



# Current State of Shoulder Arthroplasty

## *Trauma 101: Shoulder Session #2*

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**I HAVE NO DISCLOSURES or COI**

# Outline



- Background
- Humeral Component
- Glenoid Component
- Stemless
- Platform System
- Results & Summary
- ~~Reverse~~

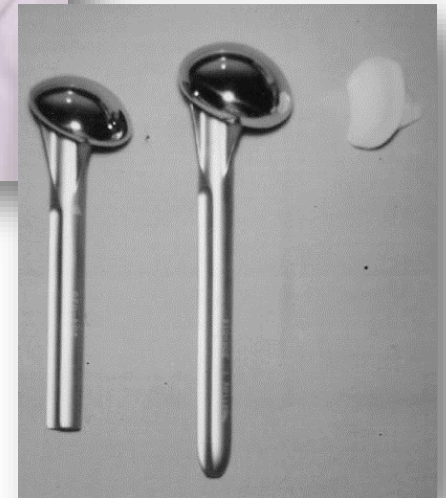
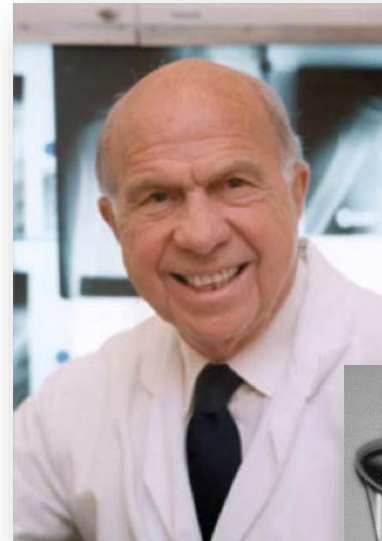




# Background

## Charles Neer

- 1974
  - Modern arthroplasty (total)
  - Glenoid
  - Monoblock humerus
- 1982
  - Results published
- 2007
  - 93% : 10 yrs
  - 87% : 15 yrs
  - Satisfaction 92% & 83%



# Background



## Disease Burden

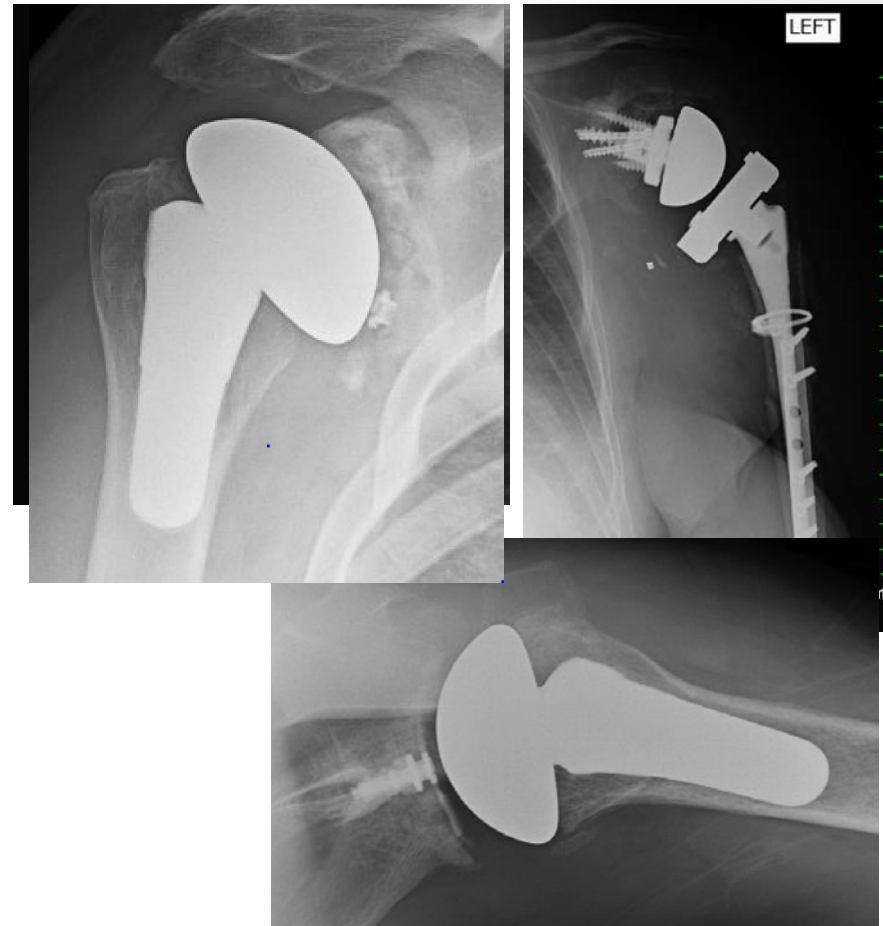
- Volume Increasing
  - 2000: 14,000
  - 2008: 46,000
  - 2016: 100,000

