

Postcovidová plíce - kdy intervenovat a kdy ne

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XXIV. Colours of Sepsis, 26. – 29. 4. 2022 Ostrava

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Východiska

- Jaké změny lze očekávat
- Zkušenosti ze světa
- Vlastní

RTG prezentace

- Denzity mléčného skla s konsolidacemi parenchymu
- Pneumomediastina
- PNO
- Pneumatocele
- Kavitace
- Empyemy

RTG prezentace - cévní

- Plicní infarkty
- Embolizace
- Trombotizace in situ

Literární zkušenosti

- Kasuistiky
- Malé soubory
- Monocentrické
- Retrospektivní

Pneumomediastinum - Londýn

Pneumomediastinum in COVID-19 patients: a case series of a rare complication


Sara Volpi , Jason M Ali, Alishah Suleman, Rahim Nadeem Ahmed


European Journal of Cardio-Thoracic Surgery, Volume 58, Issue 3, September 2020, Pages 646–647, <https://doi.org/10.1093/ejcts/ezaa222>

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Abstract

Pneumomediastinum is a rare clinical finding, but one which can be the source of significant concern for clinicians. By presenting 3 such cases, we highlight that pneumomediastinum can complicate the course of a severe coronavirus disease 2019 infection but emphasize that conservative management is the first-line method of treatment, with gradual resorption of the air from the tissues. It is important to be alert to the development of pneumothorax, which will require drainage.

Pneumothorax - USA



The Annals of Thoracic Surgery

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Original article

Incidence, Management, and Outcomes of Patients With COVID-19 and Pneumothorax

Presented at the Fifty-seventh Annual Meeting of The Society of Thoracic Surgeons, Virtual Meeting, Jan 29-31, 2021.

Travis C. Geraci MD ¹, David Williams MD ², Stacey Chen MD ³, Eugene Grossi MD ⁴, Stephanie Chang MD ⁵, Robert J. Cerfolio MD, MBA ⁶, Costas Bizakis MD ⁷, Michael Zervos MD ⁸

From March 1, 2020, to April 30, 2020

25 patients (21.2%) demonstrated tension physiology. Placement of a large-bore chest tube (20 F or greater) was associated with fewer tube-related complications than a small-bore tube (14 F or less) (14 vs 26 events, $P = .011$).

Incidence, Management, and Outcomes of Patients with COVID-19 and Pneumothorax

1595 Patients with COVID-19



- 27% admitted to the intensive care unit
- 22% required mechanical ventilation

118 (7%) Pneumothorax



- 78% underwent tube thoracostomy
- 80% were on mechanical ventilation

58% In-Hospital Mortality



- 36-day median hospital stay
- 5% required operative intervention

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THORACIC SURGERY

Official Journal of The Society of Thoracic Surgeons and the Southern Thoracic Surgical Association



Geraci et al, 2021
@annalsthorsurg #TSSMN
#VisualAbstract #AnnalsImages






Pneumatocele - Itálie

Case report

Surgical Resections of Superinfected Pneumatoceles in a COVID-19 Patient

Massimo Castiglioni MD ^a, Giuseppe Pelosi MD ^b, Alberto Meroni MD ^a, Marta Tagliabue MD ^c, Elisabetta Uslenghi MD ^d, Davide Salaris MD ^e, Matteo Incarbone MD ^a

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<https://doi.org/10.1016/j.athoracsur.2020.06.008>

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Referred to by Antonio Manenti, Luca Roncati, Gabriele Melegari

Deepening Pathology of SARS-CoV-2 Pneumonia Explains Lung Ventilation Complications


The Annals of Thoracic Surgery, Volume 113, Issue 4, April 2022, Pages 1389

Emerging studies on radiologic findings in patients with coronavirus disease 2019 (COVID-19) report a high incidence of bilateral lung involvement, with ground-glass opacities imaging being the most common pattern on computed tomography. Cystic lesions, such as pneumatoceles, are rare, although they may occur in 10% of cases. Cyst formation may be explained by a focal pulmonary trauma caused by mechanical ventilation or infection-related damage to the alveolar walls leading to pneumatoceles. The superinfection of pneumatoceles is a potential life-threatening condition for which no standardized therapeutic algorithm has been accepted. We report a case of a COVID-19 patient successfully treated by lung resections for infected pneumatoceles.

