throughout the day causing changing levels of consciousness, perceptual disturbance, altered psychomotor activity, disorientation and memory impairment.

One or multiple causative medical illnesses or medications often can be identified and need to be treated.
Functional (social and occupational) impairment is characteristic of most psychiatric illnesses

Cognitive impairment therefore becomes the focus for recognizing dementing disease

Cognitive Problems in DSM-IV

Psychiatric Illness

- Delirium, Dementia, Amnestic and Other Cognitive Disorders
- Substance-Related Disorders
- Schizophrenia and Other Psychotic Disorders
- Mood Disorders
- Somatoform Disorders
- Factitious Disorders
- Dissociative Disorders – Dissociative Amnesia
- Sleep Disorders
Cognitive Problems in Substance-Related Disorders

- Intoxication Delirium – Alcohol, Cocaine, Hallucinogen, Inhalant, Opiate, Phencyclidine, Sedative, Hypnotic or Anxiolytic, Other (or Unknown) Substance
- Withdrawal Delirium – Alcohol,
- Persisting Dementia – Alcohol, Inhalant, Sedative, Hypnotic or Anxiolytic, Other (or Unknown) Substance
- Persisting Amnestic Disorder – Alcohol, Sedative, Hypnotic or Anxiolytic, Other (or Unknown) Substance

Cognitive Problems in Schizophrenia and Other Psychotic Disorders

- Inattention
  - Distracted by delusions and hallucinations
  - Medications
- Diagnostic criteria
  - Disorganized speech
  - Disorganized behavior
  - Avolition
- Persisting Dementia – (not in DSM-IV)
Cognitive Problems in Mood Disorders

- Inattention
  - Rumination, psychosis, racing thoughts
  - Medications
  - Sleep disturbance
- Criteria for major depression
  - Diminished interest (?FTD-like)
  - Psychomotor retardation
  - Diminished ability to think or concentrate

Clues Distinguishing Psychiatric Illness from Dementia and Delirium

- Functional abilities more impaired than can be explained by objective physical and cognitive deficits
- Cognitive complaints much greater in patient than informant
- History of psychiatric illness
- Fluctuation in deficits associated with changes in behavioral and emotional symptoms
Neuropsychological Testing and Serial Examinations

- What are measures of mood and effort show?
- Are deficits from consistent when examined in different ways?
- Are deficits consistent from one examination to the next (clinical and neuropsychological)?
- Are deficits consistent over time or progressive when psychiatric symptoms improve?
- Are the severity of objective deficits consistent with reported functional loss?
Definition of Dementia Syndrome

- A loss of mental ability severe enough to interfere with normal activities of daily living
- Lasting more than six months
- Not present since birth
- Not associated with a loss or alteration of consciousness.
- Neurobehavioral Syndrome with MANY different medical causes (80+ causes)
- Definition is based on the cognitive changes commonly seen in Alzheimer’s Disease; memory disturbances are not so prominent in other dementias (e.g., FTD, Vascular dementias, etc.)
Common Types of Memory Lapses

- Names
- Appointments: Dates & Times
- Misplacing things
- Details of conversations
- Losing train of thought
- Getting lost
- Forgetting to take medications
- Cooking: following recipes
- Leaving pots on burner
- Forgetting to pay bills on time
- Forgetting where the car is parked
- Forgetting things on the shopping list
- Remembering how to do things on a computer
- Remembering computer passwords/phone #s

Causes of Reversible Memory Problems

- Normal Aging
- General Health Issues
- Sleep
- Chronic Stress & Mental Health Issues
- Medications
- Alcohol Consumption
- Situational Illnesses/Infections
- Pain
- Surgeries
- Other Medical Conditions
Causes of Reversible Memory Problems

Other Medical Conditions:

- Hypertension
- Diabetes
- Endocrine Conditions
- Anemia
- Renal Failure
- Traumatic Brain Injuries
- Stroke
- COPD

Neurodegenerative Dementias

- Alzheimer's Dementia
- Vascular Cognitive Impairment
- Parkinson's Dementia and -
- Diffuse Lewy Body Disease
- Frontotemporal Lobar Degenerations
  1. Frontal-Temporal Dementia
  2. Primary Progressive Dementia
  3. Semantic Dementia
  4. Logopenic Dementia

Insidious Progression Over Time
Changes in Cognition:
Normal and Not So Normal Aging

