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Acute respiratory distress syndrome during a pandemic—an obvious diagnosis?

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A man aged 28 years was admitted to hospital with fever and headache in April, 2020. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) PCR testing from an oropharyngeal swab was negative, and he was discharged from hospital and sent home the next day. 8 days later, he presented again with dry cough and severe respiratory distress. Oxygen saturation was 72% with 15 L/min of oxygen via a non-rebreather mask. He was immediately intubated and transferred to the intensive care unit (ICU) because of severe acute respiratory distress syndrome. Chest x-ray revealed bilateral, diffuse, homogeneous infiltrates with a positive air-bronchogram-sign (figure), as also seen in viral pneumonias, such as COVID-19. Bronchoscopy showed no obstruction, and oxygenation and decarboxylation stabilised only with venovenous extracorporeal membrane oxygenation (ECMO). Laboratory work-up revealed acute kidney injury (creatinine 1·70 mg/dL), leucocytosis ($16\cdot4\times 10^9$ cells per L), lymphopenia ($1\cdot0\times 10^9$ cells per L), elevated D-dimer (9·13 mg/L), C-reactive protein

(335 mg/L), and procalcitonin (8·37 ng/mL). Immunological testing (anti-nuclear, anti-neutrophil cytoplasmic, and anti-glomerular basement membrane antibodies) was inconspicuous. Cultures, bacterial PCR, and viral PCR, including SARS-CoV-2 from bronchoalveolar fluid remained repeatedly negative. Blood and urine cultures, Legionella and pneumococcal antigen tests, Galactomannan and β -D-glucan, an HIV test, and Puumala and Hantaan antibody tests were negative. Environmental history, obtained from the patient's life partner via telephone, revealed a hobby of breeding animals (llamas, emus, geese, goats, sheep, and pigeons). Whole blood PCR and serum titres of *Chlamydophila psittaci* returned positive, thus confirming the diagnosis of psittacosis. The patient improved under empiric antibiotic therapy with piperacillin and tazobactam at 4·5 g four times a day and azithromycin at 0·5 g once a day. The patient was weaned from venovenous ECMO after 9 days, extubated 2 days later, and discharged fully orientated from ICU on day 13.

Psittacosis is a rare but likely underdiagnosed form of atypical pneumonia, often transmitted from birds. Human infection with *C psittaci* typically presents with high fever, headaches, and dry cough. Obtaining a thorough medical history remains pivotal, especially in times of a pandemic as radiographic imaging is non-specific for psittacosis and COVID-19.

Contributors

ACR and PE wrote the Clinical Picture. ACR, GS, and PE were directly involved in clinical management of the patient. JP and IZ-S provided clinical expertise for the patient's care. GS, JP, and IZ-S critically revised the Clinical Picture. All authors approved the final version and agreed to be accountable for all aspects related to accuracy and integrity of the work. Informed consent was obtained from the patient. He approved the use of clinical data, images, and other clinically related material for scientific purposes and publication.

Declaration of interests

We declare no competing interests.

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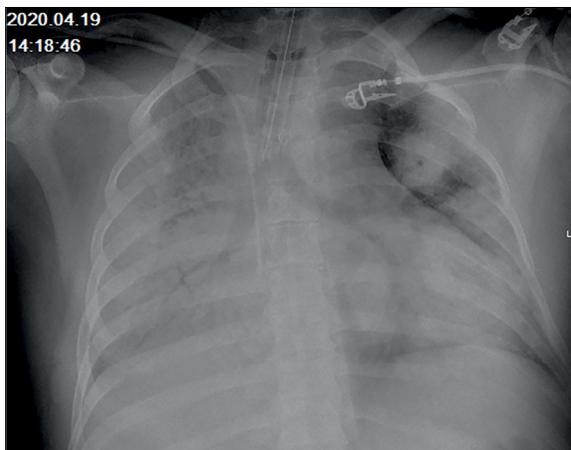


Figure: Chest x-ray with bilateral infiltrates and positive air-bronchogram-sign