



The Many Faces of Dementia

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With the advance in medical technology, the aging population is on the rise. "Baby boomers" will reach the age of 85 between 2030 and 2050, with an alarming increase in the rate of dementia in every primary care practice.

Dementia is an acquired brain disorder with persistent impairment of intellectual functioning. It afflicts more than 8% of Canadians over 65, and nearly 35% of those over 85.

Primary care physicians are best equipped to diagnose and manage this disorder, since they provide the majority of medical care for patients and their families.

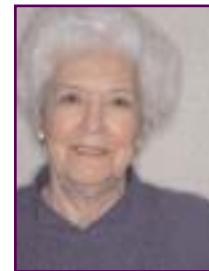
In 1989, the Canadian Consensus Conference on the Assessment of Dementia (CCCAD) developed guidelines for the evaluation of individuals with suspected dementia. Despite the fact that our knowledge of dementia is significantly better today, including treatment strategies, these guidelines remain quite relevant.

Diagnosing dementia is not much different from detecting fever in a patient with an infectious disease. The underlying etiology is important, insofar as to distinguish whether it is reversible or not, to choose a treatment modality, and to provide support and counselling for patient and family.

Challenges in evaluating capacity (competency) is even more crucial for the primary care physician. In many cases, the family will turn to the family practi-

Mrs. Scott

Mrs. Scott, 82, is a widow who presents to your practice. Ever since she lost her husband 18 months ago, she was noted to be more forgetful. She may have lost 10 pounds due to poor eating habits. Her son is the one who communicates these concerns to you.



Mr. Jones' hallucinations

Mr. Jones, 75, presents with a six-month history of cognitive decline. He continues to care for himself at home, but over the past two months, he has been experiencing visual hallucinations. He believes he sees a marching band in his living room.

tioner to assess whether the patient is competent to safely live independently.

What is the clinical presentation of a patient with dementia?

Memory deficit is considered to be the most cardinal feature in diagnosing dementia. Other cognitive

Table 1

Functional assessment

<u>ADL</u>	<u>IADL</u>
<ul style="list-style-type: none"> • Hygiene • Dressing • Eating • Toileting • Ambulation 	<ul style="list-style-type: none"> • Managing finances • Shopping • Transportation • Meal preparation • Housekeeping

ADL: Activities of daily living

IADL: Instrumental activities of daily living

deficits may include language, visuo-spatial skills, personality change, and loss of executive functioning (sequencing, organizing, abstracting, and planning). History-taking, including collateral data from the family, is the basis for more than 90% of the diagnosis. An emphasis on premorbid level of functioning is considered a key point in guiding the clinician for detecting dementia (*e.g.*, an orderly and meticulous person has become dishevelled, and lacks grooming and personal hygiene). Functional assessment is considered essential, not only for making the diagnosis, but for monitoring treatment success (Table 1). During the office visit, the primary care physician will conduct a physical examination. This physical includes a neurologic examination to rule out medical and neurologic disorders. Cognitive assessment, such as a mini mental state exam (MMSE), is used as a guide to detect cognitive deficits. Combining a MMSE with a test for visuo-spatial skills, such as a clock test or reversal of an arrow, is a common practice. In the clock test, the patient is provided with a large circle (representing a clock), and is asked to put the numbers on it. The patient is then asked to

draw the hands at five minutes after 10. In the “arrow reversal,” the patient is provided with an arrow with a head and tail and asked to copy it before he/she draws another one pointing in the opposite direction. The clock administration test measures attention/concentration, laterality, abstraction and personality, in addition to the visuo-spatial function. I often use the clock test for caregiver education to illustrate the magnitude of the cognitive struggle their loved one is experiencing. When the cognitive deficit is mild, a referral to a geriatrician or geriatric psychiatrist, and a detailed battery of neuropsychologic testing, is appropriate.

A basic metabolic workup, as suggested by the

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Table 2

Indications for a CT scan in dementia

- Under the age of 60
- Less than 2 years duration
- Rapid decline over the course of a few weeks
- Unexplainable neurologic symptoms or recent onset of focal signs
- Recent head injury
- History of cancer
- History of coagulation problems or being on anticoagulants
- Presence of urinary incontinence or gait disturbance early in the course of the disease
- Unusual or atypical cognitive presentations

CCCAD, includes a complete blood count, serum electrolytes, thyroid stimulating hormone, blood glucose, B₁₂, and calcium. Further investigation, including kidney and liver function tests, are not unreasonable to perform, if they have not been done in the past 12 months. Cost-effectiveness is always an issue, since reversible causes of dementia have been estimated to be < 10%. The same applies for a computed tomography (CT) scan of the head, or magnetic resonance imaging, which are not routinely done in every case. There are suggested guidelines for the indication of a CT scan (or equivalent) in dementia (Table 2).

While a long list of possible causes of dementia is suggested, it remains that the most common causes include Alzheimer's disease, vascular dementia, mixed dementia (Alzheimer disease



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and vascular etiology), Lewy body dementia, Parkinson's dementia, and fronto-temporal dementia, including alcohol related dementia.

