

FEATURES OF DEMENTIA MANIFESTATIONS

Alikulov Nodirbek Yuldosh ogli

Clinical Resident, Department of Neurology Samarkand State Medical University

Nomozov Khumoyun Shavkat ogli

Clinical Resident, Department of Neurology Samarkand State Medical University

Tursunbaev Musobek Sadulla ogli

Clinical Resident, Department of Neurology Samarkand State Medical University

Sherkulov Shukrullo Urol ogli

Clinical Resident, Department of Neurology Samarkand State Medical University

Kasimov Arslanbek Atabaevich

PhD, Associate Professor, Department of Neurology

Abstract: Modern medicine frequently encounters dementia diseases, which manifest as Alzheimer's disease, frontotemporal disorder, dementia with Lewy bodies, and Parkinson's disease. This article examines the manifestation features of diseases grouped under the general term "dementia," which affects the decline of thinking skills, also known as cognitive abilities, and influences behavior, feelings, and relationships.

Keywords: dementia, Alzheimer's disease, cortical and subcortical dementia, dementia with Lewy bodies, frontotemporal dementia, COVID-19.

Introduction. Dementia is a general term for memory loss, speech impairment, problem-solving ability, and other thinking capabilities that are severe enough to interfere with daily life. Alzheimer's disease is the most common cause of dementia. Diseases grouped under the general term "dementia" are caused by abnormal brain changes. These changes cause a decline in thinking skills, also known as cognitive abilities, severe enough to disrupt daily life and independent functioning. They also affect behavior, feelings, and relationships.

The functions that are impaired in dementia include memory, language skills, visual perception, problem-solving, self-management, and the ability to focus and pay attention. Some people with dementia cannot control their emotions, and their personality may change. Dementia varies in severity from the mildest stage, when it is just beginning to affect a person's functioning, to the most severe stage, when the person must completely depend on others for basic life activities (Medical News Today, "Dementia: symptoms, stages and types," December 1, 2017).

Signs and symptoms of dementia occur when once-healthy neurons (nerve cells) in the brain stop working, lose connections with other brain cells, and die. While everyone loses some neurons with age, people with dementia experience much greater loss. Although dementia is more common with age (up to half of all people aged 85 and older may have some form of dementia), it is not a normal part of aging. Many people live to 90 and older without any signs of dementia. One type of dementia, frontotemporal diseases, is more common in middle-aged people than in older adults.

The causes of dementia may vary depending on the types of brain changes that may occur. Alzheimer's disease is the most common cause of dementia in older adults. Other types of dementia include dementia with Lewy bodies, frontotemporal diseases, and vascular dementia. People often have mixed dementia—a combination of two or more types of dementia. For example, some people have both Alzheimer's disease and vascular dementia (Medical News Today, "Dementia: symptoms, stages and types," December 1, 2017).

The research problem lies in the fact that most works by many authors examine one type of disease, most often Alzheimer's disease or Parkinson's disease. In this work, we will try to collect works by authors who have examined different types of dementia diseases and show their research results in one article. Moreover, modern medicine is updated every year, with more and more scientific works emerging that apply new approaches in their research.

The aim of the study is to review secondary information examining the features of clinical manifestations in dementia diseases.

The research method consists of a review analysis of scientific articles, as well as analysis of statistical indicators related to dementia diseases. The study is descriptive in nature and based on the results of previously published works. The research mainly focuses on the context of dementia disease manifestations, their causes, types, stages, and applied treatment measures.

For analysis, works by authors such as Cunningham E.L., McGuinness B., Herron B., Passmore A.P., Gale S.A., Acar D., Daffner K.R., Buffington A., Lipsky D.M., and Erin Westfall were selected.

Results and Discussion. Dementia, as we previously wrote, is a syndrome (group of related symptoms) associated with persistent deterioration of brain function. There are many different causes of dementia and many different types. The most commonly encountered is Alzheimer's disease, which together with vascular dementia constitutes the majority of cases.

According to data from A. Buffington, D.M. Lipsky, and Erin Westfall, the next several decades will see growth in the number of elderly people suffering from dementia. For example, it is predicted that by 2030, the number of people with Alzheimer's disease will increase by 50%. Doctors usually have contact with patients suffering from dementia, and therefore they need to understand its various manifestations. In this regard, the authors examine the characteristics and etiological data of cortical and subcortical dementia, as well as examine cognitive profiles and symptoms of specific types of dementia. They also discuss the osteopathic approach to care aimed at establishing relationships with patients and their families (Buffington, Lipsky, Westfall, 2013).

