

1 **Atypical presentation of COVID-19 in a frail older person**

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17 **Abstract:**

18 Common symptoms of pandemic Coronavirus disease (COVID-19) include fever and
19 cough. We describe a 94 year old man with well-controlled schizoaffective disorder,
20 who presented with non-specific and atypical symptoms: delirium, low-grade pyrexia
21 and abdominal pain. He was given antibiotics for infection of unknown source,
22 subsequently refined to treatment for community-acquired pneumonia. Despite
23 active treatment, he deteriorated with oxygen desaturation and tachypnoea. Repeat
24 chest X-ray showed widespread opacification. Post-mortem throat swab identified
25 COVID-19 infection. He was treated in three wards over five days with no infection
26 control precautions. This has implications for the screening, assessment and
27 isolation of frail older people to COVID-specific clinical facilities, and highlights the
28 potential for spread among healthcare professionals and other patients.

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30 **Introduction:**

31 The World Health Organisation characterised Coronavirus disease (COVID-19) as
32 pandemic in March 2020 [1]. In published series 44% of patients had fever on
33 admission and 89% developed it subsequently. Cough was present in 68%, fatigue
34 and sputum production in about 25% [2]. Cardiac complications such as myocardial
35 infarction or heart failure are common. Mortality rates are particularly high in older
36 people [3]. We describe a case highlighting the need to be alert for non-specific or
37 atypical presentations which may delayed testing, diagnosis and isolation.

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39 **Case report:**

40 A 94 year old man with schizoaffective disorder was admitted to hospital in the
41 United Kingdom in March 2020, early in the pandemic. He was found confused by
42 his landlady. His home was untidy and cold. Emergency department assessment
43 concluded: 'not coping at home, possible delirium or mental relapse'.

44 Further history was given by his daughter by telephone. He had ischemic heart
45 disease, his schizoaffective disorder was well-controlled on valproate semisodium,
46 and he was normally cognitively intact. He was moderately frail (Clinical Frailty Scale
47 6), and a former smoker. He lived alone and walked with a Zimmer frame. His
48 daughter visited four times a week, the last time three days previously, as she had
49 been unwell with pneumonia.

50 On arrival, his temperature was 37.4°Celsius, respiratory rate 20/minute, oxygen
51 saturation 98% on air, blood pressure 128/70mmHg and heart rate 96/minute. He
52 was drowsy, disorientated, trying to undress himself and resisting care. He had
53 wheeze and crepitations on chest examination, and abdominal pain and tenderness.
54 Blood test results included white cell count 14 (lymphocytes 0.97, neutrophils 6.3)
55 $\times 10^9/\text{L}$, C-reactive protein 258mg/L, urea 15 mmol/L, creatinine 101 micromol/L
56 (baseline 83), lactate 3.4 mmol/L. Blood culture grew *Staphylococcus epidermidis* of
57 doubtful significance. ECG showed sinus rhythm with left bundle branch block. Chest
58 X-ray (CXR) showed no consolidation. Urine culture was negative.

59 The initial diagnosis was delirium due to infection of unknown source and acute
60 kidney injury. He was treated with intravenous fluids and piperacillin/tazobactam. CT
61 abdomen with contrast showed bibasal lung consolidation. There was hypo-
62 enhancement of the cardiac apex consistent with myocardial ischemia.
63 Echocardiogram showed a dilated left ventricle with severely impaired systolic
64 function. Troponin was raised at 475ng/L (normal 0-59) suggesting type 2 myocardial
65 infarction. A Do Not Resuscitate order was agreed.

66
67 Antibiotics were changed to co-amoxiclav and clarithromycin following the CT scan.
68 Three days following admission, he remained unwell: temperature 37.5°, respiratory
69 rate 30/minute, oxygen saturation 91% on 2 litres/minute inspired oxygen. Repeat
70 CXR showed right upper and lower zones airspace opacification in keeping with
71 infection (Figure 1). Oxygen saturation deteriorated to 87% on 15 litres/minute of
72 oxygen; arterial blood gas showed pO_2 7.8kPa, pCO_2 5.3kPa. He died 5 days
73 following admission. A nasopharyngeal swab performed post-mortem was positive
74 for SARS-COV-2-RNA.

75
76 Seven nursing staff and one doctor subsequently developed symptoms. The patient
77 in the adjacent bed developed confirmed COVID-19.

