

Could it be COVID-19? Atypical presentations in a pandemic

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Dear Editor,

We write in the midst of the COVID-19 global pandemic to share and stimulate discussion on the diagnostic challenge presented by novel coronavirus. The diverse and atypical symptoms attributed to COVID-19 infections require a high degree of suspicion in almost all patient presentations.¹⁻³ This clinical ambiguity is amplified in the face of testing limitations,⁴ with delays in results and poor sensitivity, as well as atypical presentations of other conditions, as we encountered in this case.

Recently, a patient in their sixties arrived by emergency medical services to our rural hospital. They presented with agitation and delirium of such severity that the administration of both chemical and physical restraint was required for ambulance egress. The patient was febrile (37.9), tachycardic (110), normotensive, normopneic (SpO₂ 96%) with convincing cellulitis of the leg. Collateral history identified no preceding sick contacts or travel, and a history of fibromyalgia with no routine medication use.

After initial assessment in the negative pressure room, the patient was admitted to hospital with (1) droplet precautions, (2) IV fluids and (3) IV antibiotics for cellulitis.

Altered sensorium persisted; head CT was negative. Blood and urine cultures, toxicology, chest X-ray [Figure 1], electrocardiogram and troponin were negative. The delirium lingered 4 days into admission while, interestingly, the fever resolved, and cellulitis, neutrophilia and markedly elevated CRP were decreasing. The possibility of atypical presentation of COVID-19 infection was again considered; nasopharyngeal swab however proved negative.

On day 5, the patient developed a new fever of 38.7 degrees, prompting repeat investigations and a second COVID-19 swab. Chest X-ray [Figure 2] showed new patchy ground-glass left-upper lobe pneumonia. An oral macrolide was added along with salbutamol and tiotropium in light of the patient's 15 pack-a-year smoking history.

The patient's respiratory status declined slightly in the following day with new cough, exertional shortness of breath and decreasing oxygen saturation to 92% on room air. A third chest X-ray [Figure 3] suggested multifocal pneumonia with COVID-19 in the differential. Fortunately, the patient improved over the ensuing 2 days; however, discharge preceded the results of the second COVID-19 swab, which,

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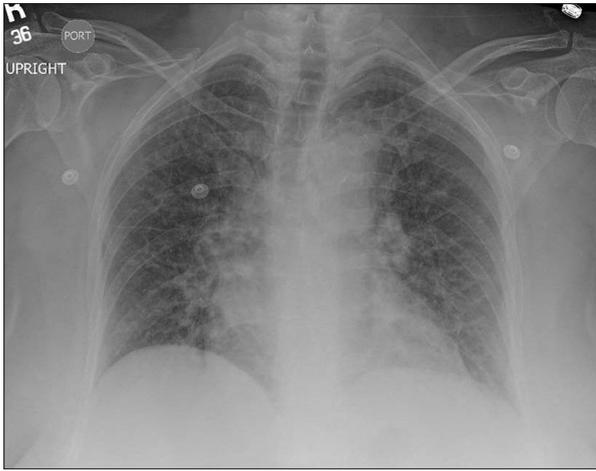


Figure 1: Portable chest X-ray with no focal abnormalities.

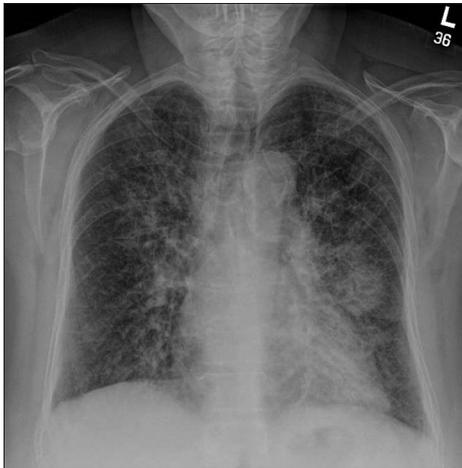


Figure 2: Chest X-ray with evidence of the left upper lobe pneumonia.



Figure 3: Portable chest X-ray with findings of multifocal pneumonia.

ultimately, proved to be negative. Given the clinical possibility of COVID-19 (1) public health was involved in discharge planning and (2) hospital

occupational health was alerted to ensure that staff surveillance occurred if deemed appropriate.

The COVID-19 pandemic has made clinical decision-making challenging. This case demonstrates the importance of a high index of suspicion in admitted non-COVID-19 patients, and repeated appropriate investigations to assist in further clarifying diagnoses. It raises the question of how best to manage patients who, during a pandemic, have clinical findings very suggestive of a contagious disease but have negative and/or pending swabs on discharge, and unconvincing contact or travel history within the context of increasing community spread.

Clinical management in the face of diagnostic uncertainty is something we understand well in rural and remote settings. In the absence of confirmatory testing, treatment decisions during a pandemic must be made that ensure patient and community well-being. In our case, consultation with public health helped guide outpatient management and follow-up of this patient with COVID-19-like atypical pneumonia – at their recommendation, the patient was instructed to remain in self-isolation until 24 h symptom free. It will be important for rural clinicians to share strategies and challenges in this evolving clinical landscape, as COVID-19 considerations continue to permeate most aspects of care.

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Need for organised human involvement to produce rural physicians

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Dear Editor,

In the review recently published by Asghari *et al.*,¹ the factors influencing the recruitment and retention of rural physicians were divided into three categories: personal background, medical training and practical conditions. These factors were also each divided into an additional three categories: pre-medical school, medical school and post-medical school stages.¹ Our University, Jichi Medical University (JMU), Japan, was established in 1972 to improve the health and well-being among medically underserved areas. JMU has produced rural physicians and dispatched them nation-wide.^{2,3} While the students who enter JMU take out medical school loans to cover their studies, they are exempt from repaying the loans provided they work for public medical institutions, including those in rural/remote areas, in their home prefectures for 9 years (the period required for repayment). Almost all physicians (approximately 97% of 3203 physicians) graduating from JMU fulfil their obligatory work assignment during the required period.

The factors categorised by Asghari *et al.*¹ are felt to be well arrayed, and

indeed, JMU follows most of the categorised factors of medical training in medical school and post-medical school stages, as well as parts of the categorised factors, regarding the practical conditions (i.e. generalism, work and community environment and loan payment).

We would like to add our comments concerning a potentially important factor of the medical and post-medical school stages in our experience, as the factor was not much described in the review (as one of the practical conditions).¹ According to the unique system of JMU, a few students enter the school's program from their home prefecture and return to the prefecture after graduating as a physician.² In the medical school stage, all students live in dormitories. In the residential organisation, students not only form a network of comrades but also have associations between junior and senior students in the same home prefecture. At the post-medical school stage, they work with those associations in the same prefecture. Moreover, they systematically discuss their carrier paths and receive mentoring from administrative officers of their home prefecture governments, as well as from tutorial teachers of

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JMU assigned to each prefecture. The officers and tutorial teachers occasionally hold meetings with the prefecture and JMU. Based on JMU's history, the efforts of not only individuals, but also various types of organised human involvement, can be used as a factor to increase the number of students/physicians working in medically underserved areas.

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