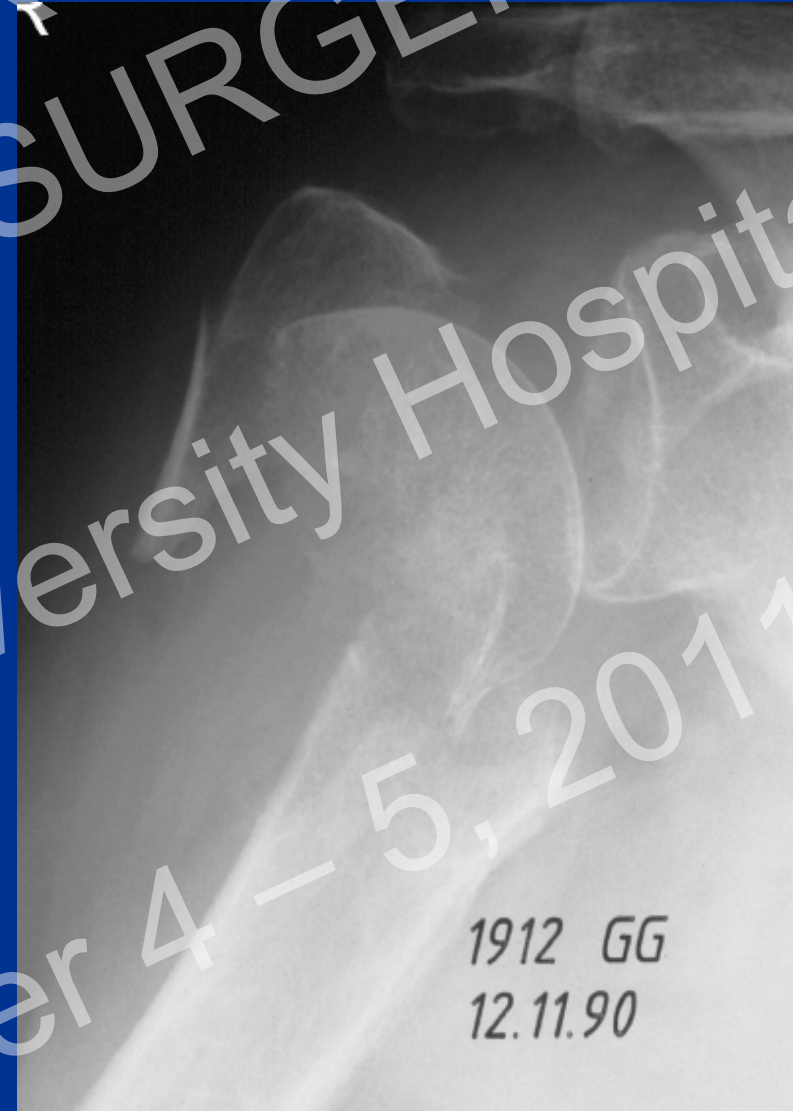


INDICATIONS FOR PROSTHESES

Inability to
restore anatomy
and maintain
anatomical reduction
until healing



MALUNION GREATER TUBEROSITY



October 4-5, 2011

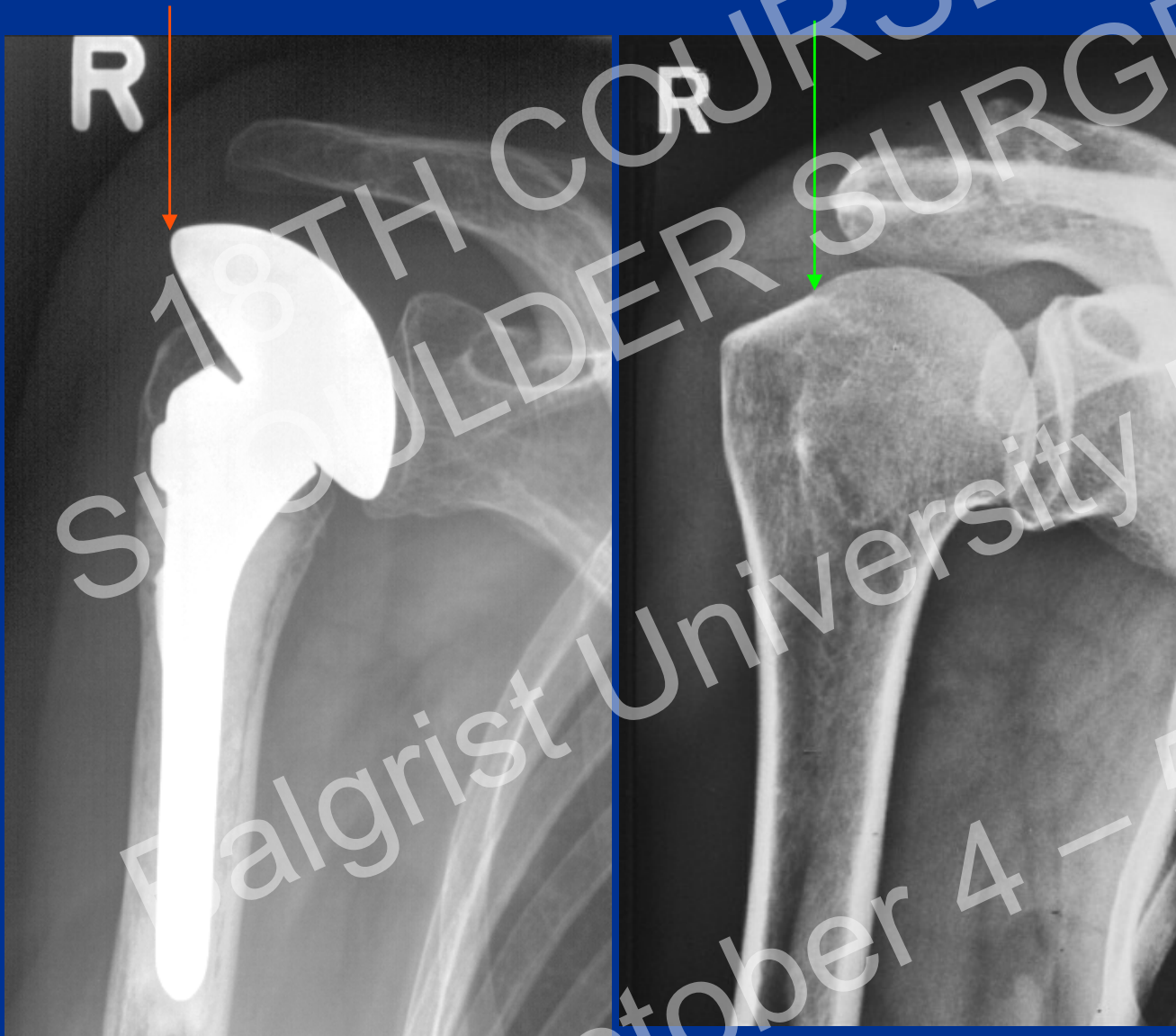
42% > 90° OF ELEVATION (n=167; f-up > 1y)

	• N	healed tuberosities
• Global	90 (54%)	29%
• Neer	39 (23%)	36%
• Biomet	15 (9%)	80%
• Aequalis	12 (7%)	41%
• Howmedica	11 (7%)	46%

