Endobronchial valves cope with the persistent contagion air trickles in severe acute respiratory syndrome coronavirus 2.

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Abstract

Recent cases of pneumothorax and on-going air leakage as ARDS-related consequences caused by the SARS CoV-2 virus have been described. Pneumothorax can develop as a result of alveolar-pleural and broncho-pleural fistulas. Endobronchial Valves, a bronchoscopy-guided technique, has been established as a therapeutic option for these fistulas relatively recently. Endobronchial valves are an efficient, minimally invasive surgery for individuals with PALs, according to recent literature. The first two covid-19 cases complicated by pneumothorax and persistent air leaks that were successfully treated with EBV placement are described in this article.

Keywords: Endobronchial valves, SARS CoV-2, Air leakage.

Introduction

Over the past two years, the severe acute respiratory syndrome coronavirus type 2 (SARS-CoV-2) has prevailed as a worldwide epidemic. Recent cases of pneumothorax and persistent air leaks as side effects of SARS CoV-2-related illnesses have been described. Alveolar-pleural Fistula and Broncho-pleural Fistula are two pathological communications between the lung parenchyma and the pleural space, respectively [1]. A pneumothorax can result from air leaking from the lung into the pleural cavity via several pathogenic pathways. There is the potential risk of a worsening pneumothorax if the link continues. The fistulas are connected to slow healing and constrained lung expansion. As indicated by air bubbling in the water seal chamber of the chest drainage system, a persistent air leak is one that lasts longer than five to seven days [2]. The initial line of defence is typically surveillance and conservative therapies like chest tube drainage. Patients who have air leaks that are resistant to conservative care with chest tubes and observation may benefit from surgical surgery. However, many patients either decline less invasive treatments or are not candidates for surgical care. Chemical pleurodesis using substances like talc and tetracycline derivatives is the alternative treatment option for PAL patients who are either not candidates for surgery or refuse surgery [3]. Endobronchial Valves, a bronchoscopy-guided technique, has been created more recently as a therapy option for APF and BPF [4]. EBVs have been made available as a successful and minimally invasive therapeutic option for PAL in patients with minor fistulas and those who are considered poor surgical candidates [5]. In this case series, we provide the first two COVID-19-related cases of persistent pneumothorax and persistent air leak that were effectively treated with EBV implantation.

Conclusion

The prevalence of pneumothorax in SARS-CoV-2 cases is believed to be 10%, and patients with severe ARDS are most frequently affected. The structural changes in the lung parenchyma that result in bronchial and alveolar injury are thought to be the cause of pneumothorax. Barotrauma is additionally brought on by elevated intrathoracic pressure as a result of mechanical breathing. As air leaks into the pleural cavity, bronchopleural and alveolar pleural fistulas both have the potential to result in a pneumothorax. The most frequent procedures that result in the establishment of these aberrant fistulous tracts are lung resection and lung volume reduction surgeries.

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