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INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI:10.21474/IJAR01/11384
DOI URL: <http://dx.doi.org/10.21474/IJAR01/11384>



RESEARCH ARTICLE

TUBERCULOSIS WITH COVID 19 IN A YOUNG WOMAN WITH ATYPICAL RADIOLOGICAL FINDINGS

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Manuscript Info

Manuscript History

Received: 25 May 2020
Final Accepted: 28 June 2020
Published: July 2020

Key words:-

COVID-19, Pneumonia, Tomography

Abstract

Coronavirus Disease 2019 (COVID-19) has become a pandemic since March 2020. Tuberculosis (TB) is caused by Mycobacterium tuberculosis, a bacterium known since 1882. Experience on joint management of both COVID-19 and Tuberculosis remains limited As COVID-19 is so new. Chest CT findings in covid 19 may be Atypical due to co-infection Covid 19 and other infectious agents or to the timing of the disease. We report here the case of COVID-19 in a young woman with atypical CT findings as an organized pneumonia with lymphadenopathy and associated tuberculosis.

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Introduction:-

Several recent studies have described common chest CT findings of lung pathology caused by SARS-COV2. Atypical CT presentations of covid 19 may be related to the timing of disease and coinfection with other infectious agents. We report here the case of COVID-19 in a young woman with atypical CT findings and associated tuberculosis.

Case Report:

A 35 years old female patient, presented with a 7day history of fever (38.5) and dry cough. Her sister was recently diagnosed with the 2019 coronavirus disease (COVID-19). On 2012, She was diagnosed and treated for pulmonary tuberculosis by rifampicin, isoniazid, ethambutol, and pyrazinamide for 6 months after a long history of cough, sputum production, hemoptysis, dyspnea and night sweats with good clinical response relatively. She defaulted clinic follow up for about four years of this actual presentation.

Considering all this, A chest CT was performed and showed an organized pneumonia in the lower left lobe (Fig.1.B,C) associated to Unilateral ground-glass opacities without specific distribution in the upper lobe of the ipsilateral lung. Traction bronchiectasis in the right Upper lobe in relation with tuberculous sequelae are also seen (Fig.1.D). Multiple Mediastinal lymphadenopathy, the biggest with a short axis more than 1cm are found too (Fig.1.E).

The patient's throat swab was initially negative for coronavirus nucleic acid on the real-time reverse transcription polymerase chain reaction (RT-PCR) assay. A subsequent test was positive.

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Quantiferon test of the blood was positive but smear and RT-PCR of the sputum were negative. Blood examinations showed a neutrophil leucocytosis, hypochromic microcytic anaemia (haemoglobin 10.5 g %) .C-reactive protein and erythrocyte sedimentation rate were elevated (46.24 mg/dl and 113 mm/h, respectively). His renal and liver function tests were within normal range.Human immune deficiency virus (HIV) and Hepatitis B and C viral infections were excluded.

She was admitted to an isolation ward and was given specific treatment for both infections .

However, she developed severe shortness of breath 3 days after .Oxygen was administered to the patient. however the symptom did not improve and she was transferred to intensive care unit and started on non-invasive ventilation. While writing this article, this patient's situation deteriorated and she was intubated for mechanical ventilation.

Discussion:-

Many recent studies have described common chest imaging findings of lung pathology caused by SARS-COV2 (1) .

The most common Chest CT findings of COVID-19 are areas of consolidation and ground-glass opacity (GGO) with bilateral peripheral involvement in multiple lobes progressing to “crazy-paving” patterns and consolidation(2).

Pleural effusion, extensive tiny lung nodules, and lymphadenopathy occur in a very small number of cases and suggest bacterial superinfection or another diagnosis (4) .

The particularity of our case is the atypical presentation of an organized pneumonia associated with mediastinale lymphadenopathy without any specific distribution of ground glass opacities.Moreover the co-infection covid 19 and tuberculosis is remarkable.

Some Authors reported that the variation of radiological presentation is related to the timing of disease or to the co-infection with other infectious agents and that was the case in our patient (3).

Therefore,It is recommended that individuals with signs of pneumonia on chest CT be quarantined while RT-PCR testing is performed in conjunction with a thorough medical evaluation including travel history and disease contacts in order to make an accurate COVID-19 diagnosis as RT-PCR is the gold standard diagnostic method (2,9).

The co-infection of TB and COVID-19 is still being discussed, but there is the possibility both could exacerbate the natural symptoms of the other .

People ill with COVID-19 and TB show similar symptoms such as cough, fever and difficulty breathing. Accurate diagnostic tests are essential for both TB and COVID-19. Tests for the two conditions are different and both should be realized for individuals with respiratory symptoms ,especially In countries that have a high burden of TB (5),and that was the approach with our patient.

TB is technically deadlier than COVID-19, though we have to consider the diseases themselves and other risk factors: age, HIV status, the quality of the body's immune systems, etc (8).

People with active, untreated TB are far more likely to die than even the highest projected mortality estimates for COVID-19,wich explains the poor evolution of our patient. However, COVID-19 affects the lungs, and when associated to left-over damage of the lungs following TB disease such as traction bronchiectasies may put an increased risk of developing more severe COVID-19 manifestations (8) .

While experience on COVID-19 infection in TB patients remains limited, it is anticipated that People ill with both TB and COVID-19 may have poorer treatment outcomes, especially if TB treatment is interrupted (5).

