Atypical chest CT findings of COVID-19 pneumonia

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Atypical chest CT findings of COVID-19 pneumonia: a pictorial review

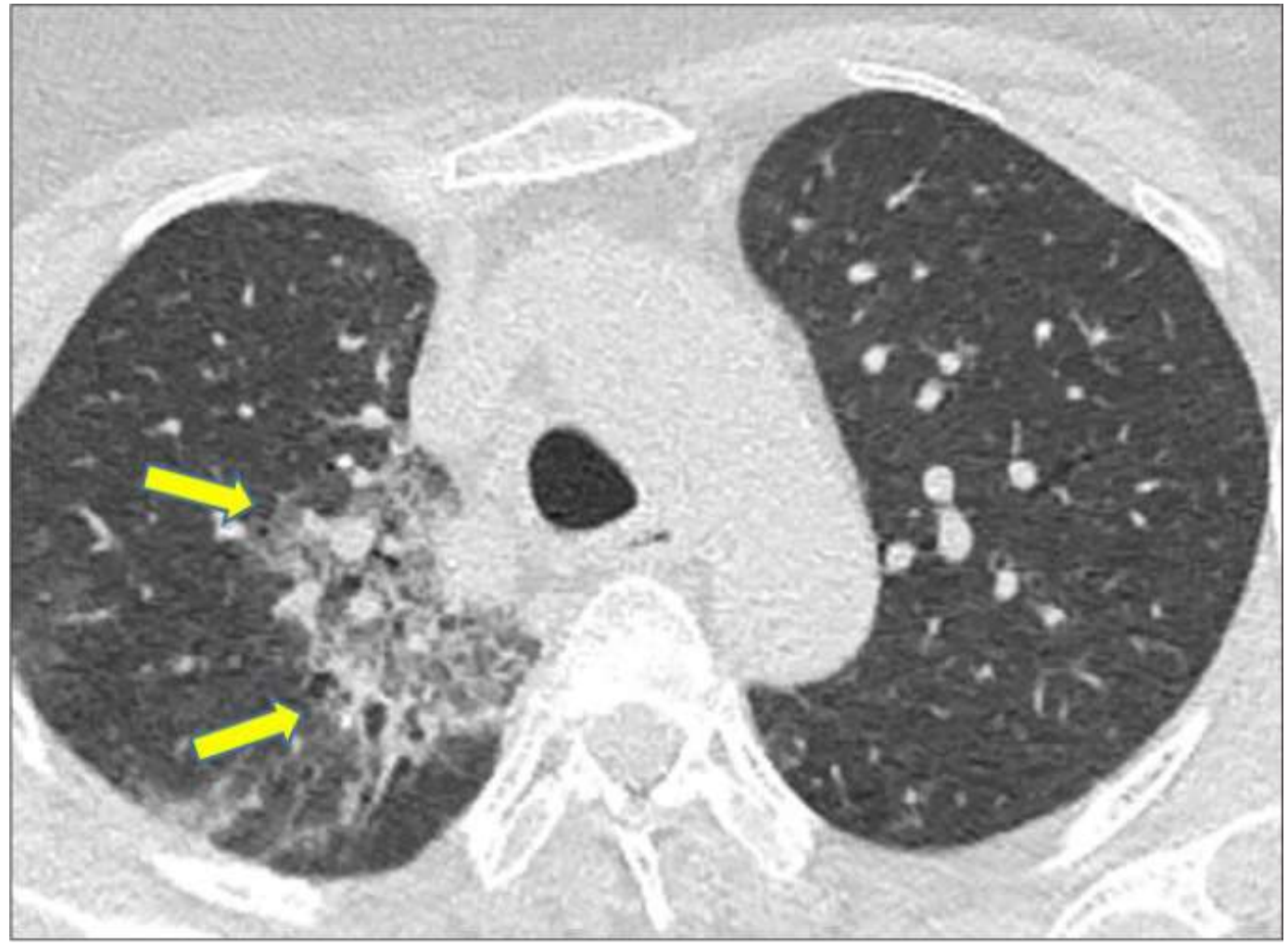
Naim Ceylan, Akın Çinkooğlu, Selen Bayraktaroğlu, and Recep Savaş

1- Isolated central involvement or central predominant involvement
(VS Peripheral and subpleural involvement)

irregular consolidation and GGO in central areas of both lungs. Bilateral pleural effusion is also seen .

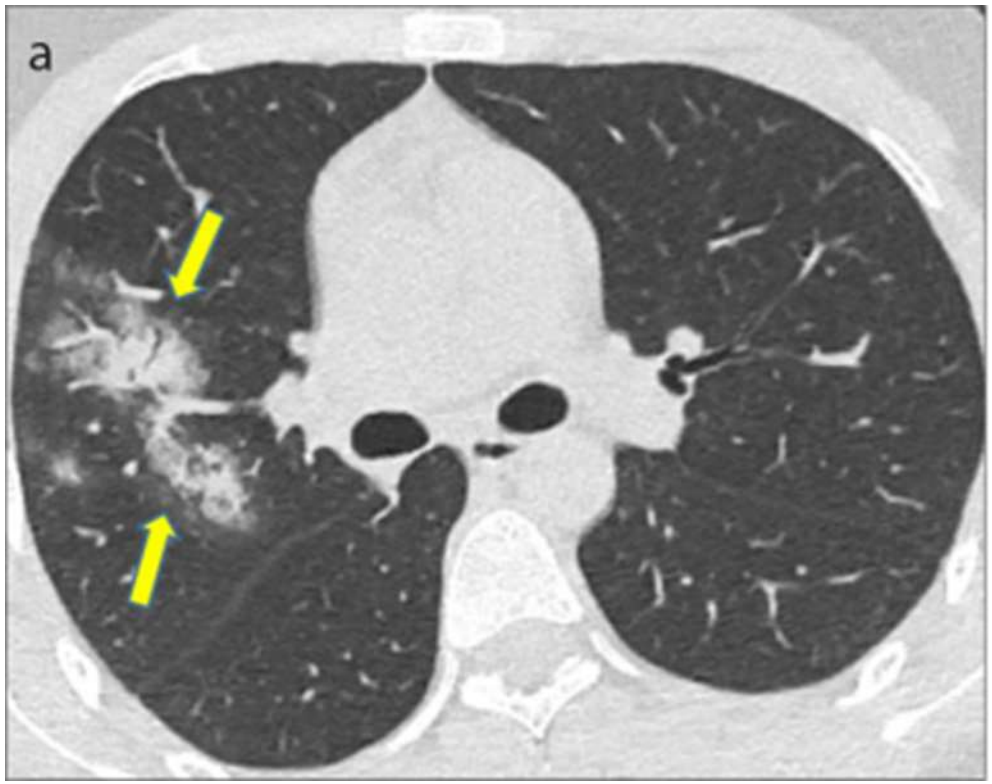
Ddx:

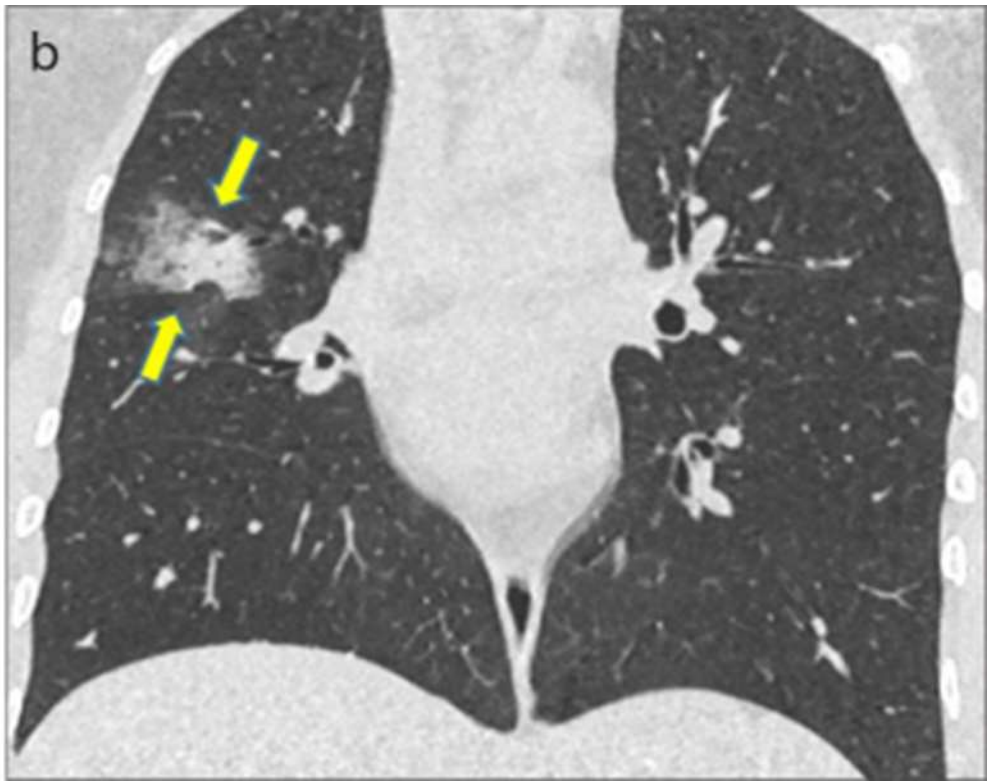
- CHF
- COP



crazy-paving pattern in central peribroncovascular area of right upper lobe

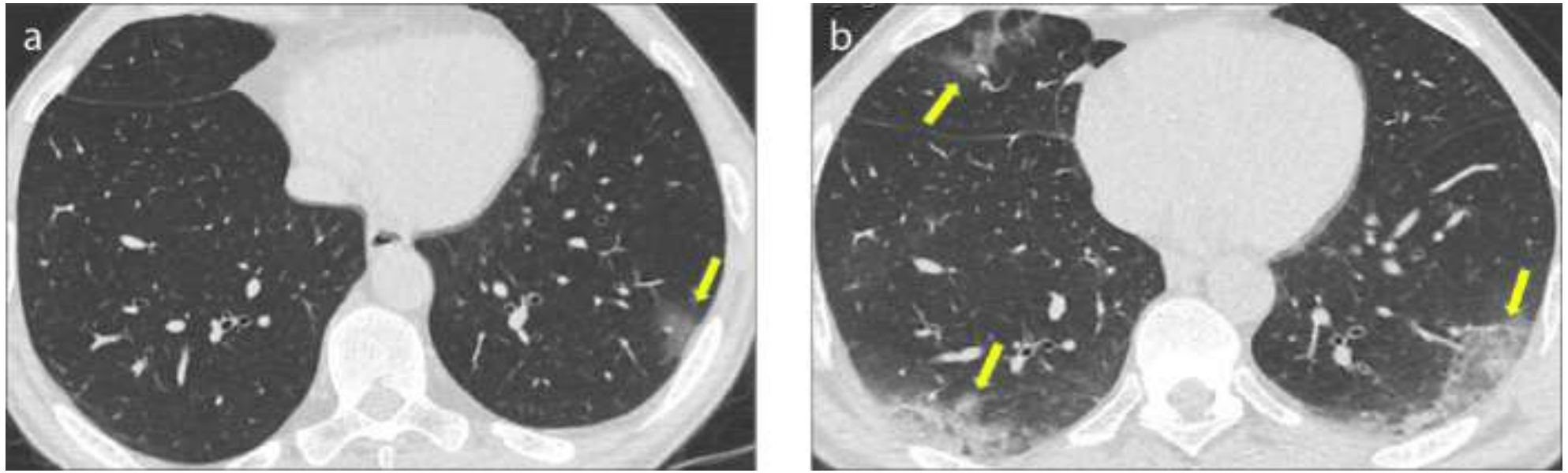
2-Isolated upper lobe involvement (VS lower lobe predominant)





Particularly in the early period of the disease, upper lobe involvement can be observed in the form of GGO.

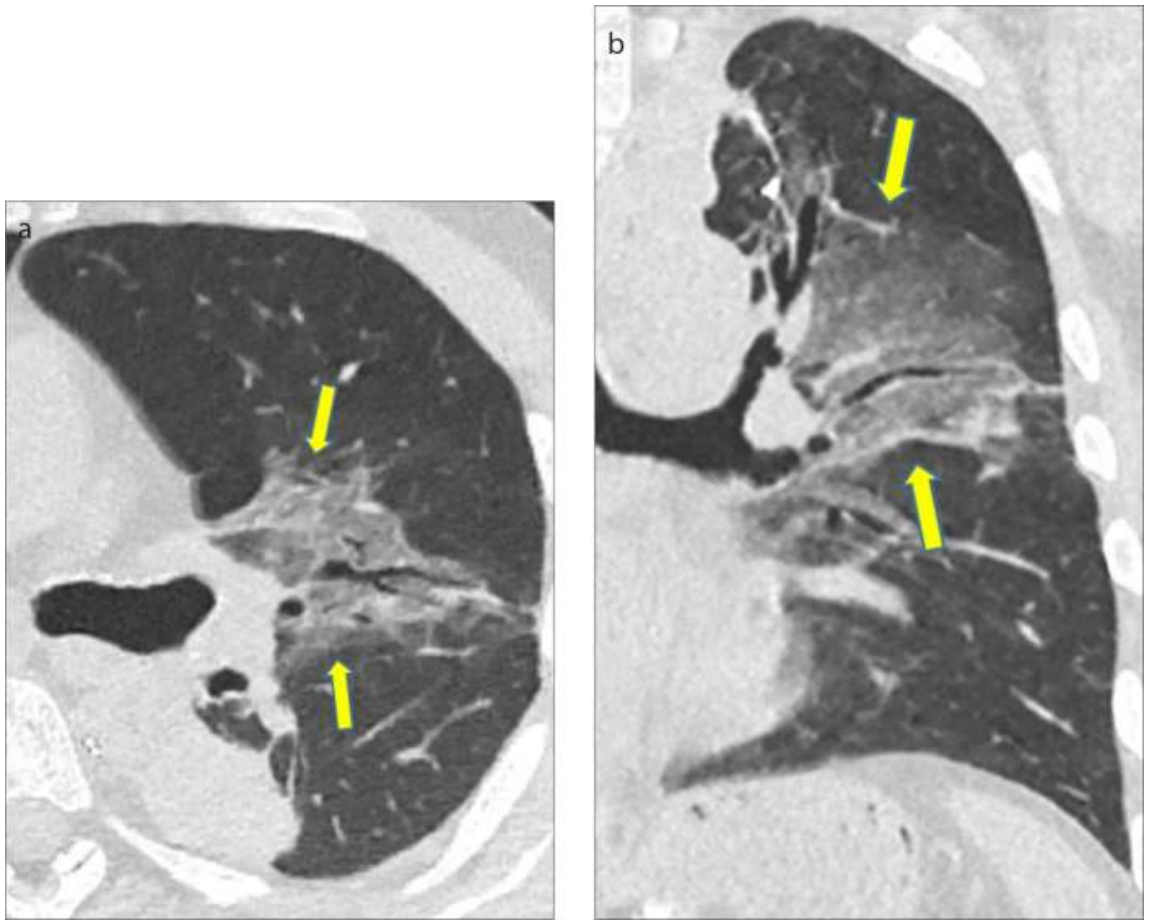
3-Solitary involvement
(VS Multifocal involvement, mostly bilateral)



taken one week later, shows an enlarged region of GGO with superimposed consolidations in both lower and middle lobes

Solitary involvement may be mostly ground-glass density or more solid. It can be observed especially in the early period and may become multifocal in later stages .

