

# Articulating Spacers: Effective, Efficient, Everlasting?



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**OrthoCarolina**  
**Hip and Knee Center**  
**Charlotte, NC**

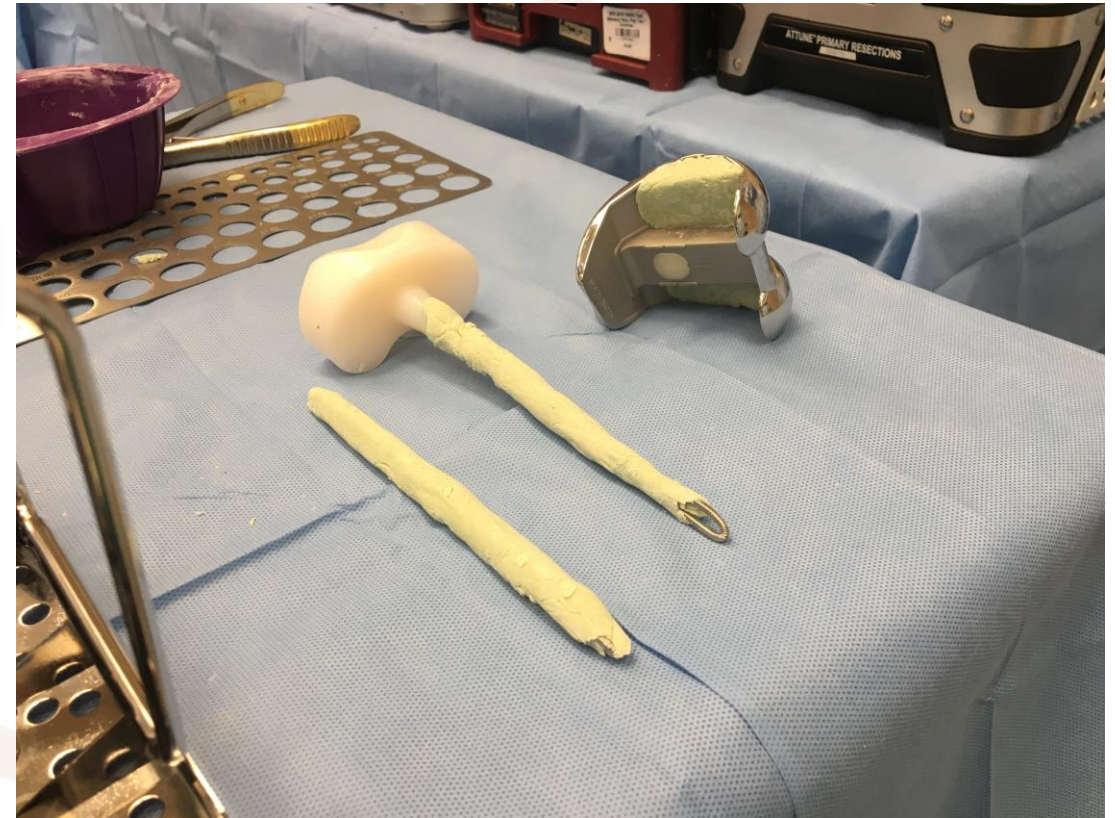


# Disclosures

- Consultant
  - Depuy
  - Zimmer Biomet

# Goals of the Talk

- How to set up the room
- How to make an effective and efficient Articulating spacer



# Room Set up: 2 Set ups



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- Clean side is set up and covered
- Dirty side wheeled out of room during room cleaning

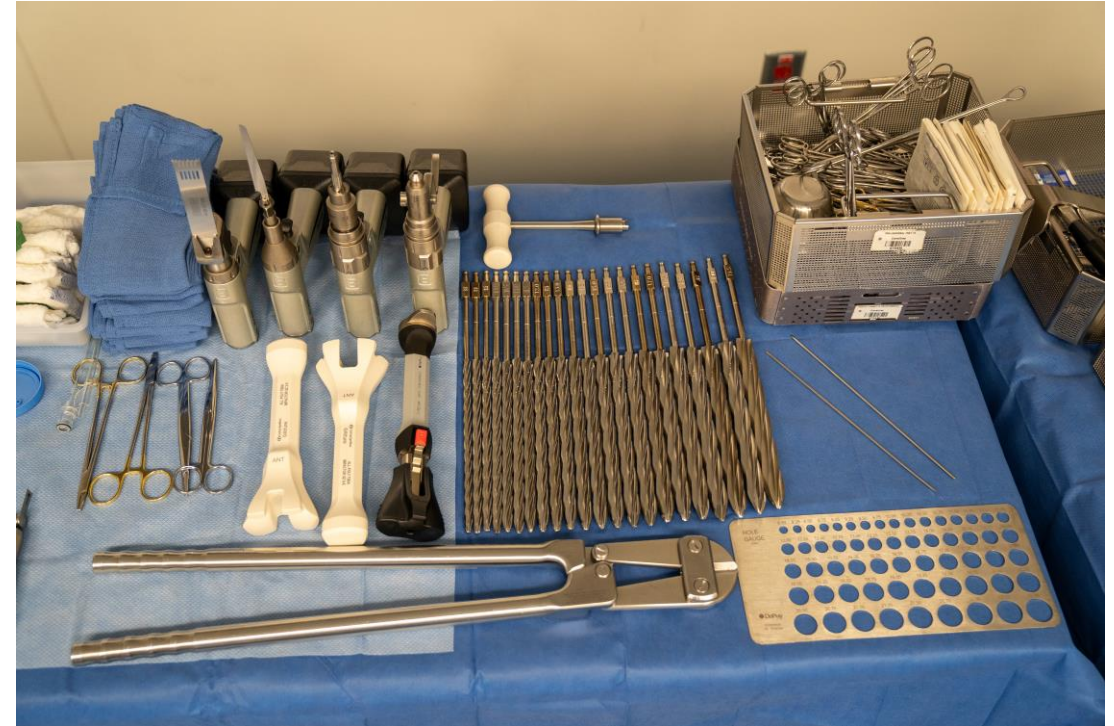
# What do you need?

