



SPONTANEOUS PNEUMOTHORAX IN A PATIENT WITH COVID 19

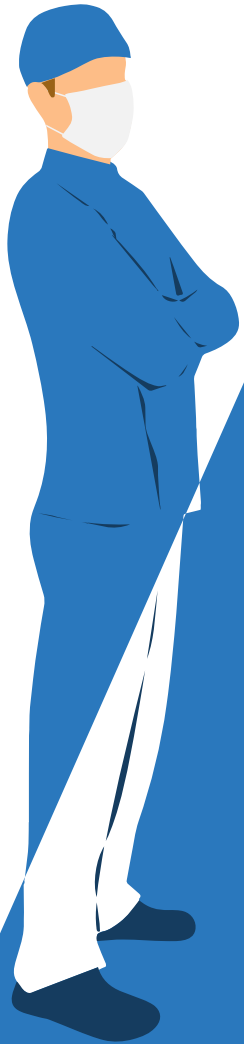
- CASE REPORT -

Gordana Kamcheva Mihailova
Clinical Hospital, Faculty of Medical Sciences, Shtip, N.Macedonia



INTRODUCTION

PANDEMIC COVID-19



Coronavirus disease 2019 (COVID-19) is an infectious disease caused by severe acute respiratory syndrome, coronavirus 2 (SARS-KOV-2). As is well known, COVID-19 has become a global pandemic and a serious health problem.

The disease was first reported in December 2019 in Wuhan, China, which spread rapidly and caused a global pandemic.

Computed tomography (CT) is strongly recommended in suspicious cases of COVID-19 or at initial assessment and monitoring.

Known radiological features of COVID-19 pneumonia on CT are: bilateral extensive obstruction of milk glass with peripheral distribution, mainly involving the lower lobes.

Uncommon parenchymal and/or extraparenchymal complications may occur: pleural and pericardial effusion, lymphadenopathy, cavitation, halo-sign on CT, and pneumothorax.



INTRODUCTION

Retrospective studies in patients with COVID-19 suggest that pneumothorax may occur in 1% of patients seeking hospitalization, 2% of patients seeking intensive care unit (ICU), and 1% of patients dying from infection.

The incidence of pneumothorax and pneumomediastinum in patients with mechanical ventilation is 15%.

Spontaneous pneumothorax has been reported as a complication of severe acute respiratory syndrome with an incidence of 1.7% in hospitalized patients.

Pneumothorax has been reported as a poor prognostic factor in patients with coronavirus infection with severe respiratory syndrome.

Our case aims to describe the clinical features of a patient with these diagnoses and to encourage consideration of the association of COVID-19 and pneumothorax as a possible poor prognostic factor.



CASE REPORT

COVID-19

PANDEMIC (COVID-19)



Dry Cough



Fever

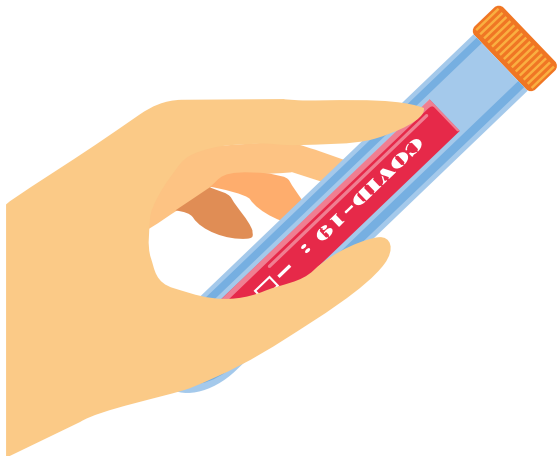


Shortness Of Breath



Fatigue

Case in a non-intubated patient with pneumothorax and COVID-19, (without previous history of lung disease or requiring positive pressure ventilation).



- ✓ 46-year-old man, without other comorbidities, admitted to the infectious ward due to 7-day temperature up to 38°C, fatigue, malaise, dry cough, shortness of breath
- ✓ Treated by a family doctor, but without improvement.
- ✓ On admission, vital signs: T=37.8°C, pulse 60/min, SpO2=87%
- ✓ Laboratory tests, chest CT, CT pulmoangiography and molecular nasopharyngeal swab test for SARS-CoV-2 were performed (twice positive)
- ✓ The patient was treated with infusions, antibiotics, analgesics and vitamin therapy

Physical examination

COVID-19



INSPECTION



Conscious, contactable, febrile, eupnoic, eucardic, wet and white coated tounge

PALPATION



Enhanced fremitus pectoralis

PERCUTION



Percutaneus dullness right in middle and basal parts of the lungs

AUSCULTATION



Inaudible breathing in basal and middle parties right, and left basal crepitation and finding of dry scraping noises in the middle parties

