Indian Journal of Clinical Anaesthesia 2023;10(1):116–117

Content available at: https://www.ipinnovative.com/open-access-journals

Indian Journal of Clinical Anaesthesia

Journal homepage: www.ijca.in

Letter to Editor

The challenges of managing cardiac arrest due to unascertained massive pulmonary embolism in the postoperative cancer patient

Gopal Krishan Jalwal[1,*], **Jyoti Kanwat**[1], **Bhanupreet Kaur**[1], **Deepa Yadav**[2]

[1] *Dept. of Anaesthesia and Critical Care, All India Institute of Medical Sciences, Bathinda, Punjab, India*
[2] *Dept. of Anaesthesia, Rajasthan University of Health Sciences, Jaipur, Rajasthan, India*

ARTICLE INFO

Article history:
Received 17-12-2022
Accepted 13-01-2023
Available online 09-03-2023

The postoperative pulmonary complication lengthens hospital stays, increases mortality, and has a significant unfavourable impact on the perioperative outcome.[1] A potentially fatal clinical condition known as pulmonary embolism (PE) is the second leading cause of death in cancer patients. Without cardiac arrest, massive pulmonary embolism has been linked to a 30% mortality risk.[2] However, if cardiac arrest occurs, mortality rates could reach 95%.[3]

A 56-year-old male, BMI 21 kg/m2, American Society of Anaesthesiology (ASA) status 1, with a history of tobacco chewing for five years, was scheduled for commando surgery for carcinoma buccal mucosa. Pre-anaesthetic check-ups showed that all investigations were normal, including 2 D Echo and lower venous doppler. The intraoperative period was unremarkable, and after overnight ventilation, the patient was extubated the next day after a normal arterial blood gas report. All monitoring parameters were normal after extubation. In the afternoon, the physiotherapist tried to mobilize the patient. The patient suddenly developed hypoxia, tachypnoea, tachycardia, hypotension and confusion. ECG showed sinus tachycardia with deep S wave in lead 1 and Q wave and T wave inversion in the lead 3 (Figure 1). After a few minutes, ECG changes converted from atrial fibrillation to asystole. Pt was intubated immediately, and CPR started. After an ultra-long CPR of 90 minutes, spontaneous circulation (ROSC) was returned. The patient was put on high-dose inotropes (noradrenaline, adrenaline, vasopressin) with ventilator support. Meanwhile, a cardiologist would have been called up and a 2 D echo done. Echocardiography revealed right heart strain (right atrium and right ventricle significantly dilated) (Figure 1) with plethoric IVC and mild pleural effusion, indicating a probable diagnosis of pulmonary embolism. Blood investigations CBC, RFT, LFT, and D-Dimer, were sent to rule out other possibilities. D- Dimer value was significantly high. To confirm the diagnosis of PE, the patient couldn't be transferred to the computed tomography room due to his precarious condition, so the cardiologist on call, anaesthetist and critical care specialist all agreed that the probability of massive pulmonary embolism (PE) was high. A decision in favour of thrombolysis was reached after nearly an hour of multidisciplinary discussion on the patient's instability, the differential diagnosis, and the danger of haemorrhage. Tenecteplase was given to thrombolysis the patient. Intravenous Tenecteplase at 6500u was instituted according to the patient body weight. Anticoagulation with warfarin was started later once hemodynamic status stabilized.

The next day, the patient commenced to show signs of improvement, and inotropes started to reduce with

* *Corresponding author*.
E-mail address: gopaljalwal@gmail.com (G. K. Jalwal).

