



Anatomic Inlay Resurfacing in Osteoarthritis of the Humeral Head

Clinical Results in a Consecutive Case Series

Philip A. Davidson, MD

Heiden Orthopaedics
Park City, Utah USA



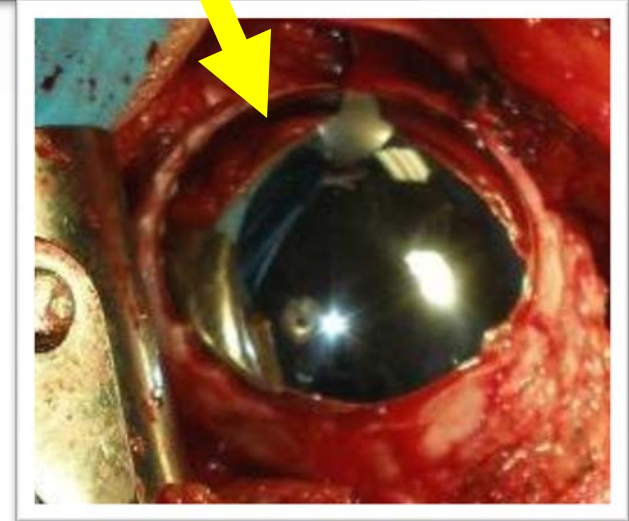
Disclosure

The author is a consultant to Arthrosurface, Inc.



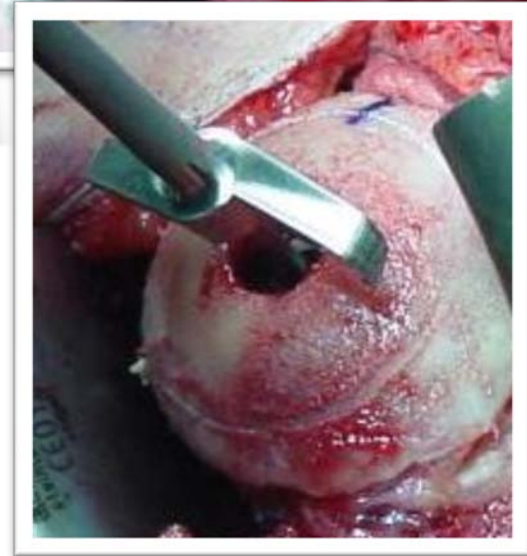
Introduction

- A novel anatomic joint resurfacing technology
- Intraoperative mapping of the native surface geometry and restoration of the humeral head with an inlay articular component



Objective

- The objective of this investigation is to quantify the outcomes of the HemiCAP[®] inlay shoulder prosthesis in the treatment of glenohumeral osteoarthritis



Methodology

- 49 shoulders, 48 patients
- Mean age, 61 years
- Mean follow-up 28 mos.
- Component diameters:
 - 40mm (n=21)
 - 35mm (n=15)
 - 30mm (n=1)
 - 25mm (n=1)

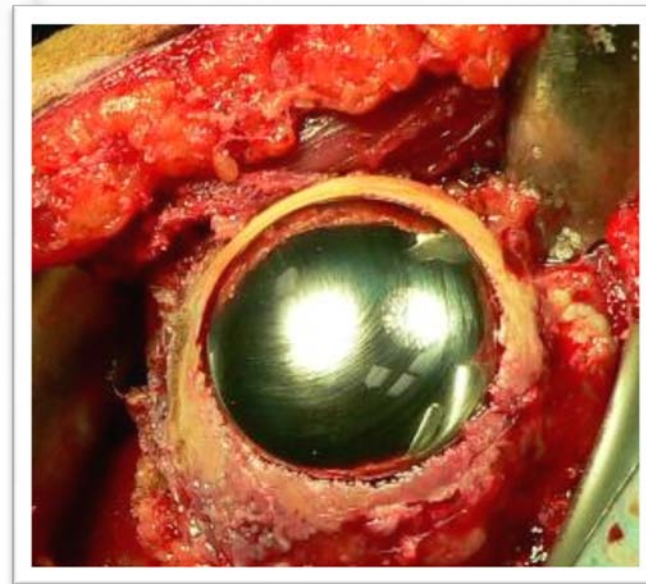
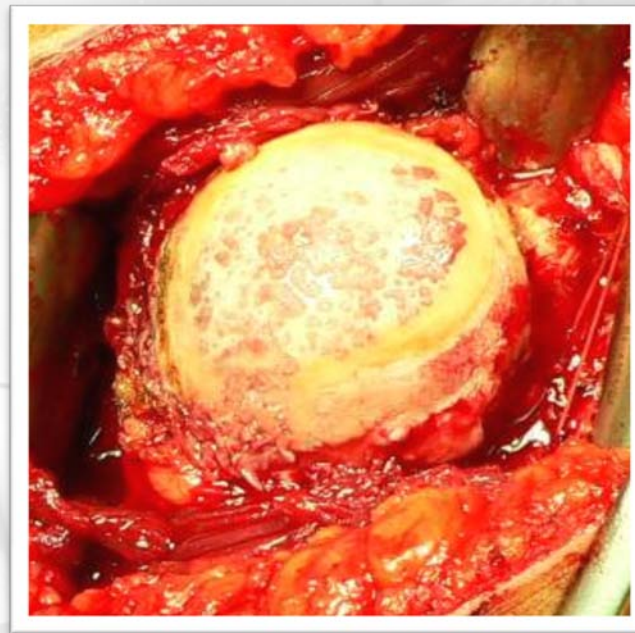