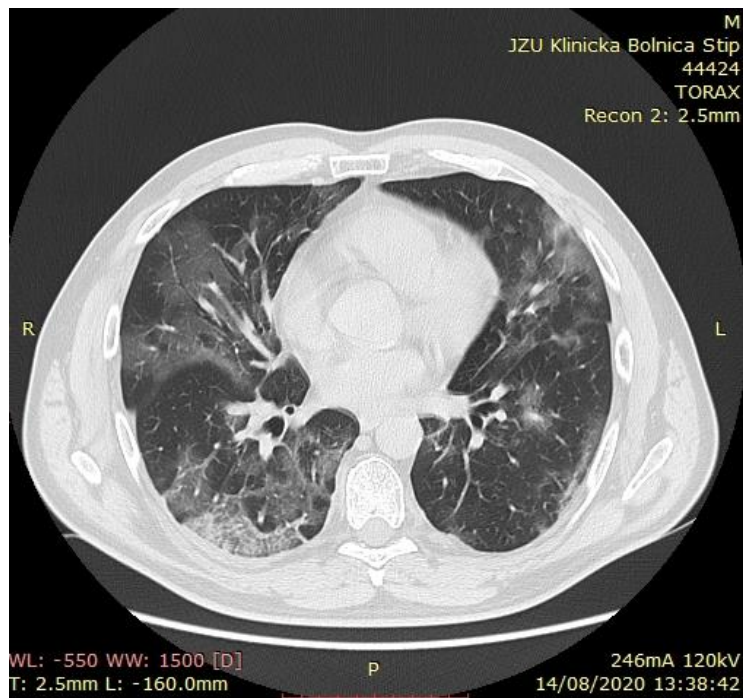
CT findings

COVID-19

Progress steps

14.08.2020 (native CT)

Figure 1. Diffuse multiple zones of bilateral interstitial pneumonia, milk glass attenuation, free mediastinum and pleural spaces.



1

27.08.2020 (CT pulmoangiography)

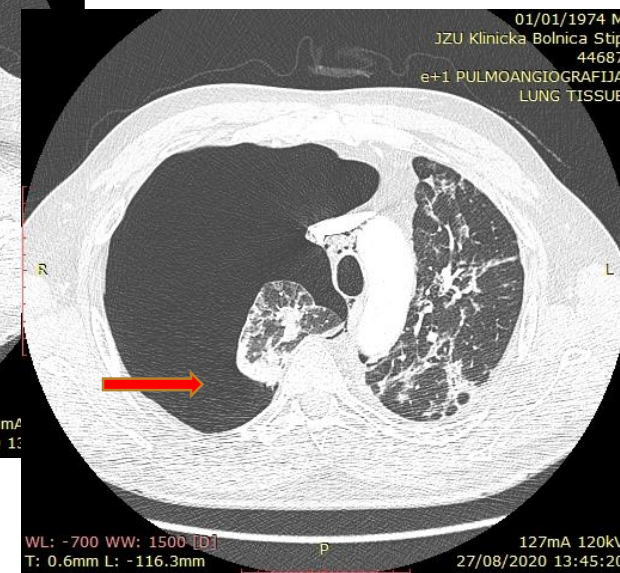
Figure 2-7. In the right lung, massive pneumothorax with collapsed lung with hyperdense zones of atelectasis and basal posterior small pleural effusion (hydropneumothorax), with no signs of thromboembolism.