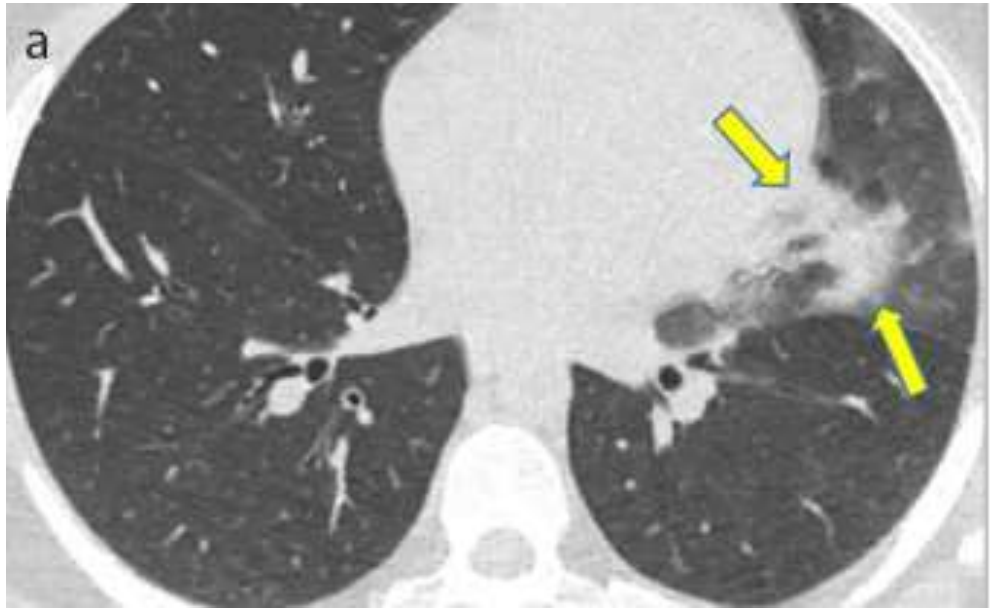
4-Peribronchovascular involvement (VS peripheral-predominant and irregular)

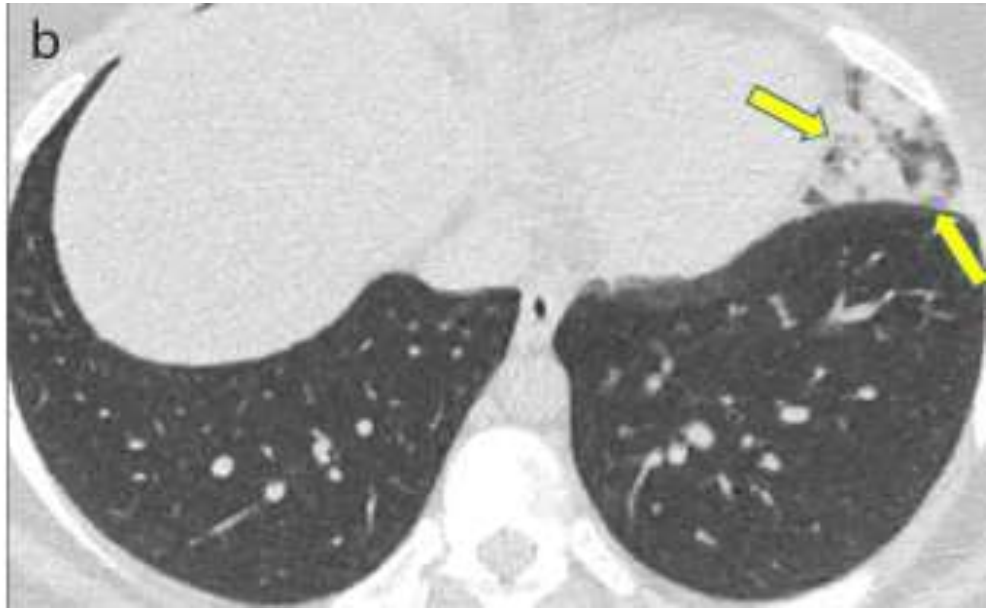


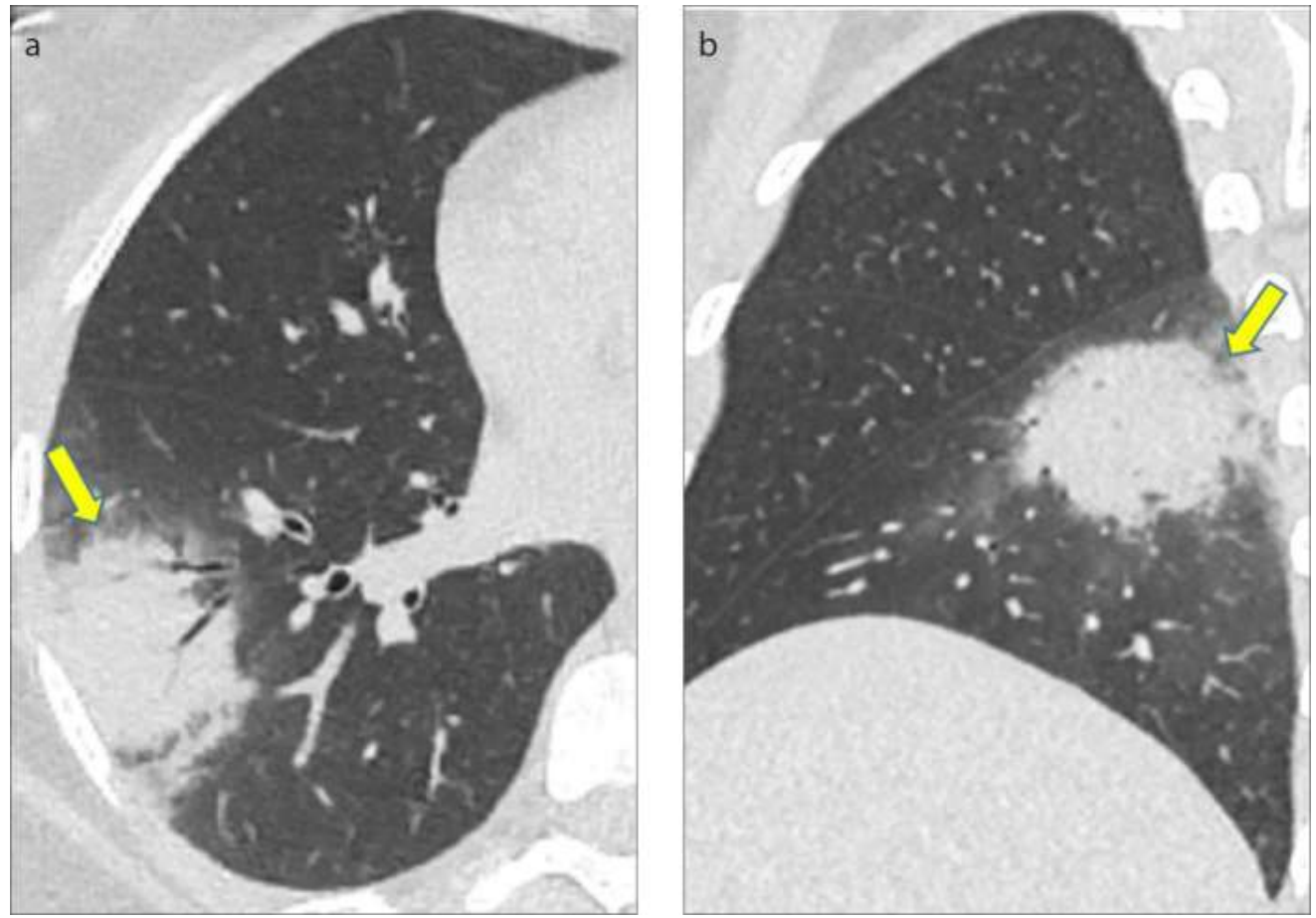
DDX:

