Binswanger's Disease

National Institute of Neurological Disorders and Stroke (NINDS)

Source

National Institute of Neurological Disorders and Stroke (NINDS). Binswanger's Disease Information Page.

Binswanger's disease (BD), also called *subcortical vascular dementia*, is a type of dementia caused by widespread, microscopic areas of damage to the deep layers of white matter in the brain. The damage is the result of the thickening and narrowing (atherosclerosis) of arteries that feed the subcortical areas of the brain. Atherosclerosis (commonly known as "hardening of the arteries") is a systemic process that affects blood vessels throughout the body. It begins late in the fourth decade of life and increases in severity with age. As the arteries become more and more narrowed, the blood supplied by those arteries decreases and brain tissue dies. A characteristic pattern of BD-damaged brain tissue can be seen with modern brain imaging techniques such as CT scans or magnetic resonance imaging (MRI). The symptoms associated with BD are related to the disruption of subcortical neural circuits that control what neuroscientists call *executive cognitive functioning*: short-term memory, organization, mood, the regulation of attention, the ability to act or make decisions, and appropriate behavior. The most characteristic feature of BD is psychomotor slowness - an increase in the length of time it takes, for example, for the fingers to turn the thought of a letter into the shape of a letter on a piece of paper. Other symptoms include forgetfulness (but not as severe as the forgetfulness of Alzheimer's disease), changes in speech, an unsteady gait, clumsiness or frequent falls, changes in personality or mood (most likely in the form of apathy, irritability, and depression), and urinary symptoms that aren't caused by urological disease. Brain imaging, which reveals the characteristic brain lesions of BD, is essential for a positive diagnosis.