2



3



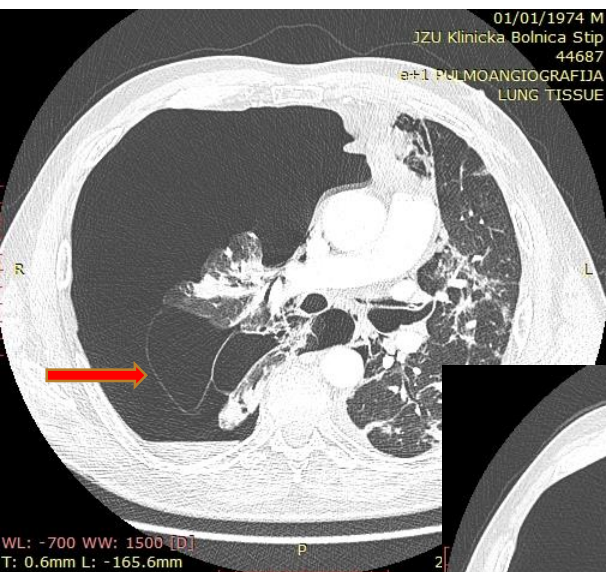
4

CT findings

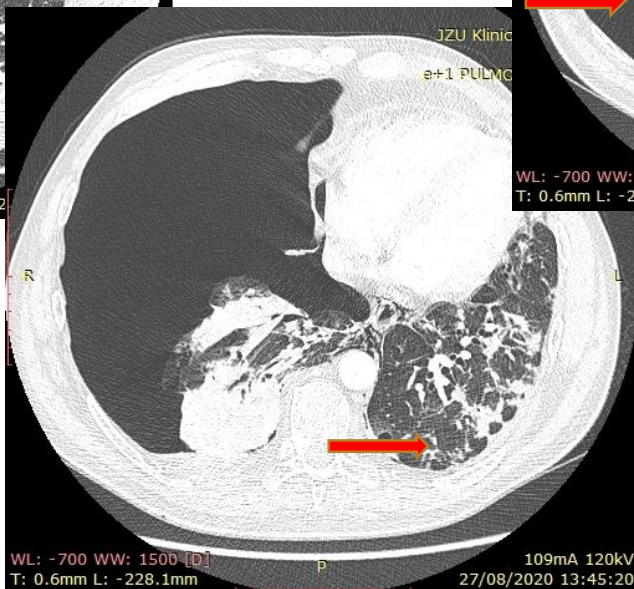
COVID-19

Progress steps

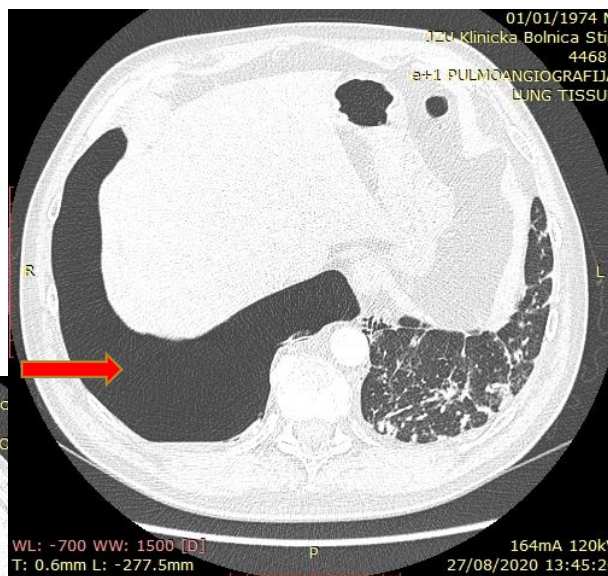
27.08.2020 (CT pulmoangiography)



5



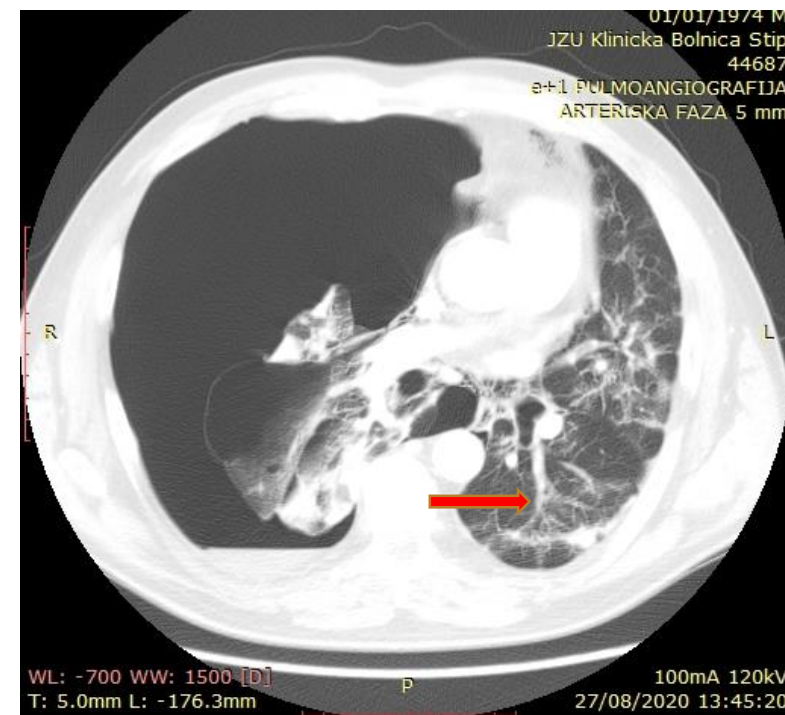
6



7

27.08.2020 – Skopje, Thoracic surgery
(surgical ward for further treatment)

