

Donor-site Outcomes of
Osteocutaneous Radial
Forearm Free Flap (OCRFFF)
“The Vanderbilt Experience”

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OCRFFF

Overview

- Background
- Indications
- “The Vanderbilt Experience”
 - The Team
 - Preferred Technique
 - Outcomes
 - Future Research



OCRFFF

Background

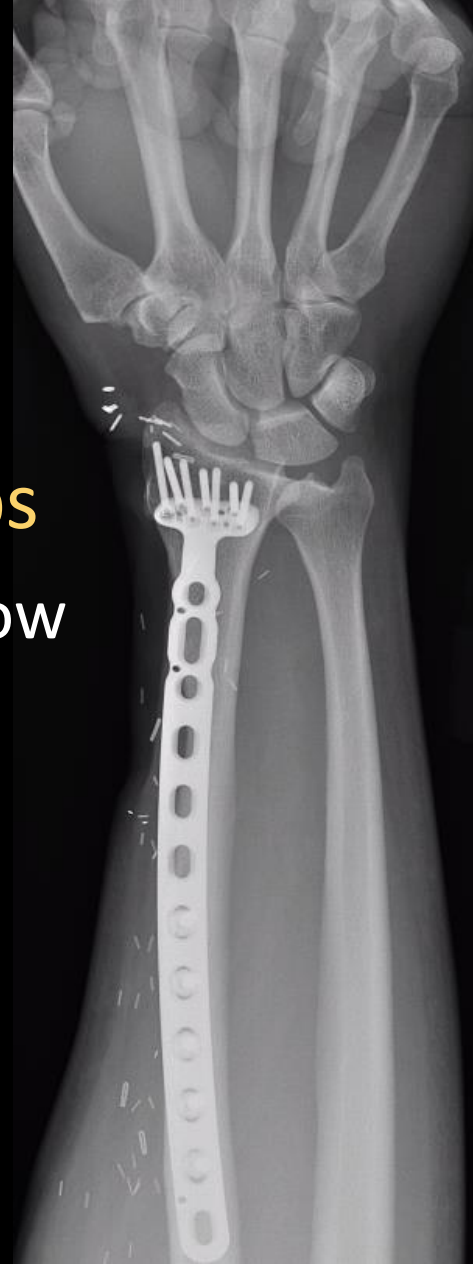
- First described in 1974
- Fell out of favor in late 1990's
 - Pathologic radius fracture @ donor site
 - No plate fixation
- **University of Kansas Medical Center**
 - Otolaryngologists elicited help from Orthopaedic Surgeons
 - Prophylactic plating (donor) resulted in very low fracture rates



OCRFFF

Indications

- Oromandibular reconstruction of 3-dimensional anatomical relationships
 - Functional: speech, mastication, swallow
 - Cosmetic
- Neoplasm or Trauma



OCRFFF vs. Free Fibula *Comparison*

OCRFFF

- **Advantages:**
 - Ease of positioning during single stage surgery
 - Long vascular pedicle
 - Predictable vascular anatomy
 - Reliable skin paddle
 - Thin, pliable soft-tissue component
- **Disadvantages:**
 - Limited amount of bone (up to 15 cm)

Free Fibula

- **Advantages:**
 - Lots of bone
 - Reconstruction
 - Dental implant placement
- **Disadvantages:**
 - Donor site morbidity



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- The Team =
 - Orthopaedic Hand Specialist
 - Otolaryngology Colleagues