Surgical Technique

- Anterior approach
- Subscapularis take down
- Capsular releases
- Osteophyte resection on both humerus and glenoid
- NO glenoid resurfacing or reaming

Concurrent Procedures

- Rotator Cuff Repair - 12
- Subacromial Decompression - 25
- Distal Clavicle Resection - 21
- Biceps Tenodesis - 2
- Biceps Tenotomy - 21
- Capsulolabral Repair - 5
- Hardware Removal - 1



Results

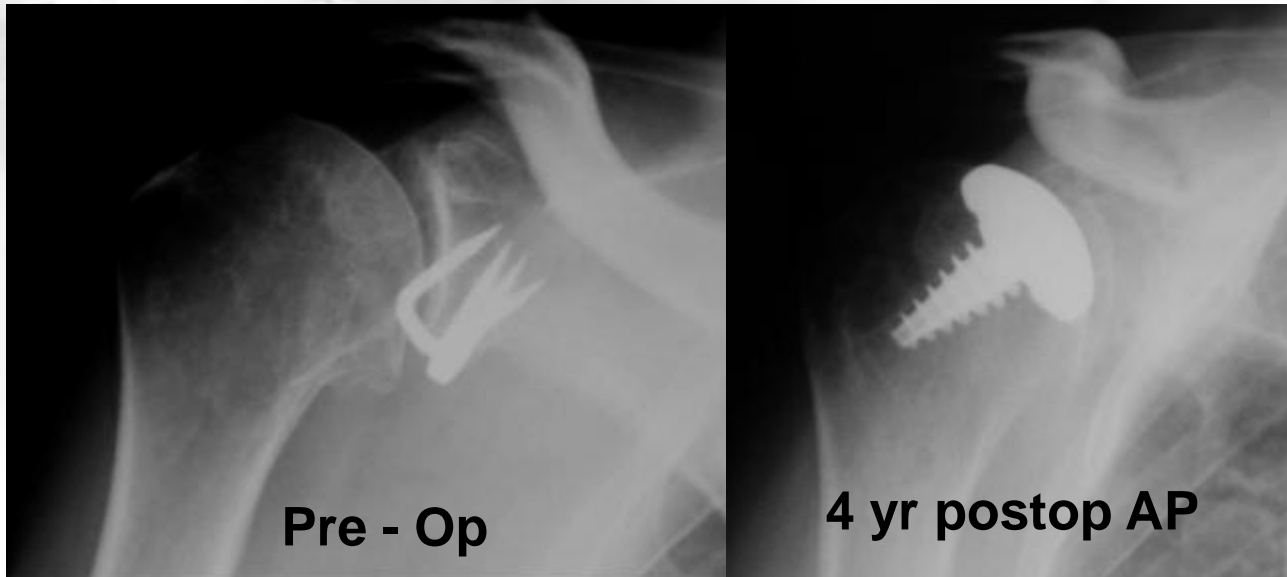
- **Mean SST score**
 - Pre: 3.7 Post: 10.3
($p < 0.0001$),
- **VAS pain with activity**
 - Pre: 7.5 Post: 1.3
($p < 0.0001$)
- **SF-36 (Physical)**
 - Pre: 36 Post: 47 ($p < 0.01$)
- **SF-36 (Mental)**
 - Pre: 49 Post: 57 ($p < 0.001$)
- **Mean active forward elevation**
 - Pre: 110° Post: 130°
($p < 0.06$),
- **Mean external rotation**
 - Pre: 30° Post: 40°
($p < 0.01$),
- **Mean internal rotation**
 - Improved by 3
spinal levels.



