Solving Loosening AND Fractures with a Megaprosthesis

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Complex Knee Treatment Options

Thanks for your time and attention

ENDSTAGE RECONSTRUCTION (ESR)

• DEFINITION: Joint replacement surgery that cannot be reconstructed by ordinary means utilizing standard revision off-the-shelf products.

• ESR &st typically require Segmental Limb Salvage Components that traditionally have been reserved for tumor surgery.
Multiple parallels: End Stage Reconstruction & *The 300*

- Only 300 Revision surgeons left...
- Impending HORDE is being funneled to us at the HOTGATES
- With Obama care all we will have to operate will be our sword, shield and helmet
- The HORDE stretches as far as the eye can see...
- No visible means of support...

The Future Burden of Hip and Knee Revisions: U.S. Projections from 2005 to 2030

- S. Kurtz PhD and E. Lau, MD
- Revision #'s will double from 2005 in 2026
  - RevTHA: 41,000 in 2005 to 98,000 by 2030
  - RevTKA: 37,000 in 2005 to 195,000 by 2030


- Massive osteolysis
- Trauma
- Post-infection
- Failed “conservative RevTKA”
- Peri-prosthetic fractures
PATIENT PROFILE

- Age (varies)
- Post-traumatic
- Deficient bone stock
- Deficient Skin envelope
- Multiple prior surgeries
- Limited ambulator
- Complex medical condition(s)
- Prior peri-op complications (infection)

Periprosthetic Fracture Classification-Femur

- **Type I**: Fracture undisplaced, component solidly fixed
- **Type II**: Fracture displaced, component solidly fixed
- **Type III**: Component loose, regardless of displacement of fracture


Type III example:
Periprosthetic Fracture Classification - Tibia

- **Type I**: Condylar
- **Type II**: Adjacent to stem
- **Type III**: Distal to stem
- **Type IV**: Tibial tubercle

**Subcategories:**
- Prosthesis well fixed
- Prosthesis loose
- Intraoperative fracture

Type III example: Treated
Type III Tibia Fracture: Treated

Implant Choice Wish List
- Multifunctional Tibial baseplate
- Constrained vs. Rotating Hinge option
- Modular Segmental implant
- Cement and/or Cementless technology
- Sleeve technology
- Quad slot stems

- Additional Wish List? Wagner Stem option for distal femur

Implant Requirements
- Ease of use/interchangeability of segments
- Smaller sized femoral component
- Cement tibial side
- Cementless femoral stem
- Cement: poor bone quality
Give me one more wish...

What I am trying to avoid:

Loosening: Cementless or Cemented
Let's put it all together

Case #1
- 74 yo Female
- Comminuted distal femur fracture
- Old tibial malunion
Case #2

66 yr old female
Sudden onset deformity & pain
Prior TKA 22 years ago

Distal Femoral Replacement Surgical Technique

Have a nice day!