

[NM-338] A novel way to perform intraoperative autologous blood transfusion during a pediatric heart transplant: A Case Report

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Acute normovolemic hemodilution (ANH) was introduced in the early 1970s and entails the removal of blood immediately before or shortly after the induction of anesthesia, with the maintenance of isovolemia using crystalloid and/or colloid replacement (1). Although this technique is used in select cardiac surgeries in both adult and pediatric populations, its use has not been employed in orthotopic heart transplant recipients due to the need to transfuse leukocyte reduced products to newly transplanted patients to prevent alloimmunization (2). One of the main values of ANH is the conservation of plasma and platelets. To our knowledge, ANH has not been reported in heart transplant procedures involving pediatric populations. We report a case where two units of autologous whole blood cells were removed shortly after the induction of general anesthesia in 14 year old female undergoing heart transplantation for dilated cardiomyopathy. We subsequently transfused the two units of autologous whole blood after the conclusion of cardiopulmonary bypass using a “bedside” leukoreduction filter placed between a Belmont infuser and the patient (see photograph). The patient did not require additional blood products in the operating room nor on the post-operative days and had near normal coagulation studies shortly after undergoing solid organ heart transplantation. This case report illustrates a novel technique whereby pediatric cardiac anesthesia providers may avoid the use of blood products during and after heart transplantations in select pediatric patients. Parental consent and institutional review board approvals were obtained prior to the presentation of this report.

REFERENCES

1. Messmer K. Hemodilution. *Surg Clin North Am* 1975; 55:659.
2. Triulzi DJ. *Transfusion Support in Solid-Organ Transplantation*. The Institute for Transfusion Medicine. 2001.

