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COVID-19 in an elderly woman with acute functional decline

SHORT CASE REPORT

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A woman in her late eighties was referred to Accident and Emergency because of acute functional decline with falls and increasing confusion. SARS-CoV-2 infection was confirmed 48 hours later. Many older people and residents of care homes are vulnerable to functional decline with acute illness. Healthcare professionals should be aware that such symptoms may be due to COVID-19.

A woman in her late eighties was found on the floor at home and the homecare nurse considered her to be unusually confused. She had experienced nasal congestion and increased dizziness the day before, but had no other classical signs of infection. She was transferred by ambulance to the Accident and Emergency department for assessment.

On arrival the patient was found to be afebrile with normal haemodynamic parameters. The results of neurological examination were normal, but she required considerable assistance with mobilisation. Admission to a municipal acute day care unit was considered, but the rapid loss of function was still unexplained. She was therefore referred to Acute Admissions at a local hospital for additional diagnostic testing.

The patient lived alone, used a walker to move around, and attended a daycare centre several days a week. She had mild cognitive impairment. A year earlier, she had undergone transcatheter aortic valve implantation, and echocardiography revealed a well-functioning aortic valve and good left ventricular function. She had had a pacemaker implanted because of postoperative complete atrioventricular block. Her past medical history included polymyalgia rheumatica and osteoporosis which had resulted in several previous fractures. The patient's list of regular medication included

metoprolol (extended-release tablets), pantoprazole, acetylsalicylic acid and vitamin D and calcium supplements. A few weeks prior to admission, the patient had attended an outpatient clinic (specialising in fall assessments and prevention) at her local hospital owing to dizziness and a tendency to fall. On this occasion she scored 27 out of 30 on the MMSE (Mini-Mental State Examination) and 5 out of 5 on the Clock Drawing Test, and was judged to have mild cognitive impairment. Her walking speed with a walker was 0.6 metres per second, and she scored 4 out of 12 on the SPPB (Short Physical Performance Battery), which indicated frailty with increased risk of falls and functional decline. Orthostatic hypotension and benign paroxysmal positional vertigo were considered to be probable causes of the functional impairment.

Upon examination in Acute Admissions, the patient was disoriented and struggled to give an account of events. She had a body temperature of 38.3 °C, dry mucous membranes and some pitting peripheral oedema in her legs. She also had 0.5 litres of residual urine. Auscultation revealed no abnormal lung sounds, but possibly decreased respiratory sounds on the left basis. Breathing was unimpaired with a frequency of 17 breaths/min (reference range 14–19 breaths/min) and peripheral oxygen saturation (SpO_2) 95 % (> 95 %). She fulfilled one of three criteria (altered mental status) in the quick Sepsis-related Organ Failure Assessment (qSOFA). The results of other clinical and neurological tests were normal, and her electrocardiogram was without acute or new findings compared to previous recordings.

Blood tests showed Hb 11.5 g/dl (11.7–15.3 g/dl), CRP 12 mg/l (0–4 mg/l), ESR 23 mm/h (1–12 mm/h), normal counts for leukocytes, lymphocytes and platelets, ferritin 66 µg/l (30–400 µg/l) and creatinine 79 µmol/l (45–90 µmol/l). Electrolytes, kidney and liver function tests were also normal. Urinary dipstick testing was positive for blood and leukocytes, but urinary culture showed no growth. X-rays of the lungs showed a minor degree of pleural effusion on the left side, but no infiltrates.

Differential diagnoses considered in Acute Admissions were a urinary tract infection, dehydration or a viral respiratory tract infection. The patient was given intravenous fluids and was transferred to the acute geriatric unit.

The day after admission, the patient appeared forgetful but without a marked attention deficit. She complained of worsening dizziness, but did not appear acutely ill. Since she had nasal congestion and had been hospitalised with acute functional decline of unknown cause, nasopharyngeal samples were taken to test for relevant respiratory tract microbes, including SARS-CoV-2. At the same time, she was isolated with droplet precautions. On day 2 after admission, virological testing confirmed that the patient was positive for SARS-CoV-2, and she was transferred to an infectious diseases ward in accordance with local protocols.

At no stage had the patient had respiratory symptoms, diarrhoea or abdominal pain, but she continued to suffer from dizziness and fatigue. She had a fluctuating temperature and oxygen saturation of 35–38 °C and 91–97 %, respectively, but did not require supplemental oxygen. Her CRP level increased to 54 mg/l, with normal leukocyte and lymphocyte counts. The patient was tired and weak, and was therefore given nutritional drinks and intravenous fluids. She gradually recovered in hospital, but suffered continuously with rotatory vertigo, which she herself described as an exacerbation of her known benign paroxysmal positional vertigo.

The patient was not comfortable with the thought of returning home. Ten days after admission, she was therefore discharged to a short-stay municipal unit for continued care and infection control before returning to her own home.

Discussion

We present one of the first patients in Norway to be hospitalised with COVID-19. The most commonly reported symptoms of COVID-19 are fever, shortness of breath, cough, fatigue, abdominal pain, diarrhoea and decreased appetite (1, 2).

In the elderly and frail, acute illness can give rise to symptoms from organ systems that are already compromised (3, 4). Reduced physiological reserves mean that acute diseases can give rise to symptoms at an earlier stage than in more robust individuals (4). SARS-CoV-2 infection did not cause respiratory symptoms in our patient, but its effects were sufficient to cause falls and increased confusion and to render her unable to cope at home (5). How often COVID-19 presents in this manner is largely unknown.

Accident and Emergency departments often assess patients in cases where relatives or carers notice a change in the person's condition. Clinical information can be sparse and the history taking difficult. Obtaining good-quality information from those who know the patient is important. Rapid functional decline may be due to serious underlying pathology, and hospitalisation is often indicated.

The patient was in contact with numerous healthcare professionals from the time she became acutely ill to when COVID-19 was confirmed, and a considerable number of health care workers had to be quarantined. Our patient's case contributed to changes in pre-triage procedures in Acute Admissions, such that patients with acute functional decline or delirium are now assessed in single rooms with use of droplet precautions.

The prognosis of elderly multimorbid patients who contract COVID-19 is not always hopeless, and the vast majority recover (6). Our patient was able to be discharged to her own home despite her advanced age and frailty.

Many elderly persons living in their own homes or in care homes are vulnerable to physical and cognitive functional impairment in the event of acute illness. Therefore, healthcare professionals in primary and secondary care need to be aware that rapid functional decline, falls and delirium may be caused by COVID-19.

The patient's next-of-kin have consented to the publication of this article.

The article has been peer-reviewed.

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