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Case Report GERIATRIC

An atypical presentation of COVID-19: Hidden risk for seniors to misdiagnose

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ABSTRACT

The outbreak of coronavirus disease (COVID-19) was announced as a pandemic by the World Health Organization in March 2020. Clinical manifestations include cough, fever, dyspnea, myalgia, and loss of sense of smell and taste. Less common extrapulmonary signs and symptoms such as cutaneous manifestations, diarrhea, confusion, functional decline have been reported in the literature. Older patients with multiple comorbidities are at a greater risk for severe disease and death and are vulnerable to atypical presentations due to changes in organ systems, multimorbidity, cognitive impairment, and sensory disturbances. In this case, a 77-year-old patient diagnosed with COVID-19 pneumonia presented with atypically acute urticaria with angioedema was reported. Although there were no typical signs of the disease, such as cough or shortness of breath, the patient's laboratory values, and chest imaging were compatible with COVID-19. Therefore, the diagnosis of COVID-19 should be considered in older patients presenting with subtle signs or cutaneous manifestations.

Keywords: Aged; angioedema; COVID-19; skin manifestations; urticaria.

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Coronavirus disease (COVID-19) has become a global public health concern, and various atypical clinical presentations were described in the literature. Recognition of COVID-19 may be challenging with non-specific cutaneous manifestations in the elderly. In this case, an older adult presenting with acute urticaria and angioedema is reported.

CASE REPORT

A 77-year-old man was admitted to the immunology and allergy outpatient clinic with a history of swelling around lips and pruritic, erythematous papular rash in the chest, arms, and legs occurred 7 days ago. His relatives photographed the lesion in the leg of the patient (Fig. 1). He had no rash, fever, chest pain, cough, dyspnea, or loss of smell in the admission. His recent medical history revealed admission to the emergency department twice, 36 hours apart due to angioedema and urticaria. He was treated with pheniramine 45.5 mg and dexamethasone 8 mg in each application and referred to the dermatology outpatient clinic with rupatadine treatment (10 mg a day) on the 4th day of urticaria. He neither had a history of atopic condition including angioedema or food and drug allergy before nor received non-steroidal inflammatory drugs in the previous 15 days. The plaques were resolved on the 6th day of the presentation. After the first evaluation with a negative skin prick test in the allergy clinic, he was referred to the geriatric outpatient clinics to be evaluated for other causes. The patient was receiving olmesartan medoxomil/hydrochlorothiazide (20/12.5 mg),

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Figure 1. Urticarial plaque of the patient.

vildagliptin/metformin (50/1000 mg twice a day), acetylsalicylic acid (100 mg), piracetam (800 mg twice a day), and betahistine dihydrochloride (24 mg twice a day) for the treatment of hypertension, diabetes mellitus, atherosclerotic coronary heart disease, and vertigo. He did not report weight loss, cough, sputum, or fever but complained about tiredness and weakness lasting for 1 week. Vital signs on admission were as follows: blood pressure 110/77 mmHg, heart rate 84 beats per minute, and respiratory rate 18/min. There was no swelling or erythematous plaques on his skin, and wheezes or rales were not present on auscultation. His laboratory values were summarized in Table 1.

Considering these unusual pandemic days and the elevated inflammatory markers, we ordered a chest X-ray that bilateral lower lobe infiltrates compatible with COVID-19 pneumonia were seen on the same day of his admission to our clinic. The patient was sent to the pandemic clinic. On the physical examination in the pandemic clinic, body temperature was 38.9 °C, and the oxygen saturation was 91% on room air. Since the computerized thorax tomography scan showed bilateral patchy peripherally located ground grass and consolidative opacities (Fig. 2), he was hospitalized, and PCR of upper-airway secretions (by nasopharyngeal swab) documented severe acute respiratory syndrome coronavirus 2 infection the following day.