- Implant of choice for the femur
- All poly tibia or TKA poly
- Reamers
- Threaded K-wire Tray
- Hole Gauge
- Cement with Antibiotics



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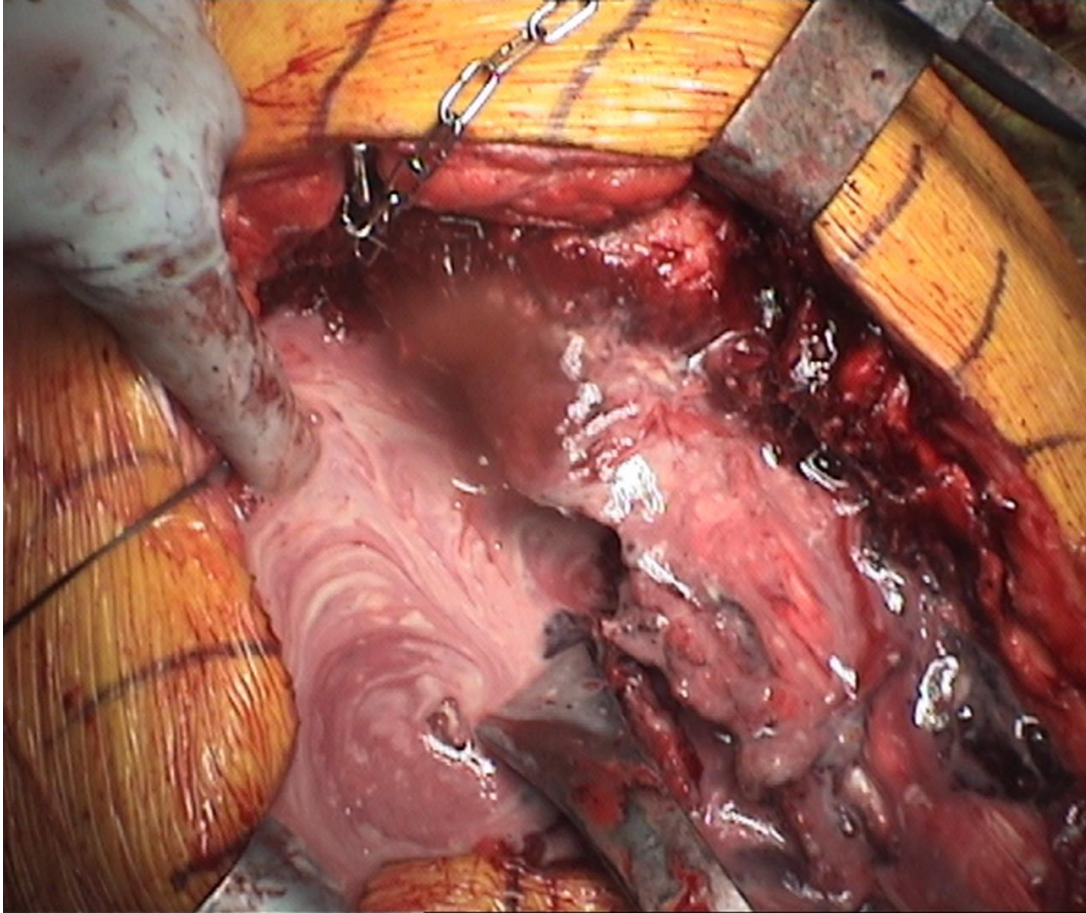


# Antibiotic Cement Dosing – 2 Stage

- Differences based on which type of cement
- Spacers:
  - Simplex: 4 grams Vanc 3.6 grams Tobra/pack
  - Palacos: 2 grams Vanc, 2.4 grams Tobra/pack
- Alternative antibiotic allowed if more sensitive
  - Must be powdered, heat stable and have documented elution characteristics



# What goes on debridement side?



- All extraction tools
- All bone prep/ cut blocks/reamers
- Prepare bone to trials
- Irrigation solutions

# Optimizing Exposure

- Essential part of Success in any revision surgery
- Ability to remove implants without risk to bone stock or integrity of the patellar tendon is of paramount importance



