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

REPLY TO THE EDITOR: 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 colleagues² 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 associates⁴ 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 videoassisted 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.

Because pneumatocele formation is not rare during SARS-CoV-2 infection and is a potentially life-threating event, patients should be carefully monitored and prompt surgery indicated before worsening of respiratory condition.

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REFERENCES

1. Shi H, Han X, Jiang N, et al. Radiologic findings from 81 patients with COVID-19 pneumonia in Wuhan, China: a descriptive study. *Lancet Infect Dis.* 2020;20:425-434.

 Manenti A, Roncati L, Melegari G. Deepening pathology of SARS-CoV-2 pneumonia explains lung ventilation complications. *Ann Thorac Surg.* 2022;113:1389.

3. Castiglioni M, Pelosi G, Meroni A, et al. Surgical resections of superinfected pneumatoceles in a COVID-19 patient. *Ann Thorac Surg.* 2021;111:e23-e25.

4. Chang SH, Chen D, Paone D, et al. Thoracic surgery outcomes for patients with Coronavirus Disease 2019. *J Thorac Cardiovasc Surg.* 2021;162:1654-1664.

5. DiBardino DJ, Espada R, Seu P, Goss JA. Management of complicated pneumatocele. *J Thorac Cardiovasc Surg.* 2003;126:859-861.

Intraoperative Esophagectomy Positive Margins: Re-Resection or Not?



TO THE EDITOR: We read with great interest the article by Saddoughi and colleagues¹ assessing the esophagectomy margin practice and survival implications. This study emphasized the guiding significance of intraoperative frozen section margin analysis and creatively proposed a common nomenclature to describe the gastric margin and divided it into 3 zones. We congratulate Saddoughi and colleagues for this excellent study.

The following questions are raised to win an opportunity to discuss with Saddoughi and colleagues. First, the authors gave different treatment recommendations at different zones without any basis. Additionally, there was also no analysis of the impact of re-resect modality (total gastrectomy or alternative conduit in reconstruction) on survival outcomes of patients with a positive gastric margin. So, we consider that both the survey of thoracic surgeons with extremely low response rate regarding the management of positive intraoperative margins and the treatment recommendation are not closely related to the authors' analysis of survival