https://doi.org/10.18231/j.ijca.2023.022

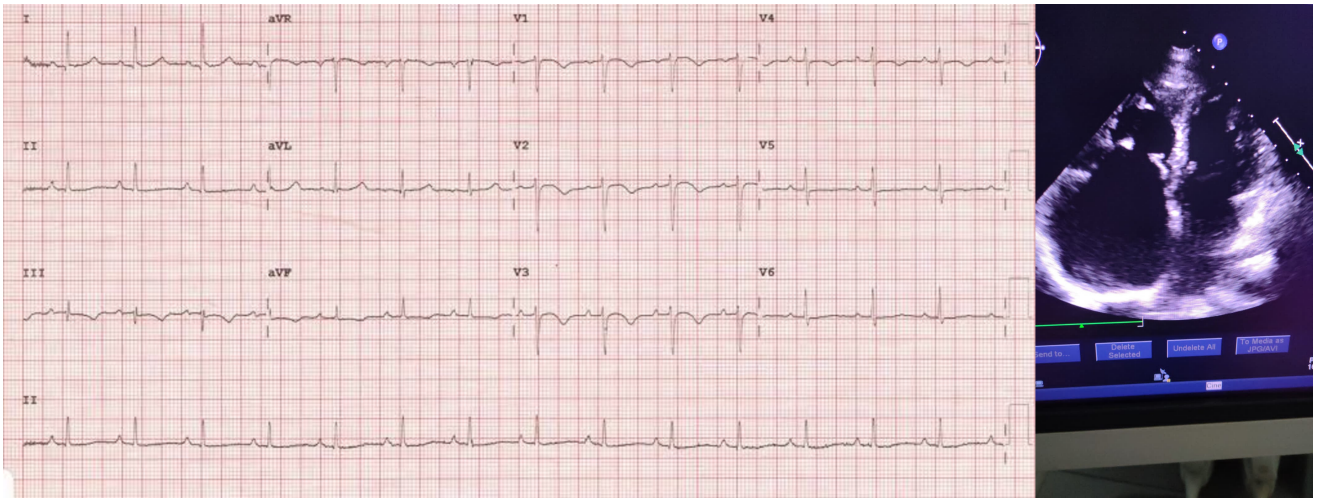

Fig. 1:

improvement in vitals, but the patient became oliguric, and urine output turned out to be nil. The nephrologist on call agreed that the patient needed urgent dialysis but was on high-dose inotropes, so it was decided to do SLED (Sustained low-efficiency dialysis). The patient s response to treatment was remarkable, and his blood gas and laboratory test results were showing significant improvement. On the eighth day, his hemodynamics stabilized completely without any inotropes, and he was extubated after the blood gas findings were normal. The patient s GCS score was 15/15. After two weeks, He didn't require dialysis and was discharged from our hospital with stable vital signs and normal urine output.

Due to the systemic consequences of malignancy, oncology patients are more likely to experience pulmonary problems than the general surgical population.[4] The European Resuscitation Council (ERC) and American Heart Association have advised the use of fibrinolytic therapy when PE is either known or believed to be the cause of cardiac arrest, despite the lack of strong supporting data.[5] Prolonged CPR and continued resuscitative efforts are recommended when PE is suspected as a cause of cardiac arrest.[6]

To conclude, thrombolysis must be a priority if we have a high suspicion of PE in a situation where we cannot establish a confirmatory diagnosis. We recommend ultra-long CPR, instead of the standard CPR timeline, in cardiac arrest due to PE to achieve a return of spontaneous circulation.

References

1. Pramanik M, Sarkar A, Gupta A, Chattopadhyay M. Postoperative pulmonary complications in robot-assisted uro-oncological surgeries: Our experience in a tertiary cancer care centre. *Indian J Anaesth*. 2020;64(3):238–41.
2. Stulz P, Schläpfer R, Feer R, Habicht J, Grädel E. Decision making in the surgical treatment of massive pulmonary embolism. *Eur J Cardiothorac Surg*. 1994;8(4):188–93.
3. Bailén MR, Cuadra JA, Hoyos E. Thrombolysis during cardiopulmonary resuscitation in fulminant pulmonary embolism: a review. *Crit Care Med*. 2001;29(11):2211–9.
4. Sathyaprasad SL, Thomas M, Philip FA, Krishna KM. Performance in 6-min walk test in prediction of postoperative pulmonary complication in major oncosurgeries: A prospective observational study. *Indian J Anaesth*. 2020;64(1):55–61.
5. Truhlár A, Deakin CD, Soar J. European resuscitation council guidelines for resuscitation 2015: section 4. cardiac arrest in special circumstances. *Resuscitation*. 2015;95:148–201.
6. Wu JP, Gu DY, Wang S, Zhang ZJ, Zhou JC, Zhang RF. Good neurological recovery after rescue thrombolysis of presumed pulmonary embolism despite prior 100 min CPR. *J Thorac Dis*. 2014;6(12):E289–93.

Author biography

Gopal Krishan Jalwal, Assistant Professor https://orcid.org/0000-0003-4890-7907

Jyoti Kanwat, Assistant Professor

Bhanupreet Kaur, Senior Resident

Deepa Yadav, Senior Resident

Cite this article: Jalwal GK, Kanwat J, Kaur B, Yadav D. The challenges of managing cardiac arrest due to unascertained massive pulmonary embolism in the postoperative cancer patient. *Indian J Clin Anaesth* 2023;10(1):116-117.