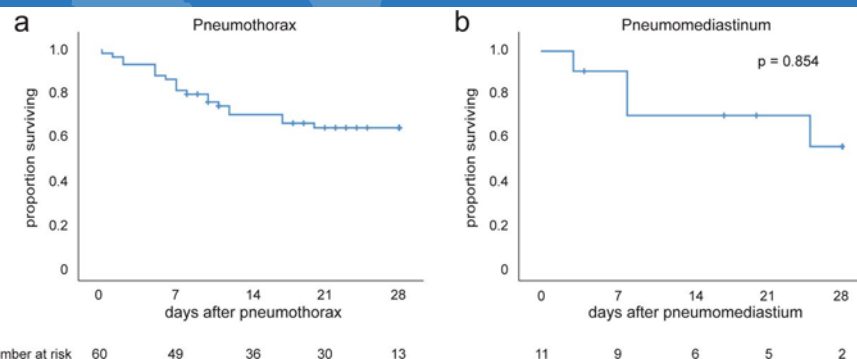
In the left lung diffuse reticulotractotic fibrous changes as well as subpleural focal fibrosis which are basally posterior in the form of a thicker band, a finding for regression.



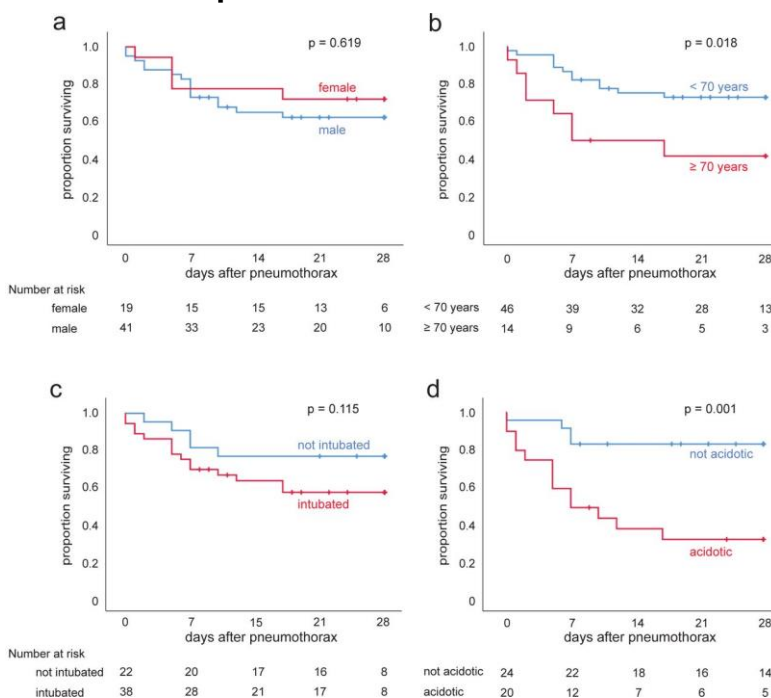
8

DISCUSSION

COVID-19



Mortality following pneumothorax or pneumomediastinum in COVID-19.



Relationship between sex, age, ventilatory support and pH and mortality in pneumothorax COVID-19.



There are several studies where spontaneous pneumothorax is a common complication of severe acute respiratory syndrome. A retrospective study, From March to June 2020, included 71 patients from 16 centers, of whom 60 had pneumothorax (6 of whom also had pneumomediastinum), while 11 patients had pneumomediastinum alone.



The clinical study included patients who already had pneumothorax on the day of admission, patients who developed pneumothorax or pneumomediastinum during their hospital admission, COVID-19 patients who developed their complication with intubation and ventilation.



Survival for 28 days was not significantly different between patients with pneumothorax ($63.1\% \pm 6.5\%$) or with isolated pneumomediastinum ($53.0\% \pm 18.7\%$; $p = 0.854$). The incidence of pneumothorax was higher in men. 28-day survival was not different between the sexes (men $62.5\% \pm 7.7\%$ versus women $68.4\% \pm 10.7\%$; $p = 0.619$).



Patients over 70 years of age had significantly lower 28-day survival than younger subjects (≥ 70 years $41.7\% \pm 13.5\%$ survival versus < 70 years $70.9\% \pm 6.8\%$ survival; $p = 0.018$ log rank).

CONCLUSION

COVID-19

01



By presenting this case we emphasize the possible clinical scenario of spontaneous pneumothorax accompanied by COVID-19 pneumonia through CT finding.

02



Clinicians should be aware that pneumothorax may be seen within the radiological manifestations of a patient with COVID-19 pneumonia.

03



Pneumothorax is rarely associated with COVID-19 pneumonia. COVID19 spontaneous pneumothorax associated with an otherwise healthy individual may be an undiagnosed entity. This association may be secondary to undiagnosed bullous lung disease and rupture.

04



Further research is needed to demonstrate the association of pneumothorax in a patient with COVID-19 bilateral pneumonia.



Let's stay
at **home**



THANK YOU

PLEASE, TAKE CARE

