ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 12, Issue, 07, pp.12895-12897, July, 2020

DOI: https://doi.org/10.24941/ijcr.39262.07.2020

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

RESEARCH ARTICLE

UNUSUAL PRESENTATION OF COVID-19 WITH LATENT PULMONARY KOCH'S

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ARTICLE INFO

Article History:
Received 07th April, 2020
Received in revised form
25th May, 2020
Accepted 21st June, 2020
Published online 30th July, 2020

Key Words:
COVID 19, Pulmonary koch's, fever, cough, Breathlessness

ABSTRACT

Introduction: The clinical features and treatment of pulmonary tuberculosis patients with COVID-19 is Unclear and understudied. Here, there is pulmonary tuberculosis patient with COVID-19infection who were prospectively followed from hospital admission to discharge. We provide information and experience with treatment of pulmonary tuberculosis case with confirmed COVID-19 infection This case has given an insight that COVID 19 infection may aggravate a latent or an occult tubercular infection, but more studies and cases need to be investigated to confirm this uncommon co-infection. **Objective: Case Presentation:** 27 year young male who tested positive for covid 19 infection and was admitted in our institute with chief complaints of Fever for past 3 days associated with Breathlessness for past one day. Right sided chest pain for past one day. Patient was found to be COVID 19 positive on day 3 of symptoms. On examination Temp – 100 . SpO2 – 85% on RA. HR-108bpm. rest vitals stable. on 4th day due to hemotysis AFB for ZN stain came out to be positive for two consecutive tests. CT is normal. Patient responded well to ATT & other treatment eventually improved symptomatically over the course of stay in the hospital & got discharged & followed through tele communication. Conclusion: This case has given an insight that COVID 19 infection may aggravate a latent or an occult tubercular infection, but more studies and cases need to be investigated to confirm this uncommon co-infection.

Citation: ***Gupta S., Aindala K. and Das, I.*** **2020.** "Unusual Presentation of Covid-19 with Latent Pulmonary Koch's", *International Journal of Current Research*, 12, (xxx), xxx-xx.

INTRODUCTION

In late December 2019, an outbreak of a mysterious pneumonia characterized by fever, dry cough, and fatigue, and occasional gastrointestinal symptoms happened in a seafood wholesale wet market, the Hunan Seafood Wholesale Market, in Wuhan, Hubei, China (Huang, 2020). Furthermore, the disease traveled to other countries, such as Thailand, Japan, Republic of Korea, Viet Nam, Germany, United States, India and Singapore. Later on the term Covid 19 was coined. To date more than 4 lacs deaths have been confirmed due to covid 19. The World Health Organization (WHO) declared the outbreak of novel coronavirus (COVID-19) a Public Health Emergency of international on Jan 30, 2020 (WHO, 2019). It is well documented that certain viral infections, such as measles, have been known to aggravate pulmonary tuberculosis (TB), presumably as a result of depressed cellular immunity (Griffin, 1996; Kempe, 1965). Despite their vulnerability as a population, to date, most studies have focused on COVID-19 infection in patients without current respiratory disease. The clinical features and treatment of tuberculosis patients with COVID-19 are unclear and understudied.

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To our knowledge, only three cases study over the coinfection of SARS-CoV-2 and mycobacterium tuberculosis (TB) has been reportedpreviously. Coronavirus is an enveloped, positive single-strand RNA virus. It belongs to the Orthocoronavirinae subfamily, as the name, with the characteristic "crown-like" spikes on their surfaces (Kim, 2001). Together with SARS-CoV, bat SARS-like CoV and others also fall into the genus beta-coronavirus. COVID-19 has a mean incubation period of 5.2 days. Symptoms usually begin with nonspecific syndromes, including fever, dry cough, and fatigue. Multiple systems may be involved, including respiratory (cough, short ofbreath, sore throat, rhinorrhea, hemoptysis, and chest pain), gastrointestinal (diarrhea, nausea, and vomiting), musculoskeletal (muscle ache), and neurologic (headache or confusion). Patients with fatal disease develop ARDS and the disease may be fatal in 3-4 percent of cases (Huang, 2020; Chushkin, 2017). Confirmatory laboratory diagnosis usually rely on real timeRT-PCR assay to detect viral RNA by targeting a consensus E region ofpan beta-CoV or other more specific regions (such as RdRp or N region)[1,8,10]. Chest x-ray and computer tomography (CT) usually revealed bilateral peripheral pneumonia (75–98%) with multiple mottling and ground-grass opacity (Huang, 2020; Chushkin, 2017). Routine laboratory data in the early stage of COVID-19 pandemic are similar to common viral infection: lymphopenia, prolonged prothrombin time, elevated D-dimer, elevated ferritin,liver

