



Lessons Learned from Simultaneous Face and Bilateral Hand Allotransplantation

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- Background**
 - In spring 2011, we performed the world's second combined face and bilateral hand transplantation, including the world's first partial hand transplantation. While the procedure was a technical success, the patient became septic several days following the procedure, eventually resulting in compromised circulation to the hands requiring subsequent explantation.
- Procedure**
 - 56F attacked by chimpanzee in 2009 with resulting severe injuries to face and bilateral upper extremities who underwent multiple standard reconstructive procedures prior to listing as allotransplantation recipient
 - Simultaneous transplantations performed in single 20 hour procedure from brain dead donor, including full face, partial right hand and full left hand at level of mid-forearm
- Postoperative Course**
 - Patient demonstrated fulminant pneumonia POD#2, likely secondary to aspiration, progressing to septic shock requiring pressor support with resultant vascular compromise to upper extremities
 - Despite multiple conservative efforts at salvage including topical nitropaste, leech therapy, axillary blocks and dobutamine, salvage unsuccessful
 - Hands explanted on POD#5 due to concerns for patient safety
- Net Outcome**
 - Survival of facial allograft and full patient recovery with no compromise in upper extremity function relative to baseline, with patient currently considering repeat attempt at hand allotransplantation

Lessons Learned

1. Biomass from multiple simultaneous allografts has unclear role in higher morbidity witnessed in these procedures to date
2. Multiple allografts may be transplanted in parallel with marginal addition in total operative time
3. Partial hand transplantation is a viable option to preserve residual donor limb function and limit negative sequelae of potential allograft failure
4. Both donor and recipient vascular anatomy appear to be particularly predisposed to thrombus formation
5. Fastidious attention must be paid to non-surgical management principles during the operative procedure
6. Above all, honor the notion of life over limb