Pneumatocele

CORRESPONDENCE | VOLUME 113, ISSUE 4, P1390, APRIL 01, 2022

To Do Is Better: Prompt Surgery Is Indicated in COVID-19 Patients With Complicated Pneumatocele

Massimo Castiglioni, MD  • Giuseppe Pelosi, MD, MIAC • Matteo Incarbone, MD

Published: May 07, 2021 • DOI: <https://doi.org/10.1016/j.athoracsur.2021.04.070> •



Although ground-glass opacities are the most common radiologic finding in COVID-19 pneumonia, in 10% of cases computed tomography scan documents round cystic changes evolving in pneumatoceles. ¹ The pathologic deepening of Manenti and colleagues ² clearly explains pathophysiology of pneumatoceles formation during SARS-CoV-2 infection and we agree completely with the proposed physiopathology interpretation. Of note, our case was likely to make up a more advanced lesion where early changes were no longer appreciable, but ischemia-related damage of peripheral airways and check valve mechanisms could actually be responsible for ultimate formation of pneumatoceles through airflow barotraumas, as suggested by Manenti and colleagues. ^{2,3} In this regard, obstruction of alveoli and respiratory bronchioles by inflammatory plugs and thrombosis of microvessels in the peripheral airways submit lung parenchyma to barotraumas, especially upon mechanical ventilation, favoring the onset of thoracic complications. As a matter of fact, in our case, parenchymal air-trapping dilation by far prevailed over solid margination by growing inflammatory cells and organizing pneumonia of the pneumatoceles wall. Interstitial emphysema was not present. Recently, a comprehensive analysis of Chang and associates ⁴ reported 13 patients with COVID-19 who required surgery for thoracic complications. In 5 patients (38%), reason for operative intervention included rupture of pneumatoceles causing air leaks. Others complications may include tension and infection. ⁵ Surgical resection was performed by either minimally invasive approach (robotically or video-assisted thoracoscopic surgery) and thoracotomy depending on complexity of the procedure and clinical condition of the patient at the time of surgery. Surgical candidates for pneumatocele resection were all critically ill, partly because of the prolonged COVID-19 courses but also related to continued air leaks. Of note, 2 patients (40%) with pneumatoceles who died postoperatively had progressive respiratory distress that would have resulted in death without surgical intervention. In contrast, the outcome of patients without postoperative respiratory distress was favorable.



Chirurgické řešení - USA



The Journal of Thoracic and Cardiovascular
Surgery

Volume 162, Issue 6, December 2021, Pages 1654-1664

Thoracic: Perioperative Management

Thoracic surgery outcomes for patients with Coronavirus Disease 2019

Stephanie H. Chang MD^a,[✉], David Chen MD^a, Darien Paone MD^b, Travis C. Geraci MD^a, Joshua
MD^a, Costas Bizakis MD^a, Michael Zervos MD^a, Robert J. Cerfolio MD^a

Methods

This study is a single-institution retrospective case series at New York University Langone Health Manhattan campus evaluating patients with confirmed Coronavirus Disease 2019 infection who were hospitalized and required thoracic surgery from March 13 to July 18, 2020.