sarcoidosis and organized pneumonia

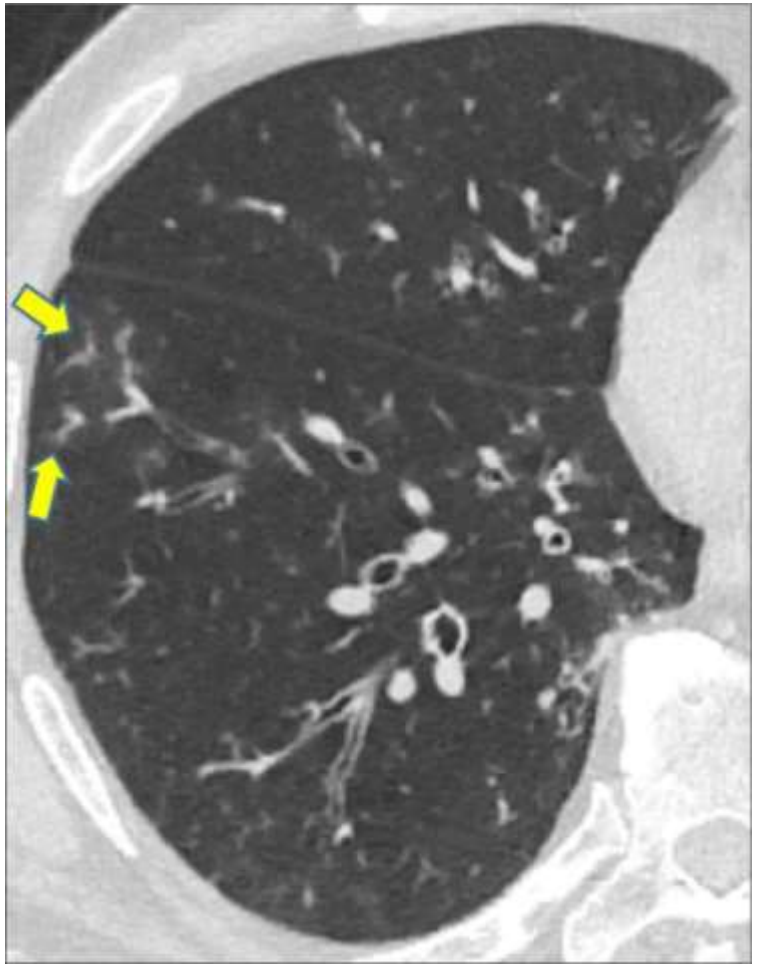
5-Lobar consolidation(VS Multifocal consolidations)






a
b

6- Tree-in-bud pattern

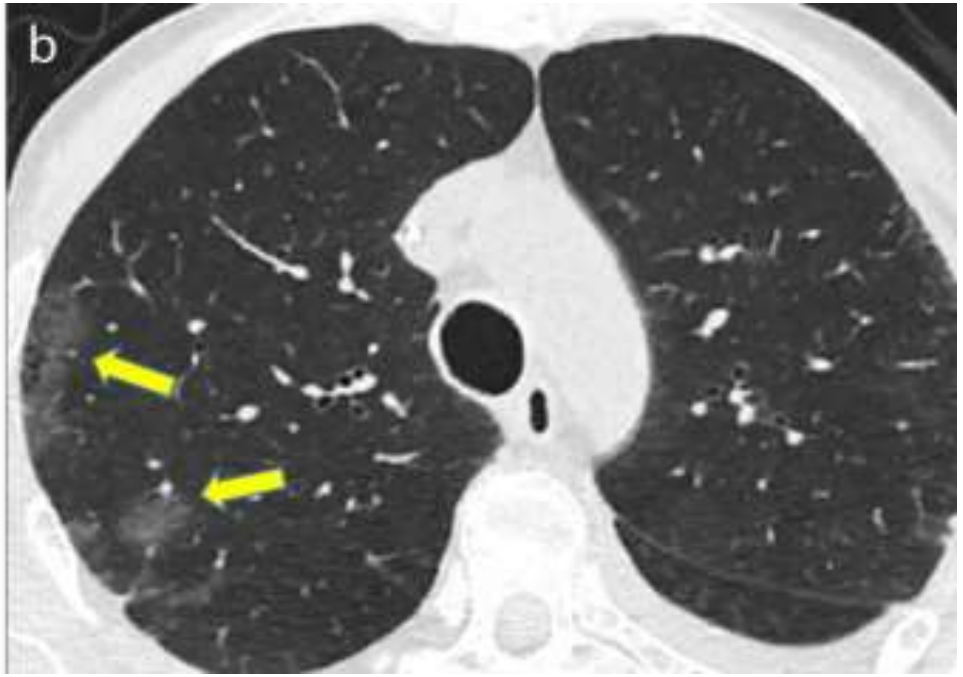


DDX:

tuberculosis and infective bronchiolitis

7-Nodules

8-Pleural effusion

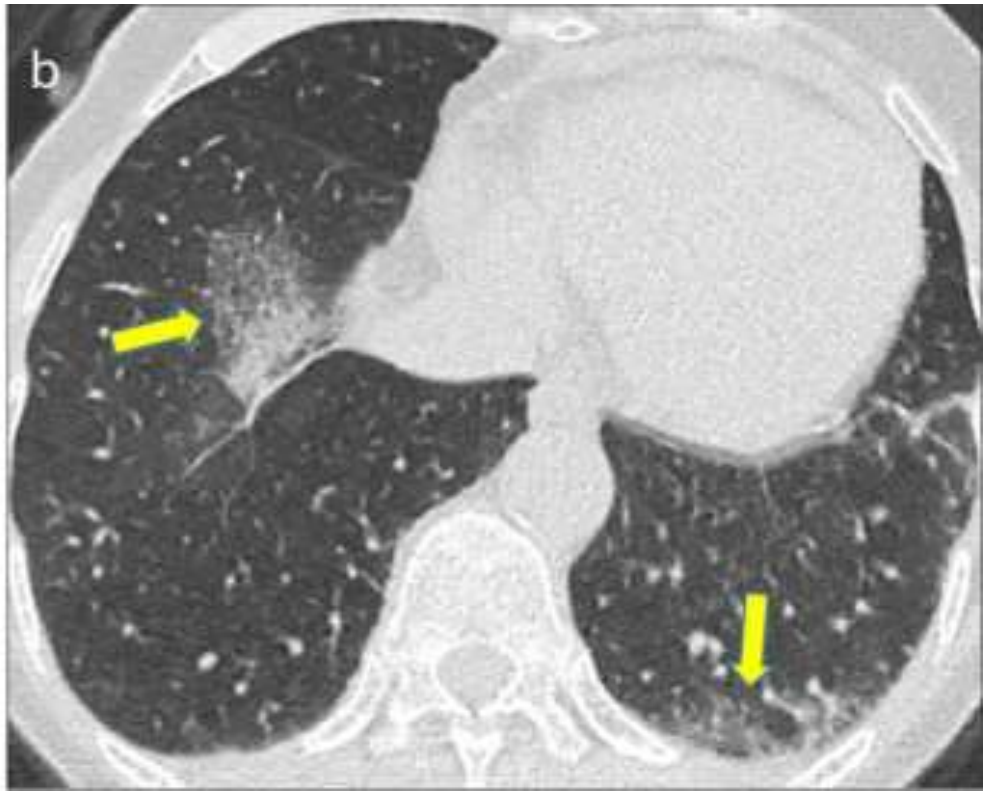


The prevalence of pleural effusion in COVID-19 : 0% to 20% .

It can be isolated or due to another accompanying disease .

The accompanying interlobular septal thickening should suggest cardiac failure.

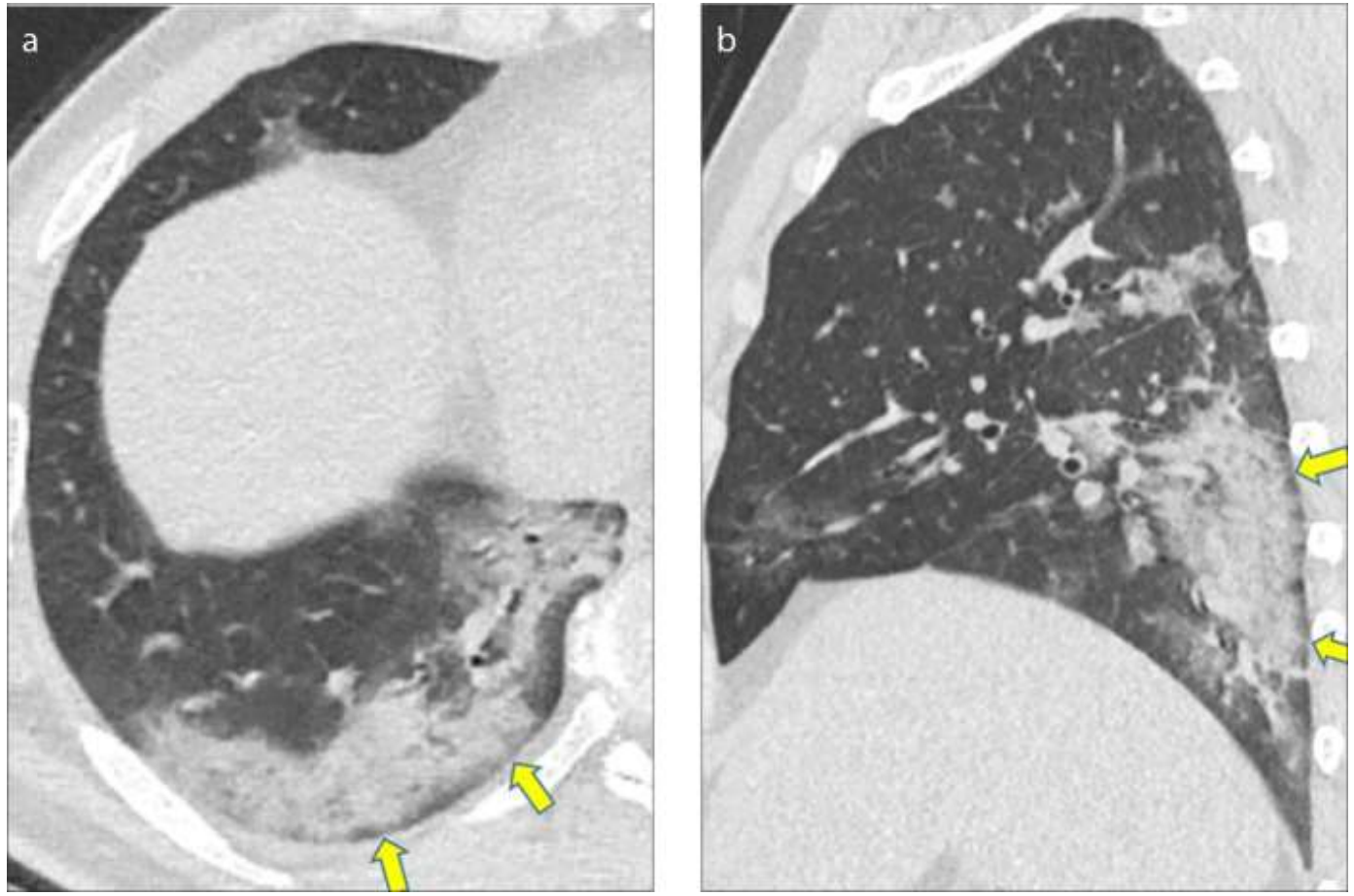
8-Pericardial effusion



pericardial fluid

- rare finding
- a poor prognostic factor in many publications
- myocarditis or myopericarditis due to COVID-19 can lead to pericardial effusion.
- patients should be evaluated for cardiac involvement in the presence of pericardial fluid, especially in patients without a history of cardiac disease.

