**CLINICAL VIGNETTE**

# Hypoactive Delirium in an Elderly Patient with Dementia and Acute Urinary Tract Infection

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A 97-year-old female custodial care resident of a local skilled nursing facility is followed monthly. At baseline, she is interactive, makes eye contact, and responsive to questions. Her mood varies and she expresses sadness and tearfulness, at some visits, while expressing happiness at others. At a regularly scheduled visit she was less responsive, did not move or lift her head nor make eye contact. She did not respond to questions. The nursing staff reports that she has not been speaking for several days and been mostly watching television in her room. They reported no falls, no signs of pain, and no overt signs of infection. She was is eating less, but having regular bowel movements.

Past medical history includes: Alzheimer's dementia, major depressive disorder, hypertension, glaucoma, insomnia, non-toxic multinodular goiter, osteoarthritis, spinal stenosis, recurrent falls with dependence on wheelchair, gastroesophageal reflux, and urinary incontinence.

Past surgical history includes bilateral cataracts, total abdominal hysterectomy and bilateral salpingo-oophorectomy, lumpectomy, blepharoplasty, and varicose vein surgery.

Family history includes dementia in her mother, stroke in her father, as well as depression and Parkinson's Disease in her brother.

She is widowed with two adult daughters, one who lives locally and another out of state. The patient is a never smoker and does not use alcohol or illicit drugs.

The patient is dependent for all iADLs and all ADLs other than self-feeding.

Medications include: daily Acetaminophen 1000 mg BID, Amlodipine 2.5 mg, Aspirin 81 mg, Multivitamin 1 tab, Omeprazole 20 mg, Sertraline 50 mg, and Turmeric.

Review of systems was not obtainable.

She appeared well nourished, comfortably sitting in a wheelchair with little spontaneous movements. Vital signs include: T 97.5°F, Blood Pressure is 136/72, Pulse 76, RR 20 with 94% O2 saturation on room air. She does not respond to voice or to gentle touch. She wears a diaper and compression stockings. A comprehensive physical exam is unremarkable other than minimal interaction.

Laboratories include normal complete blood count and chemistries. Urinalysis was cloudy, positive for nitrite and leukocyte esterase, with greater than 50 WBC. Urine culture grew greater than 100,000 colonies of pan sensitive E. coli. She was treated with oral cephalexin 500 mg 3 times per day and returned to her baseline mental status.

***Discussion***

Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5) criteria for delirium include: a disturbance in attention, awareness, and cognition that develops over hours to days, represents a change from baseline, and tends to fluctuate in severity over the course of the day. The disturbance in attention, awareness, and cognition should not be explained by pre-existing, established or evolving neurocognitive disorder nor occur in the context of a severely reduced level of arousal such as a coma. Furthermore, there should be evidence that the disturbance is a direct physiological consequence of the medical condition, substance intoxication or withdrawal, or toxin exposure.

Although delirium can occur at any age, elders are at increased risk,[1] and are more susceptible to delirium when biologically stressed.[2,3] Upon presentation to the emergency department, delirium is reported in 8–17% of seniors and 40% of nursing home residents.[1] This association is demonstrated by our patient who is 97 years old, with underlying dementia, residing in a nursing home and was biologically stressed with an occult urinary tract infection.

Delirium is underdiagnosed, especially with underlying dementia.[2,4,5] Delirium is estimated in 22-89% of older adults with dementia[6] and is associated with adverse outcomes including accelerated and long-term cognitive and functional decline, need for institutionalization, re-hospitalization, and increased mortality.[6] Despite negative patient outcomes, delirium superimposed on dementia is often unrecognized by clinicians caring for such patients.[6]

Even among elders without underlying dementia, delirium leads to adverse outcomes including increased mortality, longer

hospital stays, and diminished physical recovery.[7] Delirium has also been associated with increased risk of developing future dementia.[8-11] Outcomes are more severe with prolonged delirium, and many patients with prolonged delirium never return to baseline.[12]

Multiple delirium subtypes are based on the associated motor symptoms: hyperactive, hypoactive, or mixed.[2,13] Hyperactive delirium is characterized by motor agitation, restlessness, and sometimes aggressiveness. Hypoactive delirium has motor retardation, apathy, slowing of speech, and patients can appear to be sedated.[3,14] The hypoactive subtype occurs more often than the hyperactive subtype,[13,15] though less likely to be recognized,[2,13,16,17] due to the lack of agitation and behavioral problems. Patients with hypoactive delirium are often perceived as cooperative.[17]

There is mixed evidence regarding which subtypes of delirium lead to worse outcomes. Some studies report worse prognosis after hyperactive delirium,[16,18] while others report worse prognosis following hypoactive delirium.[15,19] The hyperactive vs hypoactive presentation of delirium are managed differently. Neuroleptics and/or physical restraints may be needed for motor agitation and behavioral problems in patients with hyperactive delirium.[20,21]

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