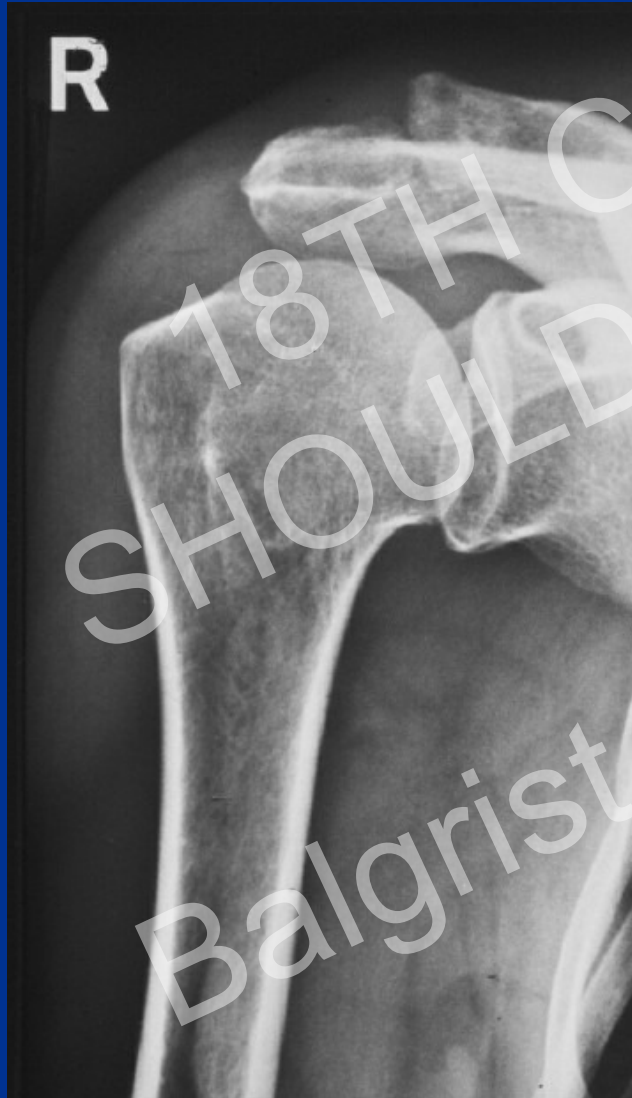
Kralinger, JBJS 86-B: 217, 2004

PROBLEM # 1

POSITION OF GREATER TUBEROSITY

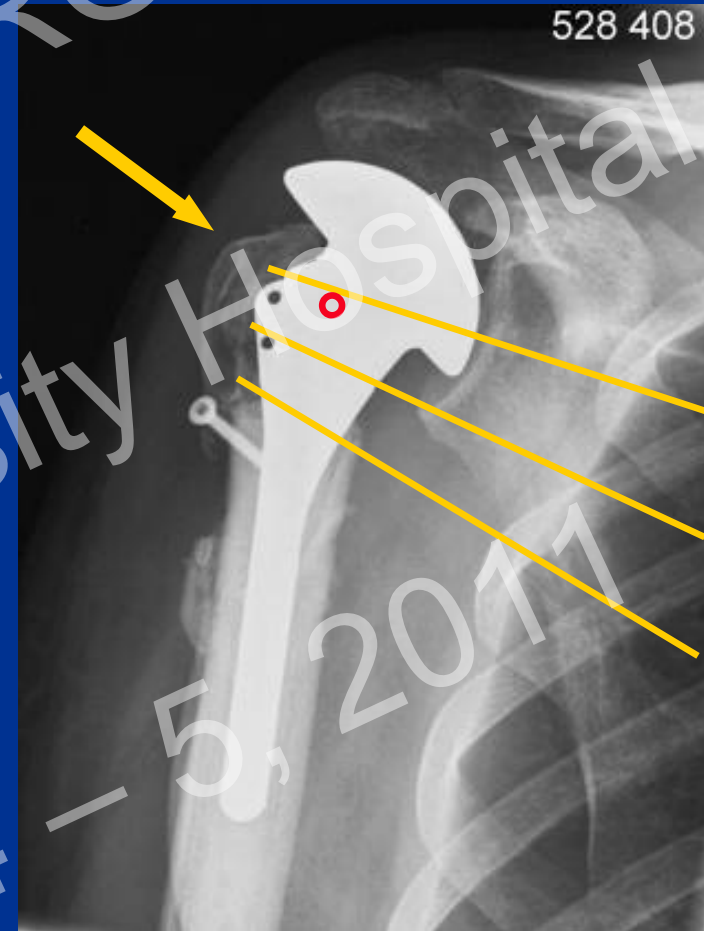


NORMAL POSITION OF GREATER TUBEROSITY



MALREDUCTION: LOSS OF ABDUCTION MOMENT

due to:
design of prosthesis
surgical technique
nonunion or malunion
of the tuberosities



POOR FUNCTION



October 4 – 5, 2011

SOLUTION # 1: LATERALIZATION OF TUBEROSITIES



small



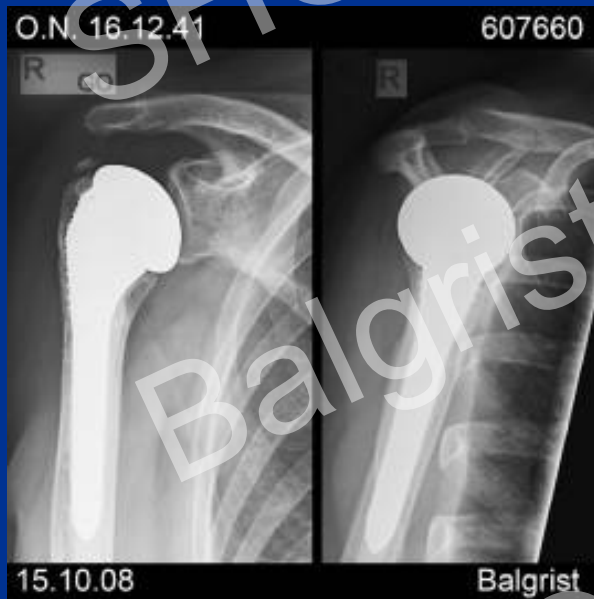
large



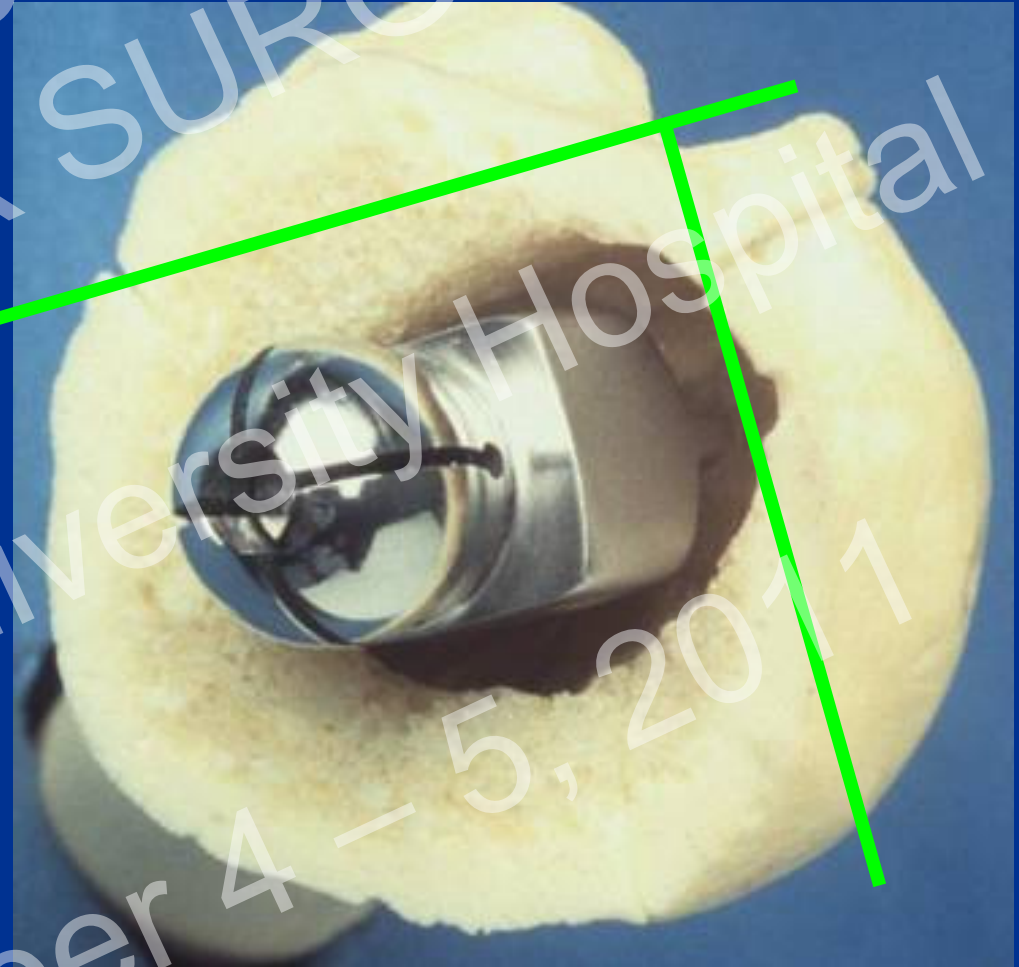
SOLUTION #1: LATERALIZATION OF TUBEROSITIES