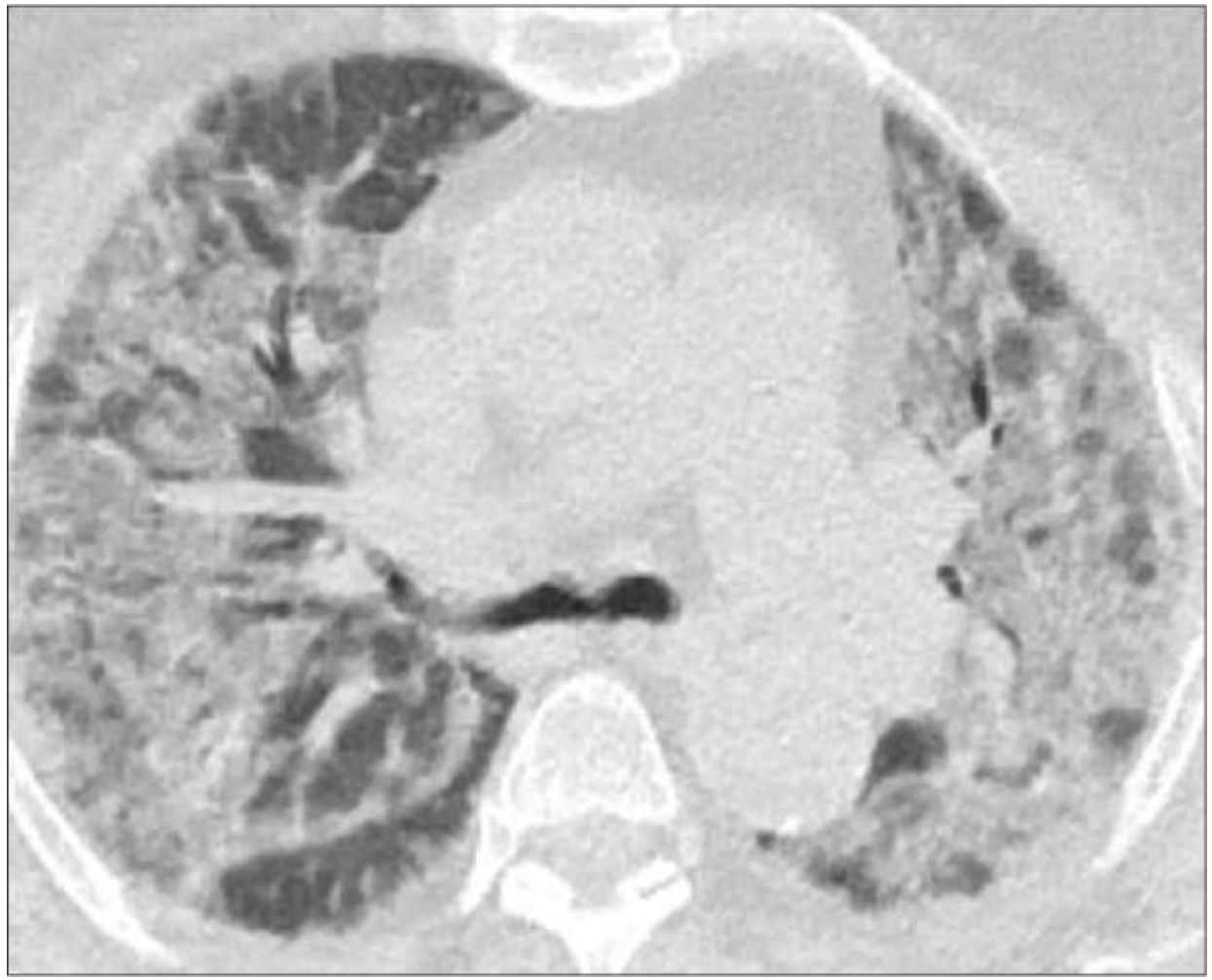
9-Subpleural sparing



DDX:

- Nonspecific interstitial pneumonia is one of the most typical diseases
- alveolar proteinosis
- parenchymal contusion

10-White lung



Diffuse infiltration involving the lung is considered to be a rare involvement seen particularly when disease progresses to acute respiratory distress syndrome (ARDS), and it is considered to indicate poor prognosis

This appearance can also be observed in other viral infections, pulmonary edema patterns, and drug toxicity.

Annals of Clinical Case Reports

Case Series
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Atypical CT Pattern in COVID-19 Infection: Are Lung Cavitations Really Uncommon?

Elisa Calabrò[1], Lucia Trotta[1], Mariangela Nivuori[1], Lisa Serati[1], Agnese Massafra[1], Michaela Cellina[3], Aurora Smeriglia[1], Enrica Negro[2], Lucio Macchi[2], Lisa Longo[1], Antonio Comi[1], Daniela Montori[1], Giancarlo Oliva[3] and Antonio Brucato[1]*

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11-cavitation

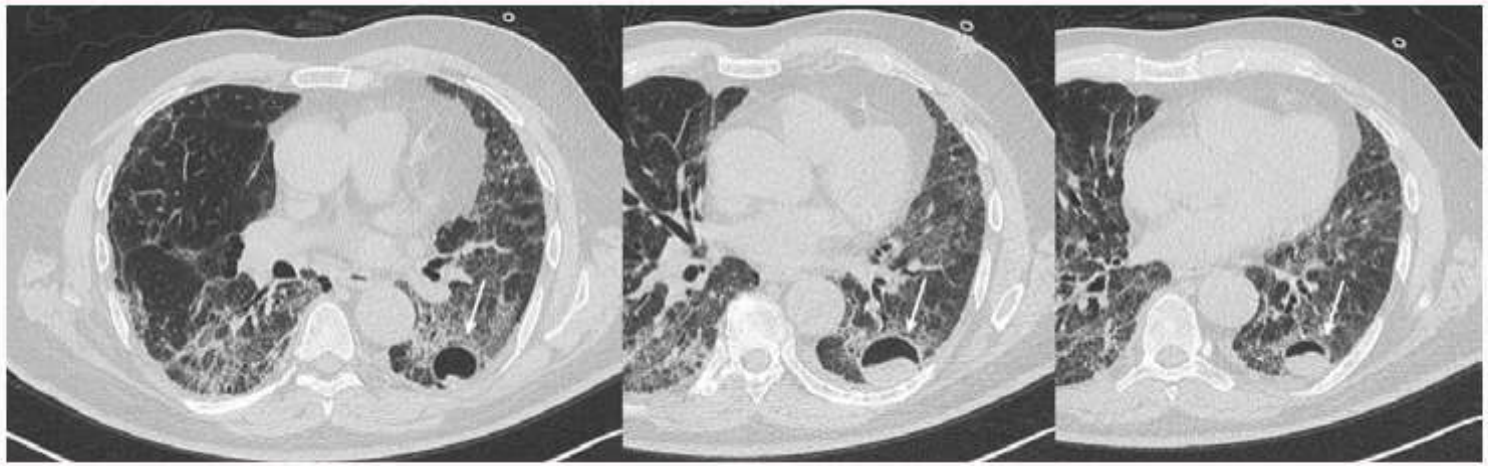


Figure 1: Axial thin-sections unenhanced CT scan show diffuse bilateral confluent and predominantly linear ground-glass opacities with a pronounced peripheral and posterior distribution and in lower left lobe a cavitated area with mucoid component in the context (arrows).