Results

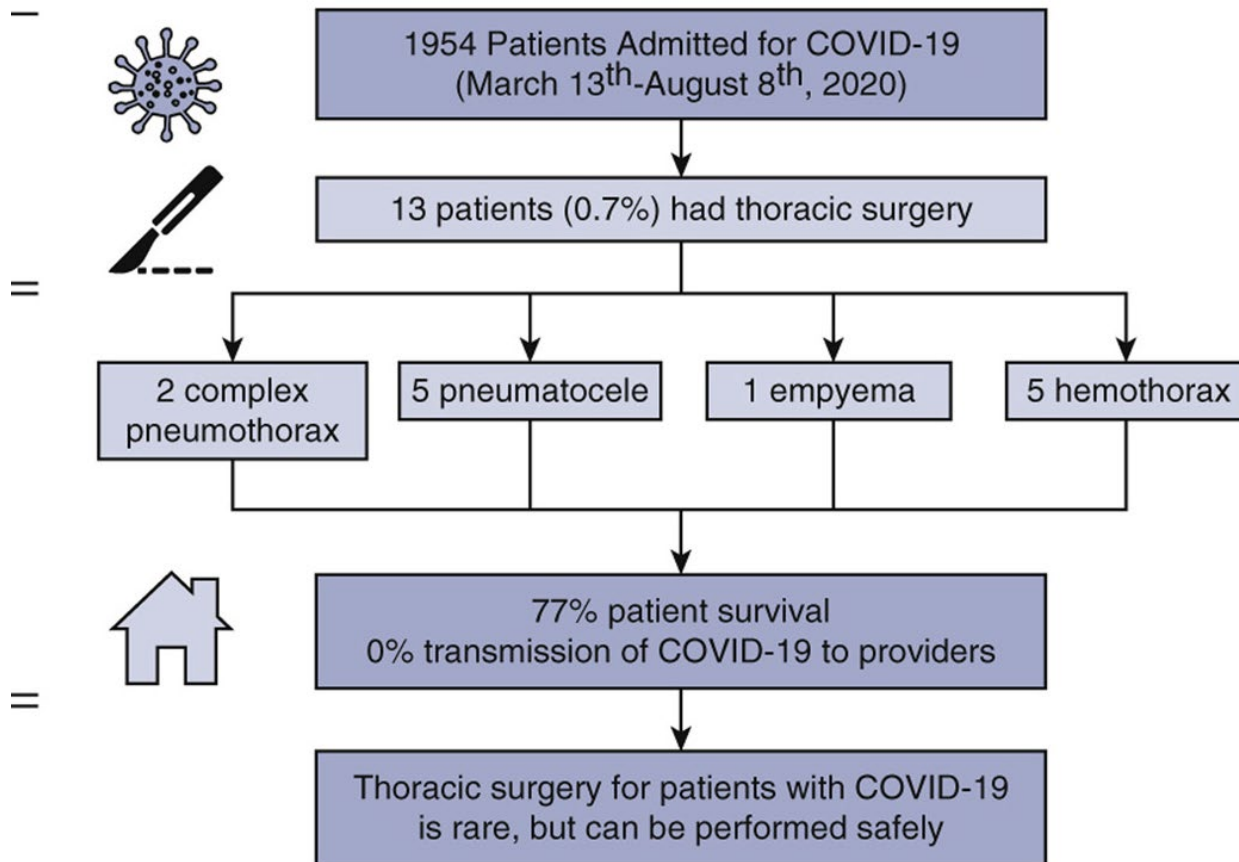
From March 13 to August 8, 2020, 1954 patients were admitted to New York University Langone Health for Coronavirus Disease 2019. Of these patients, 13 (0.7%) required thoracic surgery. Two patients (15%) required surgery for complicated pneumothoraces, 5 patients (38%) underwent pneumatocele resection, 1 patient (8%) had an empyema requiring decortication, and 5 patients (38%) developed a hemothorax that required surgery. Three patients (23%) died after surgery, 9 patients (69%) were discharged, and 1 patient (8%) remains in the hospital. No healthcare providers were positive for Coronavirus Disease 2019 after the surgeries.

Conclusions

Given the 77% survival, with a majority of patients already discharged from the hospital, thoracic surgery is feasible for the small percent of patients hospitalized with Coronavirus Disease 2019 who underwent surgery for complex pneumothorax, pneumatocele, empyema, or hemothorax. Our experience also supports the safety of surgical intervention for healthcare providers who operate on patients with Coronavirus Disease 2019.

Chirurgické řešení - USA

Thoracic Surgery Outcomes for Patients with Coronavirus Disease 2019



Kavitace - USA

Egoryan et al. *J Med Case Reports* (2021) 15:377
<https://doi.org/10.1186/s13256-021-02961-9>

Journal of
Medical Case Reports

CASE REPORT

Open Access

Development of cavitary lung disease as a long-term complication of coronavirus disease 2019 in a young previously healthy patient: a case report



Goar Egoryan^{1*}, Elise Hyser¹, Ammar H. Mushtaq¹, Maria Adriana Yanez-Bello¹, Daniela Patricia Trelles-Garcia¹, Harvey J. Friedman^{2,3} and Guillermo Rodriguez-Nava¹