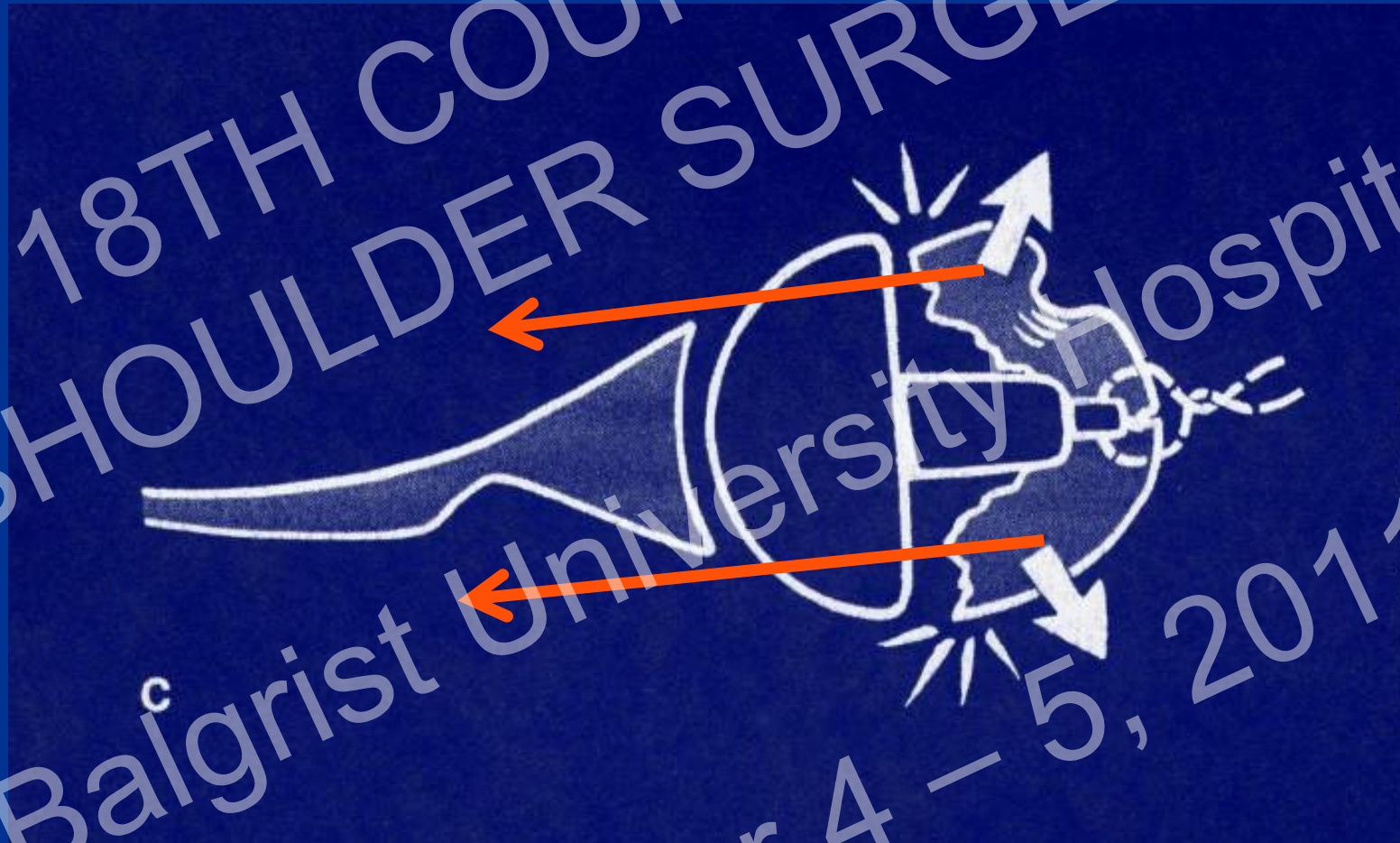
CORRECTLY LATERALIZED G.T.



PROBLEM # 2: ORIENTATION OF TUBEROSITIES



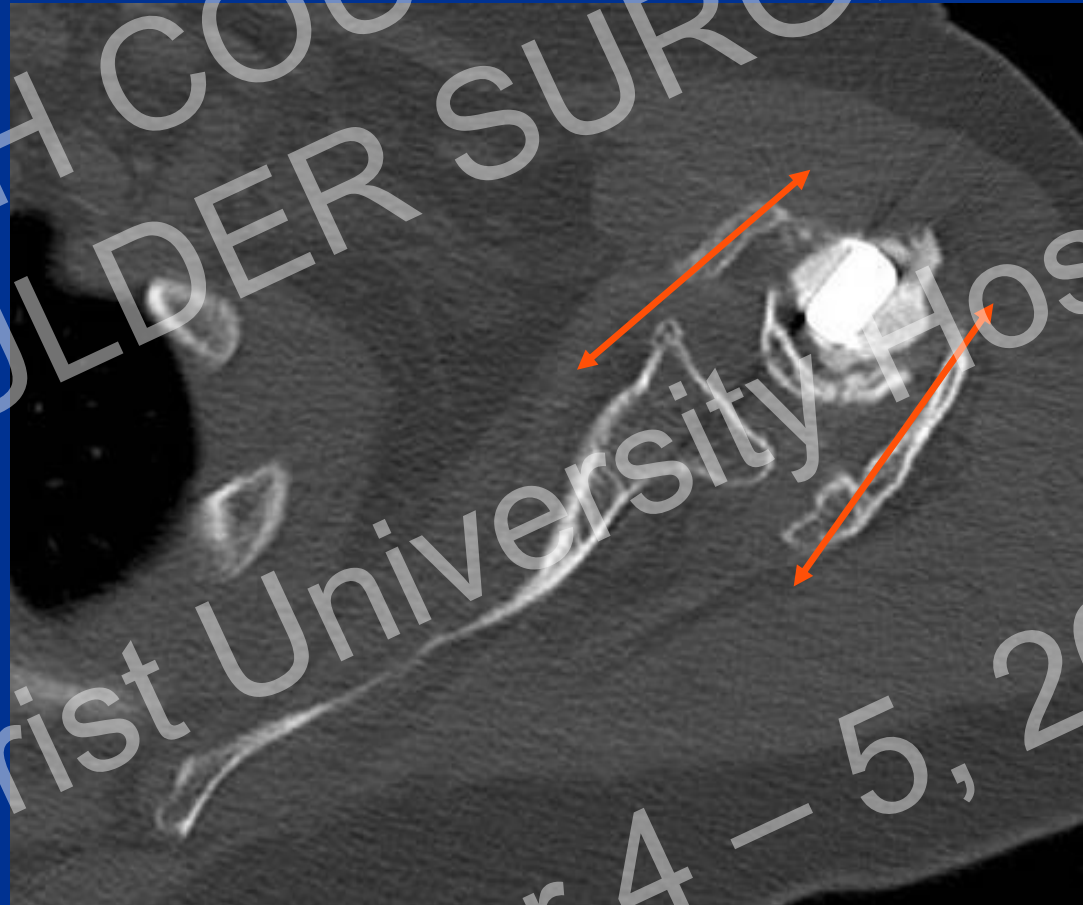
PROBLEM # 2: ORIENTATION OF TUBEROSITIES



