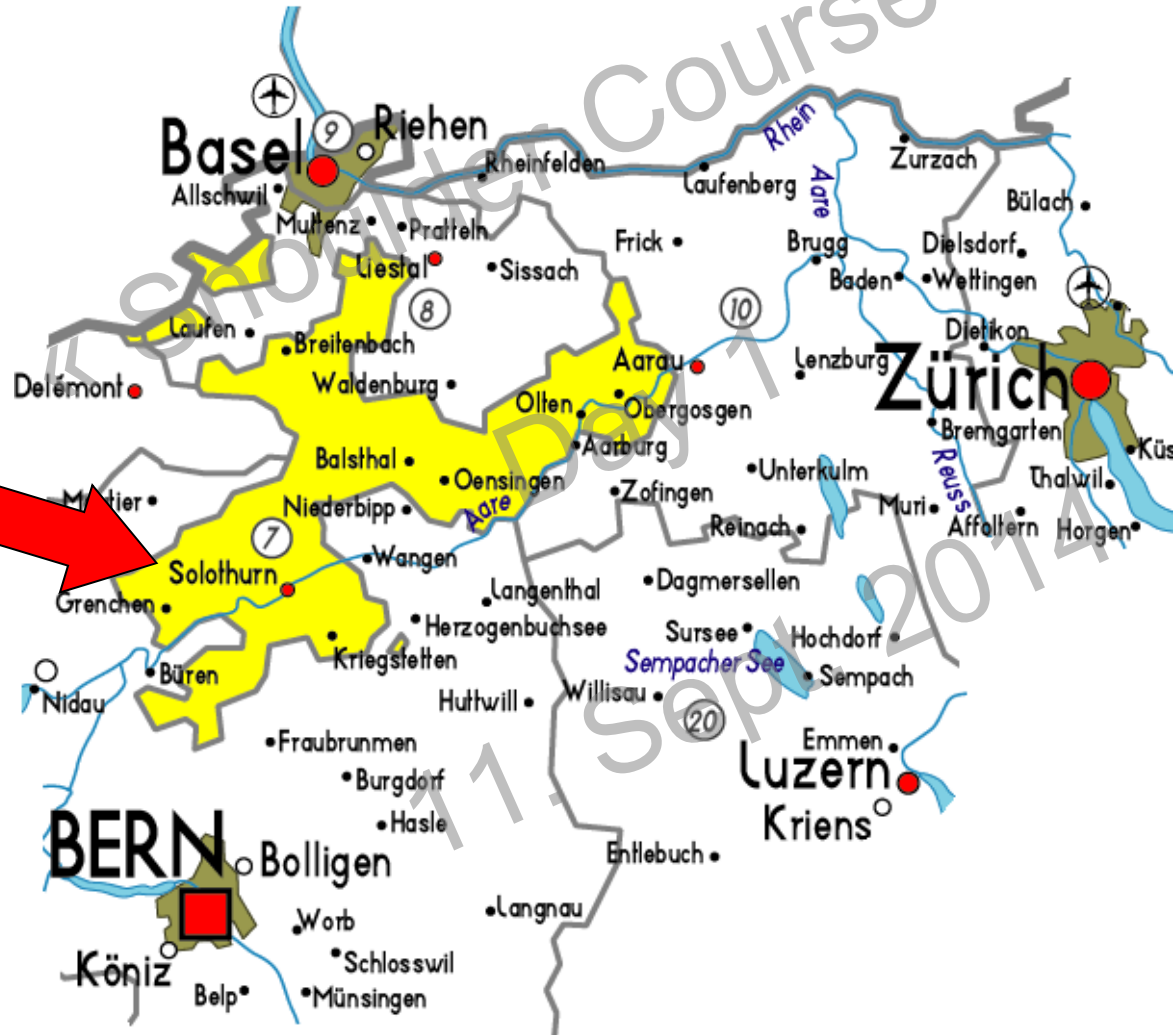


Anatomical Shoulder™ FRACTURE

Ulf Riede

20th Course in Shoulder Surgery Balgrist