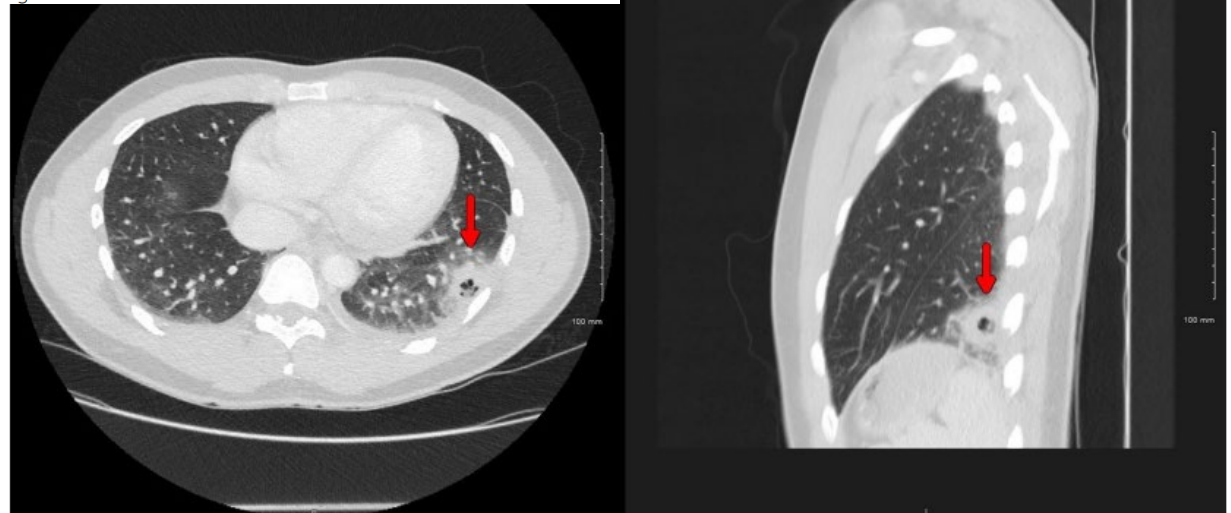


Fig. 2 Chest CT showing a left lower lobe cavitating mass measuring up to 3 cm (red arrows) and peripheral ground-glass opacities within the lung bases bilaterally (right: axial plane; left: sagittal plane)

