



Extracorporeal life support in thoracic surgery

Extracorporeal life support (ECLS) includes a spectrum of temporary mechanical cardiopulmonary support techniques that may remove CO₂, oxygenate, or maintain hemodynamic support or even when need a combination of those mentioned above.

ECLS types used in thoracic surgery include extracorporeal membrane oxygenator (ECMO), pumpless interventional lung assist device, and extracorporeal CO₂ removal.

In parallel to the technical refinements of the ECLS system (pump, oxygenator, lines, etc.) the use of ECLS in thoracic surgery increased steadily. With these improvements, long-term use of these devices was approved. In thoracic surgery, ECLS is most commonly used in the lung transplantation area (bridging, intraoperative, postoperative) or in the management of severe and refractory acute respiratory distress syndrome. ECLS in thoracic surgery is also increasingly used in airway surgery, in patients with limited lung function or who cannot tolerate one-lung ventilation, in mediastinal surgery, in extended resections for thoracic malignancies, and in thoracic emergencies.

In this focused series, the use of ECLS in thoracic surgery is discussed by the experts in the field in detail including planning ECLS in thoracic surgery, technical details, configurations, standardization of ECMO education and complications after ECLS in general thoracic surgery.

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