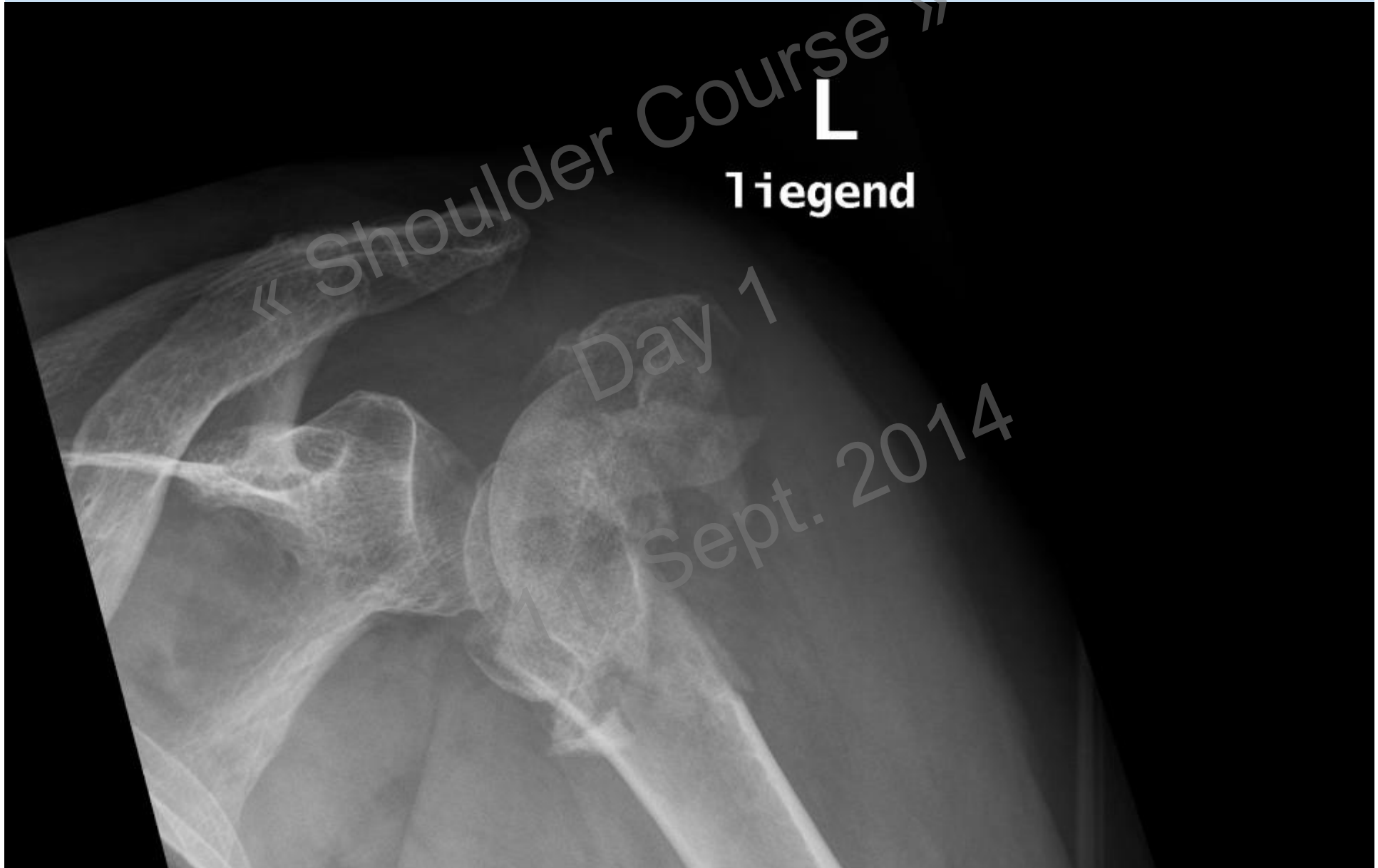




4-part fracture

fracture dislocation

impaction fracture of the humeral head involving more than 40% of the joint surface.



