

**CT FINDINGS OF COVID-19 VS TUBERCULOSIS: FINDING AN ANSWER TO  
DIAGNOSTIC DILEMMA IN INDIAN SETTING**

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**KEYWORDS:** COVID-19, coronavirus, tuberculosis, CT.

### INTRODUCTION

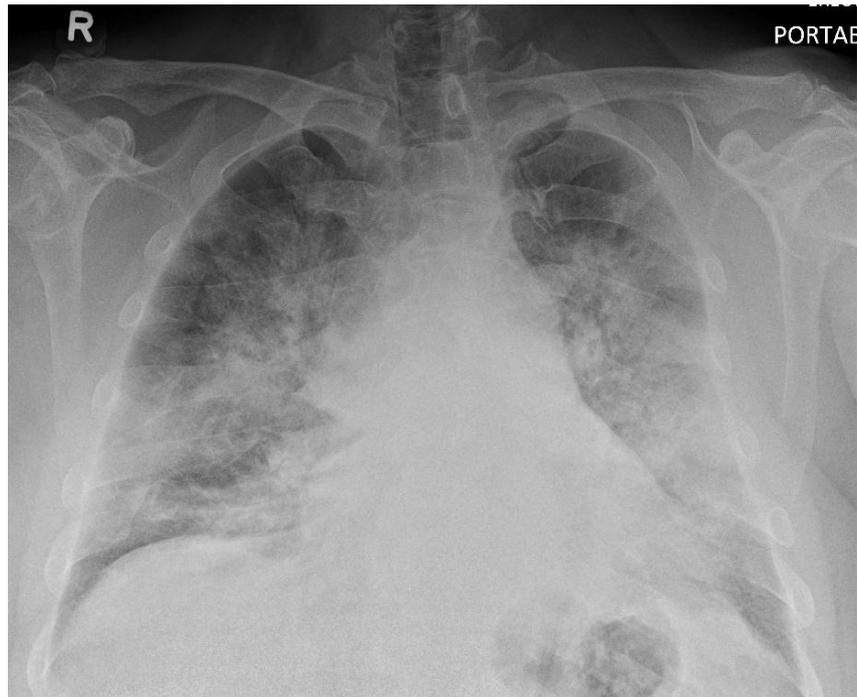
Since the beginning of 2020 the world has been gripped by the pandemic caused by the Novel-coronavirus aka COVID-19.<sup>[1]</sup> Although the virus is supposed to have zoonotic origin widespread and fast human-to-human transmission has lead to a large number of cases worldwide resulting in thousands of deaths.<sup>[2]</sup> The common presenting symptoms include fever, cough, dyspnea, headache, muscle soreness and fatigue.<sup>[3]</sup> Most of these symptoms are non-specific warranting need for imaging and laboratory investigations to confirm the diagnosis.<sup>[4,5]</sup> An incubation period of 1-14 days has been observed.<sup>[3,4,5]</sup> Since the outbreak of disease multiple studies have reported the imaging features on chest radiographs and computed tomography (CT) of chest. These include consolidation, bilateral & peripheral disease, greater total lung involvement, linear opacities, crazy paving pattern and reverse halo sign.<sup>[2,6]</sup> A lot of these imaging features are separately seen in various infective pulmonary pathologies resulting in diagnostic dilemma.

One of these infective diseases common in Indian population is tuberculosis. Pulmonary tuberculosis is a commonly encountered disease in India with fever, cough, weight-loss and malaise being the most common symptoms.<sup>[7]</sup> Cough can be productive leading to massive hemoptysis occasionally.<sup>[8]</sup> Chest radiographs and CT-Chest are the mainstay for imaging diagnosis of pulmonary tuberculosis with ultrasound and magnetic resonance imaging (MRI) playing a supporting role.<sup>[9]</sup> Common findings include consolidation, nodules, ground-glass opacity, cavity, enlarged mediastinal lymphnodes (usually necrotic), pleural effusion and bronchiectasis depending on the stage of disease.<sup>[7,8,9]</sup>

