

Humeral Stem in RSA



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Disclosure

Zimmer-Biomet, Inc

- Speaking and consulting

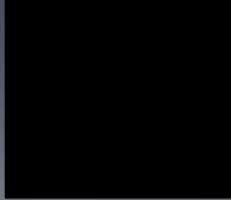


- Low on Glenoid
- No Superior Tilt
- Optimize Fixation

?



Considerations



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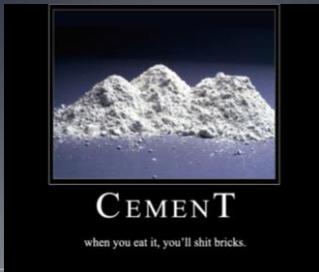
Disclaimer

Implant Design Considerations Unavoidable
There Are Tradeoffs With Each Consideration
There is No Perfect Implant
Goal is to Make You Aware of these Tradeoffs
Informed Decision and Optimize Technique
Goal is Not to Tell You One Implant is Superior

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Fixation

To cement, or not to cement, that is the question.



CEMENT

when you eat it, you'll shit bricks.

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Fixation

Cement

- Pros
 - Good initial fixation
 - (Frankle)
 - Abx in cement may lower infection rates
 - (Gobezie)
- Cons
 - Long-term loosening
 - Difficult to revise
 - OR time

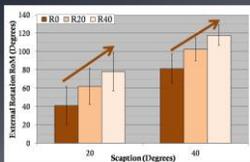
Fixation



- Systematic Review
- Uncemented stems had more stem migration and radiolucencies
- Cemented stems had more infections, nerve injury, acromial fractures, VTE
- No differences in loosening or revisions

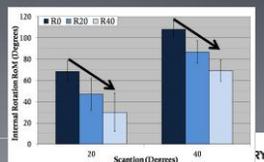
Version

Increased retroversion = Increased ER



Arc of Motion is Fixed
Changing Retroversion Just
Changes the Arc of Motion

At expense of IR



Version

Impingement in Adduction



No Impingement in Abduction



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Version

- Total arc of motion stays the same
- Changing version just shifts that arc

- What do patients want to do??



HOSPITAL FOR
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HOSPITAL FOR
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Version

- Total arc of motion stays the same
 - Changing version just shifts that arc
- What do patients want to do??



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Version

- Less retroversion
 - 1. Better functional positions
 - Maximizes IR in adduction
 - Minimal affect on ER in abduction



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Version

Neutral Version

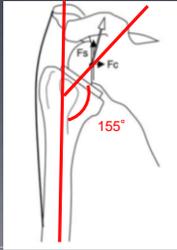
- Pros
 - May maximize functional ROM
- Cons
 - May lead to instability
 - Compromises revision to hemi if needed

20 Degrees

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Neck-Shaft Angle

- Original Grammont Design
 - 155°



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Neck-Shaft Angle

Valgus

- Pros
 - Tensions deltoid
 - Improves moment arm

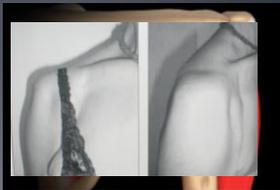


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Neck-Shaft Angle

Valgus

- Cons
 - Notching
 - Loss of deltoid wrapping
 - Shear force instead of Compression
 - Rotation
 - Poor cosmesis



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Bearing

Know your prosthesis

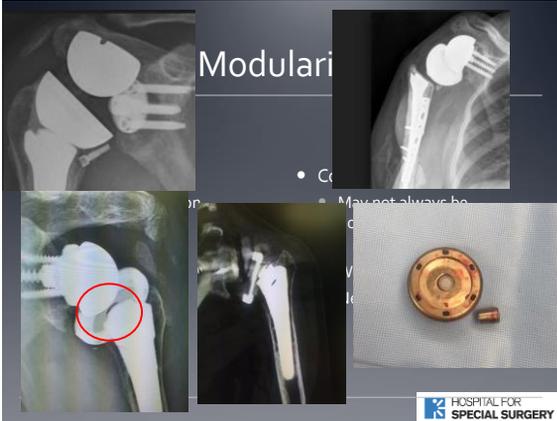
Onlay



- TAKE GENEROUS HEAD CUT
- 1. Makes glenoid exposure easier
- 2. If CTA w/ superior migration, will make reduction easier
- 3. If reduction loose -> can always build up with poly.
 - If reduction tight -> need to recut humerus and sink stem
- 4. If tight with trial, might be too tight if press-fit stem wedges a few mm's proud



Modular



- C
- May not always be



Conclusions

- Fixation
 - Cement provides better initial fixation but makes revision difficult
- Version
 - Less retroversion allows better IR but may affect stability and can compromise revision to hemi



Conclusions

- Neck-Shaft Angle
 - Valgus angle allows for better deltoid moment arm, but predisposes to notching and loss of wrapping
- Bearing
 - Onlay technique similar to TSA and make conversion easier, but is bulky and tends to overstuff.

Conclusions

- Modularity
 - Makes revisions easier, but not always feasible and creates weak links
- No Implant Is Perfect
- Important to Know the Nuances of the Implant You Use



Thank You