Cross Sectional Norms

Relationship Between Age and Memory/Cognitive Difficulties

Aging
Memory
Disease
Cognitive decline in the elderly: An analysis of population heterogeneity


- Cognitive decline is not a normal function of aging; i.e. there are distinct subgroups with different trajectories of change over time.
- These subgroups are differentially associated with AD-type brain neuropathology.
Years to age in order to experience a half-SD Decline

<table>
<thead>
<tr>
<th>Trajectory Group</th>
<th>Years for 0.5sd</th>
<th>95% Conf. Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slow</td>
<td>14.7</td>
<td>11.9 – 19.1</td>
</tr>
<tr>
<td>Moderate</td>
<td>3.0</td>
<td>2.4 – 3.7</td>
</tr>
<tr>
<td>Rapid</td>
<td>0.5</td>
<td>0.5 – 0.6</td>
</tr>
</tbody>
</table>

Amyloid Plaques

Tangles
“What” Do We Wish to Evaluate

Cognitive Functions at Risk --

- Orientation / Attention
- Executive Functions
- Memory
- Expressive/Receptive Language
- Visuospatial Functions
- Motor Skills
- Emotional / Functional Status

Looking for “Patterns” of Performance

CACIR Dementia Evaluation Battery

<table>
<thead>
<tr>
<th>Category</th>
<th>Subtests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intelligence</td>
<td>Verbal Comprehension</td>
</tr>
<tr>
<td></td>
<td>Perceptual Organization</td>
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<tr>
<td></td>
<td>Processing Speed</td>
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<tr>
<td>Executive Functions</td>
<td>Sequencing</td>
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<td>Set Maintenance</td>
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<td></td>
<td>Reasoning/Problem Solving</td>
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<tr>
<td>Memory</td>
<td>Immediate Recall</td>
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<td></td>
<td>Learning</td>
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<td></td>
<td>Delayed Recall</td>
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<tr>
<td>Visuospatial</td>
<td>Spatial Orientation</td>
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<tr>
<td></td>
<td>Visual Discrimination</td>
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<tr>
<td></td>
<td>Constructional Praxis</td>
</tr>
<tr>
<td>Emotional Status</td>
<td>Depression / Anxiety</td>
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## Cognitive Dimensions

<table>
<thead>
<tr>
<th>Dimension</th>
<th>AD</th>
<th>VCI</th>
<th>FTD</th>
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<td>Intelligence</td>
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<tr>
<td>Executive Functions</td>
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<tr>
<td>Sequencing</td>
<td>x</td>
<td>xx</td>
<td>xxx</td>
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<tr>
<td>Set Maintenance</td>
<td>x</td>
<td>xx</td>
<td>xxx</td>
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<tr>
<td>Memory</td>
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</tr>
<tr>
<td>Immediate Recall</td>
<td>xxx</td>
<td>x+</td>
<td>+</td>
</tr>
<tr>
<td>Learning</td>
<td>xxx</td>
<td>x+</td>
<td>+</td>
</tr>
<tr>
<td>Delayed Recall</td>
<td>xxx</td>
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## Diagnostic Algorithms

<table>
<thead>
<tr>
<th>Cognitive Deficits</th>
<th>Functional Complaints</th>
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<tbody>
<tr>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>Dementia Syndrome</td>
<td></td>
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<tr>
<td>-/+</td>
<td></td>
</tr>
<tr>
<td>Psychiatric Condition</td>
<td></td>
</tr>
<tr>
<td>+/-</td>
<td>-</td>
</tr>
<tr>
<td>Mild Cognitive Impairment</td>
<td></td>
</tr>
<tr>
<td>-/-</td>
<td></td>
</tr>
<tr>
<td>Normal (worried-well)</td>
<td></td>
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</tbody>
</table>
If: Normal (-/-)

Stop – provide reassurances
Consider Re-assessment if things change

If: Mild Cognitive Impairment (+/-)

Characterize the Impairment
- Amnestic type
- Multidomain
- Other domain (primarily language, visuospatial, other)

Re-assess in 12-18 months to determine if there is progression to Dementia (10-15%/year convert)
If: Dementia Syndrome (+/+)

Characterize Pattern of Impairment

• Alzheimer’s Disease (AD)
• Vascular Cognitive Impairment
• Frontal Temporal Lobar Degeneration (FTD)
• Diffuse Lewy Body disease

