



Current State of Shoulder Arthroplasty


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4/26/2019



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1

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2



Disclosures

- Consulting
 - > Mitek
- Committee Member
 - > AAOS, AOSSM,
- Journal Reviewer
 - > AJSM, JSES, JBJS
- Clinical Trial Support
 - > Zimmer
- Grant Support
 - > DoD, OREF, Institutional funding
- Institutional Support
 - > Zimmer, Stryker, Synthes, Smith & Nephew





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3

Outline

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





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4

Background

Charles Neer

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



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JAAOS 2015

5

Background

Disease Burden


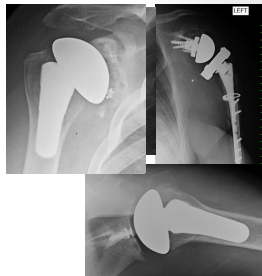
- Volume Increasing
 - 2000: 14,000
 - 2008: 46,000
 - 2016: 100,000

Reasons

- Aging & active...
- Indications expanding

Problems

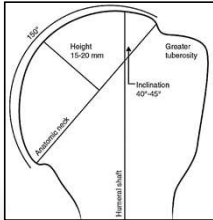

- Revisions increasing ~ 400%
 - Last 20 years



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JBJS 2011

6

Humeral Component: Anatomy

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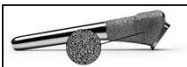
7

Humeral Component

New Concepts

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

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

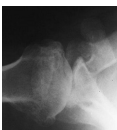
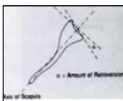
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8

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





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9

Glenoid Component

- New
- Sh
- Me
- Re



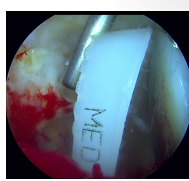
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10

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.


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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

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12

Stemless



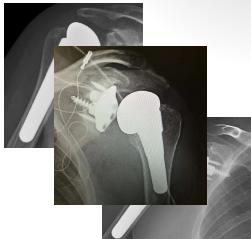
* 4 weeks postop

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JSES 2015

13

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



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CRMA 2018
JSES 2018

14

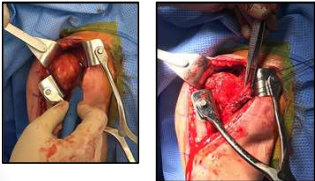
Surgical Pearls



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15

Surgical Pearls



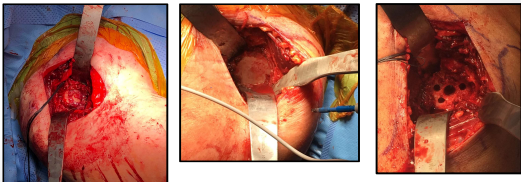
Tenotomy vs LTO

- 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

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16

Surgical Pearls



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17

Results & Summary

Survivorship


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

Return to Sport

- McCarty AJSM 2008
 - 71% RTP
 - 5.8 months

Functional Results

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



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18

END



Thank you!

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