# Revision Surgery is a 2 step process

Step 1 Implant removal

Step 2 Joint Reconstruction



Step 1 can jeopardize Step 2

# Step 1: Implant removal

- Safe
- Expedient
- Bone Preserving

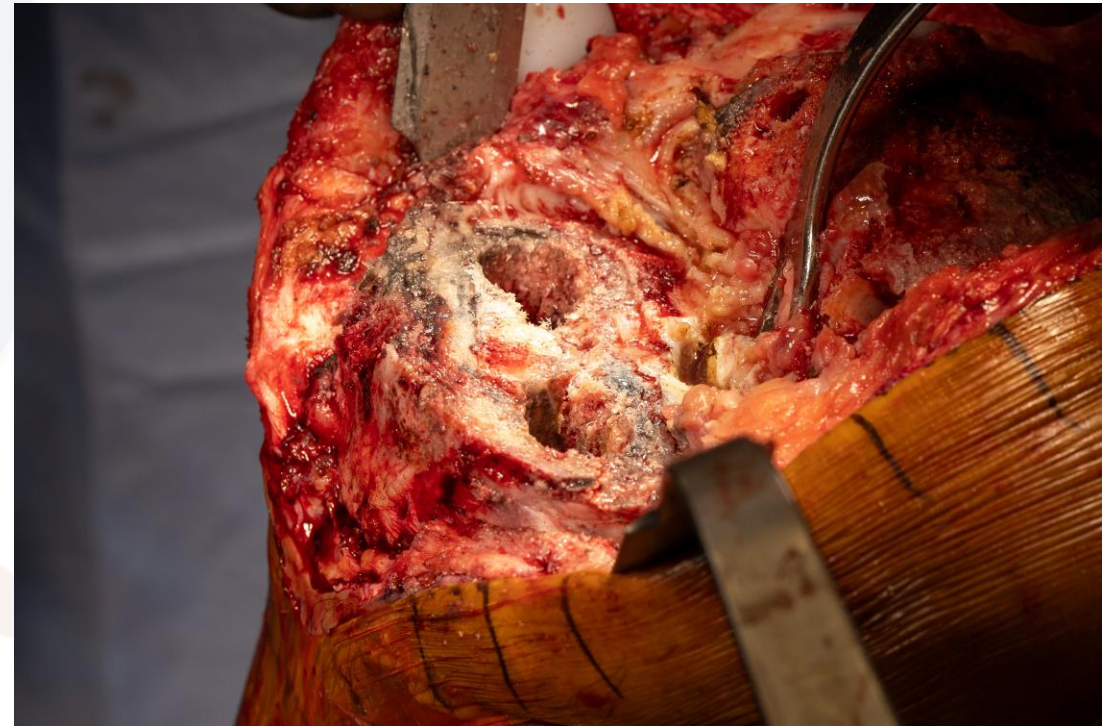


# Let's Make an Articulating Spacer

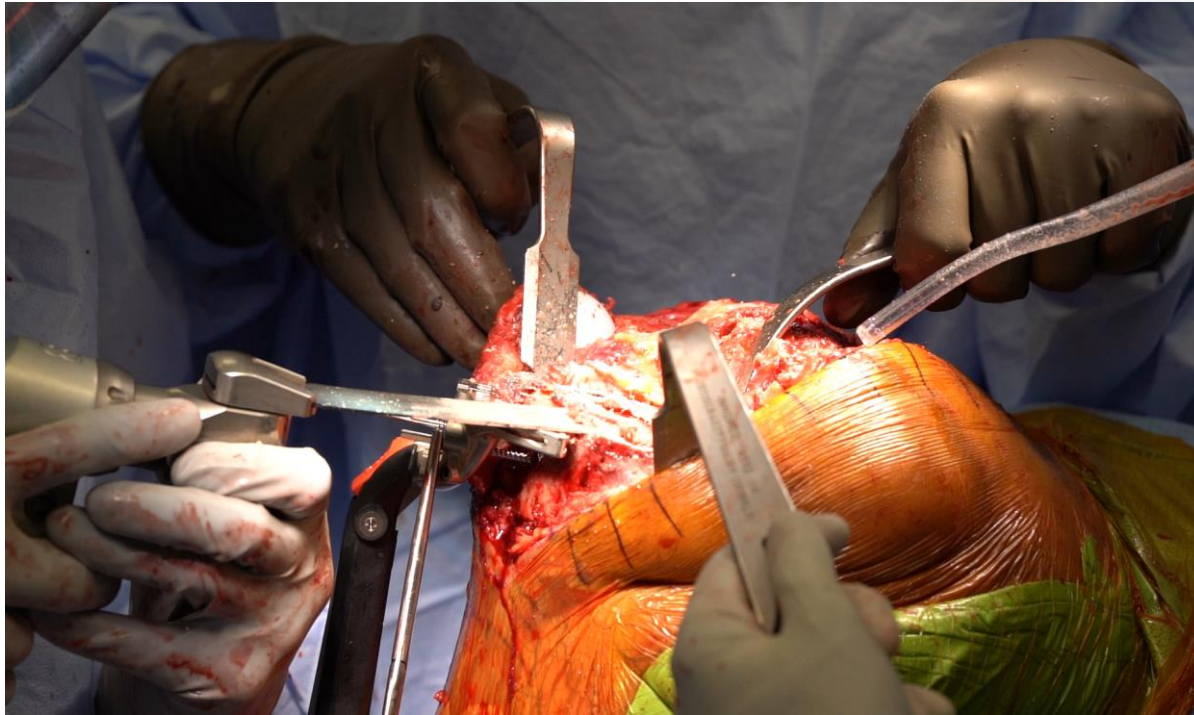


# How to do it

- Fashion dowels over Threaded K-wire
- Unite tibial k-wire to the poly tibia
- Usually ream to 13-14 mm
- Make sure dowel can go through that size hole gauge



# Femur/tibia cuts for debridement



# Ream canals





# Place trials



# Wound during transition



- Wound
