

Delirium Superimposed on Dementia

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ABSTRACT

Delirium and dementia are 2 different pathophysiologic processes, each manifesting signs that so overlap that they are often indistinguishable to the practicing clinician. Delirium superimposed on dementia is an underdiagnosed disease process associated with increased mortality and morbidity, longer recovery rates, higher cost, increased risk for falls, and long-term care placement. This article presents an overview of this disease with a focus on early recognition and prevention. Recommendations for treatment strategies, derived from evidence, are presented for consideration by family and adult and geriatric acute care nurse practitioners.

Keywords: delirium, delirium superimposed on dementia, dementia, geriatrics

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The graying of America is a demographic reality as the first baby boomers turned 65 in 2011. The number of United States citizens over the age of 65 will continue to rise rapidly and doubled between 2011 and 2050 to approximately 80 million.¹ Data from the most recent US Census Project indicate that the population of individuals 90 years old and over will double from 4.7% in 2010 to 10% by 2050.² The implications for health care in this nation are staggering as the impact of these numbers is felt on the economy, society, families and family caregivers, and the health care industry.

Alzheimer disease (the most common form of dementia) and dementia are the 6th leading cause of death in the United States.² These devastating and incurable diseases present daunting challenges to all health care providers because individuals suffering from dementia lack the capacity to communicate problems, symptoms, and concerns in ways familiar to health care providers. Also, the nature of the disease predisposes individuals suffering from dementia to the development of problems less commonly seen in those who do not have the disease, and these syndromes present more dramatically. Delirium superimposed on dementia (DSD) occurs when individuals suffering from dementia experience delirium. DSD is often undiagnosed as a specific entity, with symptoms of delirium mistaken for a patient's usual state of dementia. It is estimated that 70% of inpatient

delirium goes undetected and that nurses correctly identify delirium in only 31% of cases.³ Causes of underrecognition include a lack of knowledge about delirium, a lack of assessment methods, and a lack of communication between and among nurses and families.⁴ Nurse practitioners are in a unique position to assess risk and identify this syndrome early in its development. The lack of standardized, consistent approaches to care in this population can be illustrated by the following case study.

CASE STUDY

Mr. H. is an 83-year-old man diagnosed with Alzheimer disease in 2011 who was admitted to the emergency department from his assisted living facility in February 2017 with a comminuted fracture of his left hip. Before his admission, Mr. H. was engaging in activities of daily living such as eating, bathing, dressing, and grooming; he was unable to engage in instrumental activities of daily living, such as managing finances, taking medication, or any activity that required executive decision making. Mr. H. was mobile without assistance or assistive devices, interacted with his fellow residents, participated in activities, and communicated regularly with family and friends. His past history included peripheral arterial disease, benign prostatic hyper trophy, hyperlipidemia, hypertension, and depression. His medication regimen included tamsulosin 0.4 mg daily, simvastatin 20 mg daily, lisinopril 10

mg daily, and sertraline 75 mg daily. His sensory deficits (myopia and presbycusis) were corrected with glasses and hearing aids. His dentition was poor, with missing and decayed upper teeth and a full set of lower dentures. His appetite was excellent. Mr. H. was pleasant and social, and, although he could become frustrated when challenged by memory and task issues which he could not complete, he responded well to cues from staff and family. He had no history of behavioral problems or violence.

Upon admission to the emergency department, the diagnosis of hip fracture was made. Mr. H. was made comfortable with pain medication and sedation, and he was transferred to a surgical unit to await surgical repair of his hip. (Mr. H. was admitted without glasses, hearing aids, or dentures.) Upon awakening from his initial sedation, Mr. H. was disoriented to time, place, and person. His speech was incoherent and garbled. He was hallucinating, attempting to remove his clothing and get out of bed. He began shouting at staff and was considered disruptive. He was medicated with 5 mg haloperidol intramuscularly and 1 mg morphine sulfate intravenously. Mr. H. became mildly sedated but continued to have episodes of agitation and aggression. He became hyperverbal and physically assaulted a nurse. The medication regimen was continued with a repeated dose of haloperidol 5 mg intramuscularly; physical restraints were used, and the family was called to sit with the patient. Family caregivers reported that this was a profound change in his mental status and sought explanations from staff regarding this new behavior. The family was advised that all of Mr. H.'s laboratory parameters were normal, that a head computed tomographic scan indicated some brain atrophy but no cerebral event, and that the change in behavior could be attributed to Mr. H.'s dementia. Mr. H.'s mental status continued to deteriorate postoperatively. A palliative care consultation was requested. The palliative care nurse practitioner determined that Mr. H. had DSD secondary to pain, surgery, and a fractured hip. His haloperidol was discontinued, and his pain medication was adjusted. Mr. H.'s agitation resolved; however, 1 month after his discharge back to the assisted living facility, Mr. H. continued to have disordered

thoughts, hallucinations, and periods of agitation alternating with periods of somnolence.

DSD

Delirium is a neurologic disorder of acute onset characterized by sensory, motor, and cognitive fluctuations; delirium can be preventable and completely reversible. Dementia is chronic and often insidious, with an onset that can span years; dementia is not reversible. Delirium and dementia are 2 different and distinct pathophysiologic processes, each possessing symptoms that so overlap that they are often indistinguishable to the practicing clinician.⁵⁻⁸ Although diagnostic criteria for each condition (dementia and delirium) are outlined in standard databases (*Diagnostic and Statistical Manual of Mental Disorders, 5th Edition* and *International Statistical Classification of Diseases, 10th Revision*), there are no standardized criteria for DSD. DSD is associated with increased mortality and morbidity, longer recovery rates (from the presenting problem [eg, hip fracture]), higher cost, increased risk for falls, long-term or permanent institutionalization, and longer lengths of stay.⁹⁻¹² Individuals with dementia who develop delirium are more likely to die within a year of initial presentation.^{13,14}

Patients with DSD may have symptoms of delirium for 3 to 6 months after initial presentation (compared with patients who experience delirium without underlying dementia). In some cases, delirium associated with dementia persists for up to 1 year.¹⁴ DSD, which resolves within 2 weeks, is associated with better recovery. Failure to recognize and/or prevent DSD is associated with \$38 to 152 billion annually.¹⁵ The incidence of delirium in the acute care setting is high; it is variable from 18% to 35% in general medical units¹⁶ and is up to 88% at the end of life.^{17,18}

Dementia is an independent risk factor for DSD, and the more advanced the dementia, the greater the risk for DSD. Additional factors that predispose an individual to DSD include hip fracture and length of subsequent surgery, low body mass index, sensory impairment (visual and/or auditory), fecal impaction, history of alcohol use, depression, stroke, polypharmacy, psychoactive drugs, pain, opioids, sedatives, restraints, abnormal laboratory results, and admission to an intensive care unit.^{3,9,17,19,20} In

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