EXTRACORPOREAL MEMBRANE OXYGENATOR SUPPORT FOR COMPLEX TRACHEOBRONCHIAL PROCEDURES

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Objectives: The international experience with advanced bronchoplastic procedures performed with extracorporeal membrane oxygenator (ECMO) support is very limited. We examined our results to assess the risks and benefits of this approach.

Methods: We retrospectively analysed all patients with thoracic malignancies who underwent complex tracheo-bronchial reconstruction under ECMO support in our department between 2001 and 2013.

Results: Ten patients (mean age 54 ± 11 [range 21-81] years) underwent complex tracheo-bronchial resections under veno-arterial ECMO support. In seven patients, the underlying pathology was non-small-cell lung cancer; in two cases carcinoid tumour, and in one case adenoid-cystic carcinoma. ECMO cannulation was central (n = 7) or peripheral (n = 3). Mean time on bypass was 113 ± 17 (range 70-135) min. A complete resection (R0) was achieved in eight patients (80%). There was no perioperative mortality. Patients were discharged from the hospital after 7-52 days (median 11 days). Median time in the Intensive Care Unit was 1 (range 1-36) day. There was no complication related to the use of ECMO in this series. Mean follow up time was 1694 ± 1385 (range 12-4338) days. The 1-, 3- and 5-year Kaplan-Meier survival was 100%, 74% and 56%, respectively.

Conclusions: Based on this experience, we consider veno-arterial ECMO support to be a safe and valuable approach for complex airway surgery.