  - Whip stitched
  - Sterile towel
  - Ioband over top

# Room Set up



- Cleaning followed by
- Reprepping and draping
- New Instrumentation

# What goes on the clean side?

- Final Impactors
- K-wire tray
- Hole Gauge
- Irrigation : H<sub>2</sub>O<sub>2</sub>, Betadine, Saline



# 3-step Irrigation Protocol

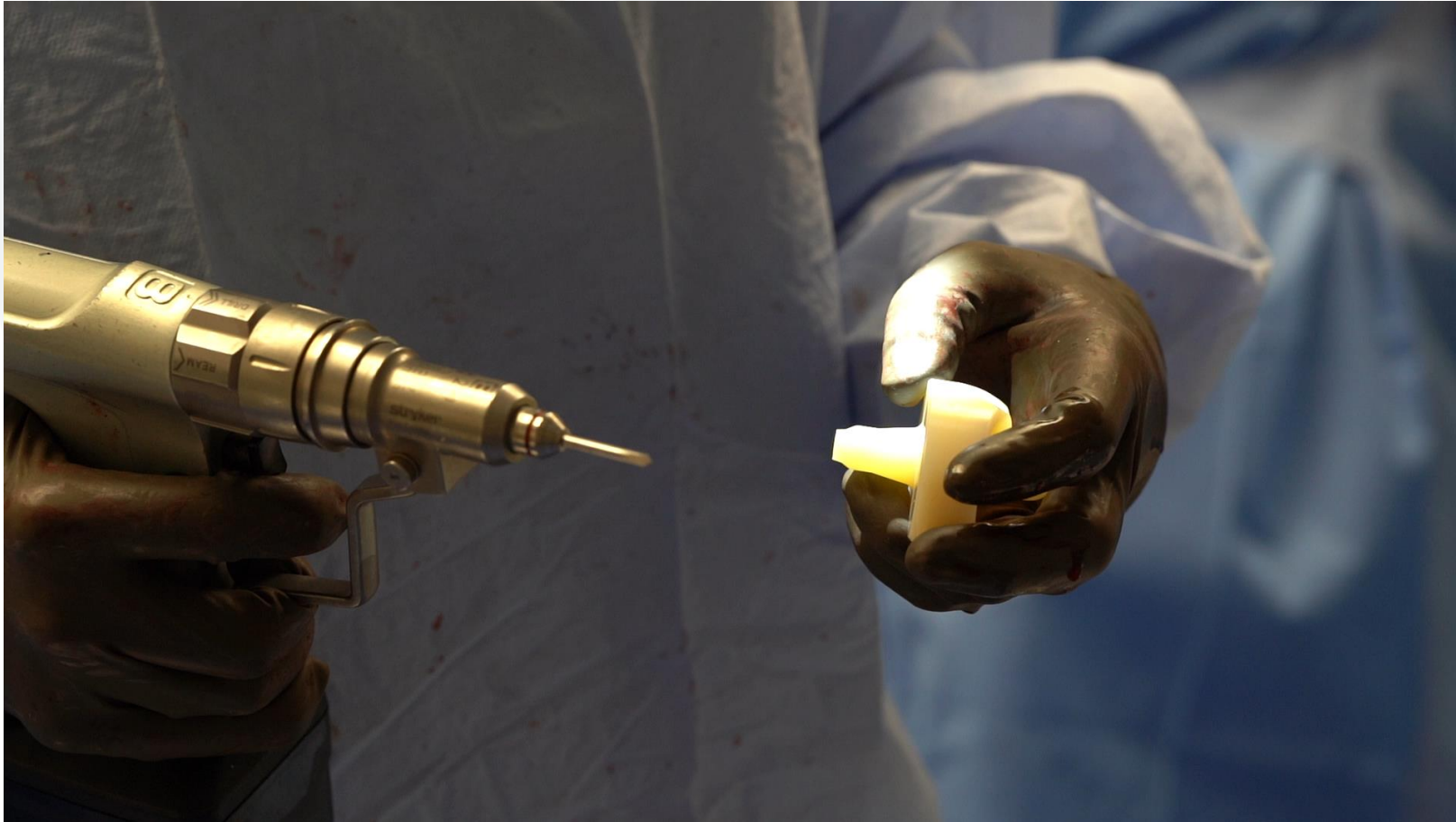
- Pulse Lavage 3 L of NS
- 100 cc's of 3% H<sub>2</sub>O<sub>2</sub> and 100 cc's of sterile water = 2 min soak
- Pulse Lavage 3 L of NS
- 1 L of dilute, sterile betadine ( 22.5 mL/L NS) = 3 min soak
- 3 L of NS



