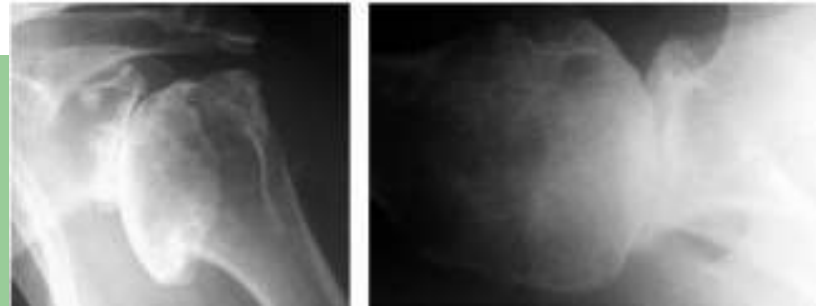


Shoulder Resurfacing

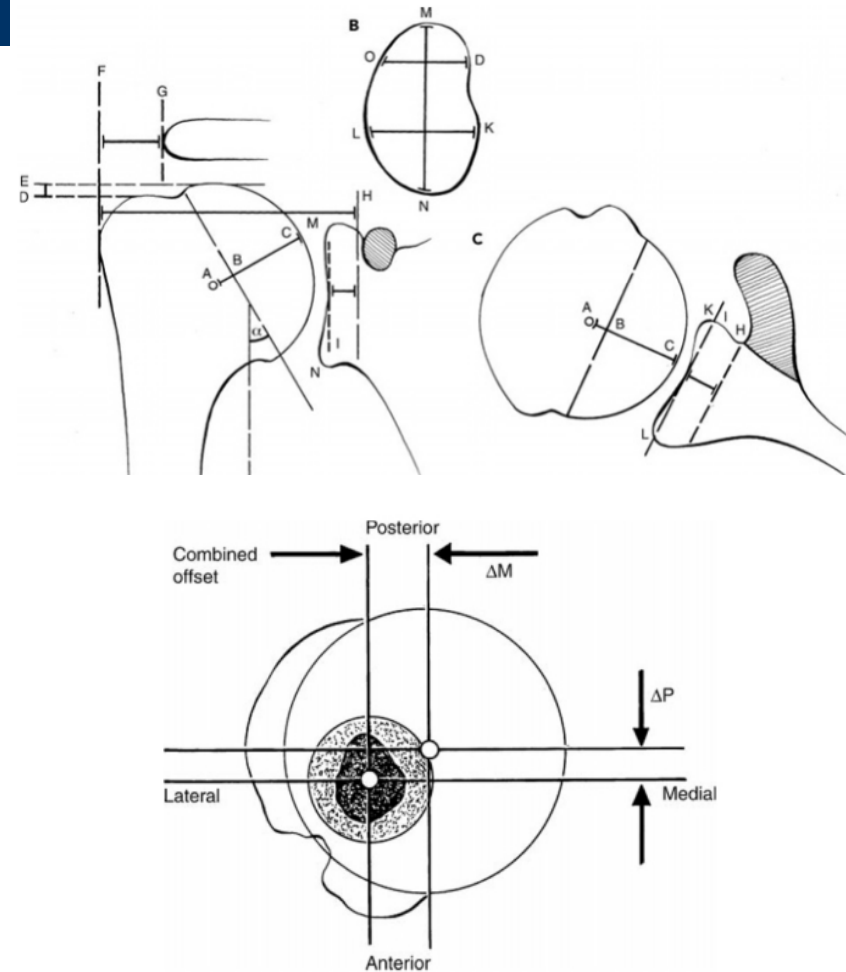


Rationale and Results

Roland Pratt & Dave Cloke
North Tyneside GH

Perceived advantages over stemmed hemi & TSR

- Easier to replicate original anatomy
 - Offset, version and inclination accounted for
 - No need for large inventory of modular components
- “6mm offset = mean loss”
 - Copeland



Why replicate original anatomy?

- Soft tissue balance:
- Alter offset → impingement / stiffness

Williams et al JSES 2001;10:399-410

- Alter head size → stiffness / translation

Harryman et al JBJS A 1995;77:555-63
Jobe et al JSES 1995;4:281-5

- Not always correct with resurfacing

Advantages

- Bone conserving
- Smaller operation
- Easier revision
- If infected, extent less
- Avoid diaphyseal stress riser

Disadvantages

- Glenoid wear and pain
 - Poorer long term results than TSR in younger patients
- Offset restored, but articulation medialised
 - Mechanics not normalised
- Not as easy to get it right as publicised!
- Long term results??
- Evidence all case series

A small trip for patient....



