

TITLE: SUCCESSFUL USE OF PRE AND POST OPERATIVE ECMO FOR PULMONARY THROMBOENDARTERECTOMY, MITRAL VALVE REPLACEMENT AND MYOMECTOMY IN A PATIENT WITH CHRONIC THROMBOEMBOLIC PULMONARY HYPERTENSION AND HYPERTROPHIC CARDIOMYOPATHY

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Introduction: ECMO has been described as peri operative support to facilitate high risk surgery. Combined pulmonary endarterectomy (PEA), mitral valve replacement (MVR) and myomectomy has not been reported in the literature.

Aims: To describe a patient with severe pulmonary hypertension (PHT) secondary to left ventricular outflow obstruction on background of hypertrophic cardiomyopathy (HOCM), mitral regurgitation (MR) and chronic thrombo-embolic pulmonary disease (CTEPH) successfully treated with bridging VA-ECMO to PEA, mechanical MVR and septal myomectomy.

Results: 35 year old man with HOCM (peak LVOT gradient 98 mmHg, moderate MR, grade II diastolic dysfunction, RV dysfunction, RVSP 73 mmHg), chronic renal failure (creatinine 380 mm/L), moderate airflow limitation, obesity (BMI 34 kg/m²) and OSA. RHC mPAP 49 mmHg, mRAP 18 mmHg, LVEDP 40 mmHg, TPG 9 mm, PVR 1.2 WU and CI 2.7 l/min/m². Pulmonary angiogram multiple segmental pulmonary defects consistent with CTEPH out of proportion to PVR.

He deteriorated pre operatively with worsening gas exchange and infiltrates on CXR. Combination of pathologies severely limited medical therapeutic options and decision made to commence central VA ECMO to bridge to surgery. Severe pulmonary reperfusion injury and biventricular failure occurred post PEA, mechanical MVR (31 mm ATS) and septal myomectomy and central VA ECMO was re-established and transitioned VV ECMO 5 days later. Total ECMO duration was 25 days, mechanical ventilation 53 days and discharged to rehabilitation day 63.

Conclusion: Case highlights the importance of a multi-disciplinary approach and the possibility of bridging patients with reversible life threatening PHT to surgery using ECMO.