

Introduction

The recent birth of Covid-19 has been a challenge to the medical fraternity.

The concealed nature of this disease with limited findings on the lung exam even in patients with severe illness, chest x-ray not correlating with the severity of the disease, and chest CT with its concern for radiation exposure, have been some of the reasons for making clinical monitoring of Covid-19 and the response to treatment, very challenging.

To tackle this, our institution utilized Lung Ultrasound as a tool to visualize the severity and evolution of this disease. In all patients with Covid-19, we used the method of 8 frontal zones from 2012 guidelines (Volpicelli et al).

Case Presentation

HPI- A 36y/o female in her 20th week of gestation was admitted to the hospital with shortness of breath secondary to Covid-19. She received appropriate management with IV steroids and Enoxaparin for 2 days, subsequently she got better and was discharged home on 2L of Oxygen.

However, on the third day after discharge, she presented again with worsening of shortness of breath.

Vitals- Hypoxic, initially requiring 5L of supplemental oxygen which eventually trended up to 30L .

Physical exam- Tachypnea, decreased breath sounds at lung bases.

Labs- Mild Leukocytosis with Lymphopenia, D-Dimer 87, and a CRP of 101.4;

Upon her prior admission D-Dimer and CRP were 2030 and 50 respectively.

Chest XR- Bilateral ground-glass opacities not changed from her prior admission.

Lung US- Abnormal sonographic findings more noticeable in zone 3, which are shown in Figure A.

Treatment- Convalescent plasma, 7 days of IV steroids and Enoxaparin.

Eventually, she was titrated off the oxygen. At this point, the Lung US was repeated which was depictive of improved lung aeration as shown in Figure B.

Here we show zone 3 with the most dramatic change before and after treatment.



Figure A: Solid B lines, abnormal pleural lines and white lung

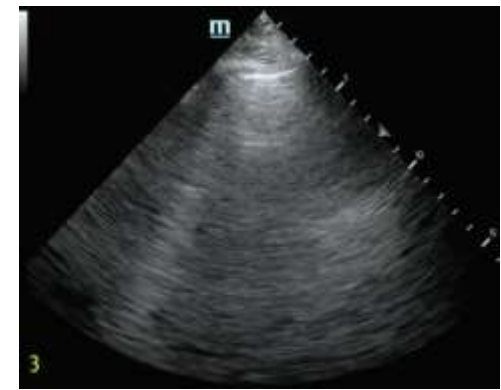


Figure B: Demonstrates the resolution of white lung and decreased B-lines with the presence of new A-lines

Discussion

At Danbury Hospital, we have consistently found sonographic changes in multiple lung zones of patients with Covid-19 which include **solid B-lines, abnormal pleural sliding, white lung, and subpleural consolidations.**

While the physical exam, abnormal labs, and chest X-Ray lagged to show worsening of the disease, changes in Lung US findings were consistent with the clinical course.

In this case, we show the reliable use of Lung US findings demonstrating an improvement of the lung injury, which, to our knowledge is a new possible use of the Lung US in Covid-19.

Conclusion

In the setting of limited resources during a pandemic with limited data about Covid-19, a simple device such as Lung US can be a pertinent diagnostic/ guidance tool to monitor the evolution and improvement of Covid-19.