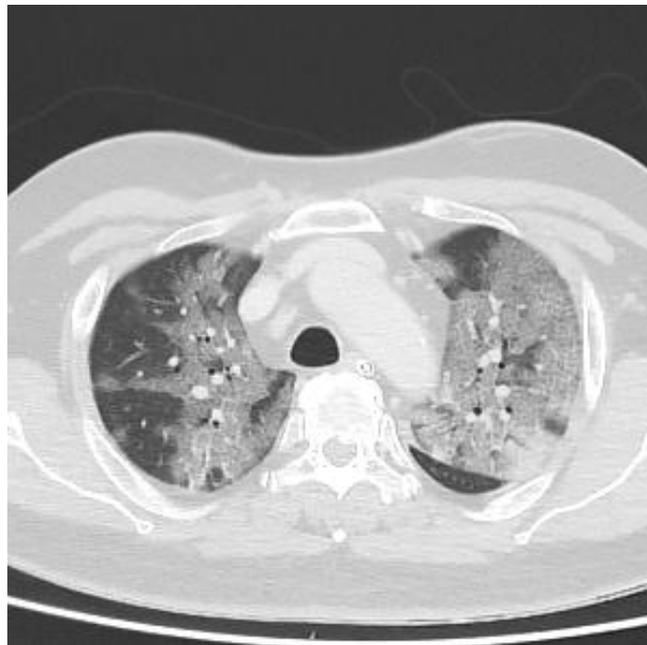
Based on the imaging findings of COVID-19 and pulmonary tuberculosis the main differentiating feature

on imaging in active infective stages is presence or lack of mediastinal lymphadenopathy. Till date there has been no evidence of presence of mediastinal lymphadenopathy in COVID-19, thereby implying that presence of mediastinal lymphadenopathy has a high sensitivity for excluding COVID-19.

We encountered a diagnostic dilemma when we received a patient for CT-Chest during the ongoing Novel-coronavirus pandemic. The patient was 24-year-old female with history of fever since 5-7 days. Chest radiographs showed patchy areas of consolidation in both lungs. CT-Chest revealed multiple necrotic mediastinal lymphnodes along with patchy areas of consolidation in both lungs.

**Figure Legends****Case 1:- Proven case of COVID-19**

**Fig. 1:- Chest radiograph AP view shows patchy air space opacities in both middle and lower zones. Reference 6**

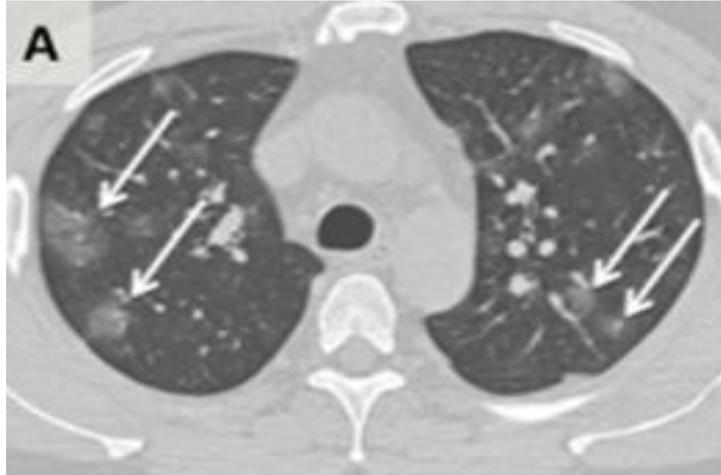




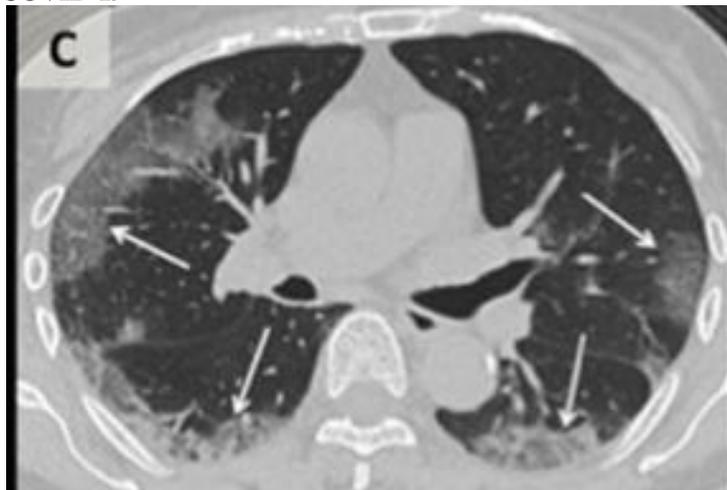
**Fig. 2 (a,b):-** Axial sections of CT chest in lung window show multifocal confluent ground-glass opacities and mixed ground-glass with patchy consolidation in both lungs. Reference 6.