Vlastní zkušenosti

48 letý hypertonik, BMI 26

Nekuřák

Dobré sociální zázemí

Těžký průběh COVID - 19

JIP, UPV, TS, Pneumomediastinum, PNO, drenáž

Pneumatokela

Vlastní zkušenosti

54 letá hypertonička, BMI 21

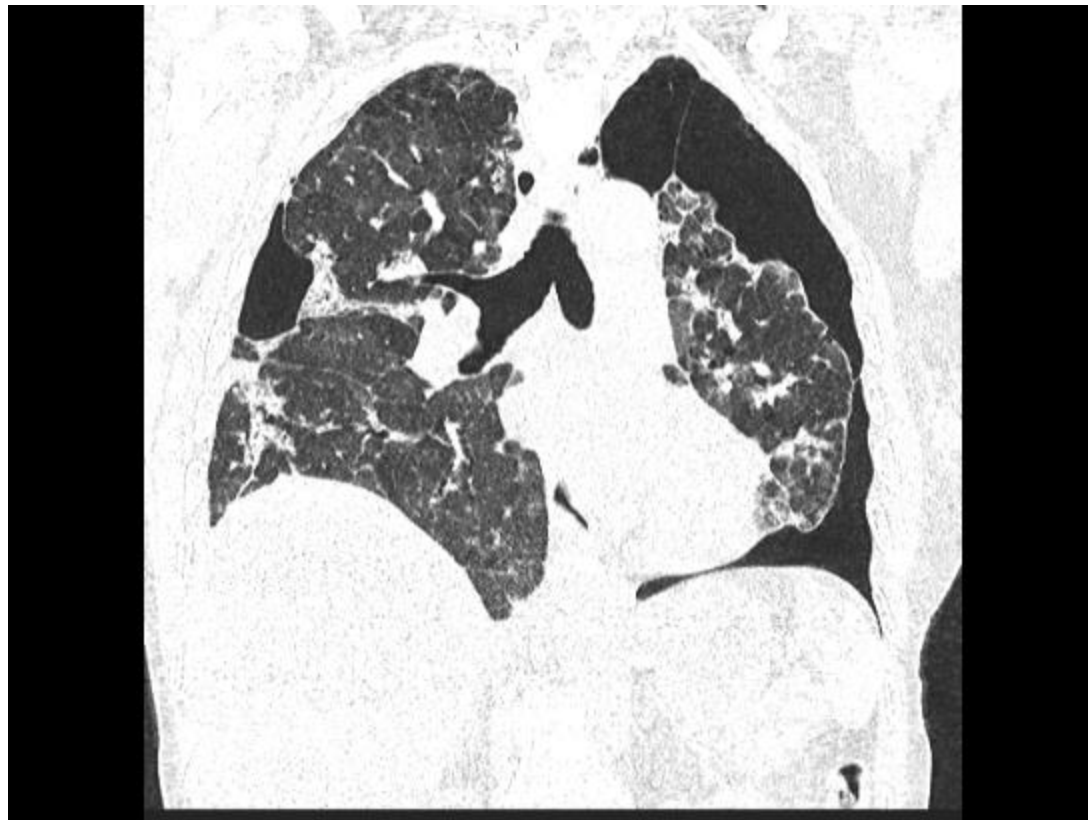
Nekuřačka

Dobré sociální zázemí

Těžký průběh COVID - 19

JIP, HFNO, UPV, TS, ECMO, PNO bilat, drenáž

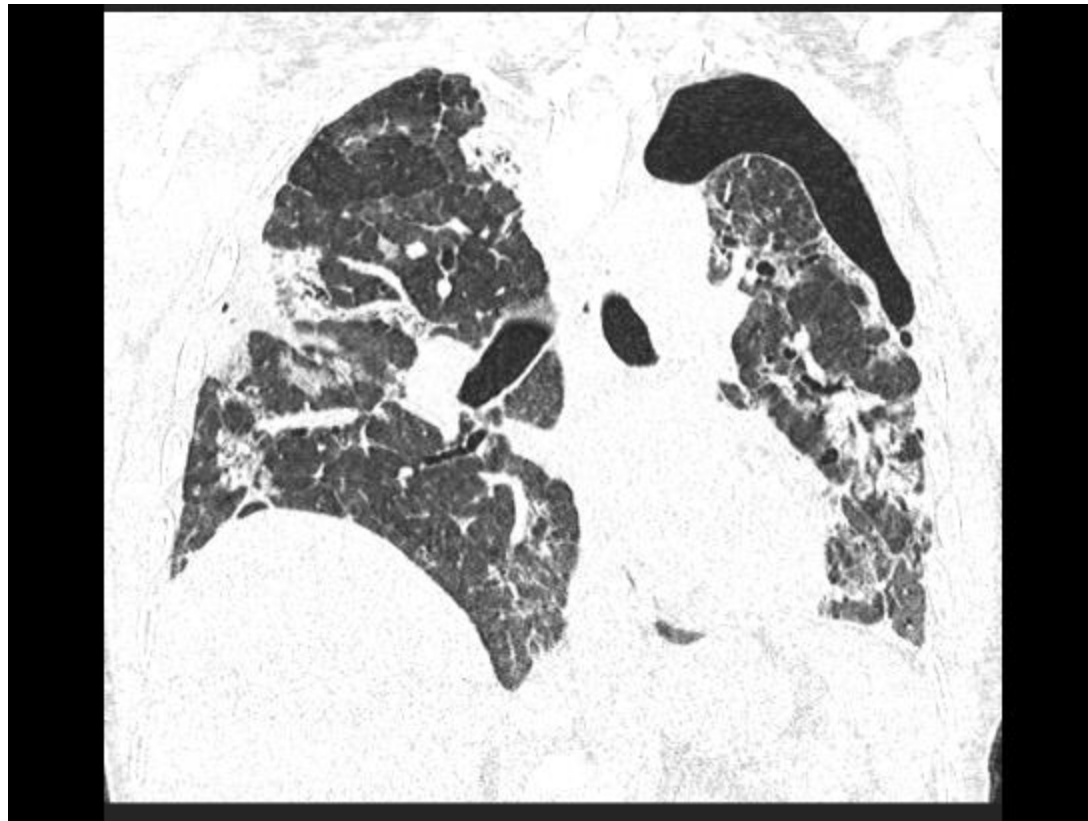
Vlastní zkušenosti PNO po 2 měsících



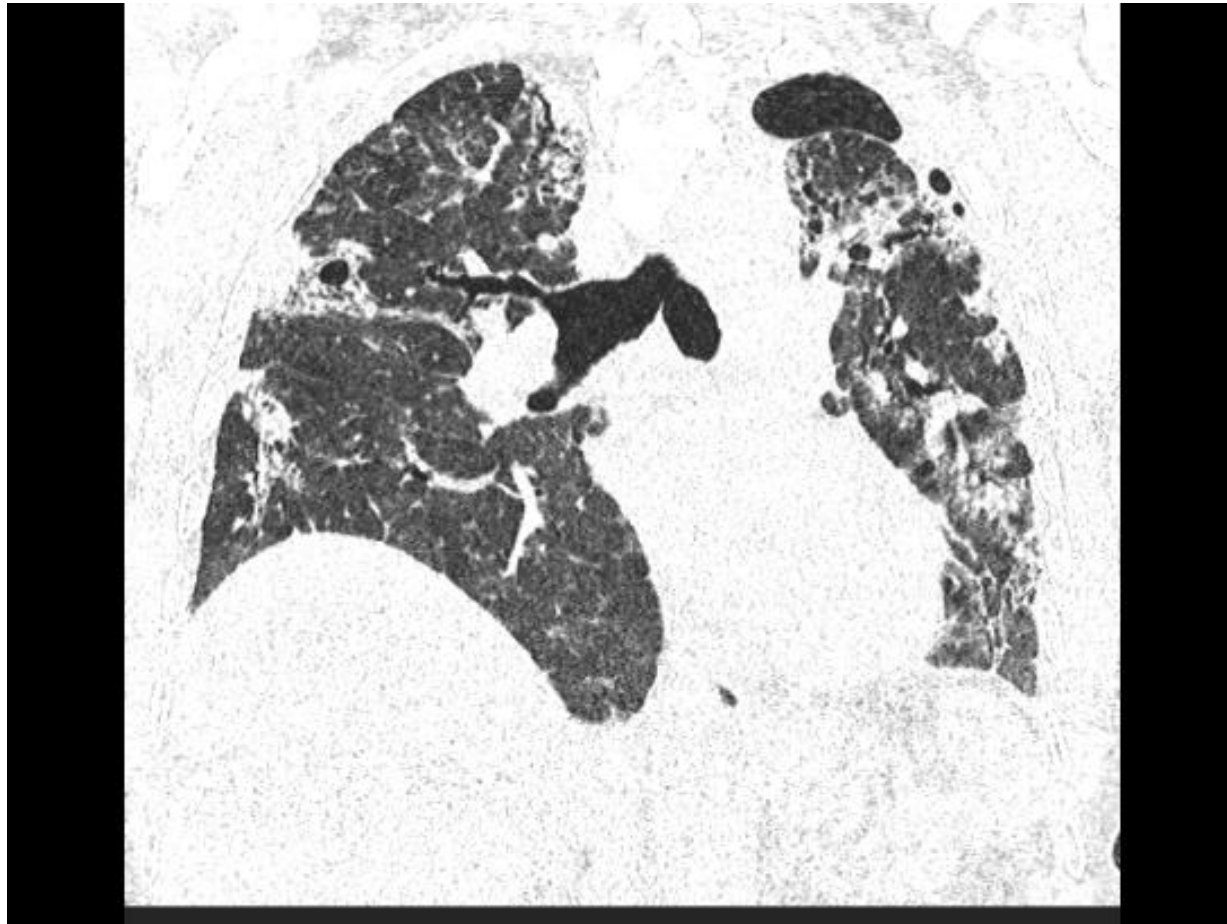
Vlastní zkušenosti PNO po 3 měsících



Vlastní zkušenosti PNO po 7 měsících



Vlastní zkušenosti PNO po 11 měsících



Závěr - I

- Elektivní výkony vyčkat po odeznění COVID
- PNO a masivní výpotky včasně drénovat silnějšími drény
- Ostatní problémy se často dají řešit konzervativně

Závěr - II

- Před rozsáhlejší intervencí vždy zvážit prognózu pacienta a potenciální přínos
- Chirurgicky – řešíme komplikace BP pístěle, empyemy, hemotoraxy, komplikované infikované pneumokely (bakterie, vláknité plísňe, mukor)

