

Supplementary material

Victoria-Nandayapa JR, Arroyo-Rodríguez C, Franco-Rodríguez SL, et al. Ultrasound-assisted thrombolysis for a giant right atrial thrombus and pulmonary embolism in a patient with COVID-19. Kardiol Pol. 2021.

Please note that the journal is not responsible for the scientific accuracy or functionality of any supplementary material submitted by the authors. Any queries (except missing content) should be directed to the corresponding author of the article.

Supplementary material

Arguments against surgery were the risk of exposure to a greater number of health personal in the operating and post-surgical care rooms, and shortage of dedicated personal to provide post-surgical care in an already overwhelmed health system during the COVID-19 pandemic.

A control angiography was not performed, aiming to avoid exposure to health personal in the mobilization of the patient. Although control pulmonary artery pressure measurement was not done, clinical stabilization of the patient, weaning of vasopressors and improvement in oxygen saturation indicate an improvement in pulmonary and right ventricular hemodynamics.

Although the septic process and the associated pneumonia could have contributed to the clinical deterioration of the patient, the rapid deterioration, along with the large size of the thrombus partially obstructing the right ventricular inflow, the associated pulmonary embolism and the marked improvement of the patient following ultrasound assisted thrombolysis indicate that the major issue was the thrombus. The characteristics of the thrombus (large size, right atrial location with prolapse to the right ventricle, heterogenous morphology, high mobility) suggest that it was originated in the lower extremities deep venous system; however, we have no evidence to prove this hypothesis.

The optimal dosing and timing of the procedure has not been established yet. Multiple regimens ranging from 0.5 to 2mg/h of alteplase during 12 to 24h have been used efficiently. [1] In this case, 0.75mg/h over 24 h (total 18mg) were used, trying to be within the lower lytic range to minimize the risk of bleeding. More recently a very low dose and a shorter duration (10mg of alteplase during 5 hours) have demonstrated improvement in pulmonary hemodynamics and cardiac function leading to cardiopulmonary stabilization in intermediate-high risk PE patients at a low periprocedural risk. [2]

References

- [1] Pei DT, Liu J, Yaqoob M, et al. Meta-Analysis of Catheter Directed Ultrasound-Assisted Thrombolysis in Pulmonary Embolism. *Am J Cardiol.* 2019; 124: 1470-1477.
- [2] Stępniewski J, Kopec G, Musiałek P, et al. Hemodynamic Effects of Ultrasound-Assisted, Catheter-Directed, Very Low-Dose, Short-Time Duration Thrombolysis in Acute Intermediate-High Risk Pulmonary Embolism (from the EKOS-PL Study). *Am J Cardiol.* 2020 Nov 18. [Epub ahead of print].