October 4 – 5, 2011

PROBLEM # 2

ORIENTATION OF TUBEROSITIES



66 Y LADY



66 Y FAILED HEMI FOR FX



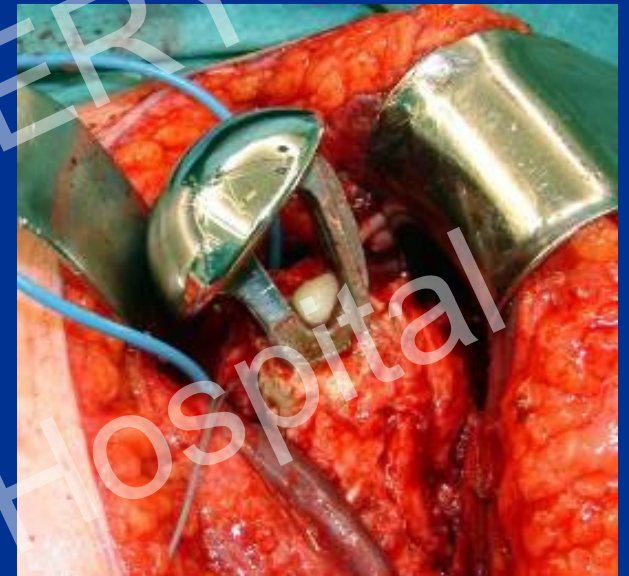
October 4-5, 2011

66 Y FAILED HEMI FOR FX

F.M.S. 04.05.39



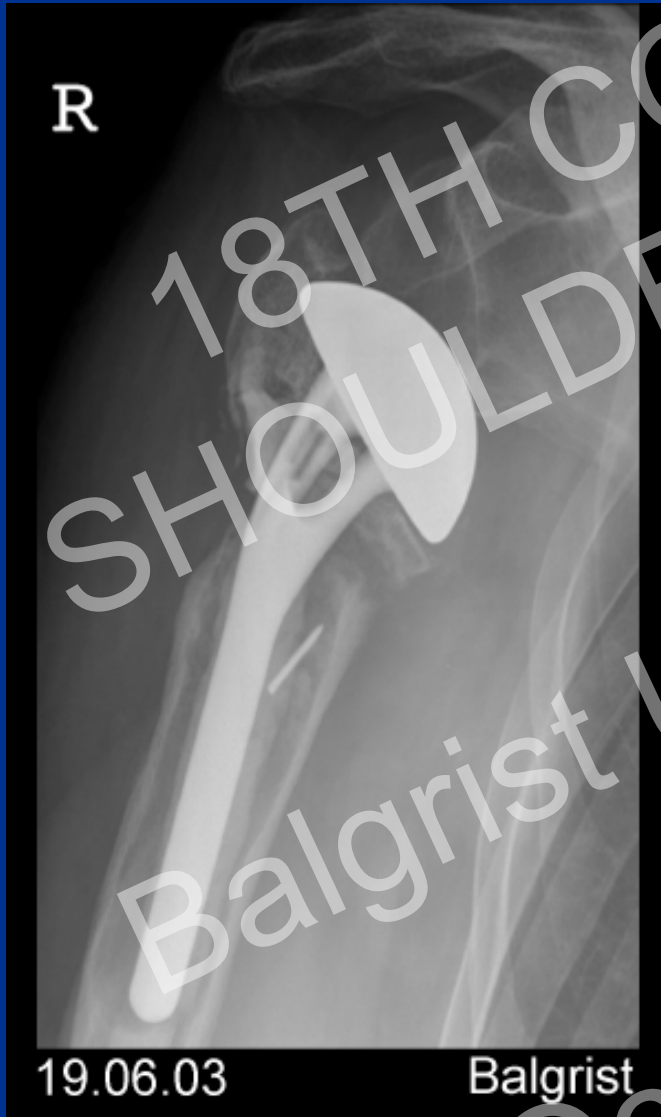
21.10.05



4 Y RESULT OF FX REVISION



LOW PROFILE FX PROSTHESES

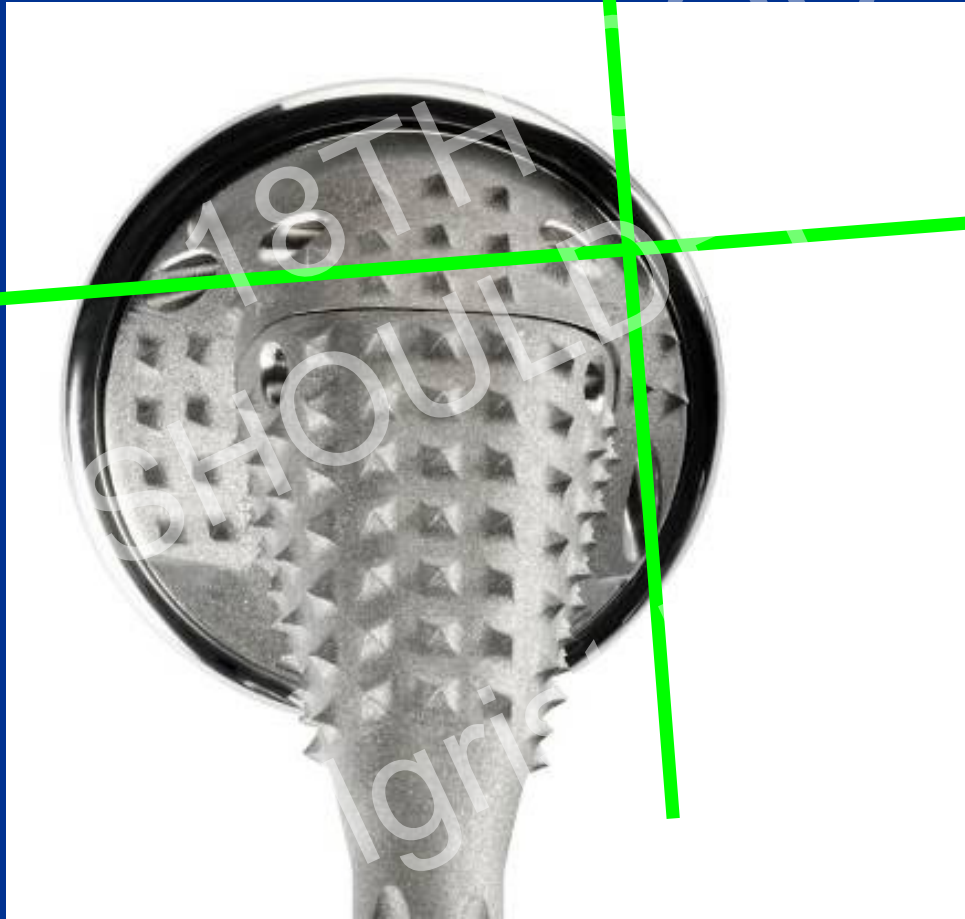


- *This prosthesis specifically designed for fractures, did not lead to improved integration of tuberosities.*
- *Overall results obtained with standard, very similar to those of “fracture prosthesis“*

Loew et al.: JBJS 88-B: 345, 2006

SOLUTION # 2

ANATOMICAL SCAFFOLD FOR TUBEROSITIES



October 4 – 5, 2011

PROBLEM # 3: STABILITY OF TUBEROSITIES

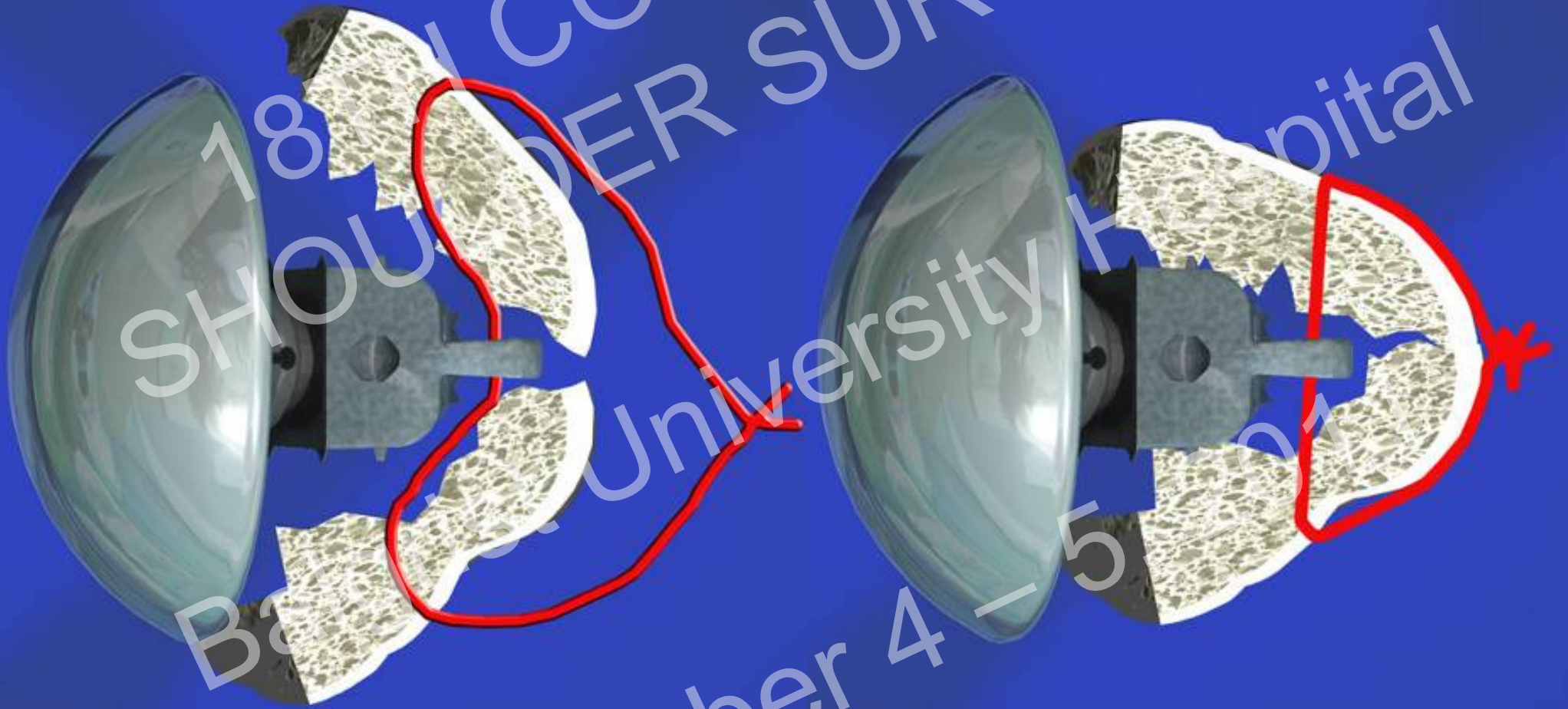


ADDITIONAL REASONS?

