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Case Report

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Management of a Patient with Intraoperative Pulmonary Embolism

Yan Li and Haixing Zhong*

Department of Anesthesia and Perioperative Medicine, Xijing Hospital, the Fourth Military Medical University, Xi'an, China 710000

***Corresponding author:** Haixing Zhong, Department of Anesthesia and Perioperative Medicine, Xijing Hospital, the Fourth Military Medical University, Xi'an, China 710000

Abstract

The patient with a malignant tumor in the right kidney with tumor thrombus presented in both right renal vein and inferior vena cava. Management of pulmonary embolism resulting from shedding of the tumor thrombus within the inferior vena cava during operation.

Case Report

The patient, a 50-year-old male, was admitted to the hospital due to persistent right waist distension for over 4 months. CT scan revealed a malignant tumor in the right kidney with tumor thrombus presented in both right renal vein and inferior vena cava. Abdominal ultrasound further showed that the emboli, measuring 9.5 × 2.8 cm, located above the deep inferior vena cava, approximately 3.6 cm away from the entrance of the right atrium. Due to this proximity, it was not feasible for filter placement (with a screen length of 5 cm), suggesting an increased risk of pulmonary embolism resulting from shedding of the tumor thrombus within the inferior vena cava. During radical nephrectomy performed under

general anesthesia, there was a sudden decrease in $PETCO_2$ to 25 mmHg, accompanied by continuous increase in heart rate up to 134 bpm and lowest blood pressure recorded at 75/60 mmHg, while SPO_2 maintained at 97%. Additionally, central venous pressure continued rising and reached up to 38 cm H_2O. Immediate esophageal ultrasonography demonstrated an enlarged right atrium with suspected tricuspid regurgitation or pulmonary embolism as potential causes. Subsequently, pulmonary angiography was performed under emergency intervention, which identified filling defects within the trunk of left pulmonary artery branch, along with localized lung perfusion defect observed in left lower lung lobe. At the same time, the patient's heart rate escalated further reaching 151 bpm, blood pressure dropped significantly to 55/45 mmHg, while SPO_2 decreased down to 87%. Arterial blood gas analysis indicated PCO_2 71 mmHg and pH 7.15. Emergency thrombectomy and thrombolysis were promptly conducted on the affected left pulmonary artery branch, leading to improved perfusion within this region. Post-operation care involved transferring patients to the Intensive Care Unit (ICU) for further observation and treatment, where their heart rate stabilized at 138 bpm, blood pressure increased to 133/85 mmHg (with norepinephrine infusion) and SPO_2 reached 100%. Furthermore, mechanical ventilation therapy, natroparin anticoagulation therapy, and homeostasis regulation according to blood gas analysis were conducted. The next day, the patient woke up withstable vital signs. Therefore, the endotracheal tube was removed, and the patient was transferred to the local hospital for further treatment.

Citation of this Article

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