## Reasons

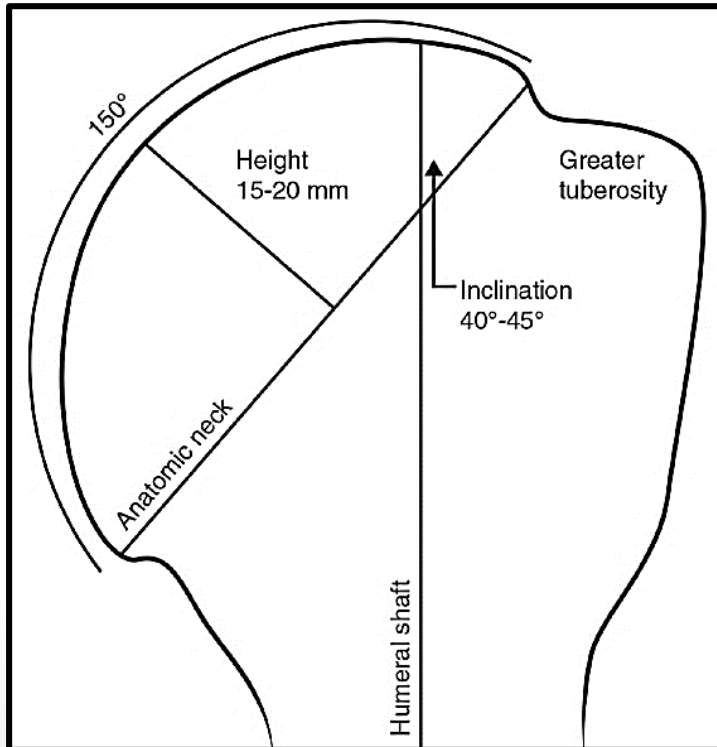
- Aging & active...
- Indications expanding

## Problems

- Revisions increasing ~ 400%
  - Last 20 years



# Humeral Component: Anatomy



# Humeral Component

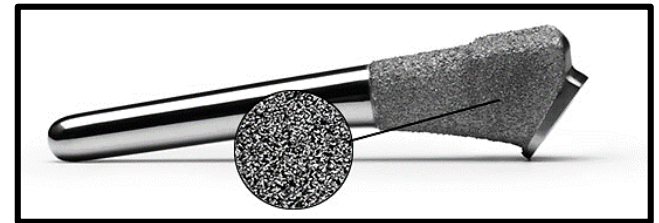


## New Concepts

- Version, inclination, & thickness
  - Soft tissue balance
- Fixation
  - Press-fit
  - High surface roughness
  - Bony on-growth / in-growth
  - Metaphyseal (shorty)



*\*Easier revision*  
*\*Loosening uncommon*  
*\*Stress shielding common*  
*\*stemless & platform...*



# Glenoid Component: Anatomy



- Width
  - 27mm/23mm; M/F
  - (19-32mm)
- Height
  - 37mm/32mm; M/F
  - (29-42mm)
- Inclination
  - 3.6-5.2°
  - Extremely variable
- Version
  - 1.23° (retro)
  - -9.5-10.5°