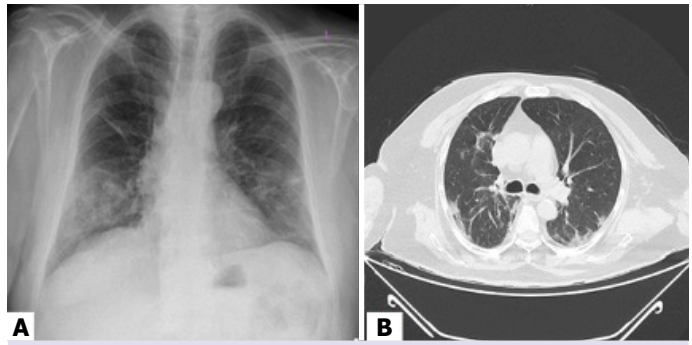

Figure 2. Radiological images of the lungs. **(A)** Chest X-ray (left) shows infiltration predominantly involving bilateral lower lung zones. **(B)** CT (right) findings identify bilateral patchy peripheral lung opacities.

Table 1. Laboratory values of the patient

White blood cell count (mcL)	13,300
Lymphocyte count (mcL)	8,500
Neutrophil count (mcL)	3,600
Hemoglobin (g/dL)	13.3
Platelet count (mcL)	382,000
Creatinine (mg/dL)	0.82
Albumin (g/dL)	35.9
Aspartate transaminase (AST) (U/L)	36
Alanine transaminase (ALT) (U/L)	31
L-lactate dehydrogenase (LD) (U/L)	400
C-reactive protein (CRP) (mg/L)	175
D-dimer (ng/mL)	703

DISCUSSION

COVID-19 is a highly contagious disease that can be presented with various symptoms and signs. The clinical picture ranges from asymptomatic infection to severe pneumonia and acute respiratory distress syndrome, and eleven clinical presentations of the COVID-19 have been described so far. Frail older adults with multimorbidity are vulnerable to deleterious effects of the infection and classical symptoms may not be seen as a presenting symptom. The typical inflammatory febrile response may not be initiated because of thermoregulation defects and immune system changes with aging [1]. Accordingly, atypical clinical manifestations of COVID-19 such as afebrile illness, diarrhea, cutaneous lesions, confusion, falls, and the functional decline may be the chief symptom in older adults [2]. In a recent study, it was reported that 40% of the older adults present with atypical symptoms of

COVID-19, and the common complaints were specified as falls, reduced mobility, weakness, and confusion [3].

Although it was previously reported that atopic dermatitis, urticaria, and allergic rhinitis might accompany pneumonia [4], the cutaneous manifestations of the COVID-19 have been still under investigation. There is growing evidence about described manifestations of the disease, including maculopapular rash, urticaria, vesicular lesions, livedo reticularis, petechial, and chilblain [5]. The variety of cutaneous manifestations suggests different pathophysiological mechanisms that need to be elucidated [6]. It has been reported that 19% of the patients diagnosed with COVID-19 have urticaria. The symptoms last for up to 1 week [7]. The relationship between acute urticaria, drugs, and viral infections has been well documented [8]. Various pathophysiological mechanisms were blamed for the development of acute urticaria and angioedema type1 hypersensitivity reaction. Viral activate mast cells release inflammatory cytokines and histamine. Inflammatory response leads to increased capillary permeability. Urticaria may be a prodromal sign of infection, and angioedema may accompany COVID-19-related acute urticaria [9] as in our case.

In addition to the clinical complexity of the disease, age-related changes, especially in the immune system, atypical presentations of the disorders, and comorbidities, make it challenging to recognize the COVID-19 disease in older adults. Moreover, sensory losses and cognitive impairment, common in this population, complicate getting an appropriate medical history [10].

Conclusion

During these unusual pandemic days, health-care professionals should keep in mind that COVID-19 may have atypical manifestations, particularly in the elderly, and screening for COVID-19 may be helpful in elderly patients with suspicious clinical findings. Failing to diagnose infected individuals increases the risk of transmission. Thus, the chain of infection may be broken by providing early diagnosis and treatment and preventing unnecessary clinical visits.

Informed Consent: Written informed consent was obtained from the patient for the publication of the case report and the accompanying images.

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