Sara Rohde, MD



Robert Sinard, MD



Kyle Mannion, MD



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Courtesy of Sara Rohde, MD



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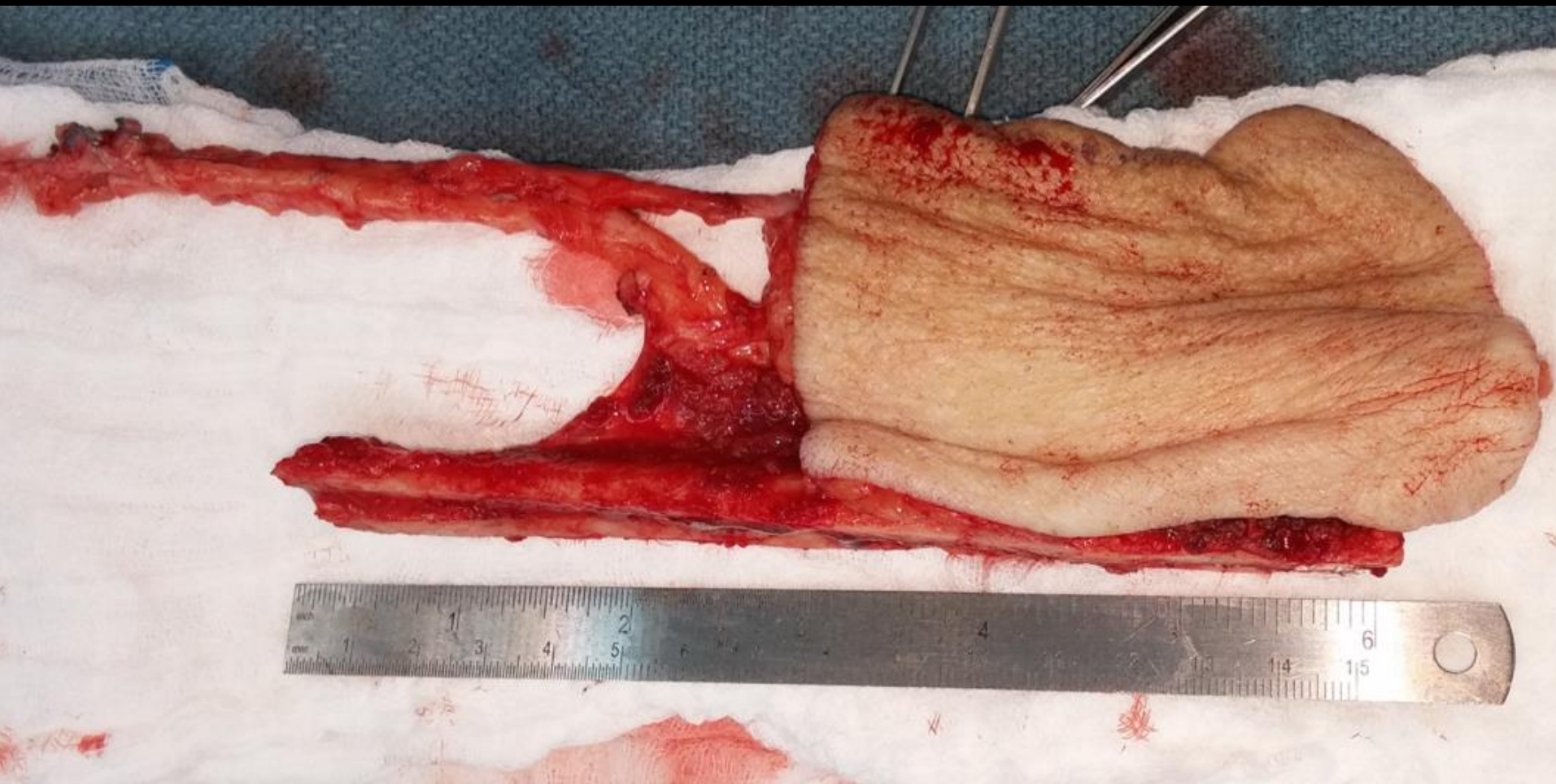
“The Vanderbilt Experience”



