

A Bizarre Bronchoscopic Appearance In A Case Of Pneumomediastinum Linked To Coronavirus

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Abstract:

The description of lesions of the bronchial mucosa during Covid-19 remains exceptional in the literature review. Our observation concerns a 29-year-old patient with no history presenting an acute clinical situation made up of the combination of subcutaneous emphysema and pneumomediastinum whose etiological exploration confirms the diagnosis of severe acute respiratory syndrome coronavirus 2 (SARS COV-2). The peculiarity of our work is the discovery of a bizarre appearance during the bronchoscopy performed during this clinical presentation which is described as rare in Covid-19.

Key Word: Covid19; Pneumonia; Pneumomediastinum; Bronchial mucosa; Bronchoscopy.

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I. Introduction:

The global, health, economic and social impact of SARS-COV-2 is continuously evaluated. The spontaneous alveolar air leakage is a rare complication of Covid-19 pneumonia.

We describe a particular aspect of the bronchial mucosa never described before during pneumomediastinum in a 29-year-old man with covid19 pneumonia.

II. Cases Report:

Mr. Y.E, 29 years old, never treated for tuberculosis, without a history of digestive diseases, tobacco and cannabis smoker for 15 years, without notion of recent thoracic trauma, admitted to the pulmonology department for acute dyspnea occurring for one-week, physical examination reveals subcutaneous emphysema in the neck and upper trunk with polypnea at 25 cycles per minute and 93% ambient air saturation. Standard chest x-ray and Chest CT scan without contrast media injection show pneumomediastinum (**figure1,2**).

Flexible bronchial endoscopy performed to look for a cause for pneumomediastinum reveals a bizarre aspect never seen before in such a situation, it is in fact a riddled aspect of the bronchial mucosa which presents multiple small ulcers located at the entrance to the right upper lobe bronchus and at the entrance to the intermediate trunk, with purulent secretions (**figure 3, 4**). The microbiological samples taken at the end of this fibroscopy show: a negative test for Koch's bacillus by GeneXpert MTB / RIF, but they confirm the presence of coronavirus by Polymerase Chain Reaction (PCR).

The patient is put on standard covid-19 treatment with antibiotic therapy and oxygen therapy. The course within a week is favorable with the disappearance of subcutaneous emphysema and improvement in general condition and saturation.

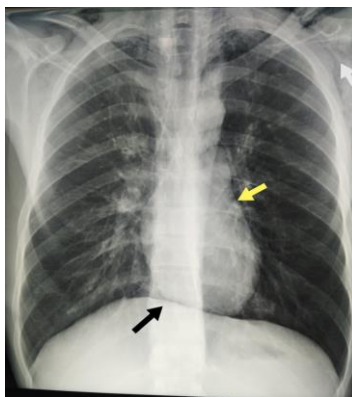


Figure 1: Standard chest x-ray showing subcutaneous emphysema (white arrows), gas out lining the inner surface of mediastinal pleura (yellow arrows) and the continuous diaphragm sign (black arrows).



Figure 2: Chest CT scan showing pneumomediastinum.



Figure 3: Flexible bronchial endoscopy: a riddled aspect of the bronchial mucosa with multiple small ulcers



Figure 4: Bronchoscopy showing multiple small ulcers of bronchial mucosa.

III. Discussion:

Pneumomediastinum is part of the air leak syndrome and this term refers to the abnormal existence of extra-alveolar air in the mediastinum, this is a condition found in different circumstances, the pathophysiology of pneumomediastinum depends on the clinical circumstances in which it occurred, most often it is the result of an alveolar rupture, sometimes it can be the result of an air leak from the upper airways, lower airways or digestive

tract [1]. Pneumomediastinum can be spontaneous or secondary, in the secondary one, these air leaks are often traumatic or iatrogenic or infectious [2].

Pneumomediastinum is a rare complication of Covid-19 pneumonia and it occurs mainly in men in 60% of cases with an unfavorable outcome in 50% of cases [3]. In a patient infected with the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the role of bronchoscopy in diagnosis was treated by the American Association of Bronchoscopy and Interventional Pulmonology (AABIP), indeed this role is limited and its indication must be reserved for urgent cases, especially for therapeutic purposes as for symptomatic tracheal or bronchial stenosis, symptomatic airway obstruction, massive hemoptysis etc, but also for diagnostic purposes and we can accept the suspicion of lung cancer or suspected infection in immune-compromised patients. The bronchoscopy should follow precautions to reduce the risk of exposure and contamination of personnel [4].

Emergency bronchoscopy has an essential place in the diagnostic strategy in the thoracic trauma responsible for pneumomediastinum and/or bilateral pneumothorax and subcutaneous emphysema. It clearly describes trachea-bronchial lesions; it determines their severity and therefore guides subsequent therapeutic management [5].

IV. Conclusion:

The realization of the bronchoscopy during the pneumomediastinum whatever the cause must be encouraged so that it guides us the etiological diagnosis, at the same time to discover new endoscopic aspects in particular in the Covid-19 and thus to be among the diagnostic criteria especially if the PCR is negative.

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