Consider annual evaluations to monitor disease progression and trajectory

If: Functional Disturbance (-/+)

• Consider additional personality testing
• Refer for Clinical Psychological/Psychiatric Evaluation
Cognitive Problems in DSM-IV Psychiatric Illness

- Delirium, Dementia, Amnestic and Other Cognitive Disorders
- Substance-Related Disorders
- Schizophrenia and Other Psychotic Disorders
- Mood Disorders
- Somatoform Disorders
- Factitious Disorders
- Dissociative Disorders – Dissociative Amnesia
- Sleep Disorders

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CASE DISCUSSION AND AUDIENCE PARTICIPATION

Norman L. Foster, M.D.
Gordon J. Chelune, Ph.D., ABPP(CN)
Center for Alzheimer’s Care, Imaging and Research
Department of Neurology
University of Utah, Salt Lake City UT
Memory Loss in Lung Cancer – Cancer Develops

- Sep ‚08: 75 y.o. woman developed LUL pneumonia, CXR showed a suspicious mass
- Oct ‚08: Chest CT - mass, FDG-PET + only in lung
- Nov ‚08: lobectomy - well-differentiated adenocarcinoma, disease-free margins 3/7 nodes positive in parenchyma, other nodes neg
- Jan ‚08: On lortab and oxycontin for post-surgical pain. Chest, abdomen and pelvis CT, brain MRI and labs neg (stage IIA). No radiotherapy, instead enrolled in clinical trial with cisplatin and docetaxel +/- bevacizumab
- Feb ‚08: 1st cycle chemo, on Lortab 2x/d

Memory Loss in Lung Cancer - Cognitive Symptoms Appear

- Mar ‚09: numbness in fingers and toes “grade 3 neuropathy”, neuro exam: CrN-intact, motor-5/5, reflexes 2+
- Apr ‚09: no sensation loss on exam, “grade 1 neuropathy” (pt says poor concentration started about now)
- symmetric bony aches and pains
- Jul ‚09: decided to discontinue trial; difficulty with concentrating, can’t think as clearly, difficulty with sleep - neuro exam - CrN-intact, motor-5/5, reflexes 2+ symmetric
Memory Loss in Lung Cancer – Cognitive Symptoms Progress

- Oncologist: Neuro complaints unlikely related to Avastin, possibly related to cisplatin or docetaxel
- Since no acute symptoms, no imaging
- Refill of oxycodone 5 mg prn for arthritic pain, methylphenidate for energy
- Aug ’09: Memory still a problem; stops when driving to remember where she is going, believes this is part of normal aging, but not present before chemo, remembers 3/3 at 5 minutes

Memory Loss in Lung Cancer – Oncologist Decision

- Cognitive problems not going away, an answer is needed. Three steps simultaneously:
  1. Neurology consult for possible “chemobrain”
  2. Lab studies - normal
  3. Brain MRI for possible reversible posterior encephalopathy - normal
Memory Loss in Lung Cancer – General Cognitive Service Consult

- Concentration problems began in March and worsened over summer
- Arthritis pain worse after chemotherapy and she had increased use of narcotics
- With addition of methylphenidate (and/or modafinil), found narcotics helped sleep and now taken regularly as sleep aid
- Discontinued daytime narcotics 2 weeks ago, now concentration and memory much improved
- Alert, MMSE 29/30, 3/3 at 5 minutes, normal naming, visuospatial ability, calculations, general information, orientation, and affect.

What Should be Done?

- Examine mental status when there is a cognitive complaint (especially the domain corresponding to complaint)
- Simply treating symptoms with drugs is inefficient and often ineffective
- There are many causes of cognitive deficits they require different treatments
- In this patient, discontinue nighttime narcotics and daytime stimulants, use non-drug strategies for sleep
Memory Loss for 2 or 4 Years – Current History

- 60 y.o. man with 2 yrs of memory loss, taking omega-3, gingko biloba, and saw palmetto for more than 4 years according to EMR
- Always had trouble with spelling and easily distracted. Recently diagnosed with ADD on Adderall
- Works for father-in-law monthly in California, researching investments, completing paperwork and organizing office; they are now concerned about his performance
- Using lists, reminder books, frequently loses things, manages all daily activities, drives and shops, involved with family decision-making

