


Atypical Presentations among Older Adults with COVID-19 Disease: A Need for Broadening the Differential Diagnosis

Gerontology & Geriatric Medicine
Volume 7: 1–4
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DOI: 10.1177/2333721421999313
journals.sagepub.com/home/ggm


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Abstract

Typical presenting symptoms of COVID-19 have been reported to be common in older adults. Current guidelines by the World Health Organization (WHO) and Centers for Disease Control (CDC) for testing and diagnosis are based on the presence of these typical symptoms. Several older adults seen at our hospital have presented atypically with symptoms such as delirium, falls, increasing the need for attention to diagnostic protocols since this has significant implications for early detection and patient outcomes, infection control and promotion of safety among healthcare providers. With the increased risk of fatality among older adults with COVID-19, appropriate diagnostic protocols are needed to ensure early diagnosis and management. Recognizing these atypical presentations in nursing homes would also facilitate early screening and cohorting in these congregate living facilities where older adults have had disproportionately high morbidity and mortality rates. We present two patients who presented with delirium and falls, found to have COVID-19 infection.

Keywords

COVID-19, atypical, delirium, fall, older adults

Manuscript received: February 4, 2021; **final revision received:** February 4, 2021; **accepted:** February 9, 2021.

Introduction

Studies have shown that older adults and persons with multiple comorbidities are at higher risk of worse outcomes from infection with SARS-CoV-2 (Bialek et al., 2020). Typical presenting symptoms of COVID-19 include fever (98%), cough (76%), dyspnea (55%), and myalgias or fatigue (up to 44%) (Huang et al., 2020; Zhu et al., 2020). These symptoms have also been reported to be common in older adults. A recent study found that the most common presenting symptoms among a group of older adults studied were shortness of breath (76%), fever (52%), and cough (48%) (Arentz et al., 2020). Current guidelines by the World Health Organization (WHO) and Centers for Disease Control (CDC) for testing and diagnosis are based on the presence of these typical symptoms (CDC, 2020a; WHO, 2020). Several older adults seen at our hospital have presented atypically, increasing the need for attention to diagnostic protocols since this has significant implications for early detection, infection control, and patient outcomes. We present two patients who presented with atypical symptoms, found to have COVID-19 infection.

Case Descriptions

Case 1

An African American female in her early 90s with a history of diabetes, hypertension, and prior pulmonary embolism presented from a nursing home with recurrent falls. She reported that she had had multiple falls the week prior to presentation, associated with dizziness and feeling of faintness. She reported that she had never had as many episodes of dizziness like this before. On the morning of presentation, she felt dizzy when she got out of bed, but had to use the restroom. As she was walking to the restroom, she felt light headed and fell but did not lose consciousness. She denied chest pain, shortness of breath, palpitations, fevers, chills, cough, sore throat,

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nausea, vomiting, or abdominal pain. She did report a poor appetite and some loose stools 2 weeks prior to presentation. Notably for potential fall risk medications, she was taking furosemide. Her examination revealed an oxygen saturation of 98% on room air, BP 153/82, Respiratory Rate 17, Pulse 100, Temperature 37.1°C. She demonstrated no orthostasis in her blood pressure readings from the lying to standing position. The rest of her exam was unremarkable. A SARS-CoV-2 screen was positive. Her laboratory results however revealed new abnormal laboratory findings including leukocytosis of 13.2, thrombocytosis of 480, elevated C-reactive protein (CRP) of 114, lactate dehydrogenase (LDH) 374, D-dimer 6,460, folate levels of 4.7. She had a computerized tomography (CT) scan of the chest, abdomen, and pelvis which showed regions of atelectasis within both lungs and no focal consolidation. It also showed mild left lateral compression type pelvic injury, with left inferior pubic ramus, and left lateral superior pubic ramus fractures with left sacral ala fracture. She was seen by orthopedic surgery who recommended non-operative management including pain management and physical therapy. Her hospital course remained unremarkable and her dizziness resolved. She was subsequently discharged to a Subacute Rehabilitation Facility.

Case 2

A 77-year old male with a history of dementia, prostate cancer, heart failure with reduced ejection fraction (40%–45%) presented from a nursing home after being found to be more altered and lethargic than normal. He had no fever or cough. His daughter felt that he was more lethargic and had a reduced appetite needing to be fed. Oxygen saturation on EMS arrival was 97% on room air, BP 92/50, Respiratory Rate 22, Pulse 76, and Temperature 37.4°C. His exam was unremarkable. His laboratory results however revealed new abnormal laboratory findings including thrombocytopenia of 91, elevated transaminases with aspartate aminotransferase (AST) 106, elevated blood urea nitrogen (BUN) 44, and creatinine 1.4, hypocalcemia with a corrected calcium level of 8.0 and hypomagnesemia of 1.3. His other lab values showed elevated C-reactive protein (CRP) of 75, lactate dehydrogenase (LDH) 573, D-dimer 1700. Urinalysis showed no evidence of infection. A SARS-CoV-2 test was done and found to be positive. His chest X-ray and head CT scan were unremarkable.