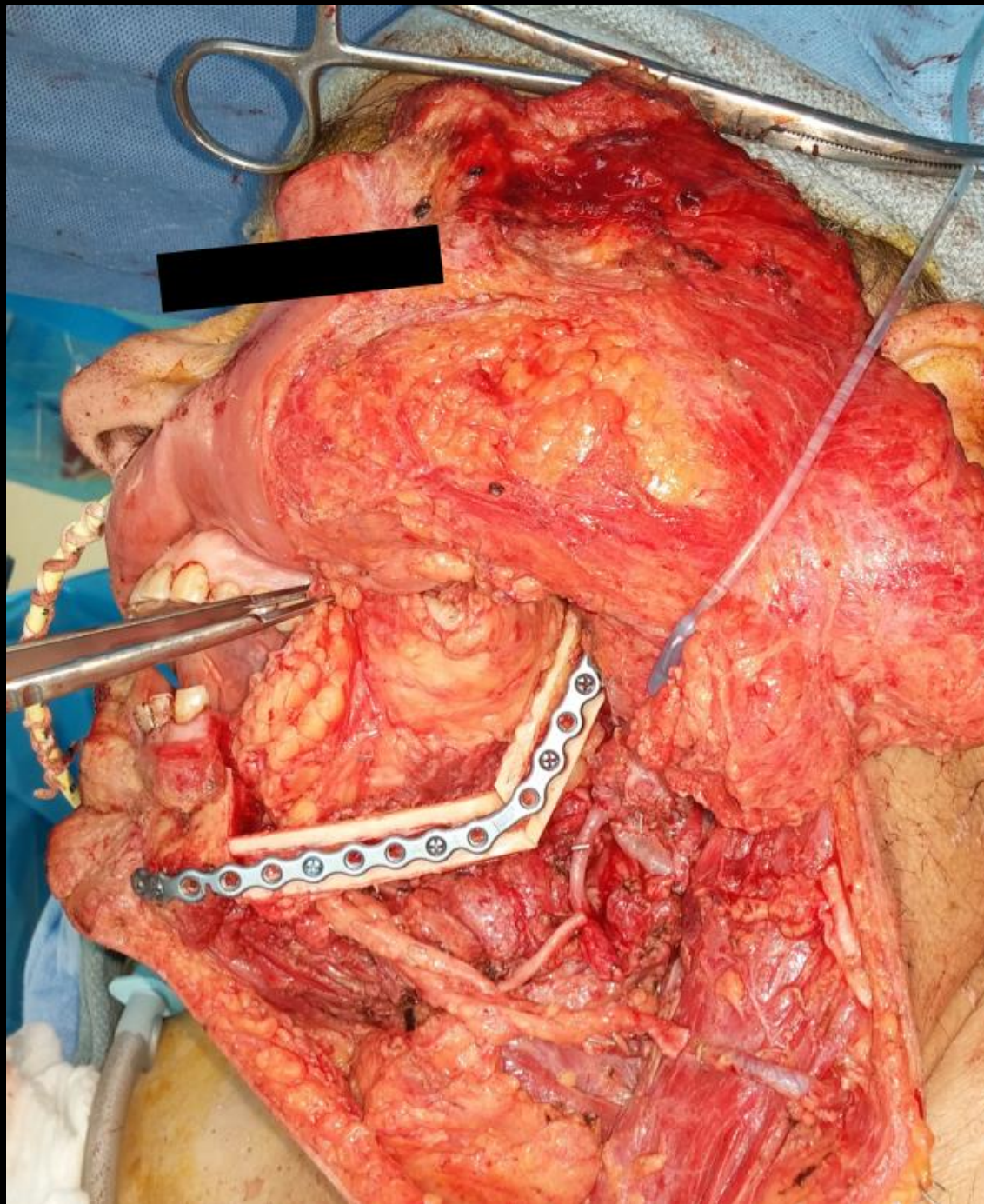
Courtesy of Sara Rohde, MD

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Courtesy of Charissa Kahue, MD

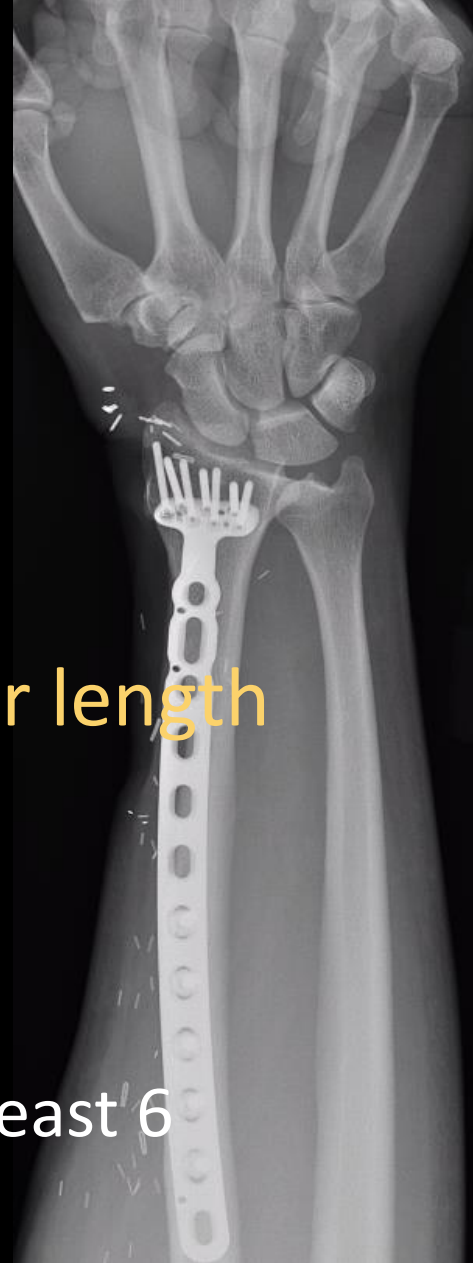


Courtesy of
Charissa
Kahue, MD

OCRFFF

Preferred Technique

- Leave 1/3rd of the ulnar radius
 - Hall® Micro 100 saw
 - osteotomes
- Okay to take down pronator teres for length
- Long volar distal radius plate
 - Preference: Hand Innovations
 - No screws in missing bone segment
 - Fill all holes distally (smooth pegs), at least 6 cortices proximally





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Outcomes

- 91 consecutive patients, 7-year period
- Single-stage oromandibular reconstruction for malignancy
- OCRFFF harvested by one Orthopaedic hand surgeon
- Known Possible Complications =
 - Fracture, skin graft loss, tendon exposure, infection, pain and minor hand dysfunction