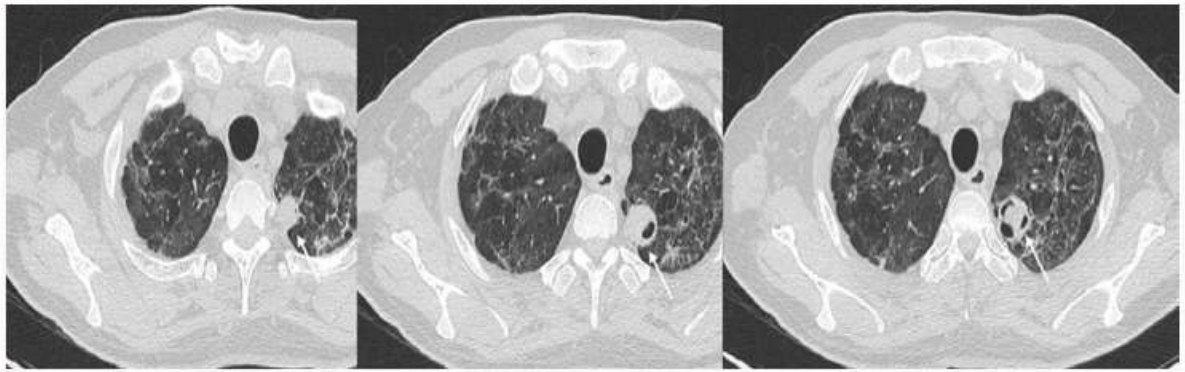


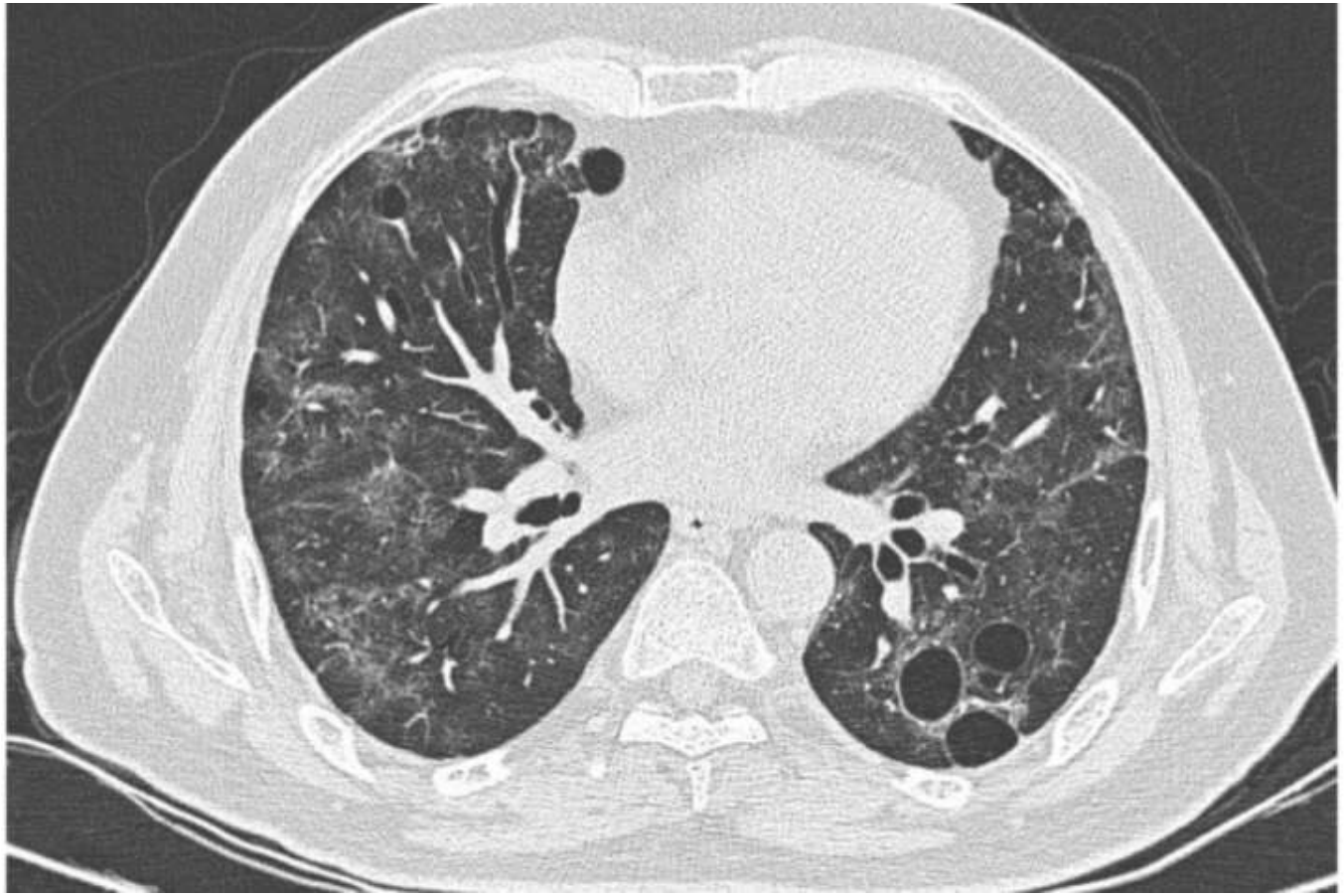
Figure 4: Axial thin-sections unenhanced CT scan show multiple patchy ground glass opacities with underlying reticulation and in left upper lobe a parenchymal alteration central excavation of 22 mm × 24 mm and craniocaudal extension of about 28 mm (arrows).

bilateral patchy ground glass opacities and

lower left lobe cavitated area with mucoid component in the context.

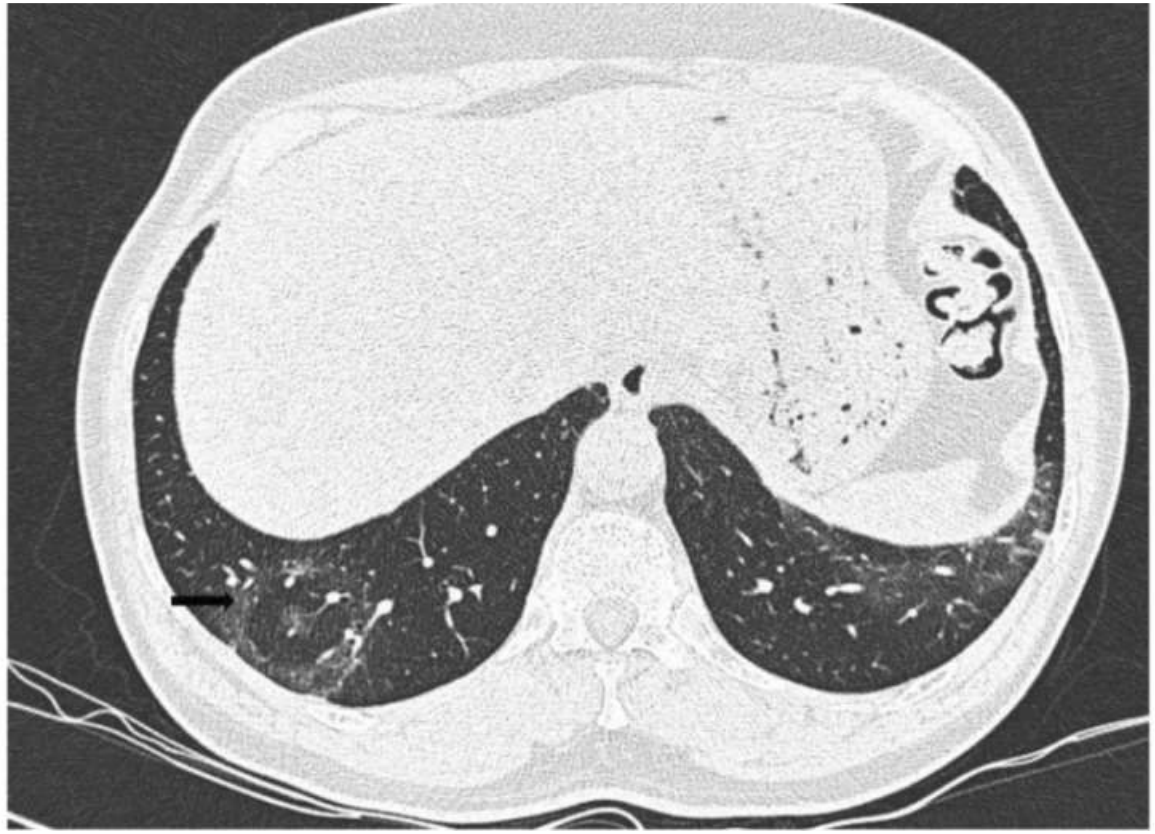
fungal and bacterial superinfection were negative.