In today's practice, except for fronto-temporal dementia and, to a lesser extent, Parkinson's dementia, cholinesterase inhibitors are considered the treatment of choice in mild to moderate cases.

Alzheimer's disease (AD)—AD constitutes 70% of all dementias. It affects cognitive and functional skills and leads to deterioration over time. (A decline in MMSE score by 1 to 2 points every year is expected.) There is a loss of higher cortical functions, including aphasia, agnosia, and apraxia.

Vascular dementia—This is the second most common cause of dementia. A loss of memory and at least two other cognitive deficits that impair function are essential for diagnosis. There are likely focal neurologic signs and imaging evidence of cerebral vascular disease. The cognitive deficits have a temporal association with cerebral vascular disease (within three months) and there are sudden or stepwise deterioration in cognition. There may be a history of unsteady gait leading to falls, as well as personality and mood changes.

Lewy body dementia—LBD is considered when one (possible LBD) or two (probable LBD) of the following characteristics are present:

1. Fluctuation in cognition with pronounced variation in attention and alertness
2. Recurrent visual hallucinations typically vivid and detailed
3. Spontaneous motor features of Parkinsonism

Mr. Kennedy's driving

Mr. Kennedy, 78, was diagnosed with mild, diet-controlled diabetes mellitus and hypertension. His only medication includes hydrochlorothiazide, 25 mg daily. Both he and his wife have been your patients for 5 years, and they came to the office this time to have Mr. Kennedy's blood pressure checked. On the way out of the office, his wife states that she does not feel safe driving with him anymore.

The patients are sensitive to neuroleptic medications and may present with delusions and hallucinations in other modalities.

Parkinson's dementia—This form of dementia presents with a history of Parkinson's disease that has been diagnosed for a number of years before detecting cognitive decline. There is slowness of thoughts, executive function deficits, and difficulty with visuo-spatial function, as well as memory deficits. Like other subcortical dementias, there are no deficits in the higher cortical functions, such as aphasia, agnosia, or ideomotor apraxia.

Fronto-temporal dementia—This form of dementia presents with a set of behavioural disorders, including loss of personal and social awareness, impulsive and disinhibited behaviour, distractibility, and perseveration. There is loss of executive function early on, and an emergence of primitive reflex, as well as progressive reduction in speech and mood lability.


What about driving and dementia?

It has been estimated that a driver must make about 20 decisions per mile driven, most of which are dependent on cognition, and motor and sensorio-perceptual functions. Psychomotor slowing is a frequent sequela of aging. One measure of psychomotor function is "simple reaction time," measured as the speed of response to the onset of a single stimulus. It increases slightly with advancing years. However, a "choice reaction time," in which a person would make a decision on multiple stimuli at the same time, is more applicable to the complicated task of driving.

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Dementia

Choice reaction time (the time it takes to react upon making a choice) tends to increase with aging. The office-based assessment should include talking to both the patient and the family about driving. Problems with driving noted by the caregiver were the presenting sign in 18% of cases in one study. Some of the warning signs would include running stop signs or red lights without realizing it, stopping at green lights, merging into another lane without looking, near misses with vehicles, pedestrians or objects without realizing it, stopping in the middle of intersections, and getting lost in familiar areas. These patients tend to drive mostly in the daytime, avoid highways, and only drive short distances. One of the most important questions to the caregiver is whether he/she would feel comfortable in any way driving with the patient (see Mr. Kennedy's clinical vignette).

The rate of motor vehicle accidents is low among elderly drivers, largely due to the fact that they drive relatively few miles. Motor vehicle accidents with older drivers involve mostly multiple vehicles, occur at junctions, and involve either right of way or traffic sign violations. These are decisions made by the elderly driver likely because of a slower choice reaction time.

It is essential that the physician know the relevant legislation in their province, especially where mandatory reporting is required. If in doubt, refer the patient for a road test, or to a specialized testing centre (e.g., driveABLE). Ultimately, it is the responsibility of the licensing authority in the province/territory of residence to decide on the patient's driving eligibility. CME

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Take-home message



Primary care physicians are best equipped to diagnose and manage dementia, since they provide the majority of medical care for patients and their families.

- Primary care physicians face more challenges in refining the diagnosis and addressing various safety issues with patients and their families.
- Once the diagnosis is made, it is essential that an appropriate cholinesterase inhibitor is selected and progress is monitored.
- Other environmental and psychosocial issues (including education for patients and their families) are also essential in the treatment regimen.
- Assessing the patient's safety to drive, being able to make financial decisions, and to determine their living arrangements may all become compromised in the course of dementia.
- Very often, the family will turn to the primary care physician for help in making decisions concerning safety and competence matters for their loved ones.



Further Readings

1. Dementia.com:
www.dementia.com
2. AlzheimerSupport.com:
www.alzheimersupport.com
3. Alzheimer's, Dementia & Driving:
www.thehartford.com/alzheimers

Suggested Readings

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5. Determining medical fitness to drive, 6th Edition. Canadian Medical Assoc. (Ottawa), 2000.
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