TB patients should take precautions as advised by health authorities to be protected from COVID-19 and continue their TB treatment as prescribed (5).

Conclusion:-

Atypical CT presentations of covid 19 can false the diagnosis and RT-PCR is still the recommended tool in diagnosing COVID-19.

Experience on joint management of both COVID-19 infection and TB remains limited As COVID-19 is so new.

There are no data currently on if those with or who have a previous history of TB are more at risk of worse outcomes.

Teaching point:

1. The variation of radiological presentation of COVID-19 is related to the timing of disease or to the co-infection.
2. Atypical CT presentation of covid 19 such as an organized pneumonia and/or lymphadenopathy may mislead the diagnosis.
3. The radiologists should know the key points of clinical manifestation, laboratory findings, and exposure history to diagnose the patients with suspected COVID-19 infection in clinical practice beyond radiologic findings.

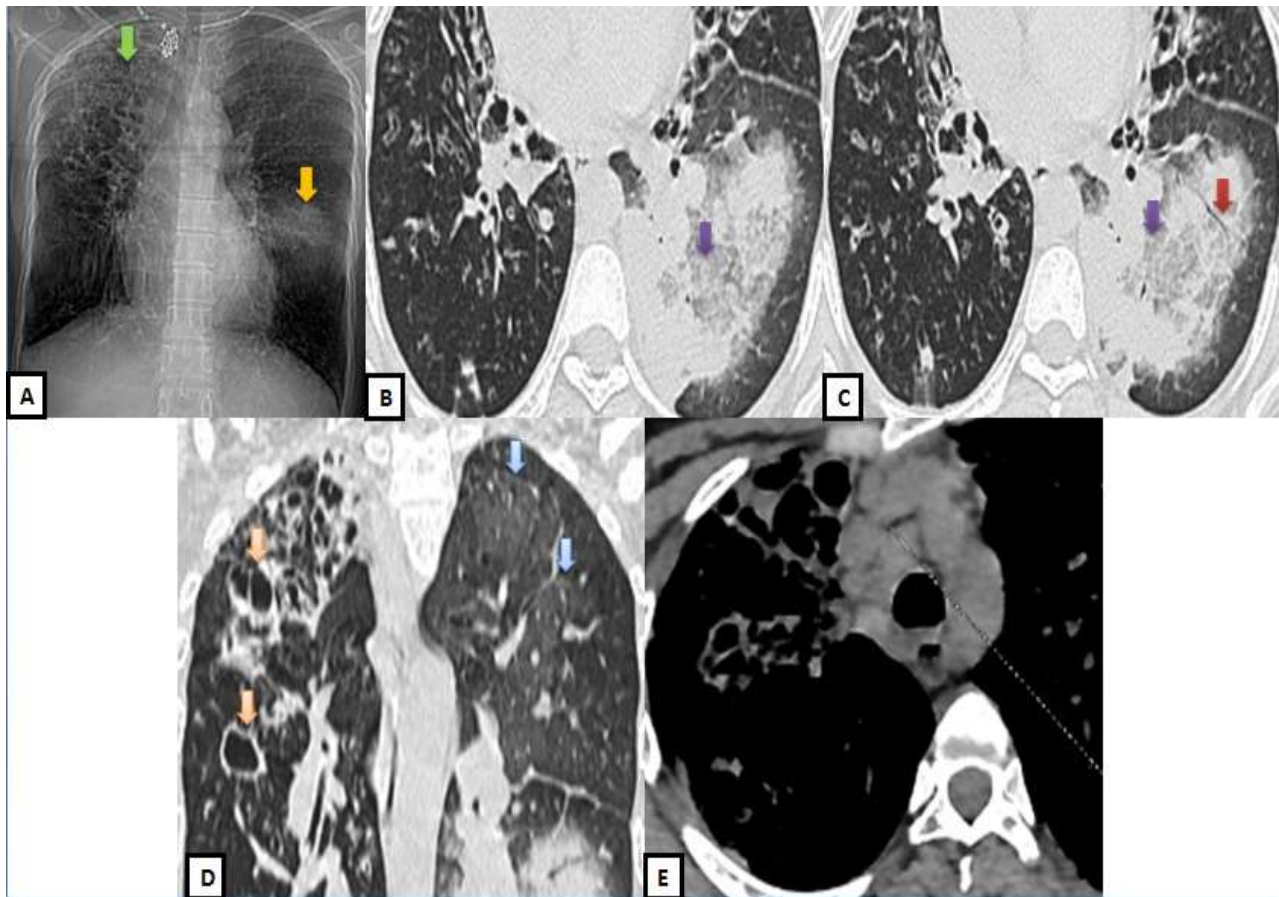


Fig. 1:-

Chest –xray shows a pulmonary opacity in the lower left lobe(yellow arrow) with traction bronchiectasis in the right upper lobe(**Green arrow**).

Unenhanced Axial CT images shows a large area of consolidation with central ground-glass opacities and focal crazy paving in the lower left lobe(Lobar pneumonia Corad 3)(**Purple arrow**).Air bronchogram can be seen inside consolidation(**Red arrow**).

Unenhanced Coronal CT image shows a right upper lobe atelectasis due to Cylindrical and cystic traction bronchiectasis in relation with tuberculous sequelae (**Orange arrow**) ; Unilateral ground-glass opacities with non specific distribution are also seen in the upper left lobe(**Blue arrow**).

Multiple Mediastinal lymphadenopathy >1cm seen in axial CT scan (mediastinal window).

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