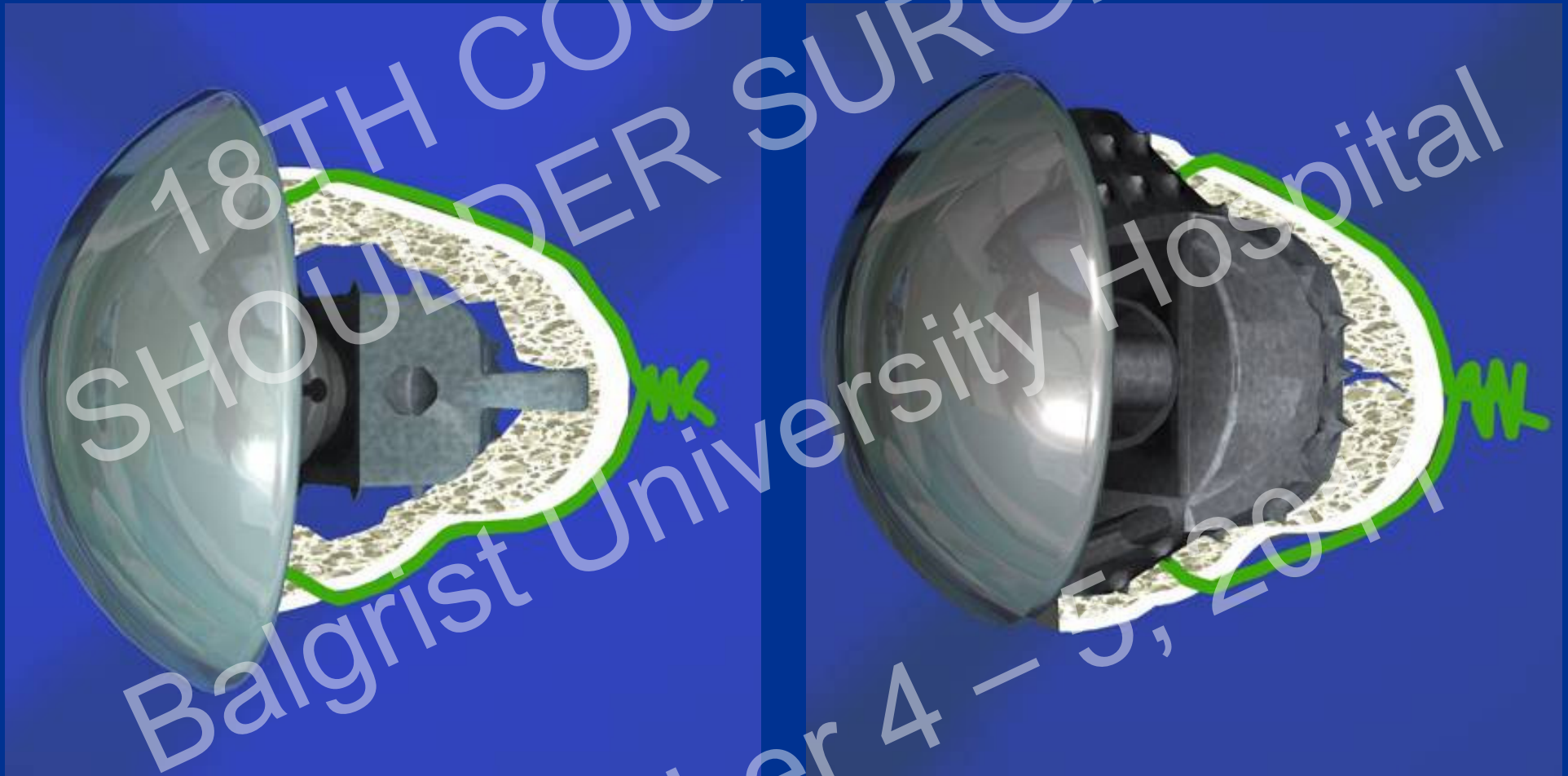


October 4 – 5, 2011

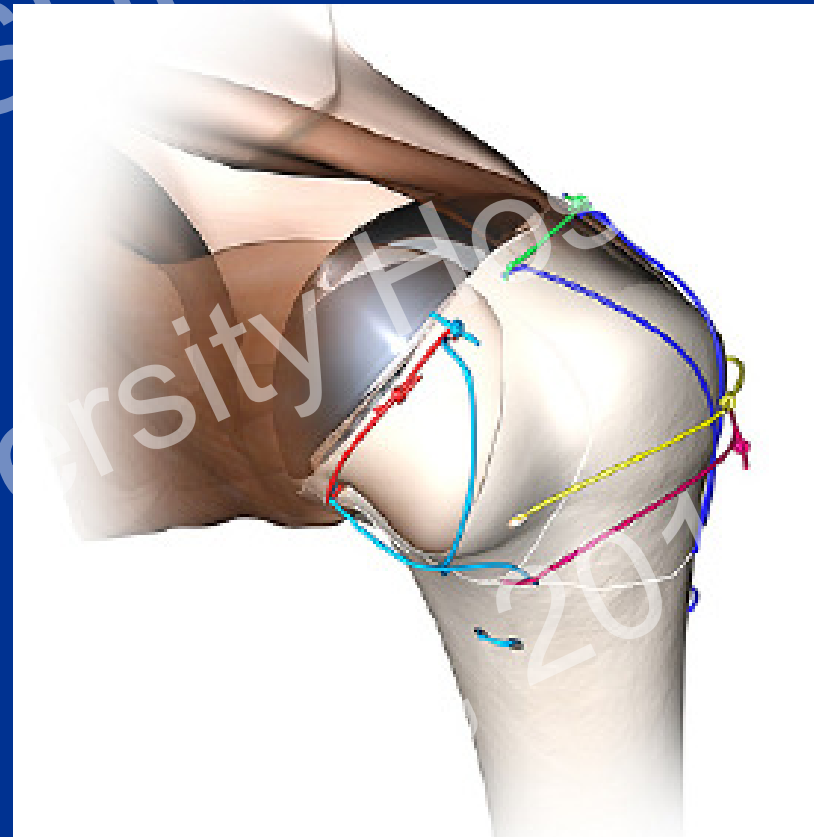
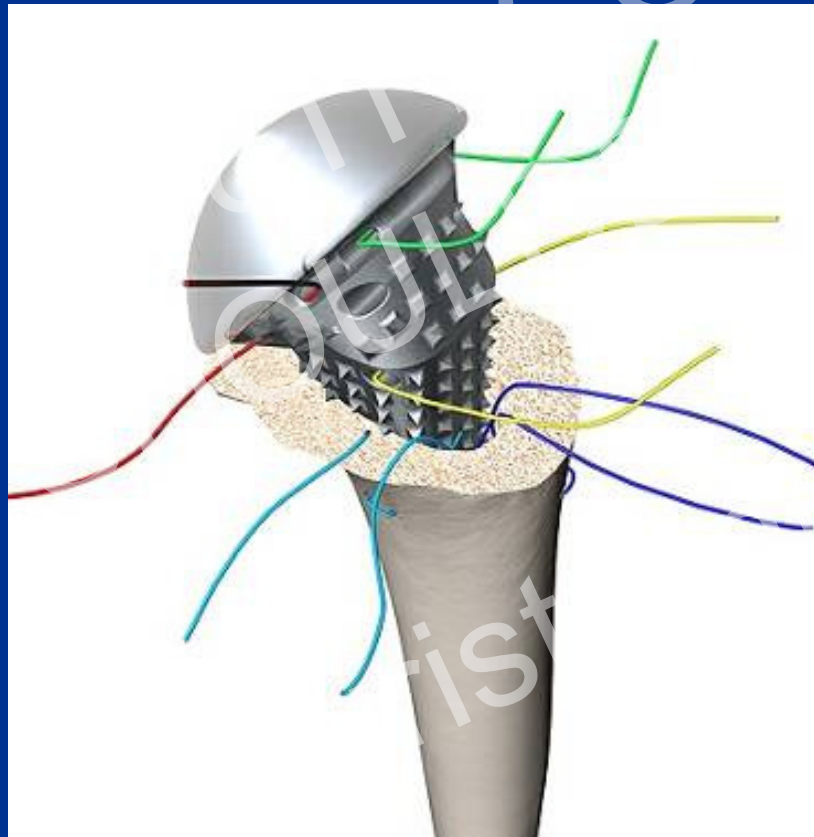
STABILITY OF TUBEROSITIES SUTURED TO A FIN



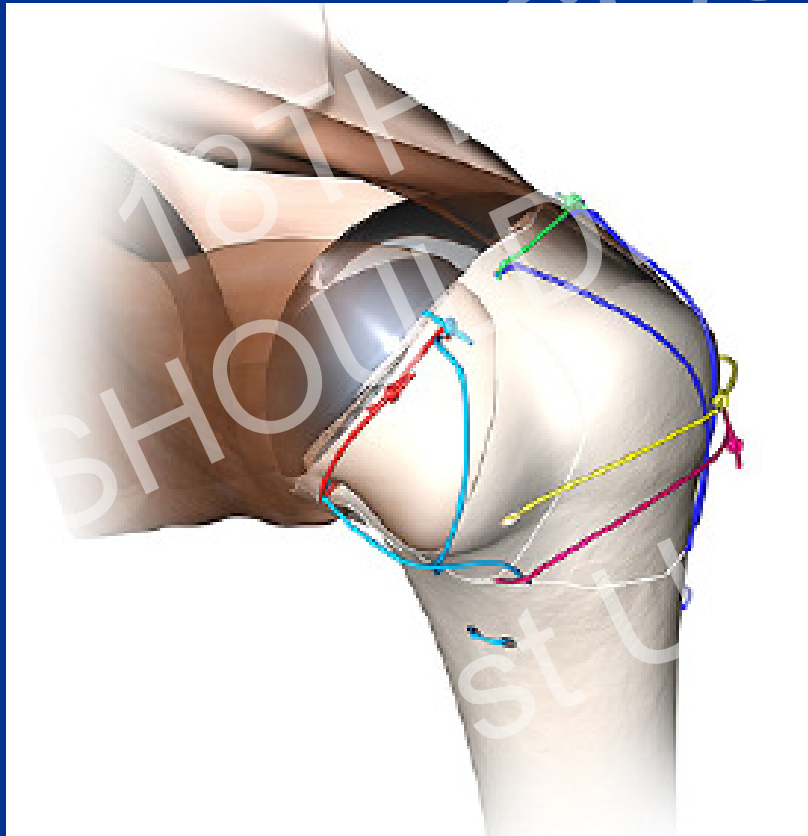
FIXATION OF TUBEROSITIES TO BODY



FIXATION OF TUBEROSITIES



SOLUTION #3: COMPRESSION TO STRUCTURED SURFACE



PRIMARY FRACTURE (n=30, follow-up 2 yrs)

Our experience



PATIENTS

- 08/06 - 03/10 30 patients
 - 25 clinical + radiological f/up
 - 2 converted (RTSA)
 - 2 only phone (overseas)
 - 1 lost
- mean follow-up 24 months
- f : m 15 : 15
- average age 63.3 yrs (41 – 78)

RESULTS

(n=27, mean follow-up 24 mts)

	mean	range
Absolute Constant Score	59 pts	26-81
pain	12 pts	3-15
ADL	8 pts	3-10
flexion	117°	45-160
abduction	111°	30-170
Relative Constant Score	75 %	26-100
Subjective Shoulder Value	70 %	25-98

Included all failures (before revision)!