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Outcomes

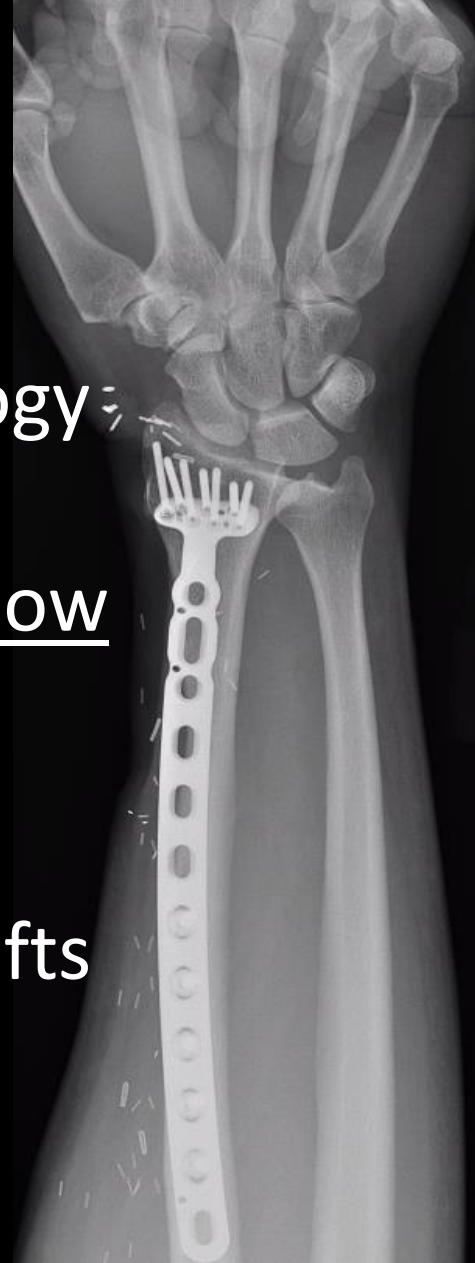
- Average graft length 8.99 cm
 - > 50% of grafts > 8 cm in length
- Mean follow-up = 18.3 months
- Results:
 - 6.6% (6/91) pain @ donor site
 - 11% (10/91) minor hand dysfunction
 - 2% (2/91) deep infections
 - **No** periprosthetic fractures



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Conclusions

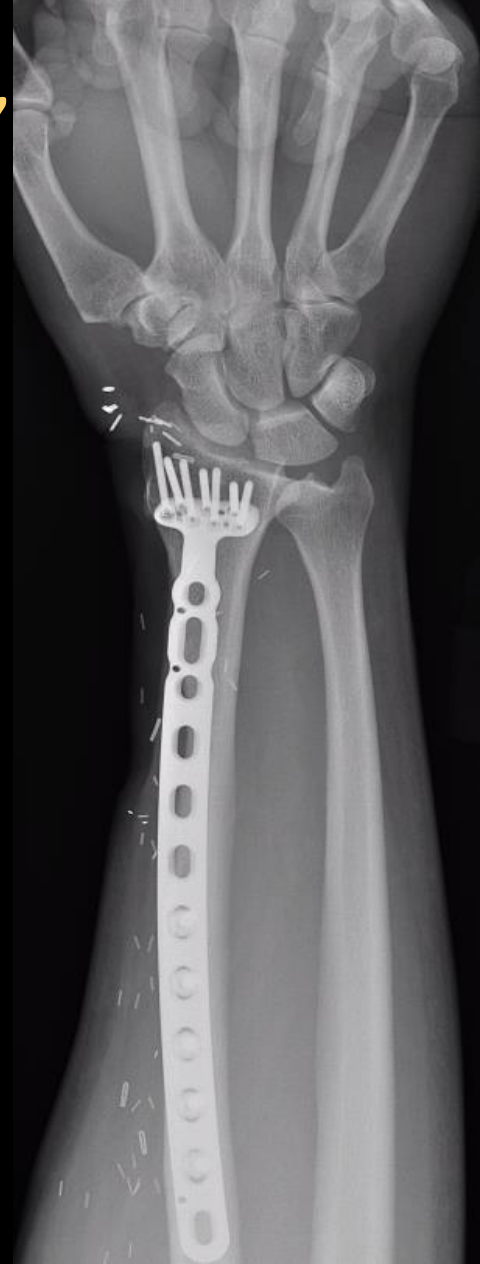
- **Collaboration** between Otolaryngology and hand surgeons allows oromandibular reconstruction with low donor-site morbidity
- **Risk of fracture** with plating with grafts up to 15 cm is negligible



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Future Research

- **Prospective study**
 - Distinct definition of graft size (length, width, amount of bone remaining)
 - DASH scores
 - Radiographs at defined time points



Thank you!

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