In the work by A. Buffington, D.M. Lipsky, and E. Westfall, neuropsychological characteristics of cortical and subcortical dementia are also given, since for better understanding of dementia it is useful to distinguish whether the pathological process primarily affects cortical or subcortical brain structures (see Table 1). Cortical dementia is usually progressive and degenerative and is typically associated with impairment of language skills (aphasia), motor coordination (apraxia), perception (agnosia), reasoning and problem-solving, learning and remembering. Subcortical dementias may be progressive, static, or reversible and are associated with slowing of cognitive functions, emotionality (e.g., apathy, irritability, depression), and deficits in attention and arousal (Turner, Moran, Kopelman, 2002; Buffington, Lipsky, Westfall, 2013).

Table 1. Neuropsychological characteristics of cortical and subcortical dementia according to A. Buffington, D.M. Lipsky, and E. Westfall

Characteristic	Cortical Dementia	Subcortical Dementia
Language	Early aphasia	No aphasia or late stage
Memory scope	Recall and recognition impairment	Recall impairment; recognition intact
Visuospatial perception	Impaired	Impaired
Frontal systems	Impairment corresponding to other functions	Disproportionately impaired
Processing speed	Normal early	Slowed early
Motor speed/coordination	Normal	Slowed
Posture	Upright	Bent or extended
Personality	Carefree	Apathetic, inert, irritable

Mood	Euphoric	Depressed, irritable
Disease course	Progressive and degenerative	Progressive, static, or reversible

According to the authors' research results, diagnosis and treatment of dementia present a unique challenge for physicians. Due to the rapid growth in dementia prevalence, physicians must be well-informed about different types of dementia, as well as approaches to caring for people with dementia. Care for patients with dementia differs from care for patients with other medical diagnoses in that care must be focused on both the patient and their relatives, and it must be proactive in nature. Using an osteopathic approach to caring for patients with dementia will help improve outcomes and increase satisfaction for patients and caregivers.

In another article by E.L. Cunningham, B. McGuinness, B. Herron, and A.P. Passmore, it is stated that dementia incidence increases with age, making it increasingly common among the aging population. The nature of symptoms means that people with dementia are more dependent and vulnerable both socially and in terms of physical and mental health, creating new challenges for society and our healthcare systems. Despite the seemingly simple premise, clinical diagnosis of dementia can be difficult, as (de novo mutation) functional impairment is often hidden behind physical frailty, comorbid psychiatric symptoms such as depression, and subtle but persistent performance of household duties by spouses and family. Clinical and pathological criteria for major diseases causing dementia largely overlap. The appearance of symptoms decades into the pathophysiological process makes targeted disease therapy difficult (Cunningham, McGuinness, Herron, Passmore, 2015).

The authors also examine clinical diagnostic criteria for dementia. Cognitive impairments that are key to dementia diagnosis can be divided into five main areas: memory; executive function; language; visuospatial abilities; personality and behavior. As dementia progresses from any cause, cognitive impairments will expand, involving more areas, and deepen, causing increased functional impairment. Thus, it can be difficult to distinguish dementias of different etiology at later stages. However, at early stages, the pattern of pronounced symptoms can help determine the most likely underlying disease process. Clinical criteria exist for all major dementia subtypes, the main characteristics of which are outlined in Table 2. All criteria require a diagnosis of dementia and include caveats that there should not be a symptom pattern more consistent with another type of dementia.