enzymes (alanine aminotransferase), total bilirubin, and lactate dehydrogenase, elevated IL 6 with worsening data in ICU cases[1]. Leukocytosis may occur if complicated with secondary bacterial infection. TB is the type of infection that requires cellular immunity, and nearly one hundred years ago lung function studies with TB showed evidence of restrictive lung disease. In patients infectedwith Mycobacterium tuberculosis, whether treated or untreated, a variety of pulmonary and extra pulmonarysequelae and complications can occur, which include bronchiectasis, tracheobronchial stenosis, and broncholithiasis.

Structural changes lead to obstructive, restrictive, or mixed patterns of impaired pulmonary function. Studies in patients with pulmonary tuberculosis (PTB) have demonstrated that 33.3-94.0% of such patients develop impaired pulmonary function[5] .The risk factors for TB patients with reduced pulmonary function are having previously had culture-positive PTB, being over 50 years of age, having a low level of education, and having experienced recurrence oftuberculosis[6] .This study suggests that previous lung disease such as treated or untreated mycobacterium tuberculosis (TB) and young age are independent risk factors carry good prognosis of those infected with COVID-19.

CASE REPORT

Here we discuss a case of a 27 year young male who tested positive for covid 19 infection and was admitted in our institute with chief complaints of Fever for past 3 days associated with Breathlessness for past one day. Right sided chest pain for past one day. Patient was found to be COVID 19 positive on day 3 of symptoms.

Patient was evaluated in emergency department…

On Examination:

PRIMARY SURVEY

- Airway – Patent
- Breathing – RR : 22/minute, SpO2 – 85% on RA-–90% on 4 LO2/min
- Circulation – HR : 108/ min, BP – 122/86 mmHg, Temp: 100F
- Disability – GCS : E4V5M6, Pupils – B/L normally reacting to light; GRBS: mg/dL,

SECONDARY SURVEY

HEENT-No Pallor, Icterus Cyanosis, Lymphadenopathy, JVP - Not Raised,

CHEST

On Inspection – No Deformity or Scar Mark seen. No swelling or lump. Bilaterally Equal Chest Rise Seen

On Auscultation – Bilaterally Equal Vesicular Breath Sound. No Added Sounds Heard.

CVS – First and Second Heart sound audible, no murmur or friction rub sound

CNS –Conscious and oriented, No focal neurological deficit.

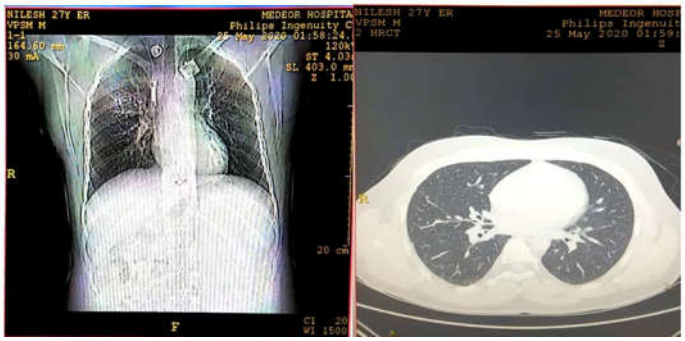
ABDOMEN

Inspection -No Scar, No Swelling, Umbilicus - Normal in Position, No Engorged Vein. Hernia Orifices – Normal Palpation - Soft, No Tenderness No palpable mass felt and normal bowel sound. Percussion – No Dullness, Fluid Thrill or Shifting Dullness Auscultation – Bowel Sound Heard. No Tenderness, No Bruit. External Genitalia – Normal

