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Challenges and Considerations in Anaesthetic Management of Patients with Past Double Lung Transplant for Non-pulmonary Surgeries

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Dear Editor,

We highlight the difficulties in managing anaesthesia for post-double lung transplantation patients undergoing non-pulmonary surgeries. These patients pose several unique challenges due to their medical history and require a comprehensive and collaborative approach to achieve a positive outcome.

We describe the case of a 38-year-old male booked for renal transplant with a past medical history of double lung transplantation due to cystic fibrosis, sleep apnoea, cystic fibrosis-associated diabetes, hypertension, sinusitis, osteoporosis, iron deficiency anaemia, spinal fractures, and recurring chest infections.

Following preoperative investigations, such as HbA1c, pulmonary function tests, sleep study, six-minute walk test, coronary angiogram, and CT pulmonary angiogram, anaesthesia was induced with fentanyl, propofol, and atracurium. The patient was intubated with elective fibreoptic laryngoscopy using a 7.5-mm endotracheal tube. Intraoperative anaesthesia was maintained with sevoflurane and remifentanil infusions, and the patient was monitored with invasive hemodynamic monitoring, including cardiac output, central venous pressure, and stroke volume variation. The patient remained hemodynamically stable throughout the procedure. Postoperatively, the patient was extubated in the operating room and transferred to the post-anaesthesia care unit, where oxygen saturation remained stable, and the patient reported minimal pain.

Recent studies have emphasized the importance of a thorough preoperative evaluation of cardiac function in these patients, as they are at increased risk of perioperative cardiac complications due to underlying cardiac disease.[1] Additionally, scarring and fibrosis in the airway can make intubation more difficult in patients with a history of lung transplantation. Fibreoptic laryngoscopy has been suggested as a helpful tool in assessing the stump level due to previous lung transplant surgery.[2] Patients with lung transplantation are also at increased

risk of hemodynamic instability during surgery, and recent studies have emphasized the importance of invasive hemodynamic monitoring to ensure stability. Patients with lung transplantation may also have increased sensitivity to pain due to nerve damage, and multimodal pain management strategies have been suggested to control pain effectively.[3] Furthermore, post-lung transplantation patients are at increased risk of postoperative complications like respiratory failure and pneumonia. Close monitoring and prompt intervention in the postoperative period may decrease the incidence of complications.

Lung transplant patients are at higher risk of difficulty during intubation due to chronic steroid treatment and post-transplant diabetes. A physical examination of the oral cavity and evaluation of previous intubation attempts should be conducted to reduce this risk. Gastric atony, which affects one-third of transplanted patients, increases the risk of pulmonary aspiration during anaesthesia induction.[4] The choice of anaesthesia technique should consider the patient's physical condition and the nature of the surgery, with regional techniques preferred, and intraoperative airway management should be approached cautiously. Intraoperative monitoring should be balanced against infection risk. Fluid balance is crucial to prevent pulmonary interstitial fluid overload. Swift weaning from mechanical and non-invasive ventilation can help reduce the risk of respiratory infections. Postoperative pain management should avoid nonsteroidal anti-inflammatory drugs and be cautious with opioids. Epidural, paravertebral, and erector spinae blocks are safe and effective methods for pain management, and local anaesthesia may be used for minor surgical wounds.

Declarations of conflict of interest:
None declared.

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