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L

Legend



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PROXIMAL HUMERUS FRACTURE TREATMENT

operative



nonoperative



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PROXIMAL HUMERUS FRACTURE TREATMENT

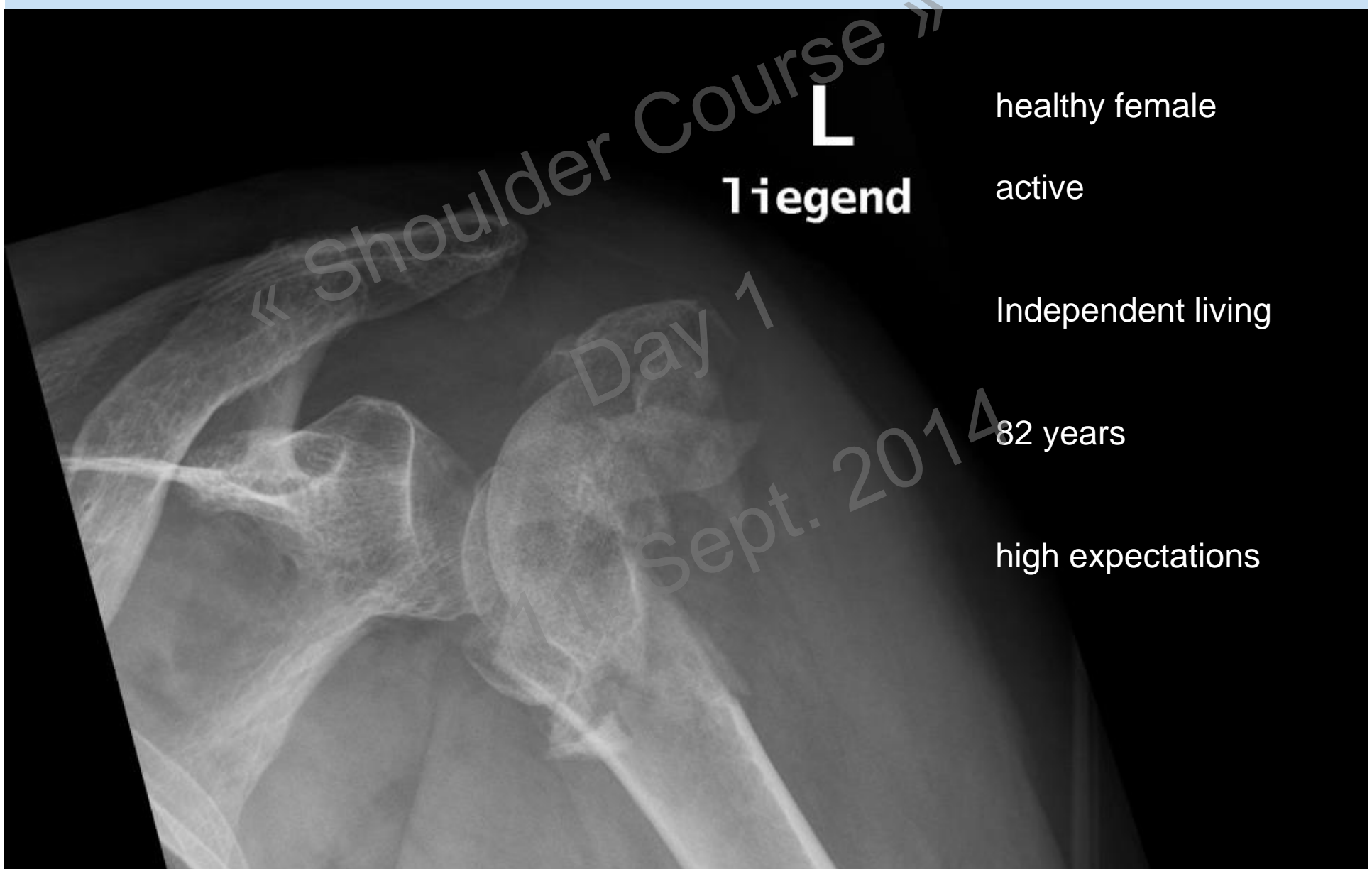
operative



nonoperative