RESULTS

(n=29, mean follow-up 24 mts)

Excellent:	14
Good:	10
Fair:	3
Poor:	2

Included all failures (before revision)!

RESULTS

(n=27, mean follow-up 24 mts)

Healing of greater tuberosity:

- uneventful: 3
- fusion & resorption: 23*
- non union & displacement: 4 → 2 revised

* no pseudoparalysis

COMPLICATIONS & REOPERATIONS

- pseudoparalysis 4 → 2 RTSA, 2 accepted
- stiffness 1 (capsulotomy)
- hematoma 0
- infection 0
- instability 0
- loosening 0

ANATOMICAL FX IN 78-Y OLD



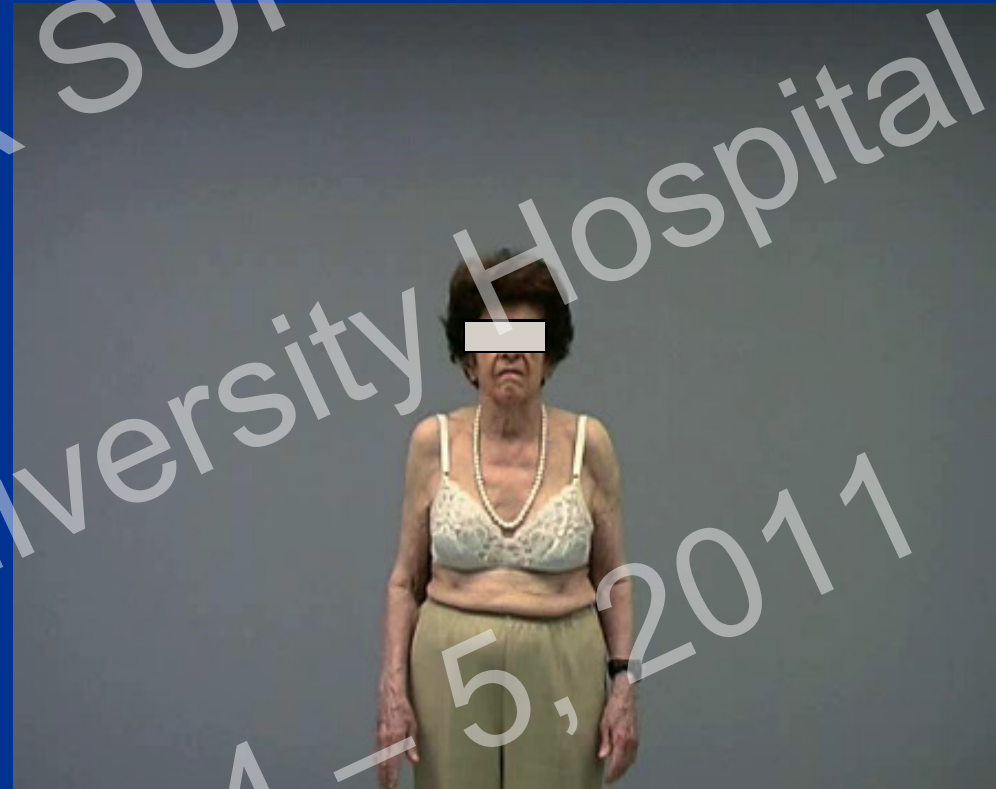
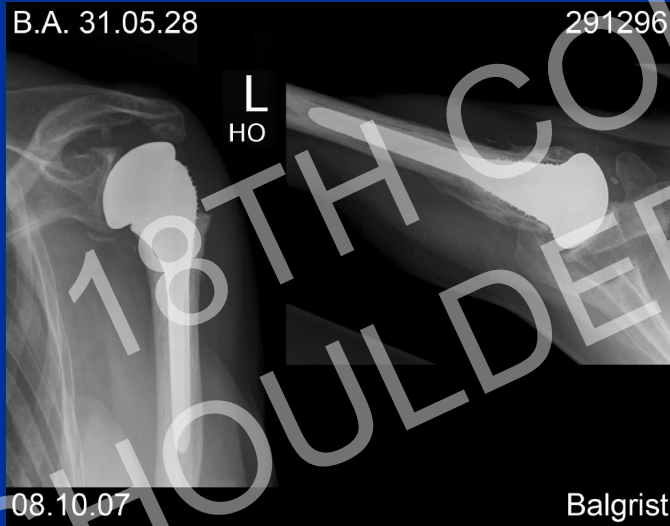
October 4

1 Y F-UP



Balgrist University Hospital
October 4 – 5, 2011

3-Y F-UP (81 Y)



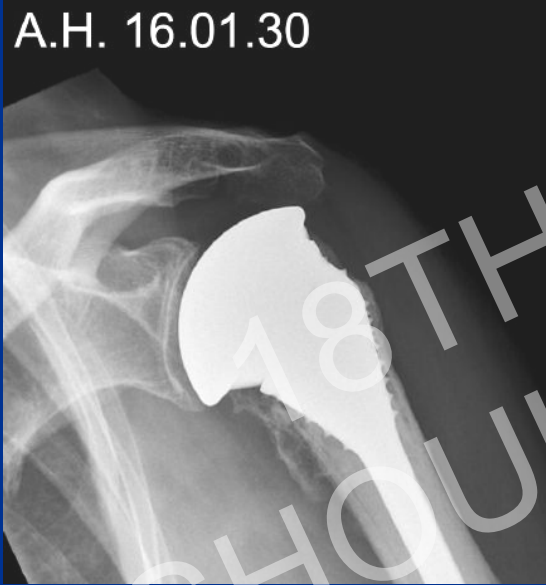
Balgrist University Hospital
October 4 - 5, 2011

