

Differential Diagnoses



DELIRIUM OR DEMENTIA?

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This column series compares neurological conditions that pose differential challenges in diagnoses.

Delirium and dementia are two separate mental states that can be characterized by impaired memory and judgement, confusion, disorientation, and variable degrees of paranoia and hallucinations. These similarities can make distinguishing between the two disorders challenging to the inexperienced clinician; however, there are distinct, critical differences that, once recognized, can assist the clinician in making an accurate diagnosis. Here we present a checklist of similarities and differences between delirium and dementia for use as a diagnostic aid.

SYMPTOM CHECKLIST. Delirium vs dementia¹⁻⁶

A diagnosis of either delirium or dementia should be considered if patient exhibits some or all of the following symptoms:

- Forgetfulness, with impaired memory and/or judgment
- Confusion and disorientation
- Variable degrees of paranoia.

Consider a diagnosis of delirium if patient exhibits

- Confused, disturbed, bizarre mental status, which is often variable and fluctuating
- Clouded sensorium and inattentiveness, which varies widely between normal, agitated, and somnolent
- Very prominent* confusion and disorientation
- Overtly impaired* short-term memory
- Fair, but impaired long-term memory in severe cases
- Frequent* visual or tactile hallucinations and occasional olfactory hallucinations
- Overtly impaired* judgment and social skills
- Variable degrees of paranoia
- Disturbed behavior.

Additionally, consider the follow characteristics of delirium before making diagnosis:

- Delirium is usually acute in onset (though not always).
- Its duration is highly variable and often fluctuating in course.
- It typically affects older people (though not always) with a wide variety of ailments (e.g., infections, depression, diabetes) or substance abuses or those exposed to certain medications and/or poisons.
- General physical and neurological examinations, vital signs, autonomic signs, and pupil examinations are cause dependent.

Consider a diagnosis of dementia if patient exhibits

- Forgetfulness, with impaired memory and/or judgment
- Variable alertness, until diminished in advance stages of the illness
- Confusion and disorientation
- Impaired short-term memory (but not always)
- Fair, but impaired long-term memory in severe cases
- Rare* visual, tactile, or olfactory hallucinations
- Poor judgment and social skills (this varies according to the area of the brain involved—for example, poor judgment, rather than impaired cognition, occurs in frontotemporal dementia)
- Variable degrees of paranoia
- Normal behavior until in advanced stages.

Additionally, consider the follow characteristics of dementia before making diagnosis:

- Dementia often has insidious onset (but can be sudden).
- Its duration is chronic and progressive, step-wise, or static.
- It is seen predominantly (but not exclusively) in elderly people with various somatic or traumatic ailments (e.g., stroke, hypertension, or Parkinson's disease) and predisposition to delirium.
- General physical and neurological examinations, vital signs, autonomic signs, and pupil examinations are cause dependent.

ETIOLOGY. Delirium vs. dementia¹⁻⁶

There are numerous extracranial, intracranial, and environmental events that can cause delirium and/or dementia. Listed below are some of the most common causes.

Delirium is most commonly caused by

- Metabolic disorders—hypoxia; hypoglycemia; electrolyte derangements; alcohol or sedative withdrawal; endocrine disorders; paraneoplastic syndromes; hyperthermia; hypothermia; and/or post-operative, anesthetic, or post-cardiac pump states
- Toxins—alcohol, drugs (medicinal or illicit), anticholinergic toxicity, herbs/herbal medicines, some over-the-counter agents, poisons
- Infections—intracranial or extracranial
- Anatomic disorders—various space occupying or structural brain lesions, tumors, neoplasms, trauma
- Environmental disorders—sensory and/or sleep deprivation
- Other—fever, postictal states, urinary retention, fecal impaction

Dementia is most commonly caused by

- Neurodegeneration—Alzheimer's disease, frontotemporal damage, abnormal tau protein formation, Lewy body proteins, Parkinson's disease
- Vascular defects—infarcts, arteriopathies, vasculitis
- Toxins—alcohol, lead, manganese, drugs (medicinal or illicit)
- Infections—prion disease, human immunodeficiency virus, herpes, neurosyphilis, Whipple's disease, progressive multifocal leukoencephalopathy
- Inflammatory or autoimmune disorders—multiple sclerosis, paraneoplastic or autoimmune limbic encephalitis, systemic lupus erythematosus, Sjogren's syndrome, Behcet's disease
- Neurometabolic disorders—leukodystrophies, adult neuronal ceroid lipofuscinosis
- Other—endocrine disorders, space occupying lesions, trauma, neoplasia, paraneoplastic syndromes, normal pressure hydrocephalus, Wilson's disease, Huntington disease, overwhelming changes of environment

TREATMENT. Delirium vs. dementia¹⁻⁶

If a diagnosis of delirium is made...

Intervention is quickly and vigorously directed at the specific cause (e.g., electrolyte imbalance). Offending agents, if any, are immediately removed (e.g., alcohol and/or sedating drugs). Symptomatic pharmacotherapy is used adjunctively to address any behavioral issues when clinically indicated.

If a diagnosis of dementia is made...

Treatment is disease-specific and also addresses any predisposing etiology, if applicable (e.g., alcohol abuse, sleep disorder). Memory-enhancing agents should be considered when appropriate. Any suspected offending agents are immediately removed, if possible (e.g., toxins). Symptomatic therapy is used when clinically indicated.

SUMMARY

In summary, delirium is due to a reversible impairment of cerebral oxidative metabolism and/or various neurotransmitter abnormalities, while in dementia, impaired brain function results from an exogenous insult or an intrinsic process affecting cerebral neurochemistry and/or anatomic damage to the cortex, subcortex, or deeper

structures. Delirium is a transient, usually acute and reversible cause of cerebral dysfunction with confusion that manifests clinically with a wide range of neuropsychiatric abnormalities. It can occur at any age, but is more common in elderly people with somatic illnesses or those who have compromised mental statuses. Dementia, on the other hand, is an acquired impairment of executive

function in one or more cognitive domains (e.g. memory, language, executive function, judgment, attention, perceptual-motor function, social skills). Dementia represents a significant decline from a previous baseline, interferes with function, is more common in older individuals, and may be persistent.

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