age; general health; activity level, patient expectation



L

Legend

healthy female

active

Independent living

82 years

high expectations

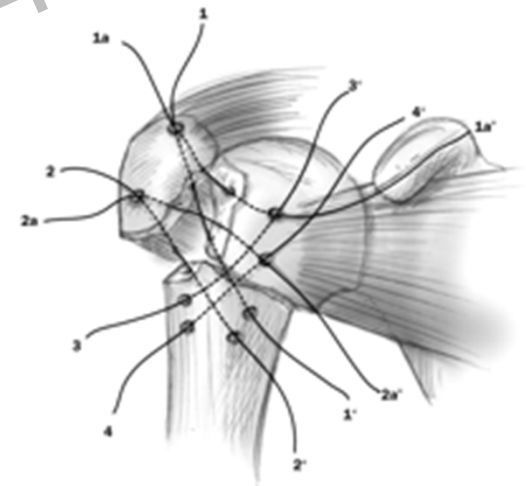
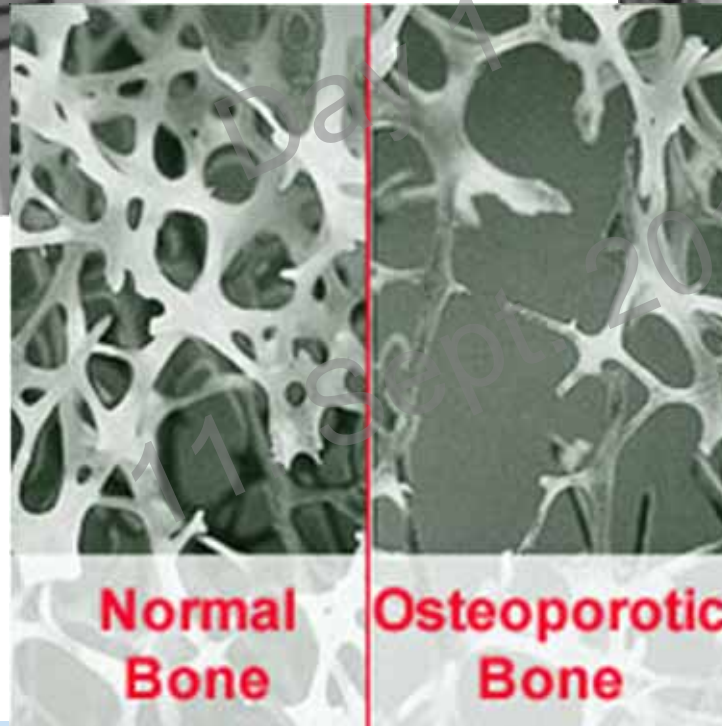


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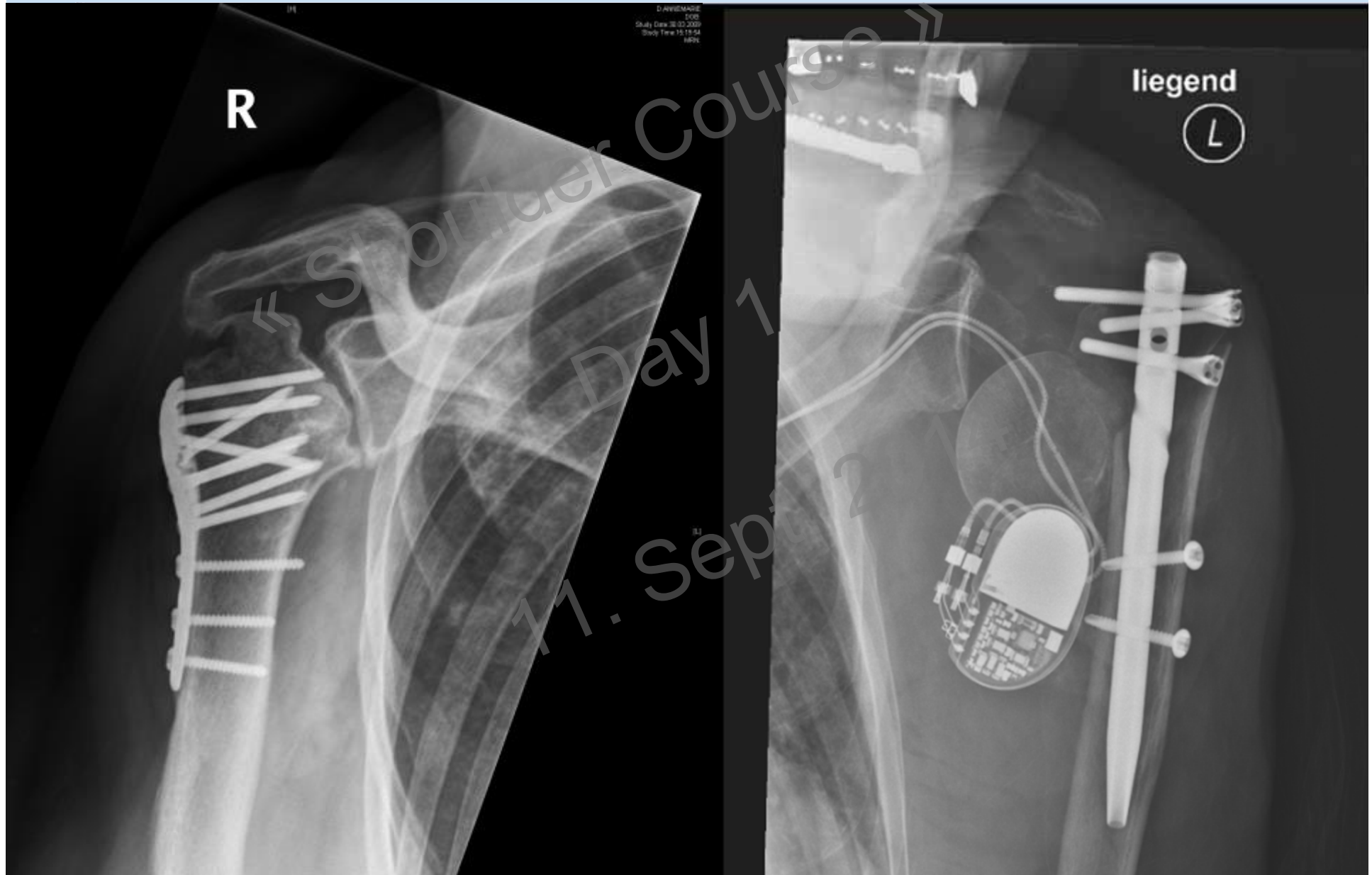
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ORIF possible?