His hospital course subsequently was complicated by increasing oxygen demand. His respiratory and mental status subsequently improved and he was discharged back to the nursing home.

Discussion

With the increased risk of fatality among older adults with COVID-19, appropriate diagnostic protocols are needed to ensure early diagnosis and management.

Current treatment guidelines recommend that patients with mildly symptomatic COVID-19 and risk factors for severe disease should be closely monitored, since in some patients the clinical course may rapidly progress (NIH, 2020). Early screening and identification of high-risk patients is therefore critical. Current guidelines by WHO and CDC for testing and diagnosis are based on the presence of typical symptoms (WHO, 2020; CDC, 2020a). Several older adults at our institution including the two patients presented here have not presented with typical symptoms of COVID-19, but present with symptoms found commonly among older adults presenting with an infectious process including falls, delirium, malaise, and poor oral intake (Samaras et al., 2010). There have also been other case reports of older patients presenting similarly (Alkeridy et al., 2020; Norman et al., 2020). Other reports have described CNS complications of SARS-CoV-2 infection (Mao et al., 2020; Poyiadji et al., 2020; Zhou et al., 2020). Zhou et al. (2020), in a report of a patient with SARS-CoV-2 encephalitis presented the first evidence that SARS-CoV-2 could directly invade the nervous system. In a review of mortality risk factors among older adults with COVID-19, Sun et al. (2020) reported a significantly higher percentage of consciousness disorders among patients who died in comparison to those who were discharged. One of the patients described here presented with altered mental status and lethargy, a manifestation of hypoactive delirium similar to other reported CNS manifestations of COVID-19 (Rozzini et al., 2020). Lethargy is a pathological state of sleepiness or deep unresponsiveness and inactivity in contrast to fatigue which manifests as a lack of energy and motivation and has been described in up to 44% of patients with COVID-19 (Huang et al., 2020; Zhu et al., 2020).

One of the patients presented here had a fall with a pelvic fracture. Falls are a major cause of morbidity and mortality among older adults (Berková & Berka, 2018). Falls have been found to be a common presentation of older adults in various infectious conditions likely due to increasing weakness associated with illness. (Samaras et al., 2010). Falls have also been reported in patients with Covid-19 disease (Norman et al., 2020). The underlying mechanism may be generalized weakness which has been reported as a common presentation of older adults with Covid-19 disease.

The potential risk of increased mortality among patients presenting with atypical symptoms raises the question as to the need to consider these as possible first line presentations of older adults with COVID-19 to facilitate early screening and management. Consideration should be made in including these features in the current diagnostic criteria (CDC, 2020a; WHO, 2020). Though not included in the diagnostic criteria, the CDC recommends the need for emergency evaluation for COVID-19 patients with new onset confusion or changes in wakefulness (CDC, 2020b). With the increasing evidence that screening based on typical symptoms alone,

is insufficient to identify COVID-19 in older adults (Kimball et al., 2020; Roxby et al., 2020), there are emerging recommendations emphasizing the consideration of COVID-19 in older adults with any significant change from baseline (D'Adamo et al., 2020).

Defining atypical symptoms in older adults is critical for determination of the true prevalence of COVID-19. With the evolving nature of COVID-19, several other symptoms have been added to the diagnostic criteria. Anosmia was first reported as the primary presentation of a patient in a case report. Subsequent patient reviews have demonstrated it to be a common symptom among patients with COVID-19 (Vaira et al., 2020). With the multiple case reports on atypical presentations of older adults with COVID-19 with geriatric syndromes, further studies are needed to characterize these clinical presentations among older adults, risk factors, and potential outcomes of patients presenting atypically. In addition, the role of underlying co-morbidities and its effect on clinical presentation needs to be studied. Abnormal laboratory findings have been described among patients with COVID-19 with some of these laboratory findings being increasingly associated with disease severity and mortality. It is important to characterize laboratory findings among patients presenting atypically as this could help in early prognostication of these patients to determine disease severity. This is particularly important since current treatment recommendations are based on presence of typical symptoms and oxygen requirements. This could provide some light and consideration as to other treatment criteria for COVID-19 if laboratory findings associated with more severe disease are found commonly among patients presenting atypically.

Conclusion

Recognizing the occurrence of atypical presentations such as falls, and delirium also raises the question of the utility of screening every patient that comes in with a fall or delirium for SARS-CoV-2 infection. Screening these patients may help with better characterization of the disease and outcomes among older adults. Recognizing these atypical presentations in nursing homes would also facilitate early screening and cohorting. This has significant implications for patient outcomes, infection control and promotion of safety among healthcare providers. In view of the fact that several case reports with these atypical presentations have been reported, sufficiently powered studies with adequate sample sizes are needed to characterize these atypical presentations, associated risk factors, and potential outcomes of patients presenting atypically. This may have significant implications for future diagnostic and treatment criteria.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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