# Mix Cement with antibiotics



# Unite All Poly Tibia to K-Wire dowel



# Fashion Dowels





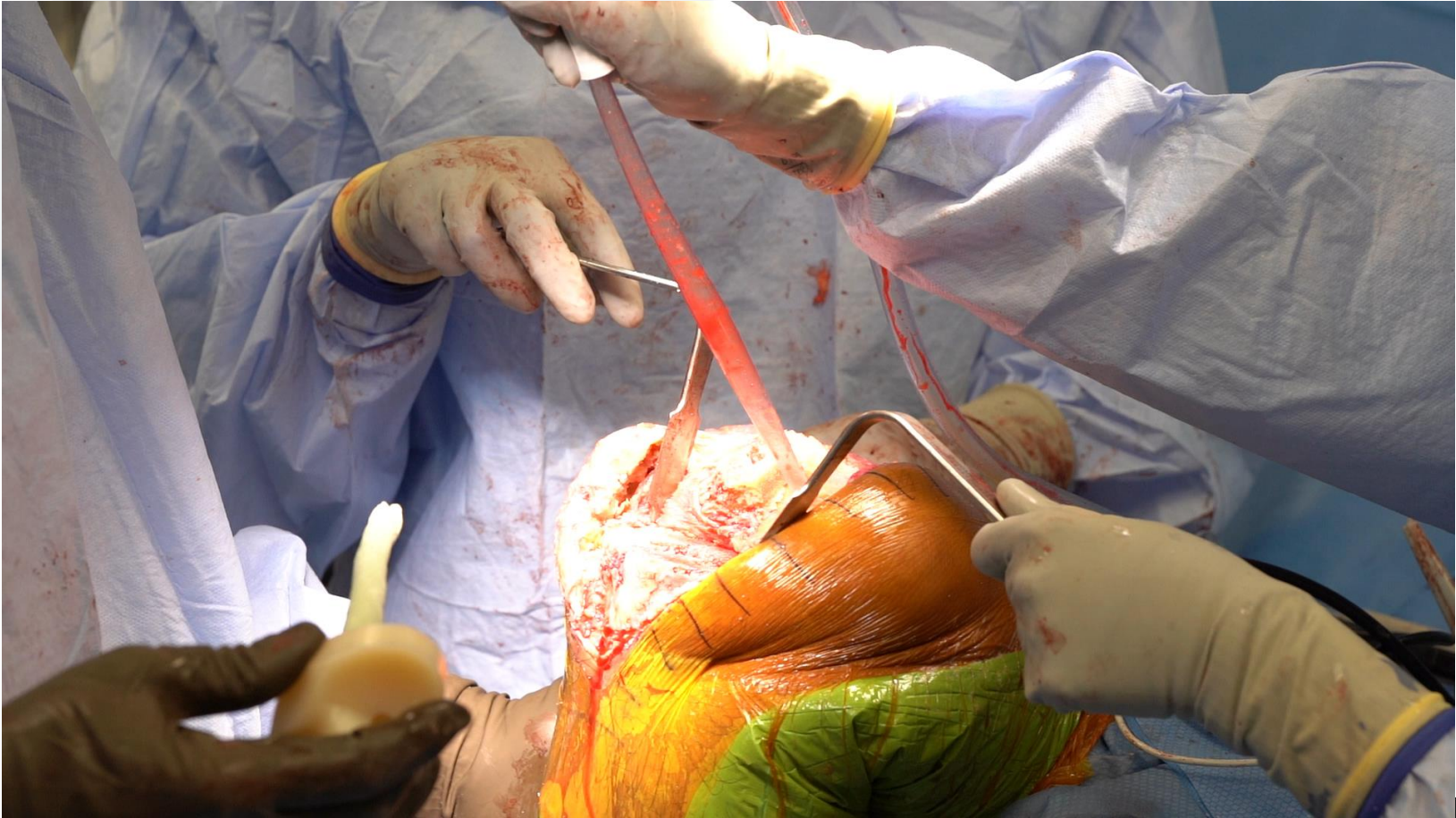
# Fashion Femoral Augments



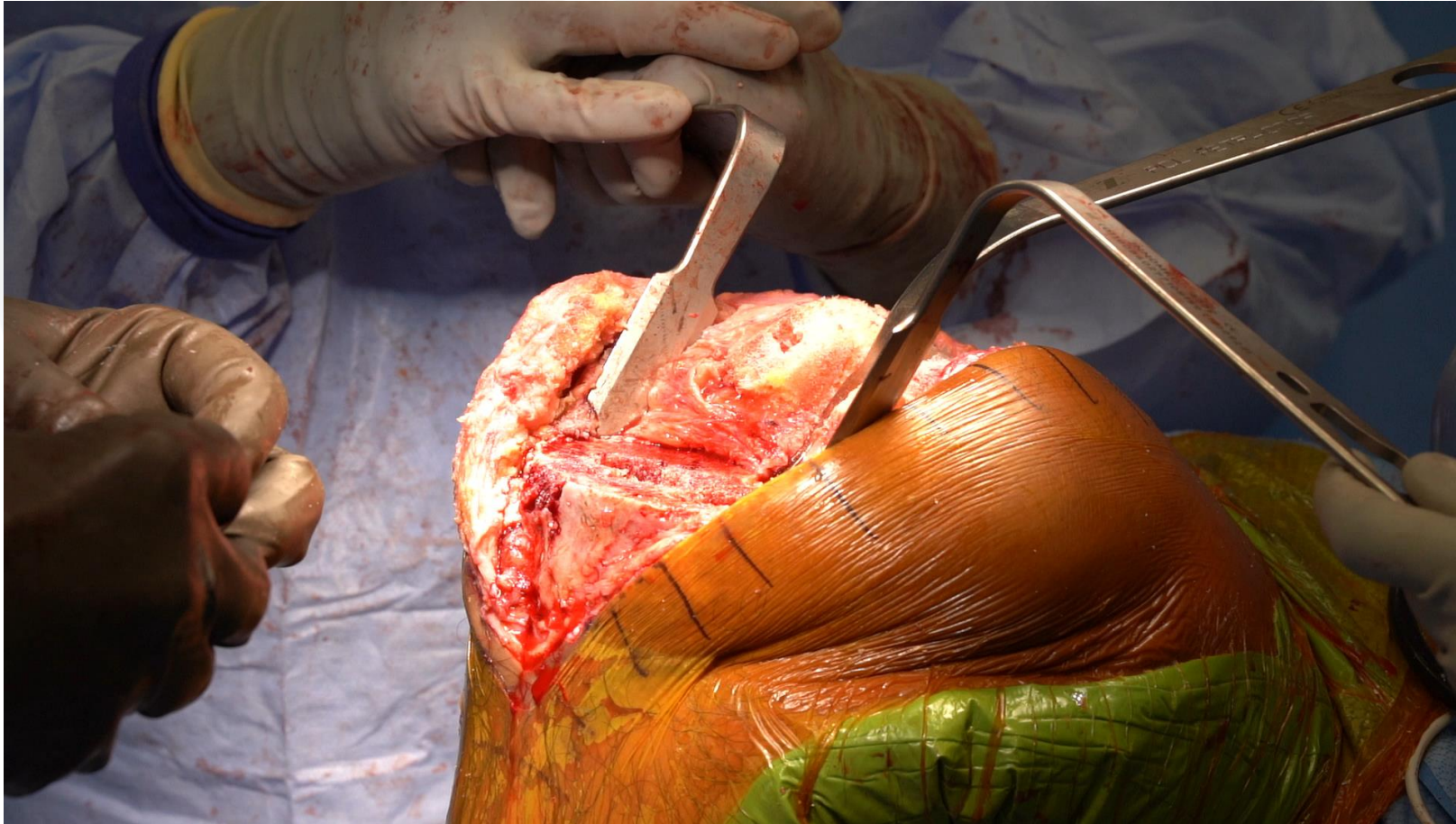
# Drill Tibia for added fixation



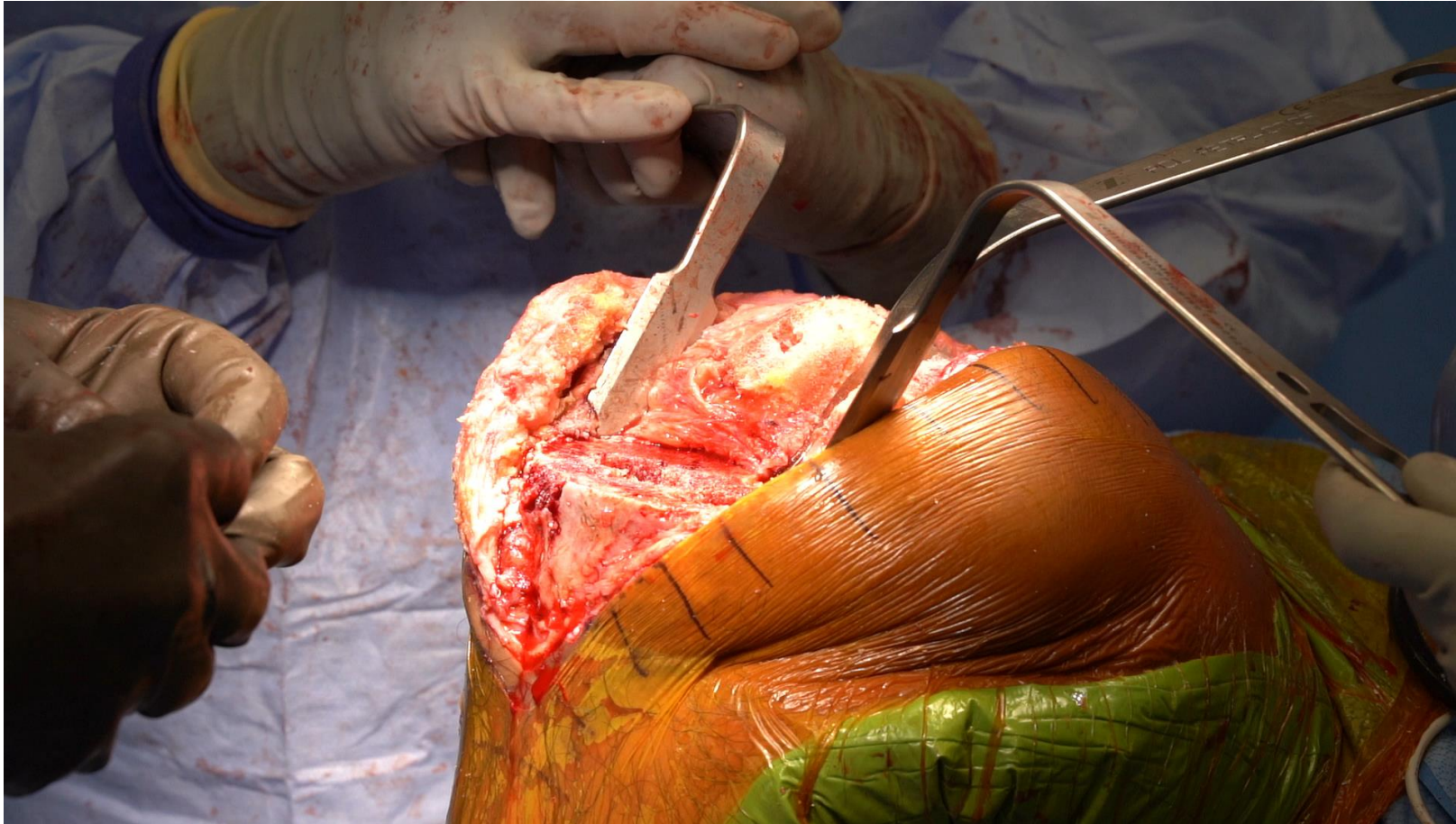