Memory Loss for 2 or 4 Years – Past Medical History and Exam

- Hypertension, no stroke, major surgeries or head injury
- Depression, some sadness, on Wellbutrin and Lexapro, no crying spells
- Sleep disturbance; restless leg syndrome treated with experimental drug in the past
- Maternal aunt in nursing home with dementia that began in her 60s, mother died in 50s
- MMSE 29/30; 3/3 immed, 2/3 @ 5 min, 3/3 with clues, 1/3 @ 10 min
- 2nd set of more difficult words 3/3 immed and @ 5 and 10 min; nickels in $1.35 rapidly; all other exam normal
### Neuropsychological Test Results

<table>
<thead>
<tr>
<th>Category</th>
<th>Subcategory</th>
<th>Score</th>
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<tbody>
<tr>
<td>Intelligence</td>
<td>Verbal Comprehension</td>
<td>Hi Ave</td>
</tr>
<tr>
<td></td>
<td>Perceptual Organization</td>
<td>Ave</td>
</tr>
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<tr>
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<td></td>
<td>Set Maintenance</td>
<td>Ok</td>
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<tr>
<td></td>
<td>Reasoning/Problem Solving</td>
<td>Good</td>
</tr>
<tr>
<td>Memory</td>
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<td>Language</td>
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<td>Excellent</td>
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<tr>
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<td>Receptive – Comprehension</td>
<td>Good</td>
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<td>Fluency: Phonemic/Letter</td>
<td>Above Ave</td>
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<td></td>
<td>Semantic</td>
<td>Above Ave</td>
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<tr>
<td>Visuospatial Functions</td>
<td>Spatial Orientation</td>
<td>Ave</td>
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<tr>
<td></td>
<td>Visual Discrimination</td>
<td>Ave</td>
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<tr>
<td></td>
<td>Constructional Praxis</td>
<td>Excellent</td>
</tr>
<tr>
<td>Emotional Status</td>
<td>Depression/Comportment</td>
<td>Diagnostic</td>
</tr>
</tbody>
</table>

Nonverbal Memory is Mildly Impaired

**GDS = 17**

### Personality Assessment Inventory

**Geriatric Depression Scale (GDS) = 17**

**PAI = DSM-IV 296.20 Major Depression**

**Geriatric Depression**

**UU01312**
Neuropsychological Report Summary

- Other than some difficulty with nonverbal memory and visual tracking, this is essentially a normal neuropsychological study. In contrast, the patient’s personality test results reflect a significant mood disturbance that could account for his subjective experience of difficulties with memory and concentration. PAI results are consistent with previous individuals with Major Depressive Disorders. Recommend psychiatric evaluation and aggressive management of his apparent mood disturbance.

Memory Loss for 2 or 4 Years – Recommendations and Outcome

- Seen back 2 months later; joined a recreation center and walking regularly; using a memory book; significant improvement in sleep, mood and memory
- Pattern of deficits inconsistent with Alzheimer’s disease
- Memory disturbance due to depression
- BP elevated at both visits, needs more intensive management
- Psychiatry consultation
- Discontinue Adderall, change in anti-depressant regimen
- Significant improvement in mood, sleep, attention and memory
- Continues psychiatric treatment
Progressive Memory Loss in a Young Woman – Initial Presentation

- 49 y.o. woman unaccompanied referred when PCP told by community mental health she had dementia
- 7 years of education, raised 4 children, divorced and remarried, but separated
- Had been assistant manager at Wal-Mart, but lost job 1 1/2 years ago because forgot what she was told in meetings, forgot to clock out, do not remember what happened at work or afterward
- One time police called when she stopped at a bank and wanted to go home, but couldn’t give her address; now primarily drives to medical visits
- Increasing dependency, needs help with medications, finances, lives alternately with husband and daughter

Progressive Memory Loss in a Young Woman – Medical History and Meds

- Diabetes, hypertension, hypercholesterolemia, unable to afford treatment
- Bipolar disease, good follow-up, although still depressed with poor energy and sleep
- No family history of dementia
- Reported history of seizures to medical assistant, but not to MD and no evidence in records
- History of elevated liver enzymes
- Meds
  - Lithium, seroquel, trazadone, clonazepam
  - Lantus, novolin prn, albuterol
Progressive Memory Loss in a Young Woman – Exam