76Y-OLD LADY 4-PART

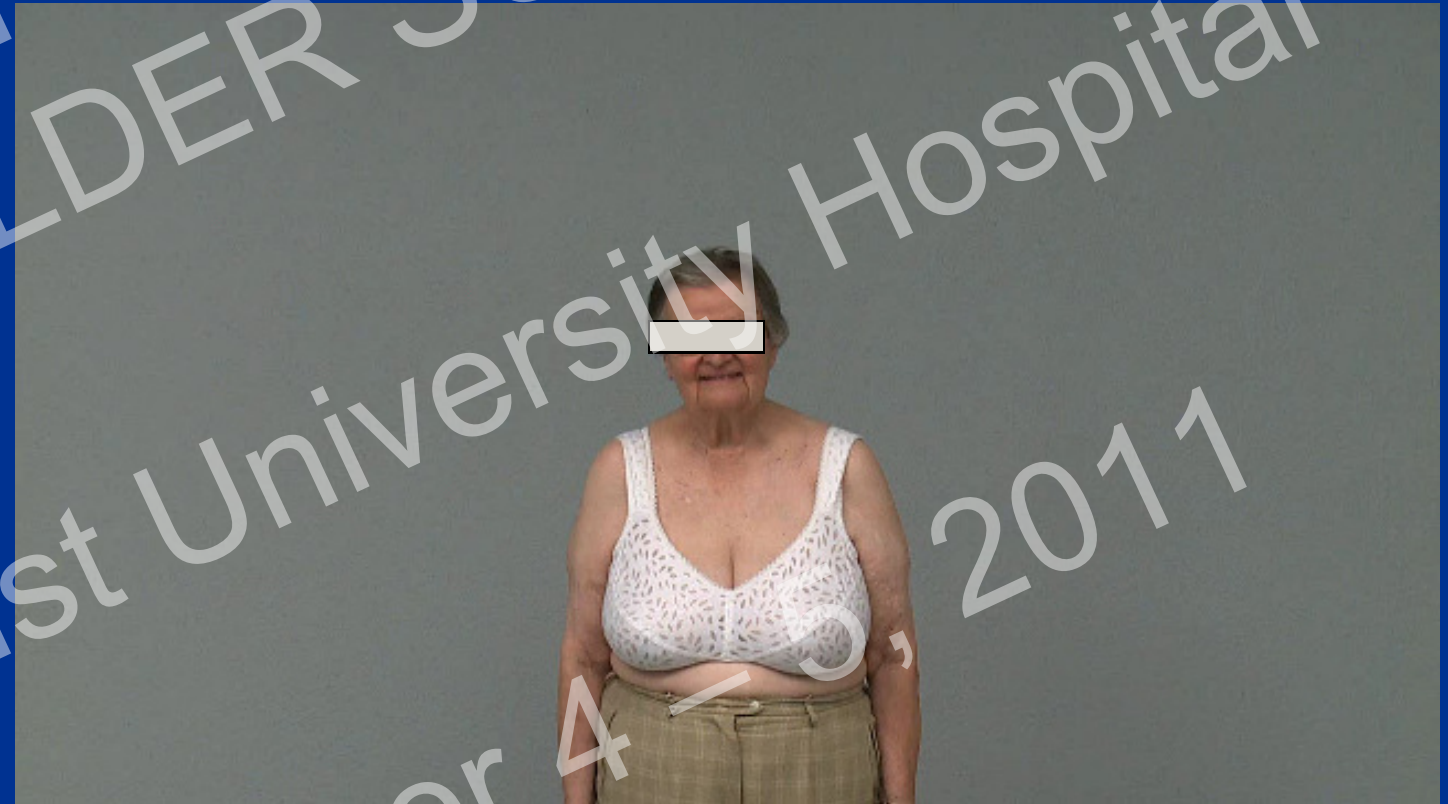


3 YEAR RESULT

A.H. 16.01.30



607666



Balgrist University Hospital
October 4 - 5, 2011

FAILURE (SSV 40%)



60-Y FX ANATOMICAL FAILURE



60-Y SECONDARY DISPLACEMENT GREATER TUBEROSITY



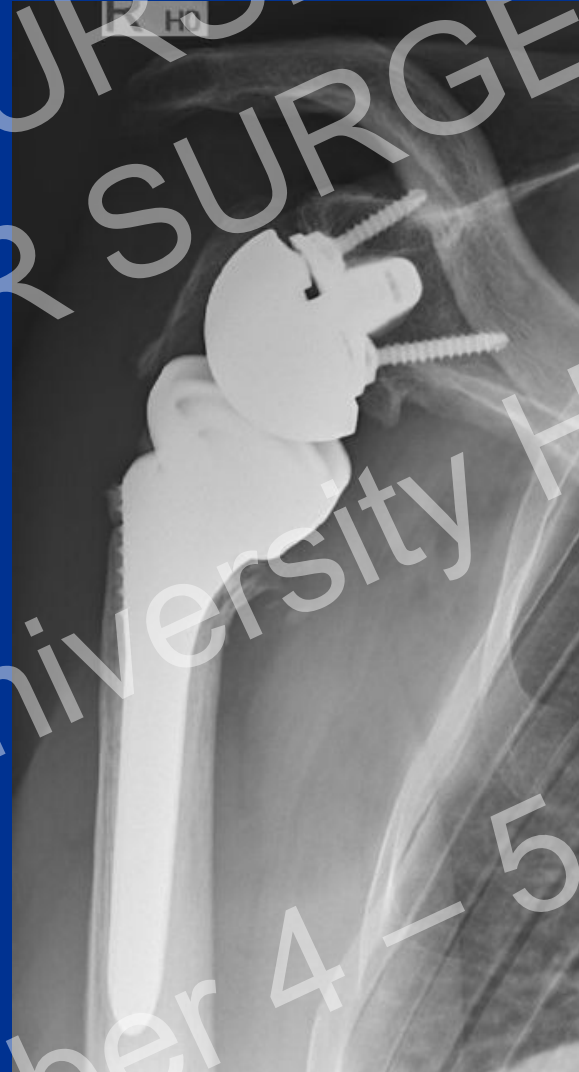
ANATOMICAL FRACTURE: SOLUTION?!