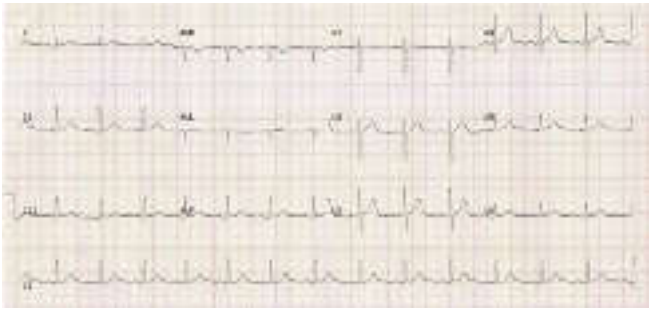
EXTREMITIES – Within Normal Limit

Investigations:

CBC: Hb– 15.1 g/dl, TLC – 5.01 10^3/ul, Neutrophil – 54%, Lympho – 42%, Plt – 177 10^3/l LFT : Total Bilirubin – 0.47 mg/dl, SGOT – 19.2 U/L, SGPT – 25 U/L, ALP – 94.5 U/L, GGT – 29.3 U/L, Total Protein – 7.2 g/Dl, Albumin – 4.4 g/Dl, Globulin – 2.8 g/Dl, A:G – 1.57 KFT – Normal CXR – Both lungs are clear and expanded with no infiltrates. There are no focal areas of consolidation. No suspicious pulmonary opacities. No pleural effusion. CT CHEST: Lung fields reveal normal parenchyma with normal bronchovascular pattern. Tracheo-bronchial tree is normal. Cardiac size is normal with no pericardial collection. No pleural effusion on either side. No Consolidations seen.



On 5th day after admission patient started having recurrent hemoptysis. AFB by ZN staining was Positive on 2 successive occasions. KOH Mount revealed no fungal elements.
CRP: Normal
Troponin T was negative.
LDH was normal
ESR was 08 mm at the end of first hour
D Dimer was not raised
Serum ferritin was normal
ECG:shows normal sinus rhythm



Management

Patient was started on Oxygen,
Intravenous fluids
Tablet. Hydroxychloroquine

Tablet. Azithromycin

Anti Tubercular 4 drug Regime as per the WHO guidelines. Patient remained asymptomatic after 7th day of admission and was discharged on ATT after his COVID 19 report came negative after 10 days. He was followed up on telemedicine and is doing well on ATT.

DISCUSSION

Very limited literature and studies are available where latent pulmonary Koch's has progressed to active disease in presence of a new COVID 19 infection. Our case had no previous symptoms or signs of pulmonary Koch's prior to admission and was a healthy individual as described in the case history. People ill with COVID-19 and Tuberculosis show similar symptoms such as cough, fever and difficulty breathing. Both diseases attack primarily the lungs and although both biological agents transmit mainly via close contacts, the incubation period from exposure to disease in tuberculosis is longer, with often a slow onset.

One of the striking observation was that despite COVID 19 and pulmonary Koch's co infection, there was nothing observed in the HRCT of the chest. Hemoptysis occurs very commonly in both COVID 19 infection & pulmonary Koch's. Our patient had hemoptysis on the 4th day of admission and sputum for AFB came out to be positive on two successive occasions. Subsequently he was started on ATT along with other ongoing medications and was discharged in a stable condition after his RT-PCR came negative for COVID 19 infection. Although the diagnosis of COVID-19 preceded that of Tuberculosis in this patient, larger studies are needed to understand any role played by SARS-CoV-2 in the progression of tubercular infection to disease. Probably, an overlap of signs/symptoms of COVID-19 and tuberculosis occurred and COVID-19 was diagnosed earlier because of a higher index of suspicion while tuberculosis may have been there since before. Or might be COVID brought to clinical evaluation/diagnostic assessment of tuberculosis at an earlier stage of disease before the occurrence of tubercular related symptoms. No steroids were given to this patient. Also to highlight that none of the acute phase reactants were elevated in the case in question as is very commonly seen in COVID 19 infection.

Conclusion

This case has given an insight that COVID 19 infection may aggravate a latent or an occult tubercular infection, but more studies and cases need to be investigated to confirm this uncommon co-infection.

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