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Aspiration Pneumonia Due to Anesthesia Digestive Endoscopy Under COVID-19: A Case Report

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Keywords:

Aspiration pneumonia; Digestive endoscopy; Case report

1. Abstract

1.1. Background

Digestive endoscopy is an important test for early cancer screening. The most serious complication during the examination was aspiration pneumonia. However, these patients currently do not receive much attention.

1.2. Case Report

A woman was brought to the Emergency Department because of fever. Chest computed tomography revealed consolidation of the lower left lung, so the patient was diagnosed with aspiration pneumonia after anesthesia digestive endoscopy. we collected Bronchoalveolar lavage (BALF) for testing of metagenomic next generation sequencing (mNGS). The result of mNGS was normal. After 7 days of medical treatment, the pneumonia subsided.

1.3. Conclusion

This case reminded us that digestive endoscopy under sedation carried a risk of aspiration pneumonia in even healthy patients. When COVID-19 prevalent, we should make a definitive diagnosis of patients with fever as soon as possible and improve etiological tests to prevent delays.

2. Introduction

Digestive endoscopy is an important test for early cancer screening. As the test is uncomfortable so more and more people choose general anesthesia. The most serious complication during the examination was aspiration pneumonia due to reflux and aspiration. However, these patients do not currently attract much attention, especially from anesthesiologists. Here, we report a healthy nurse who had undergone digestive endoscopy, aspiration pneumonia developed during induction of general anesthesia under COVID-19.

3. Case Report

A woman was brought to the Emergency Department of the Center Hospital of Jinan because of fever. She got aspirated and developed severe shortness and chest pain. History of anesthesia digestive endoscopy 1 day ago, accompanied by vomiting. Her past medical history was unremarkable, she denied cigarette smoking, and has no history of allergy, anaphylaxis or bronchial asthma. Upon arrival at the hospital, she was connected to the monitor and put on humidified oxygen. On examination, she was severely distressed, blood pressure of 120/60mmHg, pulse rate of 108 beats per minute, oxygen saturation of 95% at room air, and respiratory rate of 26 breaths per minute, temperature of 39 degrees. On physical examination, wet rales were heard in the lower left lung. Blood gas analysis showed pH 7.45, partial pressure of carbon- dioxide 36.00 mmHg and partial pressure of oxygen 71.00 mmHg with 2 L/min oxygen via nasal cannula. The peripheral white blood cell count (9940/μL) and C-reactive protein level (78.5mg/h) were slightly high. The results of blood coagulation function test, biochemistry tests, myocardial enzymes, urinalysis and stool analysis were normal. Chest computed tomography revealed consolidation of the lower left lung. (Figure 1). Under COVID-19, in order to rule out the atypical pathogen infection and assist the patient in expulsion of inhaled substances, we performed tracheoscopy. Flexible bronchoscope showed injured and edematous surfaces of the large airways. Bronchoalveolar lavage was performed from the posterior segmental bronchus of the upper lower of her left lung. A cell count of the bronchoalveolar lavage fluid (BALF) revealed57.5% macrophages, 28.0% neutrophils, 11.0% lymphocytes, and 3.5% eosinophils. The total BALF cell count was 4.2 × 106/mL. No bacteria or fungus was isolated from cultures of BALF. we collect-

ed BALF for testing of metagenomic next generation sequencing (mNGS). The result of mNGS was normal. During hospitalization, the patient received piperacillin/ tazobactam to prevent bacterial pneumonia, hormonal anti-inflammatory and bronchodilators to improve the bronchospasm or wheezing. After 7 days of medical treatment, the pneumonia subsided, blood, sputum cultures revealed negative findings. and she was discharged in a stable condition. The Fig. 2 was the chest CT of review.

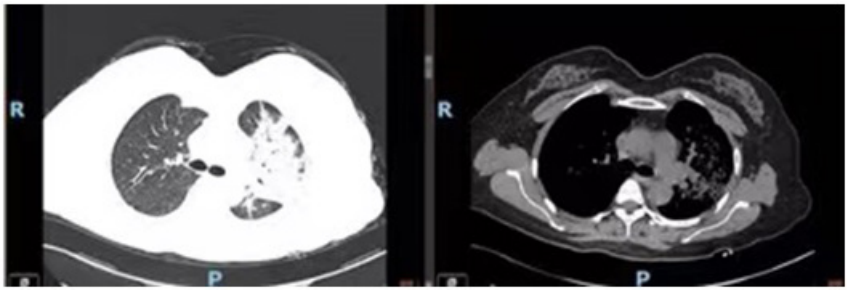

Figure 1: Chest computed tomography revealed consolidation of the lower left lung.

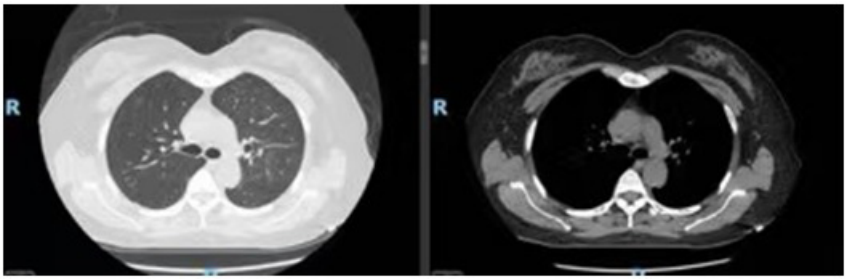

Figure 2: The Chest computed tomography reviewed after treatment.

4. Disconsion

The possibility of aspiration pneumonia was considered based on the rapid onset of the patient, the absence of previous upper respiratory infection and chest CT findings. The patient's clinical manifestations, chest CT and hematological examination results further confirmed the hypothesis. The patient's symptoms improved after early treatment with oxygen therapy, anti-infection and hormone anti-inflammatory therapy, which was also consistent with previous research results [1]. Chest CT of aspiration pneumonia often shows multifocal consolidation or patchy ground-glass opacity [2]. Because the patient was in left decubitus at the time of digestive endoscopy, so gastric contents flowed back into the left side, then large exudate shadows can be seen in the lower lobe of the left lung. We all know, Aspiration of large amounts of gastric acid will result in the induction of a chemical injury to the airways and lung parenchyma. Aspiration is recognized as an independent risk factor for the subsequent development of pneumonia or acute lung injury or acute respiratory distress syndrome (ALI/ARDS) [3]. Our patient developed dyspnea and hypoxemia. In order to prevent further exacerbation of lung injury, we treated with hydrocortisone. The other study suggested that, in bronchi-aspiration, Steroids are not proven to improve outcome or reduce mortality [4]. After hormone therapy, the patient's symptoms of dyspnea and hypoxemia were significantly improved. There were any adverse reactions. However, it remains to be discussed whether hormones can be used as a routine treatment for aspiration pneumonia.

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