

## Bilateral tension pneumothorax: An unusual complication in a COVID-19 recovered patient

Sir,

The coronavirus disease (COVID)-19 pandemic, which gained momentum in the early months of the year 2020, continues to rage across the world.<sup>[1]</sup> Accordingly, an increasingly large number of COVID-19 recovered patients are presenting to hospitals for unrelated diseases. We recently encountered a COVID-19 recovered patient, who underwent an elective surgery and later presented with an unusual complication.

The patient was a 23-year-old male who had developed a swelling over the right forearm which was first noticed two months back. On examination, a 5 cm by 4 cm sized swelling with superficial ulceration was found on the volar aspect of the right forearm just above the wrist joint. A provisional diagnosis of giant cell tumour of right distal radius was made after imaging and excision of the lesion followed by centralisation of the ulna and wrist arthrodesis was planned. In the preanaesthetic checkup, it was noted that he was a tall and thin-built male. He disclosed that he was diagnosed with COVID-19 about 4 weeks back for which he had been hospitalised and given oxygen by face mask for 4 days. This was followed by an uneventful recovery. He did not have any dyspnoea at rest or on exertion and his exercise tolerance was normal. His vitals and general physical examination as well as systemic examination were unremarkable. All biochemical investigations were normal and the reverse transcription polymerase

chain reaction (RT-PCR) for COVID-19 was negative. The preoperative chest radiograph was also normal.

The patient was given general anaesthesia (endotracheal intubation with positive pressure ventilation) along with ultrasound-guided right supraclavicular block as the expected duration of surgery was five hours. The surgery was uneventful and he was noted to be recovering well on the morning of postoperative day one.

However, in the evening, he complained of sudden onset epigastric pain and dyspnoea. On examination, he had a pulse rate of 130 beats per minute and blood pressure of 80/60 mm of Hg. The arterial blood gas analysis showed an oxygen saturation of 70% along with respiratory acidosis (pH 7.091, pCO<sub>2</sub> 77.4 mmHg, pO<sub>2</sub> 52.7 mmHg, HCO<sub>3</sub><sup>-</sup> 23 meq/L). Cardiac enzymes were normal and the electrocardiogram revealed low voltage QRS complexes. Appropriate management was started and an urgent chest radiograph was ordered. The chest radiograph revealed bilateral



**Figure 1:** Chest radiograph showing bilateral pneumothorax

tension pneumothorax [Figure 1]. The possibility of supraclavicular block-related pneumothorax was excluded as such a complication would be unilateral and is not common in ultrasound-guided procedures. In view of the tension pneumothorax, two large-bore (16G) needles were inserted into both the 2<sup>nd</sup> intercostal spaces and urgent intercostal drainage tube (ICD) insertion was attempted. However, the patient suffered a cardiac arrest while the ICD was being inserted. Cardiopulmonary resuscitation was initiated but despite all efforts, the patient could not be revived.

Pneumothorax is a known complication of mechanical ventilation (barotrauma) and several cardiopulmonary diseases. Apart from these causes, smoking, thin and tall habitus and chest trauma are other risk factors for spontaneous pneumothorax. However, spontaneous pneumothorax has been reported in patients recovered from uncomplicated COVID-19 in the absence of mechanical ventilation or lung damage on imaging.<sup>[2]</sup> Such cases may present weeks after recovery from COVID-19 with pneumothorax. While most such cases have unilateral pneumothorax, bilateral pneumothorax has been reported in only four patients as per our knowledge.<sup>[3-5]</sup> Bilateral spontaneous pneumothorax is potentially life-threatening and out of these four cases, only one survived.<sup>[5]</sup> Our patient had a similar profile and was also tall and thin built; both these factors could have contributed to our case.

The cause of spontaneous pneumothorax after COVID-19 is unclear and several causes have been hypothesised. These include alveolar rupture due to inflammation, lung parenchymal ischaemia, aggressive coughing and violent respiratory efforts due to ventilation-perfusion mismatch.<sup>[6]</sup> However, our patient did not have cough both in the preoperative and postoperative period.

Considering the potentially high mortality, clinicians should remain vigilant when dealing with COVID-19 recovered patients and spontaneous pneumothorax should be included in the differential diagnosis when such patients present with chest pain and dyspnoea.

#### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the legal guardian has given his consent for images and other clinical information to be reported in the journal. The guardian understands that names and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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#### Conflicts of interest

There are no conflicts of interest.

**Vidhi Chandra, Pooja Singh,  
H Santoshkumar Huligeri, Maitree Pandey**

Department of Anaesthesia, Lady Hardinge Medical College and Smt Sucheta Kriplani and Kalawati Saran Children's Hospital, New Delhi, India

#### Address for correspondence:

Dr. Pooja Singh,  
H-32/64, Sector-3, Rohini, Delhi - 110 085, India.  
E-mail: dr.pooja260887@gmail.com

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