

Acute Pulmonary Collapse in a Patient with Severe COVID-19

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1. Letter to Editor

COVID-19 (corona virus disease - 2019), a disease caused by the SARS-CoV-2 virus (Severe acute respiratory syndrome corona virus 2), is highly transmissible and preferentially affects the respiratory system, which may result in acute respiratory distress syndrome and respiratory failure [1-4].

Health professionals are more exposed and susceptible to contagion, especially during some procedures that potentially generate aerosols and increase the risk of viral transmission and others respiratory infectious pathogens, such as Orotracheal Intubation (OTI), non-invasive mechanical ventilation, tracheostomy and bronchoscopy [5].

In this context, bronchoscopy was initially contraindicated in a patient with suspected or confirmed SARS-CoV-2 infection [6]. However, there are circumstances in which bronchoscopy is necessary, especially in critically ill patients admitted to the Intensive Care Unit (ICU), such as, for example, in pulmonary atelectasis without improvement after mechanical measures, pneumomediastinum, tracheal injury after OTI, percutaneous tracheostomy and investigation of secondary infections or inflammatory processes that require specific therapeutic intervention. Thus, bronchoscopy is still part of the hospital routine even in the context of the COVID-19 pandemic [3].

Pulmonary atelectasis is a diagnostic challenge that can present itself as sub segmental, lobar or total (pulmonary collapse). Atelectasis is associated with decreased lung compliance, impaired oxygenation, increased pulmonary vascular resistance and the development of lung injury. Pulmonary collapse is the most serious entity, with high mortality if not resolved quickly [7, 8]. Although it is often solved with physiotherapy techniques, mucolytic agents

and mechanical vibration, this does not always occur in the daily practice of the ICU, requiring bronchoscopic maneuvers for its resolution [9, 10].

In this scenario, we report a case of acute pulmonary collapse in a patient on mechanical ventilation due to COVID-19 infection with severe decompensation reversed with flexible bronchoscopy.

A 66-year-old woman with a history of systemic arterial hypertension, diabetes mellitus, chronic obstructive pulmonary disease and ischemic stroke without sequela. In June 2020, she developed progressive dyspnea, headache and fever. COVID-19 infection was confirmed. She developed respiratory failure and was intubated with an oro-tracheal tube 7 and coupled with invasive mechanical ventilation. Upon arrival at the ICU, it was decided to change the oro-tracheal cannula to 8.5 with the aid of an airway exchange catheter. After the procedure, the patient presented hemodynamic instability and an abolished breath sounds in the left hemi thorax. Chest ultrasound showed pneumothorax in the left hemi thorax. After drainage of the chest, there was a partial improvement in hemodynamic instability. On chest radiography, hypo transparency of the left lung was seen. Due to hemodynamic instability and worsening gas exchange, it was decided to position the patient in prone position, initiate inhaled nitric oxide and request bronchoscopy for diagnostic clarification. During bronchoscopy, total obstruction of the left main bronchus by an organized clot of approximately four centimeters was observed (figure 1). Clearance was performed with suction and flexible forceps. After clearance, the patient evolved with immediate improvement of ventilatory parameters, progressive improvement of gas exchange and hemodynamic stability. Nitric oxide was suspended 48 hours after bronchoscopic clearance. The patient remained in the ICU for 41 days,

being discharged to the ward.

The case illustrates an unexpected pulmonary collapse in a patient with COVID-19 after the use of an exchange probe that may cause bleeding from the airway due to local trauma. The bleeding, although not externalizing, mimicked a foreign body with total obstruction of the left source bronchus resulting in pulmonary collapse with hemodynamic instability and ventilatory damage, being solved through bronchoscopy, preventing irretrievable lung damage.

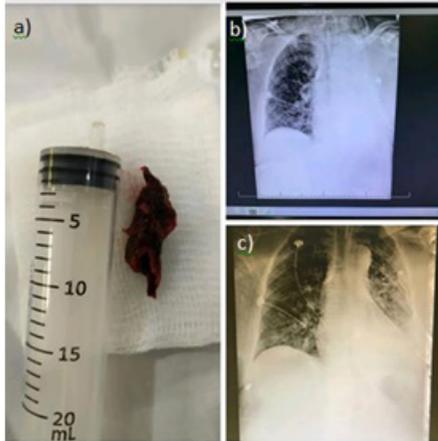


Figure 1:

- a) Organized clot removed by bronchoscopy of approximately 4 cm in diameter.
 b) Chest X-ray showing left pulmonary collapse.
 c) Radiographic improvement after bronchoscopic clearance.

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