

## Case Report

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# Hemoptysis as a Presentation of Covid-19 Pneumonia: A case report from Peshawar

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### Introduction:

The ongoing pandemic of Coronavirus disease-2019 (COVID-19) caused by a novel coronavirus called severe acute respiratory syndrome coronavirus-2 (SARS COV-2) is the main challenge to the healthcare authorities worldwide.

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The virus was first reported in December, 2019 in Wuhan, China which was later declared a worldwide pandemic on 11<sup>th</sup> March, 2020 by World Health Organization (WHO). This disease typically affects the respiratory system with symptoms including fever, cough and fatigue<sup>1</sup>. However, involvement of other systems has been reported in multiple studies<sup>2</sup>. Hemoptysis is a rare presentation of COVID-19 and only a few cases are previously reported<sup>3,4</sup>. Here we report a case of a young male patient who presented acute onset hemoptysis as the main symptom of COVID-19.

### Case Presentation:

A 25-year-old male showed up at the emergency room with the complaint of chest pain, sudden onset hemoptysis for 4 days and gradually progressing dyspnea for last three weeks. He had no previous history of any medical and surgical illness and was a non-smoker with no drug or substance abuse. At the time of arrival, he was tachypneic with a respiratory rate of 24 per minute and maintaining saturations of 89% in

room air. The patient had a pulse of 101 per minute which was regular and of normal volume. His chest auscultation along with the rest of the systemic examination was unremarkable.

The patient was admitted under the care of the Pulmonology team and baseline laboratory investigations were sent along with the chest imaging. His chest imaging showed bilateral diffuse alveolar infiltrates on x-ray and diffuse bilateral ground-glass opacities with areas of crazy paving and consolidation on the high-resolution computerized tomography scan suggestive of acute pathology. Vasculitis leading to pulmonary hemorrhage, transfusion-related acute lung injury, and pulmonary alveolar proteinases were top differentials along the side of COVID-19 pneumonia. His nasopharyngeal swab for COVID-19 PCR was taken and was tested positive after which he was put on for COVID-19 treatment. His workup for autoimmune disease and vasculitis along with the possible cause of hemoptysis was done thoroughly during his admission. His Anti neutrophilic cytoplasmic antibodies (ANCA) directed against proteinase-3 (PR3 ANCA), myeloperoxidase (MPO- ANCA), antibodies against glomerular basement membrane (anti-GBM Ab), ANA (antinuclear antibodies), and antiphospholipid antibodies were all negative. Computerized tomography pulmonary angiogram and arteriography were unremarkable with no evidence of pulmonary embolism or vascular bleed. Flexible bronchoscopy was done to visualize the bronchial structures which was negative for active bleed.

Plasmapheresis and methylprednisolone were commenced along with the supportive treatment for COVID-19. His laboratory investigations showed normocytic normochromic anemia with

raised total leukocyte counts and C-reactive protein. He was treated with broad-spectrum antibiotics for seven days as well. He was transfused with three pints of packed red cell concentrates as his hemoglobin dropped to 6.6g/dL after 4 days of admission. He improved after 5 days of hospital admission and remained stable for the next 2 weeks. His FiO<sub>2</sub> (fraction of inspired oxygen) requirement was 0.3 initially up to a maximum of 0.6 via non-breathable mask.

Keeping his negative work up thoroughly done for hemoptysis it has been assumed that it COVID-19 may be the culprit behind his hemoptysis and alveolar hemorrhage.

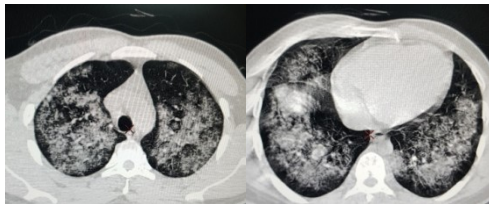


Figure 1. HRCT Chest at the time of arrival

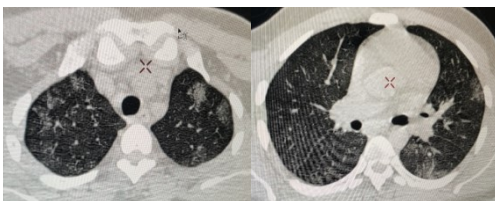


Figure 2. HRCT Chest after 2 weeks of admission

### Discussion

Non-specific presenting symptoms can make the diagnosis of COVID-19 very challenging. In majority of cases, it presents the symptoms of cough, fever, and fatigue. Hemoptysis as in this case is a very rare and unique symptom of SARS Cov-2 infection reported in few studies previously with an incidence around 0.9% to 13% in patients with covid 19 and pulmonary emboli<sup>1,3,5</sup>. Hemoptysis is the expectoration of blood or blood-tinged sputum from the lower respiratory tract and is usually associated with diseases like tuberculosis, malignancy, bronchiectasis and pneumoniavasculitis, pulmonary embolism, AV malformations, and bleeding or coagulation disorders<sup>4</sup>. It can be life-threatening when massive hemoptysis (300-600

cm<sup>3</sup> blood in a 24-hour period) occurs that can lead to hypotension or respiratory failure due to airway obstruction<sup>6</sup>. All the appropriate workup to rule out the known causes of coughing up blood in our case was negative.

A case of massive hemoptysis was reported at Ghent university hospital, Belgium. CT-angiography followed by bronchial arteriography confirmed bleeding from the left upper lobe for which the bronchial artery was embolised successfully.

### Conclusion

In summary, hemoptysis is a rare but possible presenting symptom in COVID-19 patients. Bronchoscopy and alveolar lavage in such cases give additional diagnostic value.

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