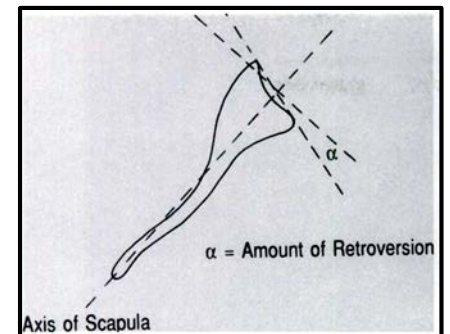
## -Classically-

Saha 1971

- -7-10° (75% with retro)

Friedman 1992

- Controls - 2° ante
- Arthritis - 11° retro



# Glenoid Component



New

• Sh



• Me



• Re

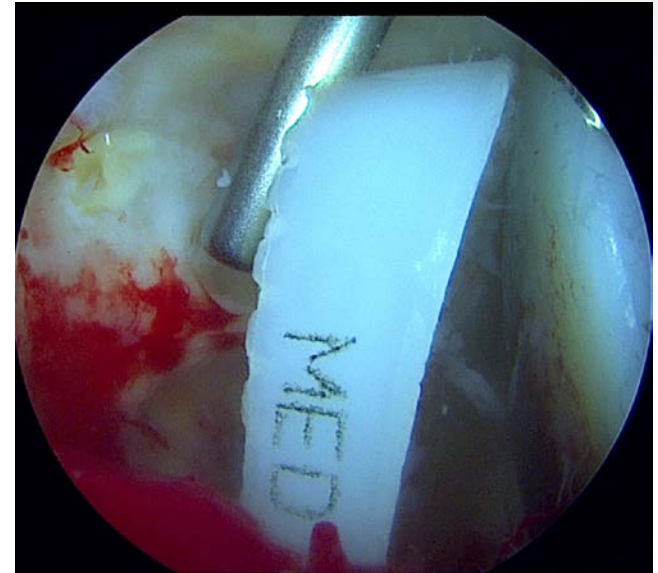


# Glenoid Component



## Loosening

- ***Most common long-term complication***
- 24% of all complication
- 7% asx radiolucent lines
- 30% of loose ones = revision
- 1-2% annual revision rate



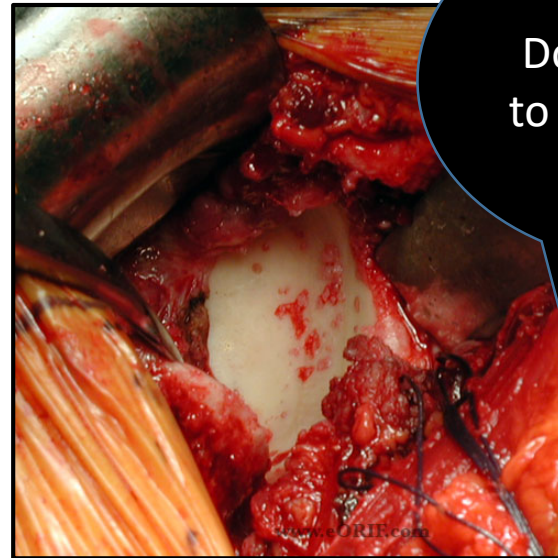
*\*Beware of all radiologists...  
\*Cannot rule-out: cancer, infection,  
potential catastrophic failure, etc*

# Glenoid Component



## TSA v Hemi

- Radnay et al
- Systematic review
- 23 studies
- TSR
  - Better pain relief
  - Forward elevation
  - Gains in ER
  - Satisfaction
  - Lower revision rate



Don't save me  
to save yourself

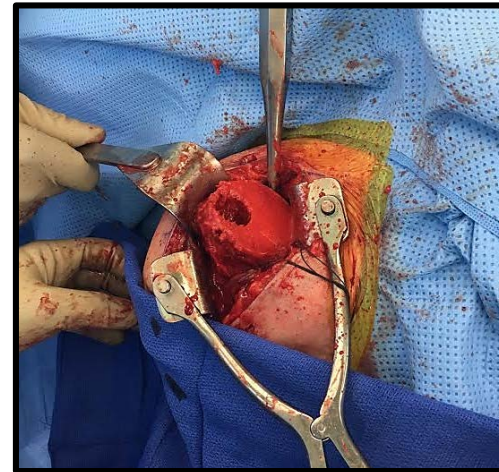
# Stemless



- Preserves bone
  - & Bone marrow
- Even easier revision
  - Don't buy stem's version
- Jury is still out
  