**Fig. 2(c):-** Coronal section of CT chest in soft-tissue window setting shows no evidence of mediastinal lymphadenopathy. Reference 2.

**Case 2:- Proven case of COVID-19**

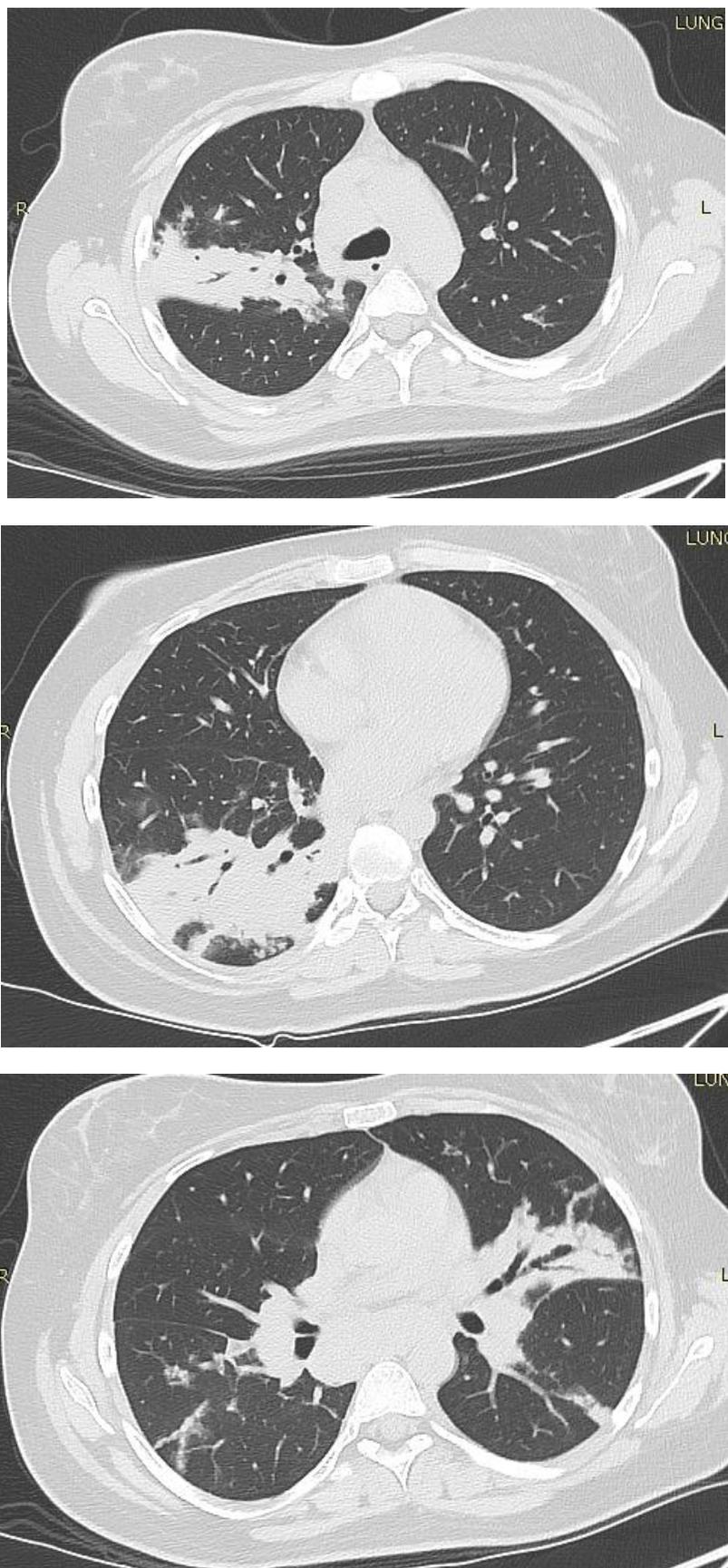
**Fig 3:-** Axial CT image obtained without contrast in a 36-year-old male shows bilateral ground-glass opacities in the upper lobes with a rounded morphology (arrows). Reference 2.

**Case 3:- Proven case of COVID-19**

**Fig 4:-** Axial CT image obtained in a 65-year-old female shows bilateral ground-glass and consolidative opacities with a striking peripheral distribution (arrows). Reference 2.