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79 **Discussion:**

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81 This man living with frailty presented with non-specific features, which do not appear
82 in the symptoms listed in published reports [2,3] or guidance [4] on COVID-19. He
83 developed lower respiratory signs and was treated for bacterial pneumonia. His
84 temperature was always below 37.8°C, the diagnostic criterion for COVID-19. He
85 was managed in three different clinical areas in open six-bedded bays without
86 infection control precautions. Clinicians must be aware of the possibility of COVID-19
87 presenting non-specifically, including with delirium, particularly with signs suggesting
88 infection, so cases are not missed when they fall outside current diagnostic and
89 management guidelines. This has implications for the diagnosis and isolation of
90 COVID-19 in frail older people, with potential for spread among healthcare
91 professionals and other patients if the diagnosis is overlooked.

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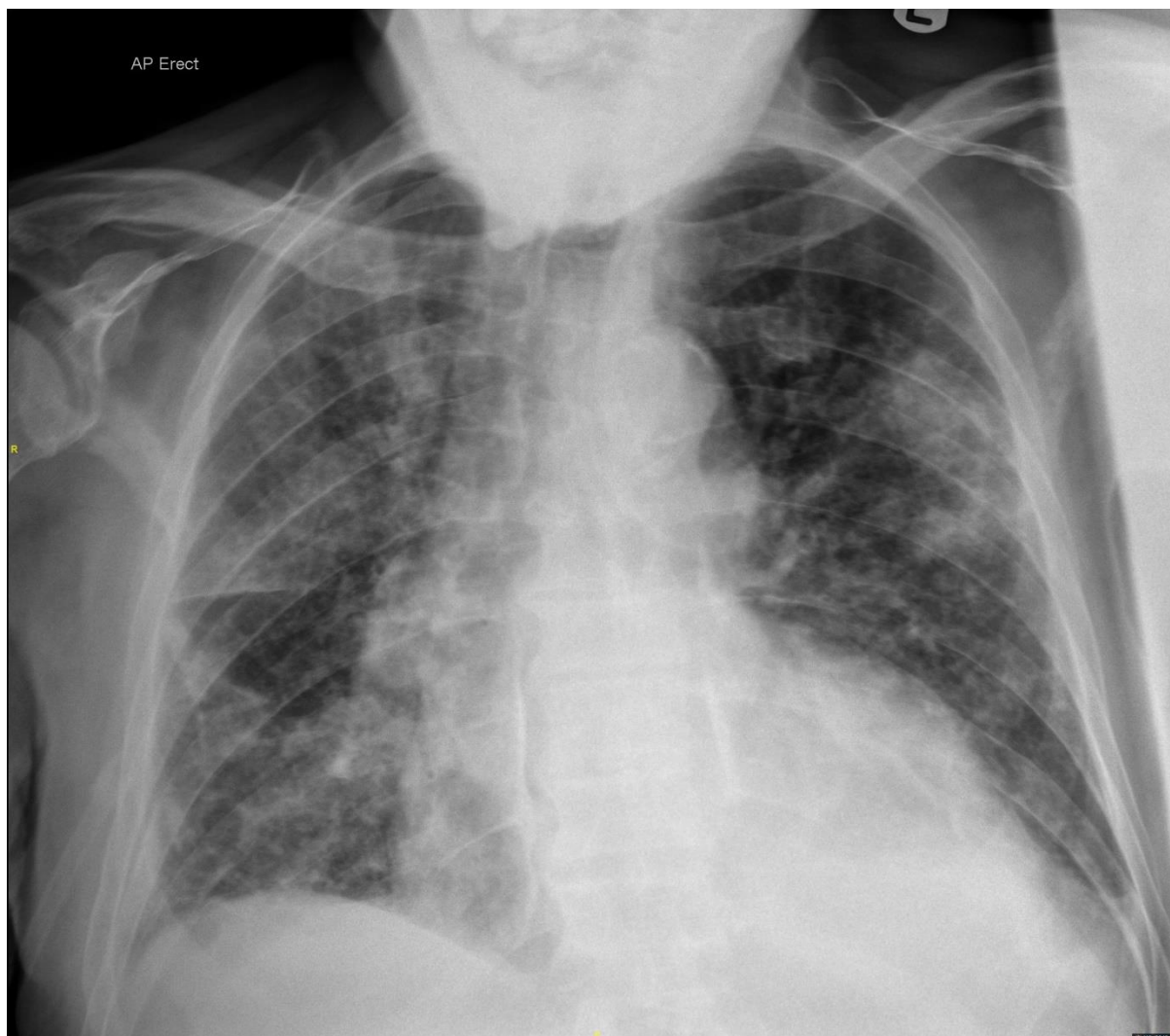
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108 Figure1: CXR showing right upper and lower zones airspace opacification and small
109 bilateral effusion.



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