12-cystic formation

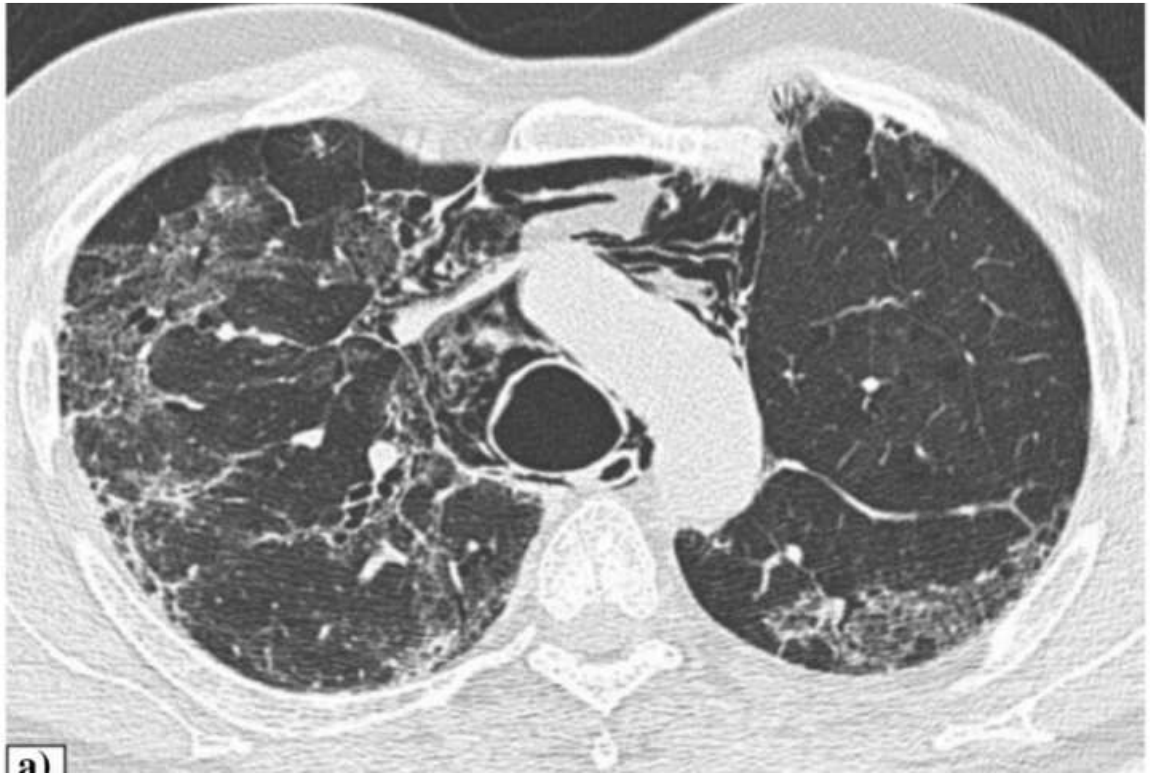


- multiple thin-walled air-filled cystic lesion

13- Bull’s eye sign.



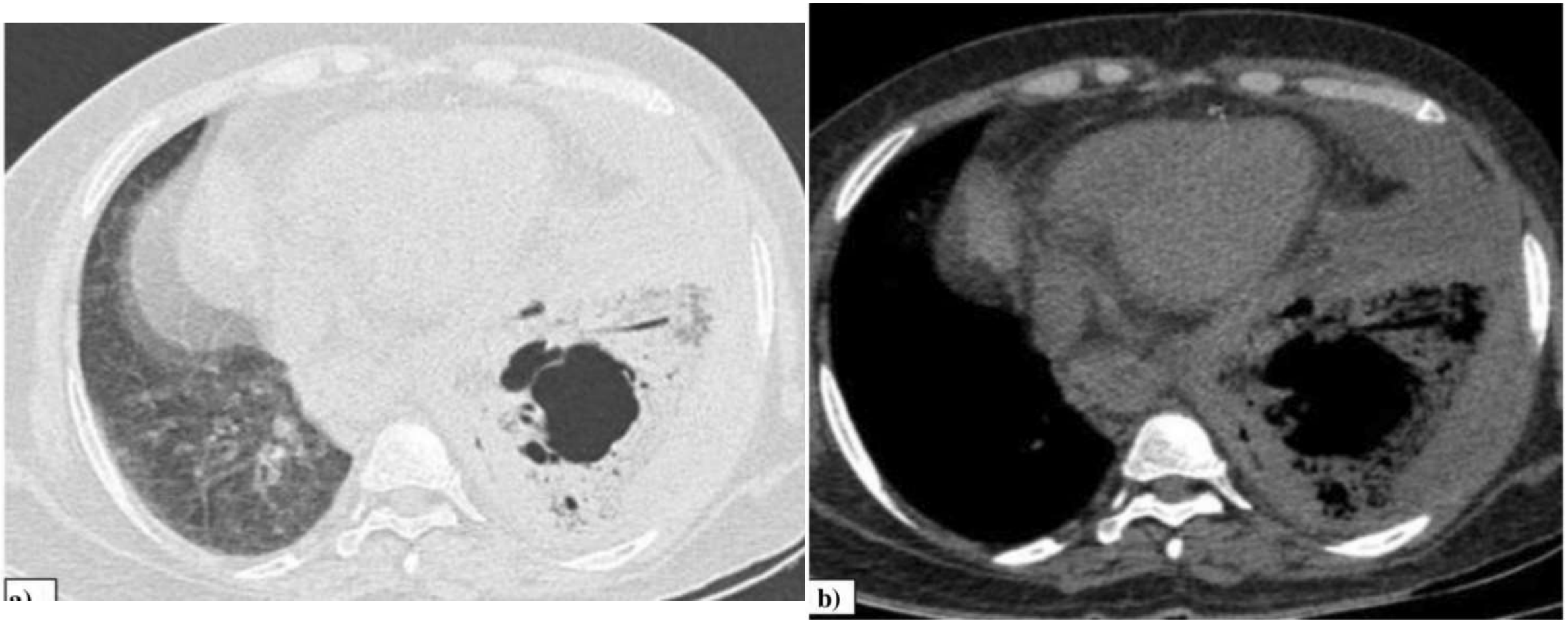
14- Spontaneous pneumomediastinum.



15-Halo sign

- Ddx:
- invasive aspergillusis
- Metastasis
- septic emboli
- vasculitis

16-Necrotizing pneumonia



Main points

Typical and most common signs of COVID-19 are mostly bilateral, multifocal, lower lobe and posterior-predominant ground-glass opacities, accompanying crazy-paving appearance, and consolidations.

Atypical chest CT findings such as central and peribronchovascular involvement, isolated upper lobe involvement, solitary involvement, lobar consolidation, nodule formation, subpleural sparing, pleural and pericardial effusion, cavitaion.cyst ,pneumpmediastinum.necrotizing pneumonia.