Indications:

PAIN

General:

- OA
- RhA
- AVN
- post-traumatic OA
- CTA

Specific:

- Proximal extra-articular humeral deformity



Contra-indications:



General:

- Infection
- (Paralysis: no cuff no deltoid)
- Neuropathic arthropathy
- (Glenoid disease)

Specific:

- Need a head
- Fractures



Contra-indications:

- Anecdotally, approx 60% original head required, rest can bone graft



Copeland JBJS A 2006;88:900-5

Results - survivorship

- OA > RhA > CTA
- OA - Copeland
 - 4/79 (5%) revised by 6 yrs (all Resurfacing TSRs)
 - HAC 98% surv 10 yrs
- RhA
 - 3/75 @6.5 yrs

Results - radiological

- Maintained inclination, version, offset, head-neck angle

Thomas, Copeland et al JSES 2005;14:186-92 & others
Bailie et al JBJS A 2008;90:110-7
Buchner et al AOTS 2008; 128:347-54

Results – clinical

OA

- Resurfacing TSR 42 @ 7.6 yrs, Constant 20 → 62, 4 revised
- Hemi 37 @ 4.4 yrs, Constant 25 → 58, 0 revised

Copeland et al JSES 2004;13:266-71

Mixed

- Hemi 52 @ 2.9 yrs, Constant 16 → 54, 1 revised

Thomas et al JSES 2005;14:485-91

Results – clinical - RhA

- TSR (resurfacing) 42 @ >6.5 yrs, Constant 6 → 53, 2 revised
- Hemi 33 @ <6.5 yrs, Constant 12 → 48, 1 revised

Copeland et al JBJS A 2004;86:512-8

- DUROM Hemi 42 @ 6 yrs, Constant 21 → 64, 3 revised

Fuerst et al JBJS 2007;89:1756-62

BUT.....

- Poorer long term results and survivorship for (stemmed) hemiarthroplasty v TSR
- Higher revision rates for stemmed hemi than TSR – glenoid wear and pain

Controversies

- Humeral Resurfacing – what to do with glenoid?
- Age specific indications
- Stemmed vs resurfacing - evidence?

What to do with the glenoid in resurfacing?

Replace

- Better pain relief
- Better function

VS

- Loosening
- Not durable
- Can overstuff
- Not in CTA

Ream / micro# / nil

- Smaller op
- Better if no cuff / no glenoid

VS

- EROSION
- ALTERNATIVE:
 - “Biological” resurfacing

Questionable to extrapolate trials in stemmed shoulders to resurfacing
No resurfacing RCTs – all case series

Age specific indications

- Resurfacing Hemi 36pts 42yrs old @ 3 yrs, VAS 7.5 → 1.3
 - Post-trauma(3), instability(7), post-op chondlysis(3)
 - Glenoid; meniscal allograft(1), micro#(2), debridement (18)
 - All had biceps tenodesis
 - 35 satisfied, all doing sports
 - 1 revision to total; little improvement after

Bailie et al JBJS A 2008;90:110-7

- Resurfacing Hemi 29pts 84yrs old @ <6.5 yrs, Constant 10 → 56, 1 revised to reverse polarity

Copeland et al JBJS B 2007;89:1466-9

Stemmed vs resurfacing hemi - evidence?

- Stemmed 3% periprosthetic # rate vs 1 periprosthetic # reported in resurfacing
- Broadly equivalent short-medium results
- Broadly equivalent revision rates

Current Concepts Shoulder Resurfacing. Burgess et al. JBJS A 2009;91:1228-38

- No direct comparisons
 - Bone conserving, smaller operation, easier revision, if infected, extent less, avoid diaphyseal stress riser

Personal Preference...

- No one implant solves all problems
- Younger, minimal glenoid disease OA or RA:
 - Resurfacing hemi, monitor glenoid wear, accept inferior pain improvement, be prepared to revise to TSR
- Older (?75), OA or RA, already glenoid erosion
 - TSR - Unless glenoid TOO worn...
- ? Advantages of stemmed hemi over resurfacing
- If humeral pathology “only”, resurface
- Lack of decent evidence
- CTA.....

Shoulder Resurfacing

- Questions?