Four Part Fracture of the Humerus in an Elderly Female

Michael D. McKee, MD, FRCS(C)

Professor and Chair,
Department of Orthopaedic Surgery
University of Arizona,
College of Medicine, Phoenix, AZ

Disclosure

- Studies supported by:
  - OTA, COA, ASES
  - Zimmer Inc.
  - Stryker, Olympus Biotech, AO
- I am a consultant for Stryker, Acumed, Zimmer, ITS
- Receive royalties from Stryker (plates), LWW, Springer (publishers)

Case Presentation

- 78 yr old female, retired
- Lives by self, stable medical conditions

POLL OPEN

What would you do?

1 Non-operative treatment 0%

2 ORIF 0%

3 Hemiarthroplasty 0%

4 Reverse TSA 0%

RCT's of Proximal Humeral Fractures Operative versus Non-operative

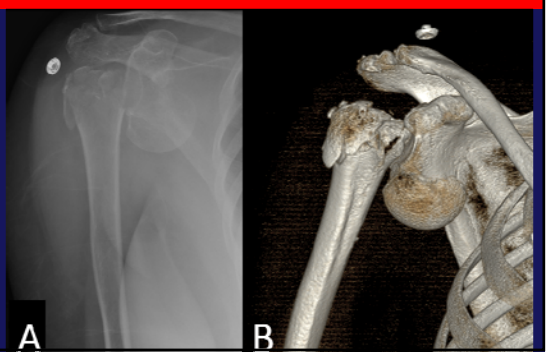
- Olerud 2011 – 60 pts, mean age 74, 2 yrs f/u
  - Constant score Non-op 59, OR 61
- Fjalestad 2012 – 50 pts, mean age 73, 1 yr fu
  - Constant score Non-op 33, OR 35
- PROFHER study, JAMA, 2015, 231 patients
  - Oxford scores 39 surgical, 38 non-op

- 10 weeks post injury
- 130 degrees flexion
- Minimal pain, fully functional

32,760 Proximal Humeral Fractures: Ontario 2007 -2012

	Number	Re-op @ 5 yrs
• Non-op:	25,104	1.4%
• Closed rdn:	3,258	21.1 %
• ORIF:	2,979	30.1%
• Arthroplasty:	1,419	13.5%

65 yr old female, plays tennis / golf



What would you do?

POLL OPEN

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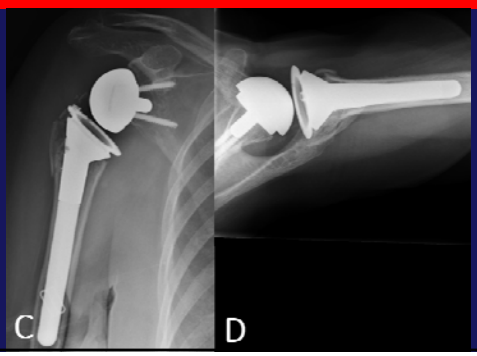
4 Reverse TSA 0%

RCT: Reverse versus Hemi

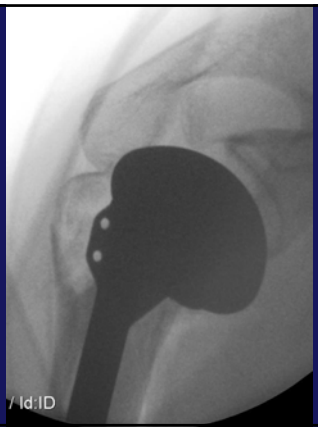
- Sebastiá-Forcada E. et. al. Reverse shoulder arthroplasty versus hemiarthroplasty for acute proximal humeral fractures. A blinded, randomized, controlled, prospective study. J Shoulder Elbow Surg. 2014 Oct;23(10):1419-26
- 62 patients over 70 years of age with 3, 4 part fractures
- RSA better Constant (56 versus 40)
- RSA better flexion 122˚ versus 79˚
- RSA better DASH 17 versus 29
- 6 HA's converted to RSA

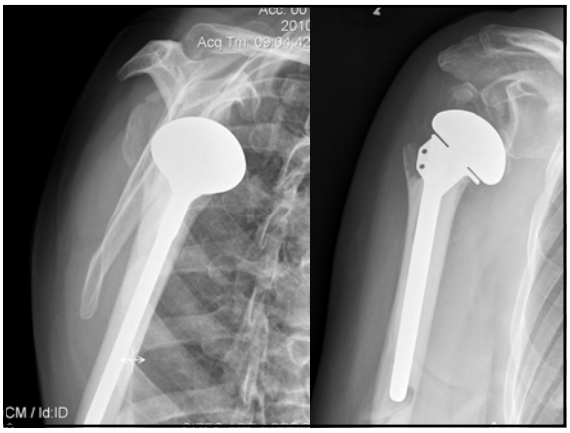
Reverse TSA



Concerns

- Able to play sports?
- Longevity of the prosthesis?
- Rotational weakness
- Role of platform stems



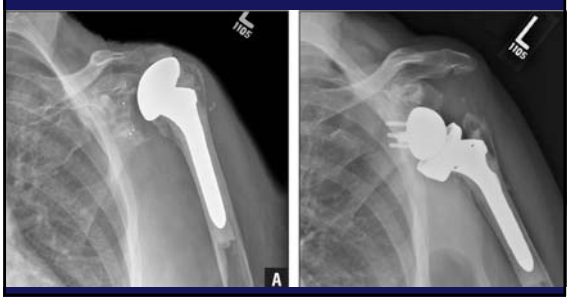


What would you do?

1. **Non-operative treatment**
2. **Fix tuberosity**
3. **Revise to a reverse arthroplasty**

“Platform” Stems

"Platform" Stems



"Platform" Stems

- Wieser K, et. al, Conversion of stemmed hemi- or total to reverse total shoulder arthroplasty: advantages of a modular stem design. CORR 2015 Feb;473(2):651-60
- 56 patients (46 stem changed, 13 stem intact)
- Stem intact group:
  - Less blood loss, less OR time
  - Fewer complications, fewer revisions
  - NOT ALWAYS POSSIBLE TO KEEP STEM

Summary

- The majority of older patients with proximal humeral fractures can be treated non-operatively
- Multiple RCT's show ORIF, at present, is not superior to non-operative care
- There is a role for surgery in specific cases (i.e. fracture-dislocation in an active individual)
- The exact role of RTSA versus hemiarthroplasty remains to be determined