# Trial run



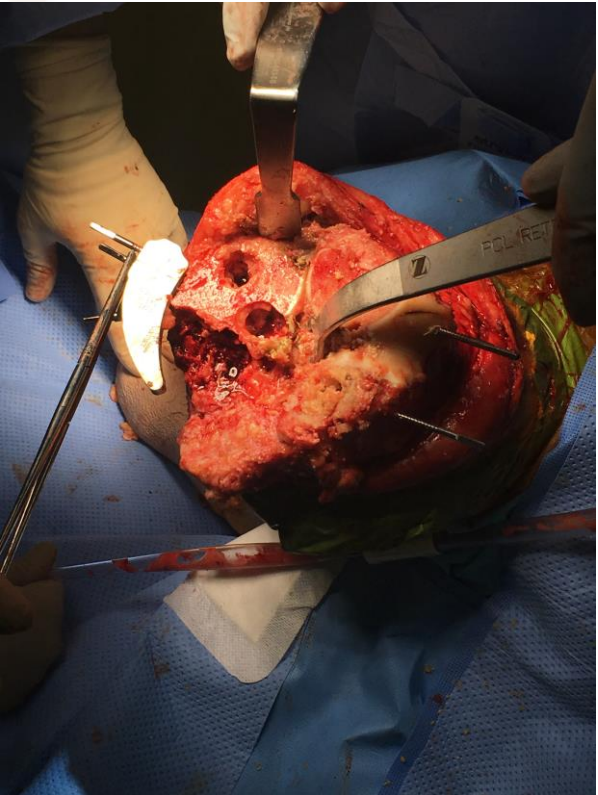
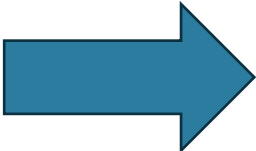
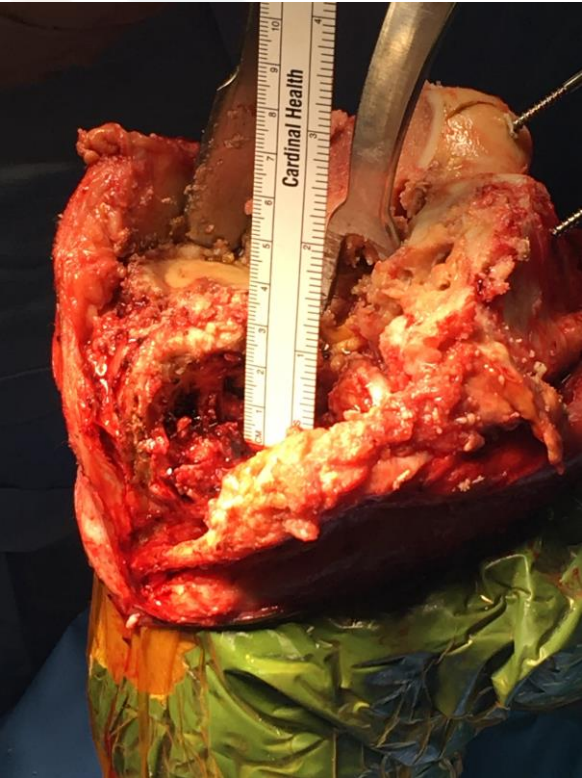
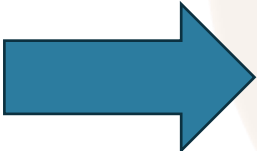
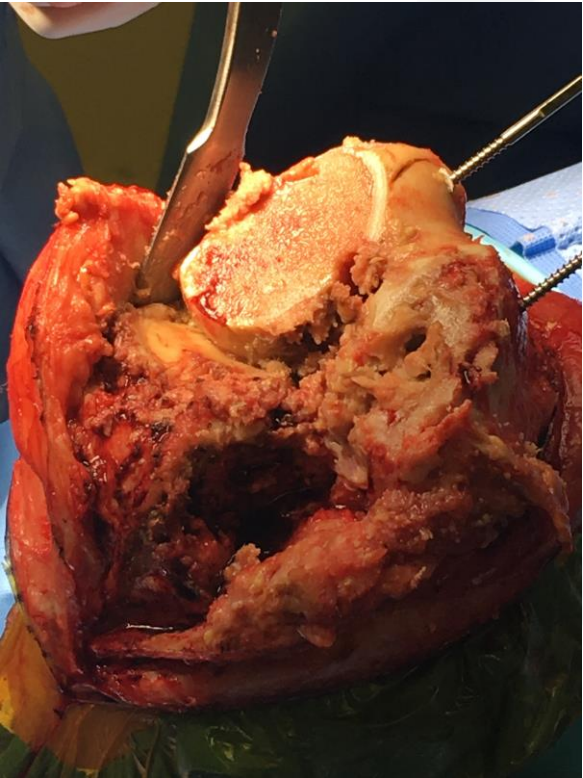
# Final Cementation



