

Introduction

Coronavirus disease 2019 (COVID-19), was a highly contagious disease that caused severe respiratory distress syndrome (RDS). The most severely affected patients were older individuals and those with comorbidities. The etiology of lung disease after COVID-19 might be a sequela of prolonged mechanical ventilation, COVID-19-induced acute (RDS), or direct injury from the virus. Chest CT played a critical role in the diagnosis and follow-up of patients with moderate to severe respiratory symptoms of COVID-19 pneumonia and was an alternative and superior method compared with (RT-PCR) testing. Patients recovering from COVID-19 had persistent symptoms and variable CT abnormalities including ground-glass opacities (GGOs), consolidations, sub-pleural bands, reticular abnormality, and evidence of fibrosis, volume loss, architectural distortion, traction bronchiectasis, and air trapping. The short and midterm chest CT outcomes in patients with COVID-19 had been reported in some studies, which used both qualitative and semi quantitative methods.

Aim of the Work

The purpose of this work was describing post covid-I9 short-term lung sequelae on follow up CT-chest.

Patients and Methods

This is a retrospective study based on the hospital data of 50 patients who performed chest CT at the initial diagnosis of COVID-19 and after short term follow-up (up to six months).

The patients were subjected to:

- Thorough history taking; regarding onset and course of clinical condition, associated chest symptoms, medical, surgical and occupational history.
- Thorough general and local chest clinical examination.
- Plain chest radiographs according to clinical presentation.
- Non-enhanced chest CT with multiplanar reformation and reconstruction algorithms including, maximum intensity projection (MIP), minimum intensity projection (MinIP) and 3D volume rendering (VR) as well as different lung window settings according to the clinical presentation at the initial diagnosis and on follow up CT within six months.
- CT pulmonary angiography in suspected cases of pulmonary embolism.

Results

Table 1: Distribution of the studied patients regarding lung findings on follow up CT.

Lung findings	NO	%
Ground glass opacity		
• Regression	18	36%
• Progression	11	22%
• Total resolution	9	18%
• De novo appearance	8	16%
• Persistence (no significant change)	3	6%
Total	49	98%
Consolidation		
• De novo appearance	5	10%
• Persistence	3	6%
• Resolution	6	12%
Total	14	28%
Crazy paving		
• De novo appearance	4	8%
• Persistence	3	6%
• Resolution	5	10%
Total	12	24%
Subpleural lines (linear bands)		
• Persistence	4	8%
• De novo appearance	5	10%
Total	9	18%
Fibrosis		
• Persistence	2	4%
• De novo appearance	5	10%
Total	7	14%
ARDS		
• Regression	1	2
• De novo appearance	1	2
Total	2	4%
Reversed halo sign		
• Resolution	1	2%
Cystic changes		
• Persistence	1	2%

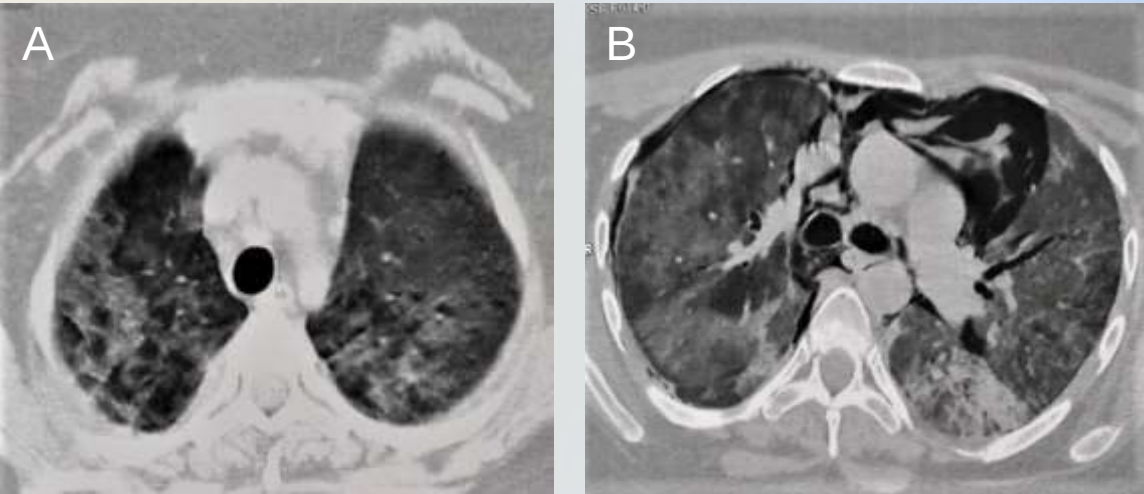


Figure: 32 year-old female patient presenting with fever and cough. The PCR test was positive for COVID-19. Initial non-contrast CT:
(A) Axial image reveals multiple bilateral, peripheral ground glass opacities mixed with areas of consolidations and interlobular septal thickening giving crazy paving appearance.
Follow up CT:
(B) Axial image of the same patient after 1 month with persistent symptoms revealed; bilateral ground glass opacities with extensive pneumothorax and pneumomediastinum.

Conclusion

COVID-9 infection can lead to various lung, mediastinal, and vascular sequelae. Chest CT is crucial for diagnosing and the GGO was the dominant finding on both the initial and follow-up CT, with typical patterns aiding differentiation from other causes of pneumonia. Patients who developed fibrotic changes at the 6-month follow-up had a higher CT severity score on their initial imaging compared to those who experienced complete resolution.