CONVERSION WITHOUT STEM REVISION



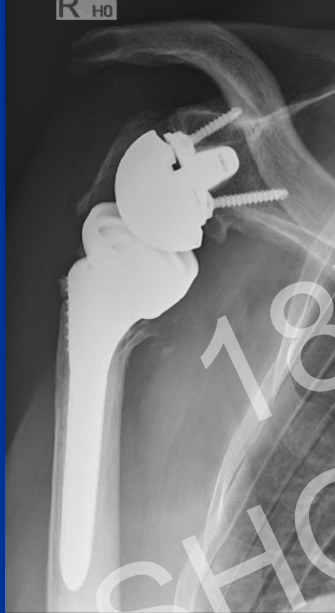
.01.08



11.11.09



1 Y AFTER CONVERSION WITHOUT STEM REVISION



615041



Balgrist



3 Y AFTER CONVERSION

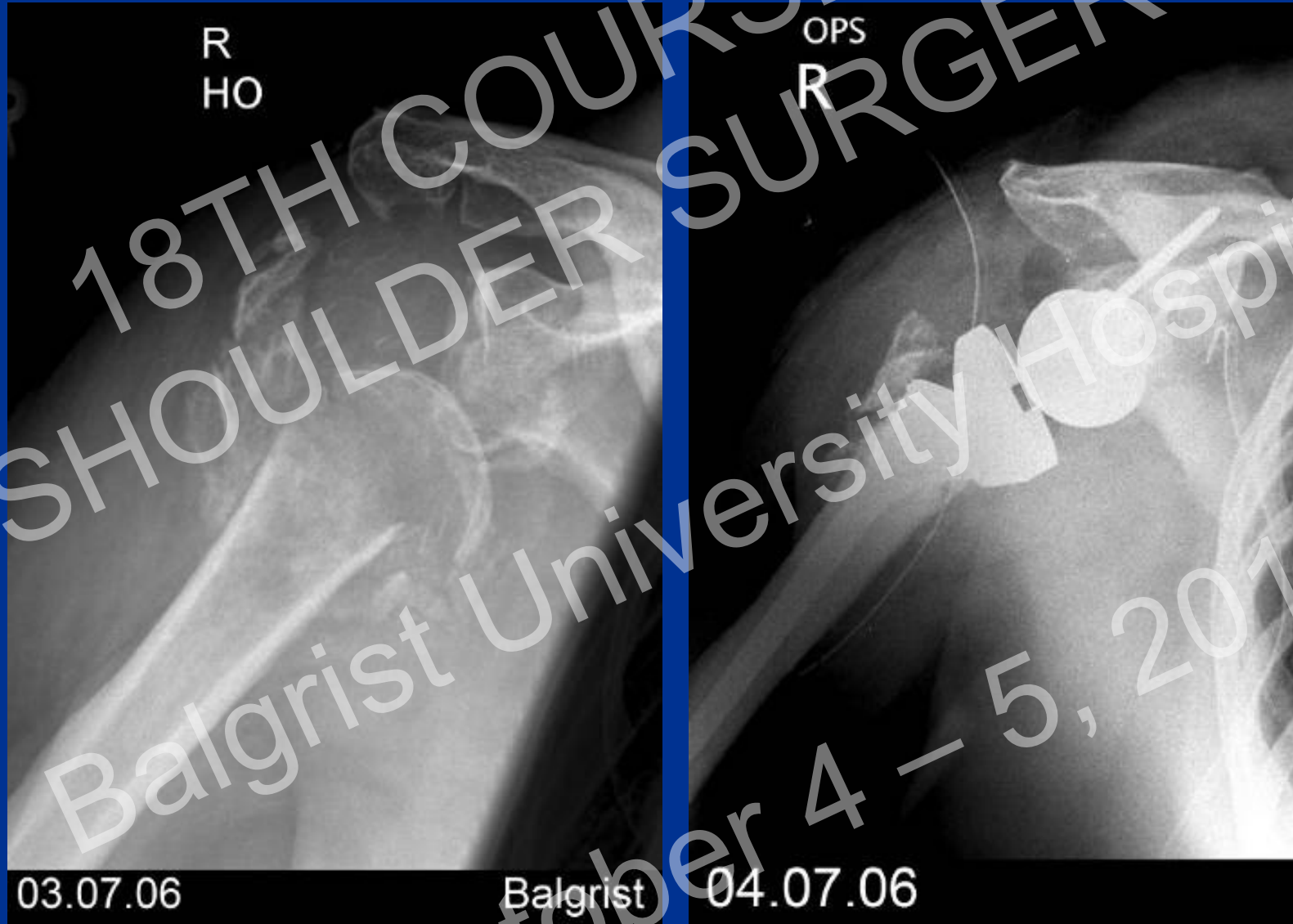


PROBLEM # 4: BONE QUALITY



October 4 – 5, 2011

4-PART 61-Y



4-PART 61-Y; 2 Y F-UP

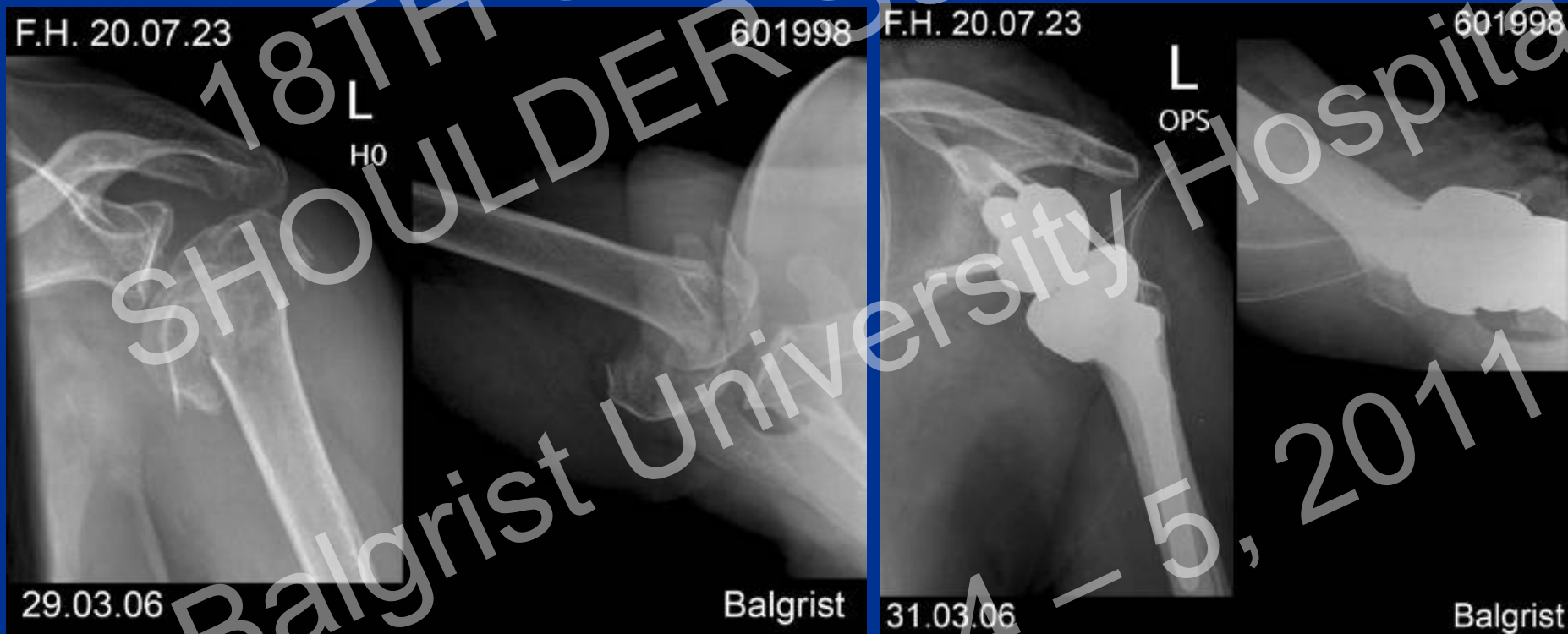


03.11.08



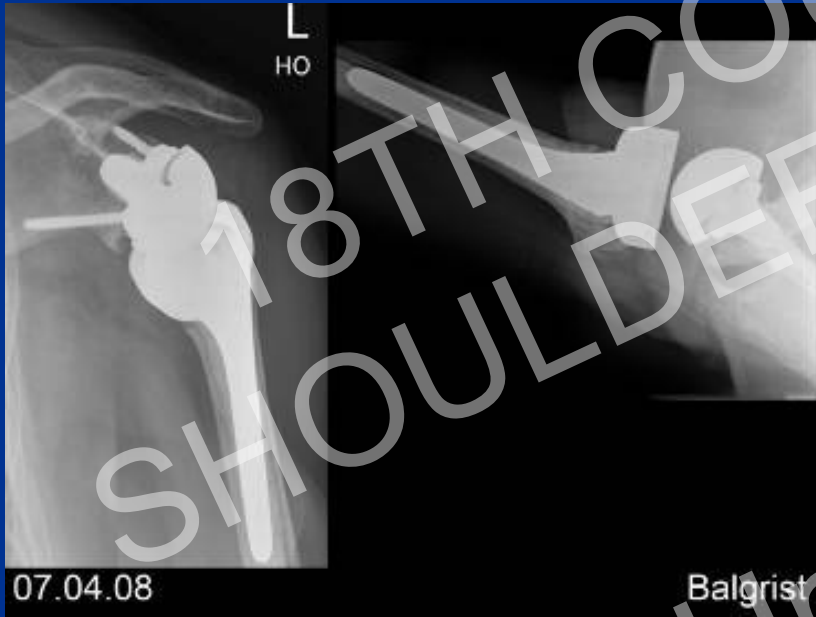
October 4 – 5, 2011

83-Y OLD LADY 4-PART FX

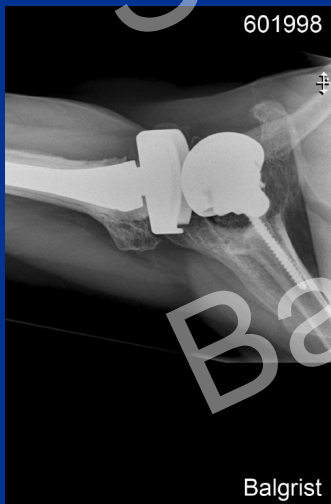


October 4 - 5, 2011

2-Y RESULT



4Y F-UP; 87 Y

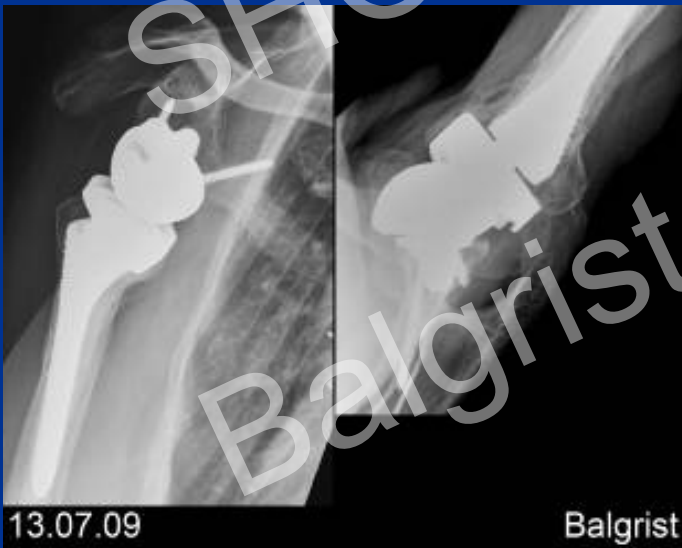
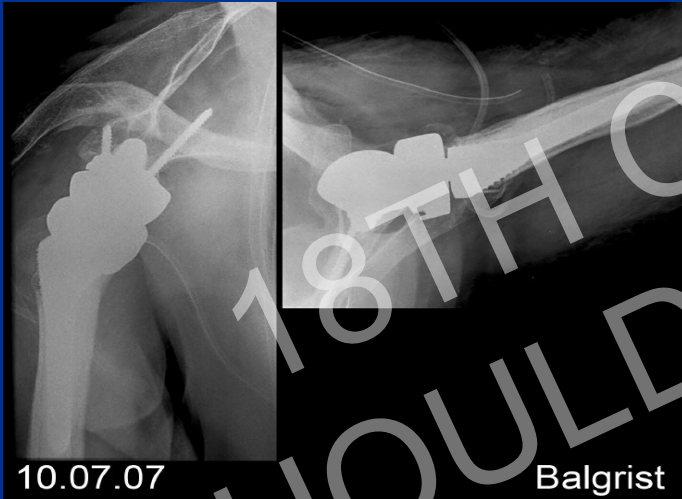


October 4-5, 2011

87-Y OLD; 4-PART



2Y F-UP (89 Y OLD!)



REVERSE TOTAL SHOULDER ARTHROPLASTY (RTSA) AS PRIMARY TREATMENT FOR COMPLEX PROXIMAL HUMERUS FRACTURES IN ELDERLY PEOPLE

D. Grisch¹, U. Riede², C. Gerber¹, M. Farshad¹, B.

Jost¹

1 - Department of Orthopaedics, University of Zurich, Balgrist, Switzerland

2 - Department of Orthopaedics and Traumatology, Bürgerspital Solothurn,
Switzerland

PRIMARY RTSA BALGRIST & KS SOLOTHURN

- 10/05 - 12/10 33 patients
- mainly women f:m = 28:5
- average age 80 y (67-90)
- n = follow-up >1 y 25 patients
- mean follow-up 23 month (1-5 y)

RESULTS

(n=25, mean follow-up 23 mts)

	mean	range
Absolute Constant Score	67 pts	34-83
pain	14.4 pts	10-15
ADL	18.6 pts	6-10
flexion	130°	80-180
abduction	125°	20-170
external rotation	18°	0-70
strength	4.9 pts	0-16
Relative Constant Score	99 %	52-139
Subjective Shoulder Value	82 %	40-100

COMPLICATIONS & REOPERATIONS

- hematoma 2 (evacuated)
- periprosthetic fissure 1 (Sarmiento protection)
- pseudoparalysis 1
- infection 0
- instability 0
- loosening 0

PRIMARY FRACTURE RTSA IN THE ELDERLY



- predictably good results
- low, acceptable complication rate
- simple post-operative treatment
- no necessity for additional support
- durability ?

CONVERTIBILITY