- Flat affect, stuttering decreasing over time
- MMSE 15 with very poor orientation
- Calculated nickels in $1, but 11 in $1.35, difficulty repeating or writing a sentence to dictation
- Unable to copy a cube, but could draw a clock and set the time
- Memory 3/3 immediately only after 3 trials and 0/3 @ 5 min even with clues
- Named all objects except lapel and cuff
- Otherwise exam normal except sensory gradient

Progressive Memory Loss in a Young Woman – Return Visit History

- Returned 3 years later with husband
- Did not get blood tests or EEG
- Got brain 2 MRI scans - both normal
- Got 2 neuropsychological assessments 1 yr apart
- Memory and behavior worse
- Amnestic episodes less distinct and simply staring and saying nothing but always arousable
- Fairly frequent dramatic episodes: lock herself in closet or bathroom and unable to get out; walks around house without any clothes; some falls with minor injuries
- Very poor sleep at night, rarely out of house; frequent crying, 5/7 days husband does cooking
Progressive Memory Loss in a Young Woman – Return Visit Meds and Exam

- **Medications**
  - Cytomel, fluoxetine 80 mg, amitryptyline 25 qhs added
- No stuttering or speech hesitancy, CrN, motor, sensory and reflex exam unchanged
- No longer able to calculate nickels in a dollar, still impaired immediate memory and recall, naming improved
- **MMSE - 18** (3 points better than 2006)
- **MMSE in 2007: 14**
- **MMSE two weeks earlier: 21**

### Neuropsychological Test Results – 1

<table>
<thead>
<tr>
<th>Intelligence</th>
<th>Verbal Comprehension</th>
<th>MMSE = 14</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Perceptual Organization</td>
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<tr>
<td></td>
<td>Processing Speed</td>
<td></td>
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<tr>
<td>Executive Functions</td>
<td>Sequencing</td>
<td>DRS = 98</td>
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<tr>
<td></td>
<td>Set Maintenance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reasoning/Problem Solving</td>
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</tr>
<tr>
<td>Memory</td>
<td>Immediate Recall</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Learning</td>
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</tr>
<tr>
<td></td>
<td>Delayed Recall</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Recognition/Cued Recall</td>
<td></td>
</tr>
<tr>
<td>Language</td>
<td>Expressive – Naming</td>
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</tr>
<tr>
<td></td>
<td>Receptive – Comprehension</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fluency: Phonemic/Letter</td>
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</tr>
<tr>
<td></td>
<td>Semantic</td>
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<tr>
<td>Visuospatial Functions</td>
<td>Spatial Orientation</td>
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<td>Visual Discrimination</td>
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<tr>
<td></td>
<td>Constructional Praxis</td>
<td></td>
</tr>
<tr>
<td>Emotional Status</td>
<td>Depression/Comportment</td>
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</table>

**MMSE:** 18
**DRS:** 98
**GDS:** 26

UU00057
**Neuropsychological Test Results – 2**

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<td>Processing Speed</td>
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<tr>
<td>Set Maintenance</td>
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<td>Severe</td>
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<tr>
<td>Reasoning/Problem Solving</td>
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<tr>
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<tr>
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<tr>
<td>Learning</td>
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<td>Delayed Recall</td>
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<td>Severe</td>
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<tr>
<td>Recognition/Cued Recall</td>
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<td>Language</td>
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<td>Receptive – Comprehension</td>
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<tr>
<td>Spatial Orientation</td>
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<td>Low Ave</td>
</tr>
<tr>
<td>Visual Discrimination</td>
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<tr>
<td>Constructional Praxis</td>
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<td>Low Ave</td>
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<td>Emotional Status</td>
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<tr>
<td>Depression/Comportment</td>
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<td>Diagnostic=26</td>
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</tbody>
</table>

**Personality Test Results - 2**

- Geriatric Depression Scale (GDS) = 27
- Beck Dep. Inventory = 34

PAI = DSM-IV
296.20 Major Depression
295.90 Schizophrenia
300.4 Dysthmic Disorder
Neuropsychological Report Summary

- Patient’s current results show some retest improvements as well as several significant declines. Consistent with previous evaluation, current personality test results reflect marked degree of psychological distress and dysphoria suggestive of major mood disturbance. Thus, functional factors may well be contributing to and/or accounting for many of the patient’s neurocognitive difficulties as well as variability in retest performance.