Role of Simulation in Face Transplantation

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DISCLOSURE
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Relevant Financial Relationship(s)
None

Off Label Usage
None

HIPAA authorization obtained for full-face photographs
Face Transplantation Team Building and Simulation: Key Principles

- Say yes to collaboration
- *Perfect* practice makes perfect
- A little luck doesn’t hurt
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Say Yes to Collaboration
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Mayo Face Transplant Program: Laying the Groundwork

- 2010-12: Informal conversations among providers
- 2012-13: Mayo Clinic Planning and Approvals
  - Clinical Practice Committee, Ethics, Health Policy Center, IRB, and Rochester Executive Operating Team
Face Transplantation at Mayo Clinic

• First clinical face transplant program

• Supported by $10 million donation from Obaid family
Mayo Face Transplant Program: Laying the Groundwork

- **2012-16: LifeSource Planning and Approvals**
  - Endorsement by 9 committees
  - Significant implication for donor management & recovery of all organ
    - Family issues
    - Transportation (adjacent room surgery)
    - Solid organ donor
Mayo Face Transplant Program: Laying the Groundwork

• 2013-15: Mayo Clinic Surgical Planning
  - Patient selection
  - Anatomy lab simulation sessions
Face Transplant: Patient Selection

• 28 year old male
• Gunshot wound 2006
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Perfect Practice Makes Perfect
Face Transplant: Ophthalmic Considerations

• 50% of face transplant patients blind in 1 or both eyes
• Central scotoma left eye
• Need for orbital, soft tissue and nasolacrimal reconstruction both eyes
Mock Face Transplant Lab

- >40 labs over 3 years
- Saturday 8-3
- Surgeons
- Anatomy lab personnel
- Scrub technicians
- Photographers
- Medical Modeling representatives
- Anaplastologists
Mock Face Transplant Lab

- Full run-through
  - Pre-op imaging both heads
  - Custom cutting guides
  - Post-op imaging reconstructed head

- Refine technique

- Anticipate challenges
  - Size mismatch
  - Soft tissue overlap

- Team building
Mock Transplant Lab Procedure: Bony Dissection Planning
Mock Transplant Lab Procedure: Donor Cutting Guides
Mock Transplant Lab Procedure: Orbital Floor Contingency Planning
Mock Transplant Lab Procedure: Donor to Recipient Transfer
Late 2015: Ready, Set, Go?

- Patient listed January 2016
- Strict donor criteria
  - Gender
  - Skin type
  - Dentition
  - EBV negative
- LifeSource data 2013-15
  - 2 potential donors for our recipient in that timeframe
June 2016: A Potential Donor

- **Wednesday**
  - Potential donor
    - 21 year old; self-inflicted gunshot wound
    - Signed donor card
    - Family deciding re: face
- **Thursday**
  - EBV negative
  - Spouse willing to donate face
A Weekend in June

• Friday
  - Donor transported
  - Patient travel to MN
  - 4-7 pm surgeon meeting
  - 7-11 pm clinical and OR team preparations
A Weekend in June

• Surgeons = 9
• Anesthesia = 14 (6 MDs + 8 CRNAs)
• Surgical Services = 40+
• Duration = 55 hours
• Operative report = 17 pages
Face Transplant Patient: 3D CT
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• Surgical suites in use Friday 7 pm to Monday 9 am
  - All surgeons in town
  - Confidentiality
  - Surgical personnel
  - OR resources
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• Love your patient