

## Antibody Response to Removal of Homograft Material in Transplant Candidates

Aashray Singareddy, BS, Kenneth O. Schowengerdt, Jr, MD, Andrew Fiore, MD Charles B. Huddleston, MD

### BACKGROUND

The presence of pre-formed antibodies is a risk factor following heart transplantation in children with congenital heart disease. These pre-formed antibodies are the consequence of prior blood transfusions to some extent, but a more intense presence of antibodies occurs in patients in whom homograft material was used as part of a prior operation. Treatments designed to remove circulating antibodies in these patients are marginally effective. We hypothesize that removal of the homograft material would result in more effective and long lasting reduction of circulating antibodies.

### METHODS

We identified two pediatric patients evaluated for transplantation in whom the panel reactive antibody (PRA) levels were quite high and had homograft material in place. Both of these patients required re-operations prior to transplantation in which the homografts were removed. We then performed a retrospective chart review of these patients and tracked the PRA levels before and after the removal of the homograft material.

### RESULTS

See Figure. The initial PRA level on both patients was quite elevated for both Class I and Class II HLA antibodies. A steady decline in the PRA was noted in the months that followed removal of the homograft material from each patient. They both received other therapies to assist with this including IVIG infusion and rituximab. However, the decline was steady and long lived.

### CONCLUSIONS

Although removal of homograft material previously used for a reparative operation is an aggressive step in a patient listed for heart transplantation, the reduction in preformed antibodies could have a profound impact on post-transplant long term survival and should be considered in patients recalcitrant to more conservative therapy to reduce antibody levels.

