Bilateral Lobar Lung Transplantation on ECLS in Jehovah’s Witness Patient

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Objective

The present case reports the challenging perioperative management of bilateral lobar lung transplantation on ECLS for a Jehovah’s Witness patient.

CASE PRESENTATION

A 42 Jehovah’s Witness patient (157 cm, 64 kg), was listed for unilateral lung transplantation because of end stage non-specific interstitial pneumonia in November 2015. Because of clinical deterioration of the patient with the rare blood group AB, we accepted an organ offer of a donor with substantial size mismatch (+27cm) and changed our initial strategy to bilateral lobar transplant on ECLS.

Given the particular situation of Jehovah’s Witness faith to refuse red packed blood cells, platelets and fresh frozen plasma, we describe the perioperative planning and meticulous management of this case. Recent publications suggest a similar outcome on patients who refuse transfusion after cardiac surgery.¹

RESULTS

According to our standardized institutional patient blood management, we administered preoperatively 40000 IU epoetin alfa (sc), 1g ferric carboxymaltose (iv) and 1000 mcg cyanocobalamin (vitamine B12, iv) to optimise production of red blood cells. The preoperative hemoglobin level was 123 g/l, platelets 488 thd, INR 1.1 and the fibrinogen level was at 4.7 g/l.

After anesthesia induction, 380 cc of the patient’s own blood was scavenged, which was preoperatively agreed by the patient. The blood remained in a close circuit connected to the patient and was not replaced by fluids, because the patient remained hemodynamically stable throughout the scavenging process. For the lobar transplant via clamshell incision, veno-arterial ECLS was installed via central cannulation under the intention of standardized heparin protocol. During surgery, careful intraoperative hemostasis was performed as well as cell salvage and reinfusion (240cc) as accepted method of blood reuse by the Jehovah’s Witness patients. Intravenous fluid solutions were limited to 1500cc crystalloid and 500cc colloidal fluid. Perioperative blood loss was estimated with the hemoglobin dilution method² as 660cc. Cell saver blood as well as patient’s own scavenged blood was reinfused at the end of the bilateral left lower lobe lung transplantation. Low dose of norepinephrine was continuously administered to maintain a mean arterial pressure higher than 70 mmHg. The patient was weaned from ECLS and transferred to the ICU without any bleeding complication and a stable hemodynamic situation. By these means the hemoglobin level dropped from 177 to a postoperative value of 111 g/l only.

Figure 1: Postoperative Chest X-Ray

CONCLUSION

We describe a successful perioperative management for bloodless bilateral lobar lung transplant on ECLS performed in a Jehovah’s Witness patient being treated for end stage non-specific interstitial pneumonia, in which standard and novel blood conservation methods were applied.

References: