

Recurrent pneumothoraces: A new complication to consider for rehabilitation physicians during the era of COVID-19

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Background

After severe COVID-19 infections, many patients will require rehabilitation services to overcome impairments caused by the disease. The aftermath clinical findings related to COVID-19 infection is not limited to neuromuscular system such as critical illness neuromyopathy or myopathy, but involves all systems such as pulmonary, cardiovascular, renal, hematologic systems to name a few. Rehabilitation physicians need to keep an open mind while caring for this group of patients who are prone to develop further complications as a sequela of this new infection.

Conclusion

COVID-19 pandemic has widened the necessity of rehabilitation services for this multisystem disease that has various neuromuscular complications. Unfortunately, consequences are not limited to the musculoskeletal system. Physiatrists need to follow up closely the respiratory status of the patients with history of COVID infection and be proactive when a decline of respiratory status is suspected.

Since our patient had history of pneumothorax before his admission to Rehabilitation Unit, pneumothorax was on top of the list of differential diagnosis during acute deterioration which has led to quick recognition and treatment. However other potential complications such as pulmonary embolus should be kept in mind in the context of hypoxia, tachycardia and acute worsening of respiratory status.

Discussion

In the era of COVID-19 pandemic, rehabilitation physicians need to be familiar with the complications that might develop during the course of this infection. Pneumothorax is reported as a rare complication (1%) of COVID-19 infection. The mechanism of formation of pneumothorax in patients with COVID-19 infection is still not clarified. However emerging data is demonstrating substantial fibrotic consequences of the disease, and thus more cases are to be expected.

Discussion (continued)

Physical signs of pneumothorax can be subtle so rehabilitation physicians must be aware of the potential pulmonary complications in addition to neuromuscular considerations during the process of rehabilitation and must have a low-threshold for follow up chest x-rays when decline of respiratory status is suspected.

Case description

Fifty-five year-old male was admitted to rehabilitation unit after COVID-19 infection that had started with shortness of breath. His course of hospital admission before rehabilitation unit was significant for pulmonary embolus and a small right apical pneumothorax which was resolved without treatment. Apixaban was started for pulmonary embolus and oxygen requirement was decreased until he was saturating well on five-six liters of oxygen by nasal cannula upon arrival to the rehabilitation unit. He developed new small pneumothoraces on both sides during his stay in the rehabilitation unit. Figure 1 demonstrates the right sided pneumothorax on the right side and Figure 2 demonstrates the pneumothorax on the left side. Pneumothoraces were treated conservatively by the pulmonologist. He was being prepared for discharge to home with oxygen when the patient developed new significant pneumothorax presenting with hypoxia, tachycardia and desaturation necessitating transfer to intensive care unit. Figure 3 demonstrates the chest X-ray that was taken during the acute desaturation necessitating the transfer back to intensive care unit.

Images

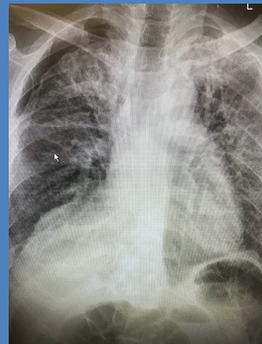


Figure 1



Figure 2

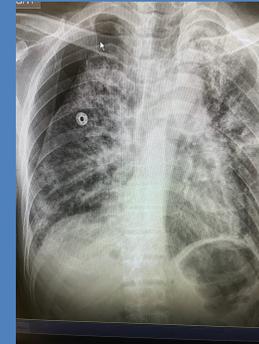


Figure 3

References

- 1-Wade D.T. Rehabilitation after COVID-19: An evidence based approach. Clin Med 2020;20(4):359-64.
- 2-Zhou C, Gao C, Xie Y, Xu M. COVID-19 with spontaneous pneumomediastinum. Lancet Infect Dis 2020;20:510.
- 3-do Lago VC, Cezare TJ, Fortaleza CMCB, Okoshi MP, Baldi BG, Tanni SE. Does COVID-19 increase the risk for spontaneous pneumothorax? Am J Med Sci 2020; 360(6):735-7.
- 4-Martinelli A.W et al. Covid-19 and pneumothorax: a multicenter retrospective case series. Eur Respir J 2020; 56: 2002697.