

DIAGNOSING SUBCORTICAL DEMENTIA

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Subcortical dementia is a frequently under-recognized form of cognitive decline that impacts arousal, attention, mood, memory, abstraction and visuospatial abilities (Dunne 1993, Mark A Turner 2002). It can cause significant personality changes, affective disorders, apathy, irritability, depression, psychotic illness, mania and hallucinations, memory, abstraction and visuospatial function (Dunne 1993, Mark A Turner 2002). The brain structures affected include the basal ganglia, thalamus, midbrain and cerebellum with relative sparing of the cortex (Dunne 1993). Subcortical dementia is associated with Parkinson's disease, progressive supranuclear palsy, Huntington's Chorea, hydrocephalus, AIDS, depression and multiple sclerosis (Dunne 1993). It has been estimated that approximately two thirds of those with Parkinson's disease and 30-70% of patients with multiple sclerosis have concomitant subcortical dementia (Dunne 1993). As such, it is an important form of dementia for any physician to understand if managing care for elderly patients.

Subcortical dementia has been generally studied by contrasting this dementia to cortical dementia exemplified by Alzheimer's Disease (Dunne 1993). Cortical dementia impairs the instrumental functions known as language, perception, memory and calculation (Dunne 1993, Mark A Turner 2002). Compared to cortical dementias, subcortical dementia patients have more mild intellectual impairments with no major aphasia, acalculia, amnesia or agnosia while having more significant impairments in their insight, problem solving and ability to use stored knowledge (Cummings and Benson 1984).

Unfortunately, there is significant difficulty in differentiating patients with cortical versus subcortical dementia especially as they often have symptoms of both. Furthermore, the histopathological and functional imaging characteristics of cortical and subcortical dementias often overlap affected regions as well (Mark A Turner 2002). It is also very difficult to design standardized cognitive testing that assesses the fundamental functions of arousal, attention, motivation and mood (Cummings and Benson 1984). As such, subcortical dementia is considered a clinical, not an anatomical diagnosis (Cummings and Benson 1984).

More recent studies have argued that the differences between cortical and subcortical dementia is not as clear as was once thought. For example, the differentiation in terms memory dysfunction has not been entirely borne out by studies (Mark A Turner 2002). Furthermore, cortical and subcortical changes often occur within the same patient (Dunne 1993). Due to the significant overlap in histological and neuroimaging changes it has been proposed that subcortical and cortical dementias exist on a continuum (Mark A Turner 2002). Generally the distinction is now thought to be useful in the clinical setting even though the differences may not be supported by evidence (Mark A Turner 2002).

The clinical picture of subcortical dementia is slowness in mental processing, impaired cognition, apathy and depression (Cummings and Benson 1984). Diagnosis is based upon this clinical picture. A significant finding for physicians can be impairments in the ability to manipulate newly acquired information. (Cummings and Benson 1984).

The bradyphrenia, or slowing of thinking processes, exhibited by those with subcortical dementia may partly explain why some elderly patients may make unexpected choices that are inconsistent with their previous wishes or lifestyles (Mark A Turner 2002). While the learning impairment can be partly improved by providing more stimulating cues, the dysfunction can have a large impact on functioning and makes planning for the future very difficult (Mark A Turner 2002). For example, the inability of these patients to problem solve, plan and organise behaviour, in combination with apathy, inertia, depression and forgetfulness, may explain why these patients often do not function well without significant care even when they only have mild cognitive impairments (Dunne 1993). It is important for physicians and families to recognize the dementia and the impact it may have on future plans, housing and care.

The diagnosis of subcortical dementia is significant for patients and their families. Families are often concerned by the apathy exhibited by patients who might spend most of their day sitting quietly or whose hygiene standards may decrease (Rhynold, Hurley and Hobbs 2010). Those with subcortical dementia may also require significant planning for the future in terms of powers of attorney and care directives (Rhynold, Hurley and Hobbs, An introduction to dementia: Helping you chart a course 2010). Accepting home care or a transition to personal care homes is particularly difficult for these patients because new information is hard to process and remember (Rhynold, Hurley and Hobbs, The dementia compass 2010). Because of this, it may be useful to have home care implemented earlier than generally done as this allows patients more time to adapt and accept professional help.

As such, the diagnosis of subcortical dementia in elderly patients is very important and can help guide care planning for patients. Physicians should be cognizant that it is often difficult to recognize and diagnose subcortical dementia due to the overlap in presentations and because dementia is difficult to test in standard cognitive assessments. It is also important to understand that patients can often compensate with fairly intact language and memory functions. Detecting and managing subcortical dementia is still a worthwhile pursuit as many treatable dementias exhibit cortical patterns (Dunne 1993). It may also give families some relief to learn that worrisome and uncharacteristic behaviours may be directly due to their form of dementia. Hopefully, this explanation will allow physicians to more easily recognize the pattern of apathy, depression, abnormal judgment and insight in those with subcortical depression.

Bibliography

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