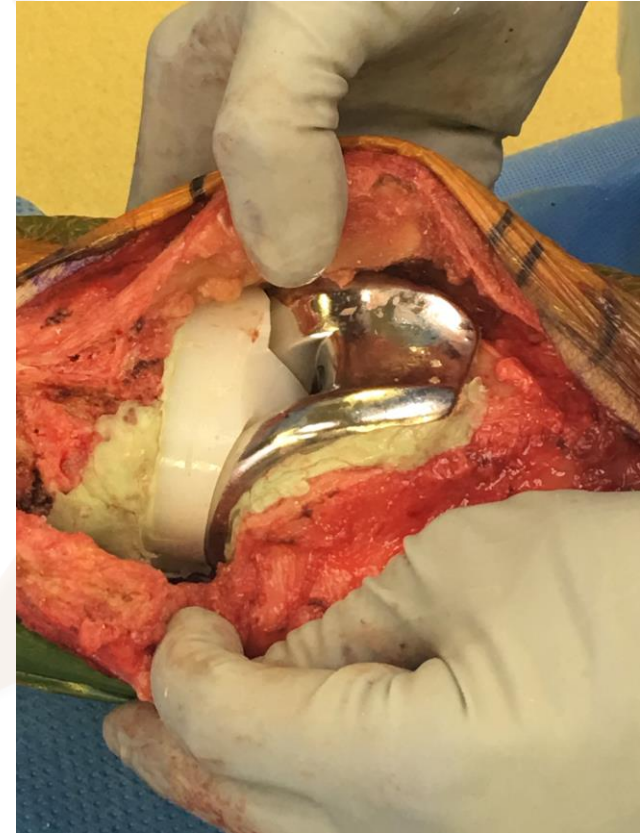
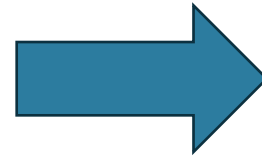
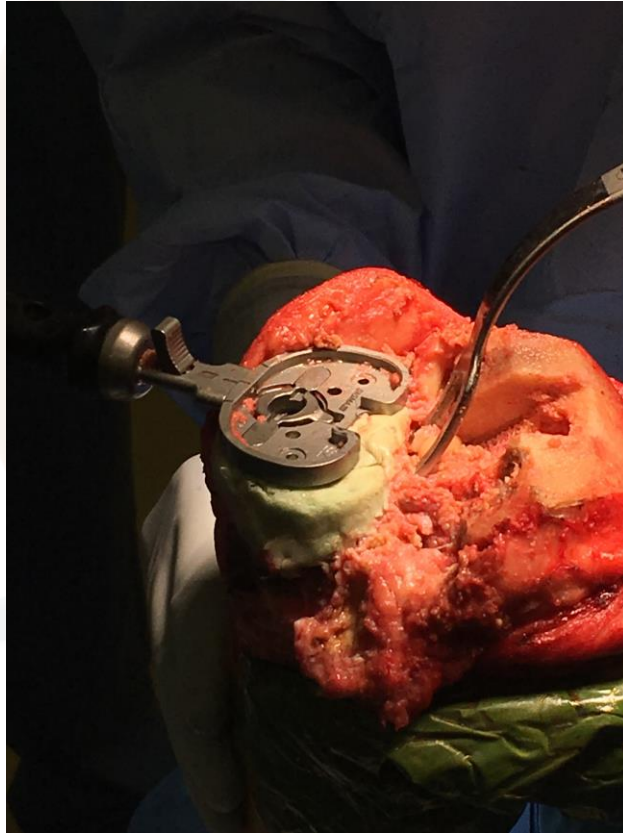
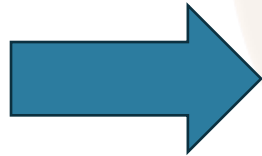
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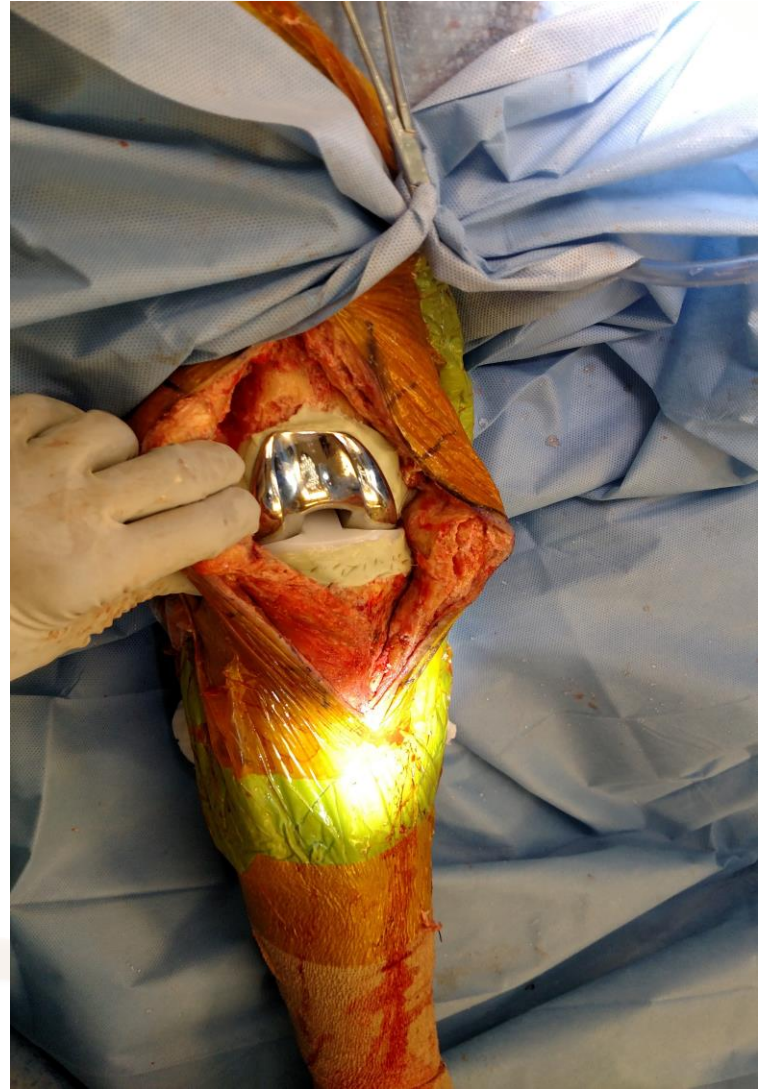
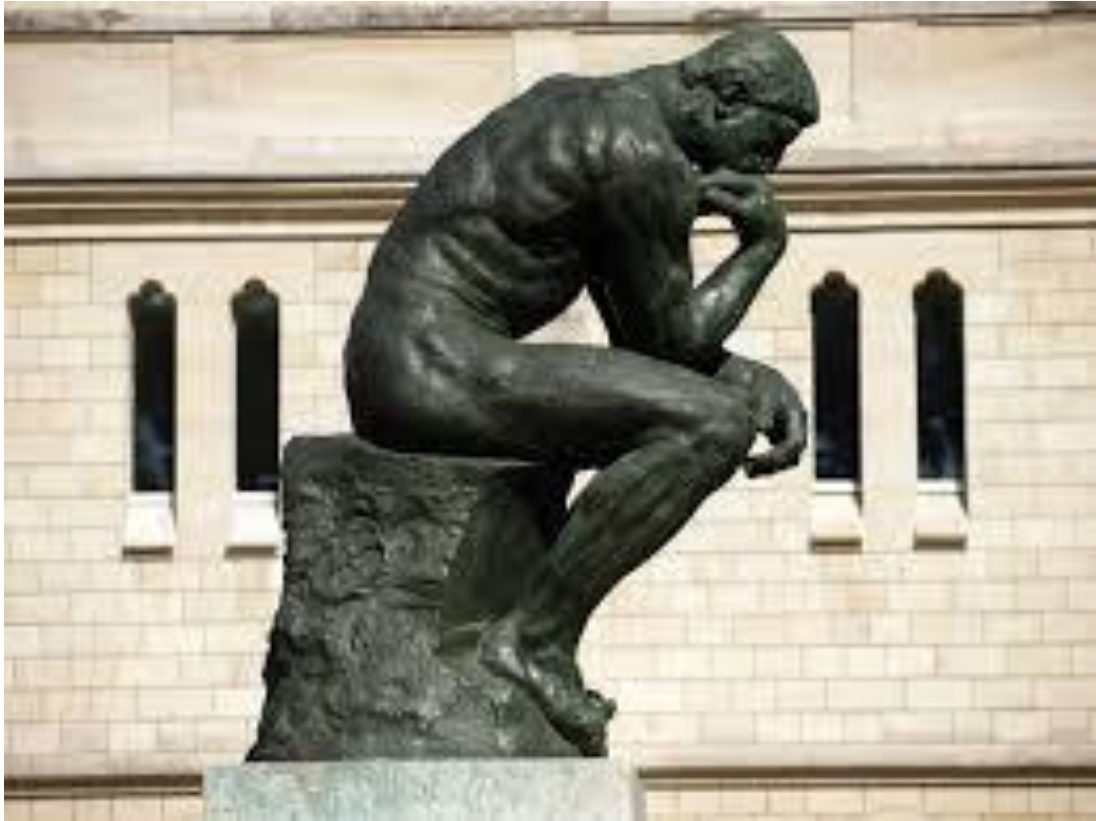
# Articulating spacer with increasing complexity