- *Cost?*
- *Version?*
- *Subsidence?*



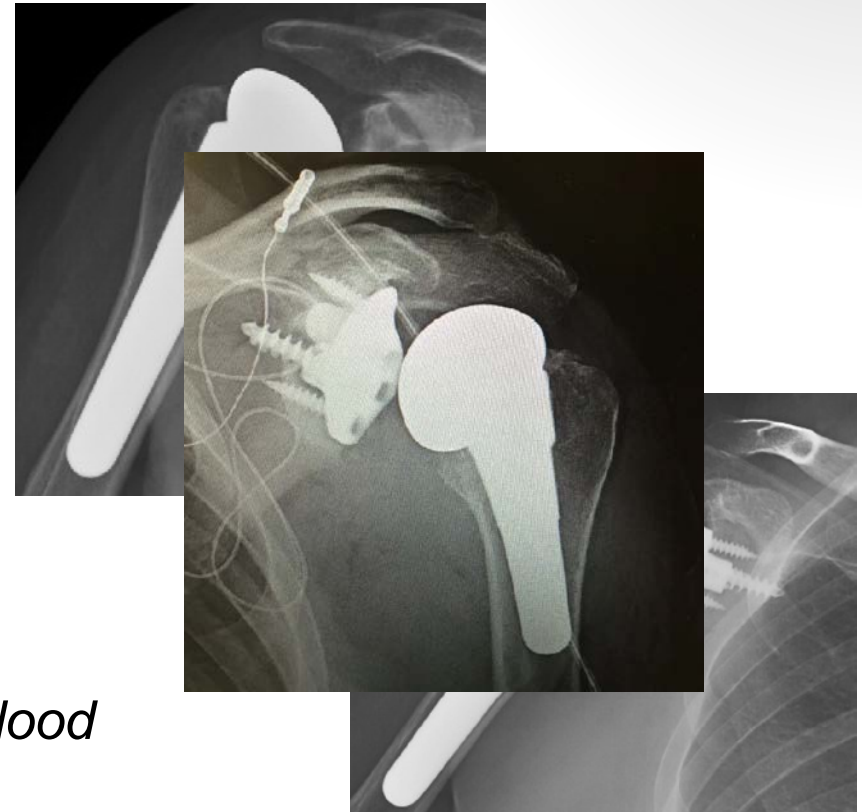
Very few  
are FDA  
approved...  
limitless to  
limited



# Platform Systems



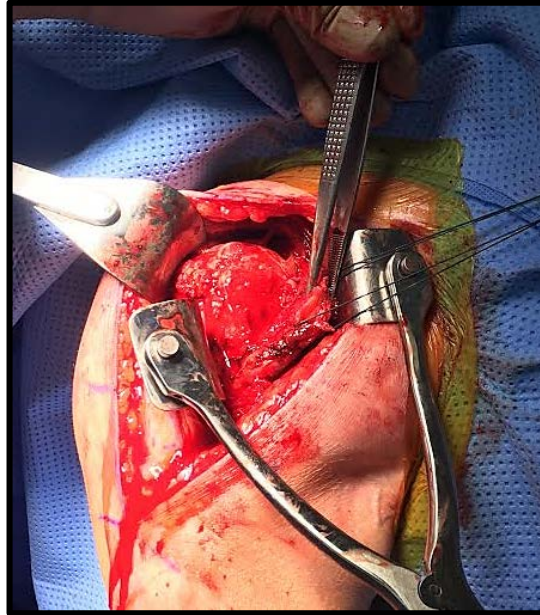
- Versatility
  - Facilitate conversion
  - Humerus fractures
  - Exposure
- Limitations
  - Accept stem position
  - Height & version
  - No outcomes from glenoid
- Bedi et al JSES 2018
  - *Decreased: complications, blood loss, surgical time*