Table 2. Clinical diagnostic criteria for dementia according to E.L. Cunningham, B. McGuinness, B. Herron, and A.P. Passmore

Таблица

Disease	Alzheimer's Disease	Dementia with Lewy Bodies	Behavioral Variant (Frontotemporal Dementia)	Primary Progressive Aphasia (Frontotemporal Dementia)	Vascular Dementia
Authors (year)	McKhann et al. (2011)	McKeith et al. (2005)	Rascovsky et al. (2011)	Gorno-Tempini et al. (2011)	Gorelick et al. (2011)
Mandatory symptoms	(Typical syndrome) Memory deficit + deficit in at least one other cognitive domain	(Central features) Attention deficit Executive dysfunction Visuospatial deficit (Core features, 2/3) Fluctuating cognitive	Behavioral disinhibition Apathy or inertia Loss of sympathy or empathy Perseverative, stereotypic, or compulsive/ritualistic behavior Hyperorality and dietary changes Executive	Language deficit is the most prominent symptom and constitutes functional decline No prominent memory, visuospatial, or behavioral problems	Clear temporal relationship between vascular event and onset of cognitive deficit Cognitive deficit independent

		abilities Visual hallucinations Parkinsonism (Suggestive features) REM sleep behavior disorder Neuroleptic sensitivity Positive DLB scan	dysfunction with relative sparing of episodic memory and visuospatial skills (requires 3/6)		of motor/sensory consequences of vascular event
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Other diagnostic criteria also exist. In addition to criteria established by McKhann in 2011, the International Working Group proposed diagnostic criteria for AD. There are also older Hachinski scales that are still used to determine vascular dementia. The 5th edition of the Diagnostic and Statistical Manual of Mental Disorders, published in 2013 by the American Psychiatric Association, introduced the terms major and mild neurocognitive disorders, which are equivalent to dementia. Their criteria for various subtypes generally coincide with previously existing clinical criteria (McKhann et al., 2011; Hachinski et al., 1975; Roman et al., 1993).

S.A. Gale, D. Acar, and K.R. Daffner, like previous authors, note that cognitive impairments and dementia manifested in dementia still remain among the most common diseases in the world. The authors in their review identify separate dementia syndromes from dozens of different diseases. Efforts to preserve daily functional abilities and quality of life should be the main goal of dementia management throughout life. According to their definition, dementias are chronic diseases requiring long-term treatment, constant counseling, and psychosocial support for patients and their families from dedicated physicians. The authors also note that doctors are now prepared to understand and treat a range of neurological and neuropsychiatric symptoms that can improve patients' quality of life (Gale, Acar, Daffner, 2018).

Dementia and COVID-19

Severe acute respiratory syndrome coronavirus was first identified in patients with viral pneumonia in Hubei Province, China. Later, when the disease spread worldwide, it became clear that elderly people are at risk, and many people with dementia are at particular risk. Death certificates from the United Kingdom show that dementia and Alzheimer's disease were the most common underlying conditions listed on 11,950 deaths (25.6% of all COVID-19-related deaths) from March to May 2020 (Leung, Caruso, Perls, 2020).

It was found that people with dementia found it difficult to comply with social distancing measures, as they may not understand or remember necessary behavioral changes, such as physical distancing and hygiene compliance, leading to increased risk for themselves and their caregivers. They may be additionally vulnerable if they depend on others for daily activities or personal hygiene, as this requires close personal contact. This situation is particularly relevant in nursing homes where many residents suffer from dementia and where many COVID-19 deaths have occurred in many countries, with more than half of residents reportedly hospitalized. In US nursing homes, out of 10,576 people with confirmed COVID-19, residents living with dementia accounted for 52% of COVID-19 cases, yet accounted for 72% of all deaths (Comas-Herrera, Zalakaín, Litwin et al., 2020; McMichael, Currie, Clark et al., 2020).

The impact of COVID-19 on people with dementia may be particularly severe due to the fact that not all countries can allocate funding for testing and protective equipment, and the quality of home and nursing home medical services is not always at the required level. Thus, people with dementia are

particularly vulnerable to COVID-19 due to their age, multimorbidity, and difficulties in maintaining physical distancing.

Conclusion. Summarizing the research, we can say that according to all authors, dementia remains one of the most pressing problems of modern medicine today. Moreover, the coronavirus pandemic has also worsened the situation for several reasons, and as already mentioned, in many countries among mortality, people with dementia comprised about 25%, which is already alarming. Besides all this, people with dementia experience stress during the dementia trajectory, and it is very important to find ways to cope with this to make daily life work and continue being themselves, feeling meaning and independence. Many authors also note that knowledge about dementia detection criteria is necessary in dementia treatment. This understanding is of great importance for medical staff and close relatives, whose role is to create a favorable environment for a person with dementia. However, people with dementia cope with difficulties differently and use several parallel strategies to solve the problems they face.

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