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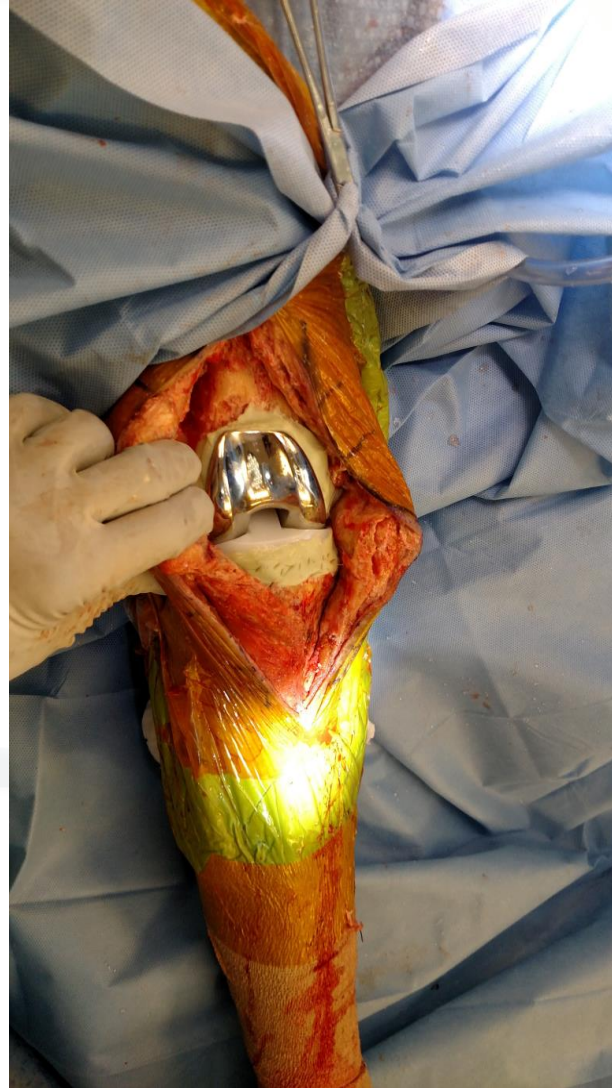
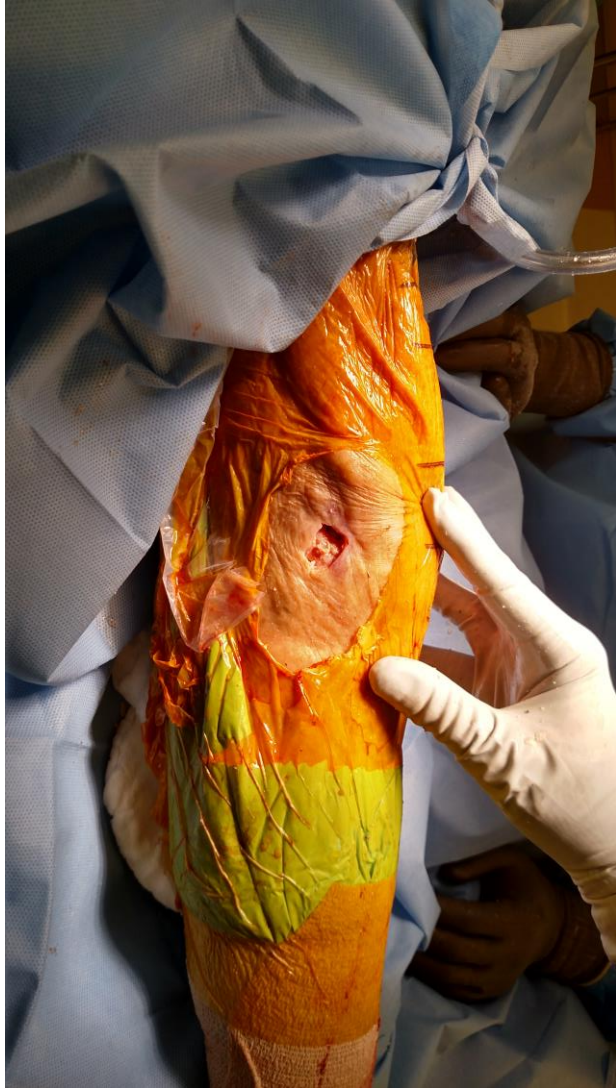


# To Retain or Reimplant?





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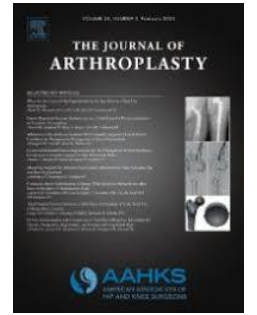
# Destination Spacer?




# One and a Half-Stage Revision With Prosthetic Articulating Spacer for Definitive Management of Knee Periprosthetic Joint Infection

[Ahmed Siddiqi](#), DO, MBA,<sup>a,b,c</sup> [Yusuf Mahmoud](#), MD,<sup>b</sup> [Salvador A. Forte](#), DO,<sup>d</sup> [Thomas A. Novack](#), MD,<sup>e</sup> and [James Nace](#), DO, FAOAO, MPT<sup>e,\*</sup>

- Cemented in to last
- Organism specific antibiotics
- 85% infection free survival at 3 years
- Cost effective –



# 1.5-Stage Exchange Arthroplasty for Total Knee Arthroplasty Periprosthetic Joint Infections

Nicholas M. Hernandez MD <sup>a</sup> , Michael W. Buchanan BS <sup>b</sup>,  
Thorsten M. Seyler MD, PhD <sup>c</sup>, Samuel S. Wellman MD <sup>c</sup>,  
Jessica Seidelman MD, MPH <sup>d</sup>, William A. Jiranek MD <sup>c</sup>

- Similar results – 81% survival at 2.7 years
- Effective in poor host, medically complex
- Essentially a 1 stage exchange

## Retained Antibiotic Spacers After Total Hip and Knee Arthroplasty Resections: High Complication Rates

Stephen M. Petis, MD, FRCSC, Kevin I. Perry, MD, Mark W. Pagnano, MD, Daniel J. Berry, MD, Arlen D. Hanssen, MD, Matthew P. Abdel, MD \*



- Reviewed 1106 cases of PJI with spacer placement
- 4.6% retention rate (medically unfit or acceptable function)
  - 17 hip
  - 34 knee
- Cumulative all cause revision rate at 4 years
  - 28% hips
  - 21% knees
- Cumulative incidence for radiographic signs of mechanical failure
  - 72% hips
  - 87% knees

# Philosophy at OrthoCarolina

- Try to Reimplant everyone (99%)
- Otherwise just doing a Single-Stage
- Best outcome long-term
- “Put your nickel down”



# OrthoCarolina

## HIP & KNEE CENTER

### *Thank You*

We are what we repeatedly do,  
Excellence then, is not a single act, but a habit  
-Aristotle

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