**Case 4:- Our case, which turned out to be pulmonary tuberculosis.**

**Fig. 5:-** Chest radiograph showing inhomogeneous opacities in right lower zone and left upper zone.



**Fig. 6 (a,b,c):-** Axial lung window images showing patchy areas of consolidation in right middle lobe (a), right lower lobe (b) and left upper lobe (c).

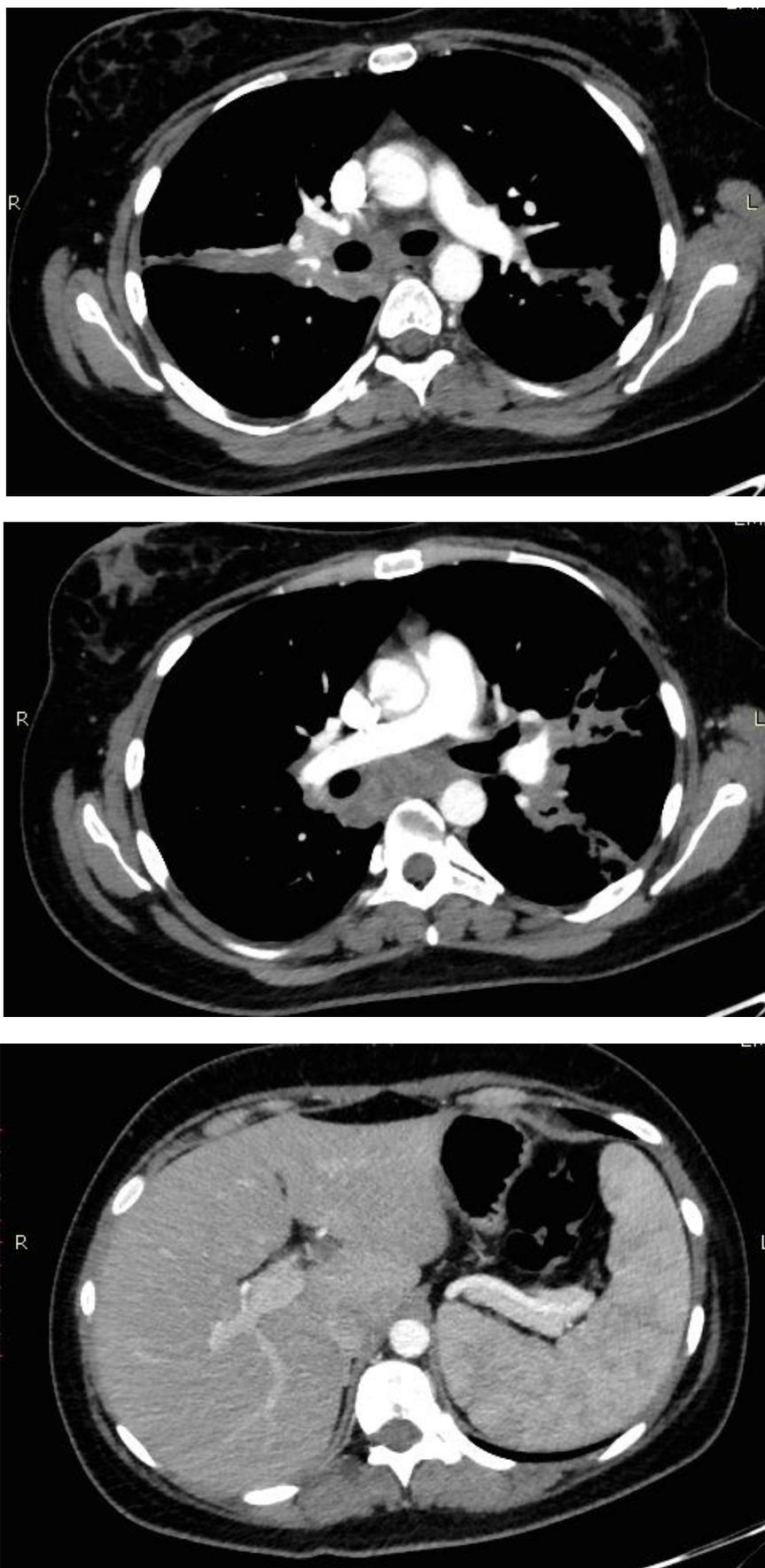


Fig 7 (a,b,c):- Axial soft-tissue window images showing enlarged necrotic mediastinal lymphnodes (a,b) and splenomegaly (c).

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