Radiographs

No signs of

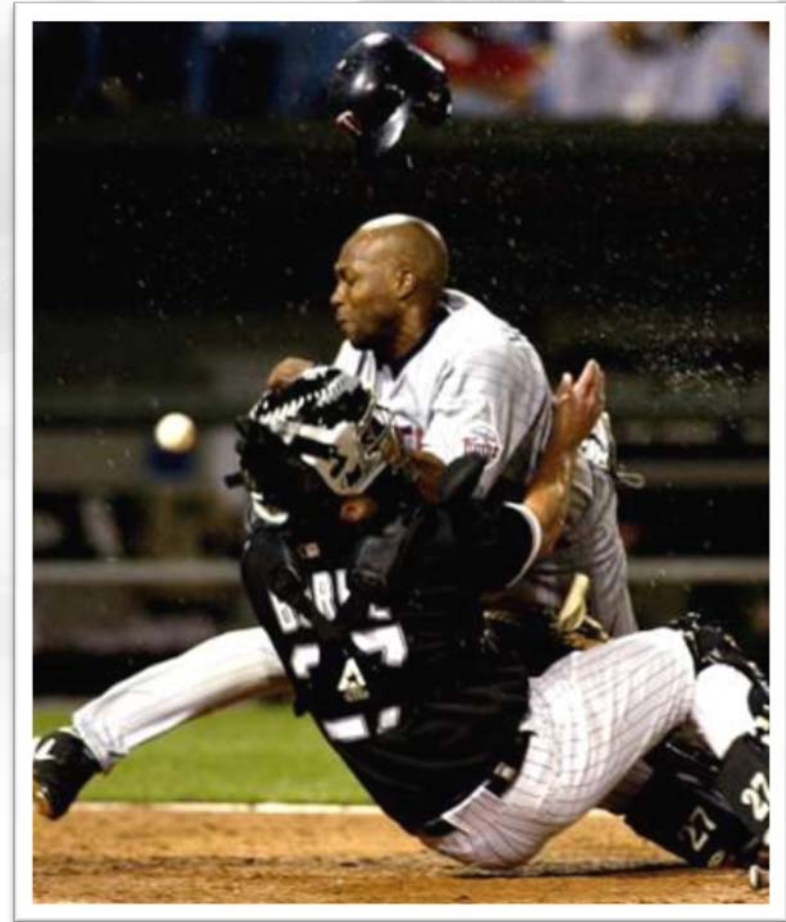
- Prosthetic disengagement
- Implant migration
- Progressive periprosthetic radiolucency



- Female patient
 - Fulltime nurse
- 4 year results**
- No pain at rest and with activity
 - SST=11

Complications

One patient suffered a traumatic, high-energy injury 3 months postoperatively, subsequently resulting in revision surgery



Osteoarthritis

Perhaps a prime indication for the HemiCAP

- How much pain from glenoid??
- Surprisingly little!!!
- Removal of Osteophytes critically important
- Soft tissue releases
- Treat concurrent pathologies



Discussion

Potential Advantages of Inlay Arthroplasty for GH – OA

- Immediate, excellent pain relief
- Simple, canulated, reproducible, yet elegant surgery
- Very few soft tissue balancing challenges
- Minimally bone sacrificing
- Minimal blood loss, can be outpatient
- Can easily convert to traditional arthroplasty
- Patient acceptance
- Allows concurrent soft tissue procedures
- Maintain cartilage restoration principles
- Based on patient, or ambient anatomy
- Solid implant fixation on radiographic follow-up



CONCLUSIONS

- **Early (3 year) results very encouraging**
- **Significant relief of pain**
- **Significant functional improvement**
- **No apparent implant failures or related complications**
- **Joint preserving, reproducible, anatomic procedure**
- **Minimal bone stock removal preserves healthy tissue and avoids overstuffing**
- **Surgical technique is canulated and highly reproducible**
- **Continued studies needed, to monitor progress with time in decades**



Thank You
pdavidson@heidenortho.com
www.phildavidsonmd.com