# Surgical Pearls



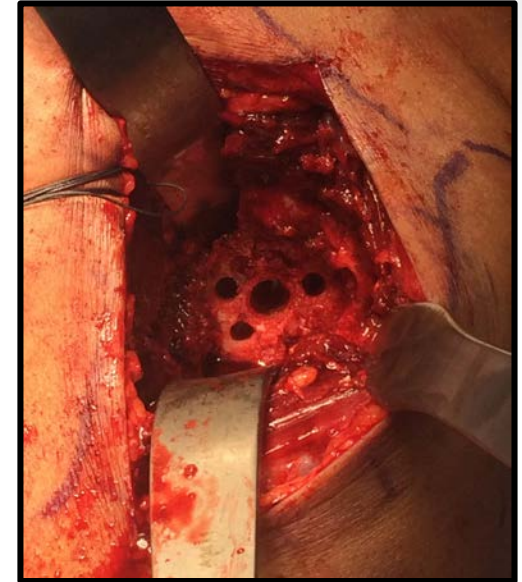
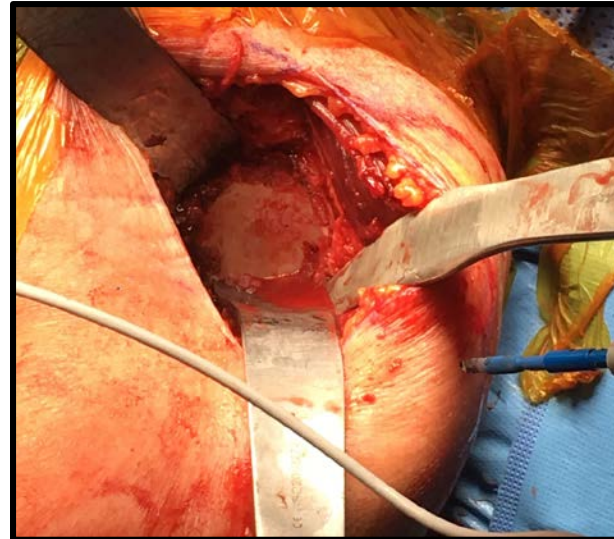
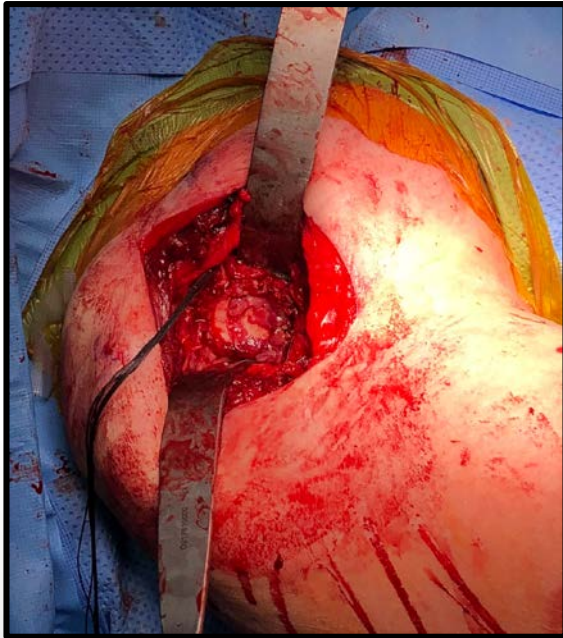
# Surgical Pearls



## Tenotomy vs LTO

- Scalise et al 2010
  - LTO w/ better clinical outcomes
  - Lower rate of tendon tears
  - IR strength the same
- Lapner et al 2013
  - Showed no difference btwn healing, function and fatty infiltration

# Surgical Pearls



# Results & Summary



## Survivorship

- Deshmukh JSES 2005
  - 98% (5), 93% (10), 88% (15), 85% (20)

## Functional Results

- Young JBS Br 2011
  - 27 to 60 (constant scores)
  - 7 to 30 (ER)
  - 85 to 125 (FF)
- Iannotti JBS 2003
  - Posterior humeral head sbx (Gerber)
  - Severe motion loss
  - RCT no effect

## Return to Sport

- McCarty AJSM 2008
  - 71% RTP
  - 5.8 months





# END



Thank you!  
Questions / Comments