ORIF successful?



ORIF???????

L

Legend

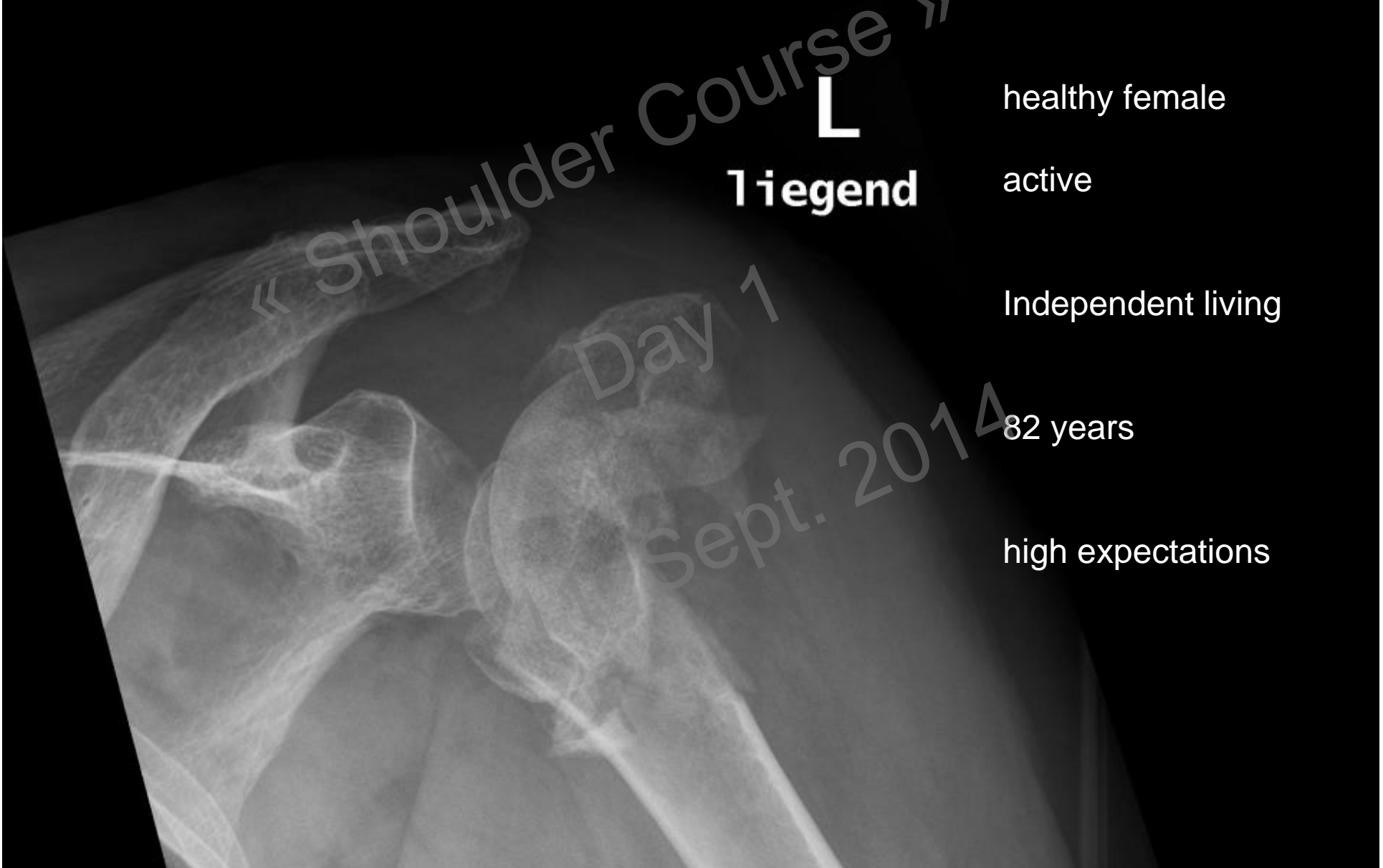
healthy female

active

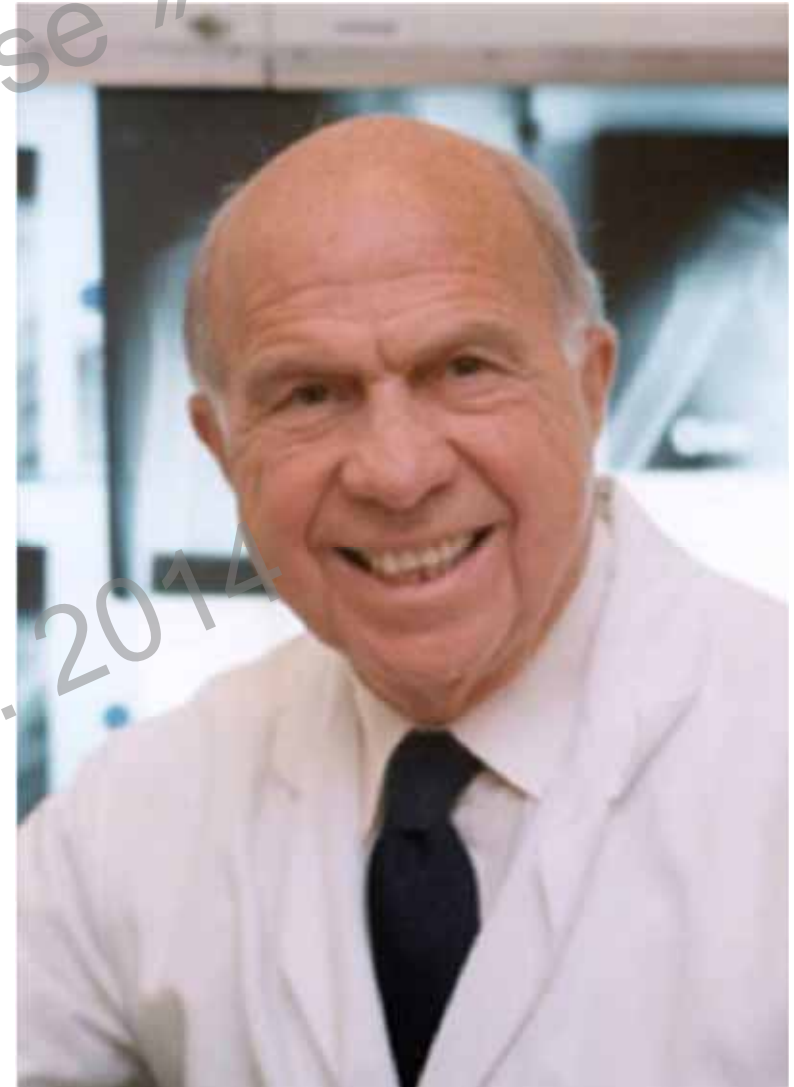
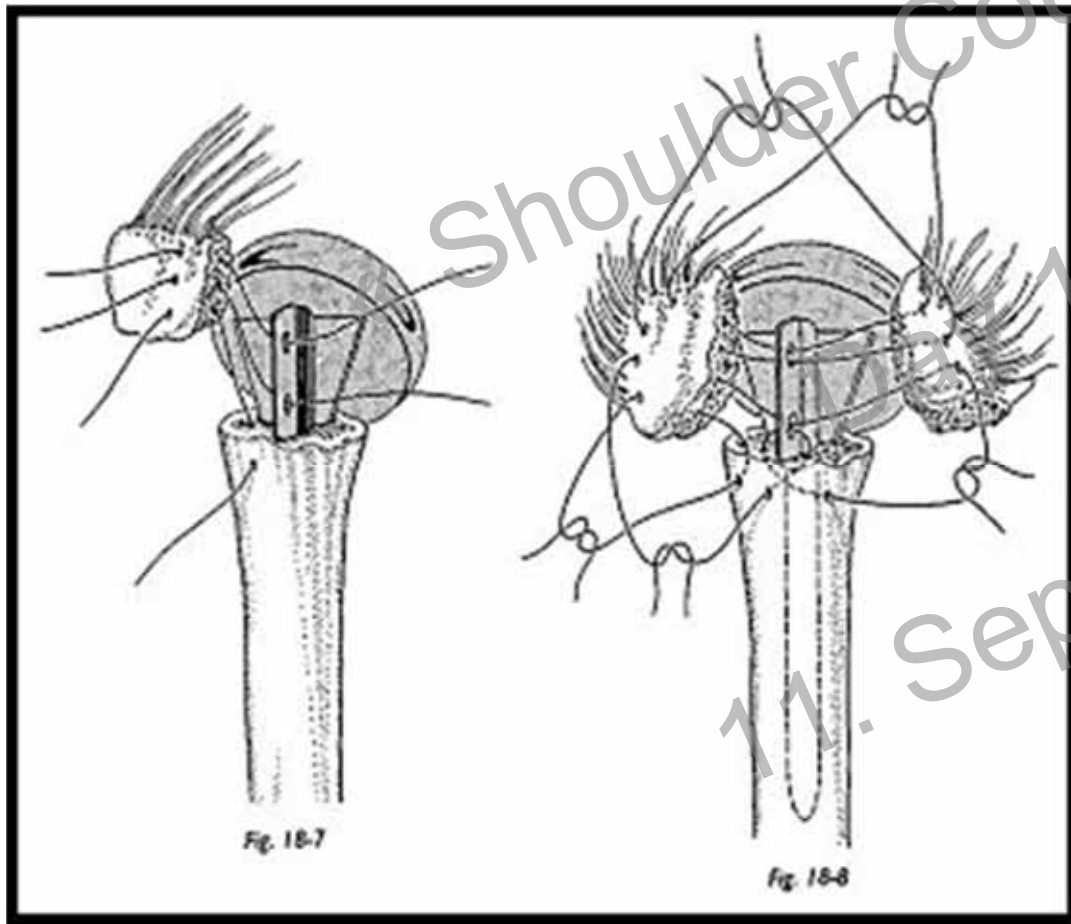
Independent living

82 years

high expectations



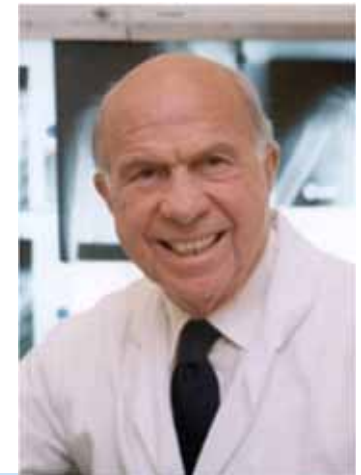




Neer CS: Displaced proximal humeral fractures. Part II. Treatment of three and four part displacement. J Bone Joint Surg [Am] 52:1090-1103, 1970

Hemiarthroplasty for three- and four-part fractures

Using these indications, the typical result was **satisfactory but imperfect** and many months were required for maximum recovery”



Neer CS II. Displaced proximal humeral fractures: treatment of three-part and four-part displacement. J Bone Joint Surg [Am] 1970; 52-A:1090-103.

The Results

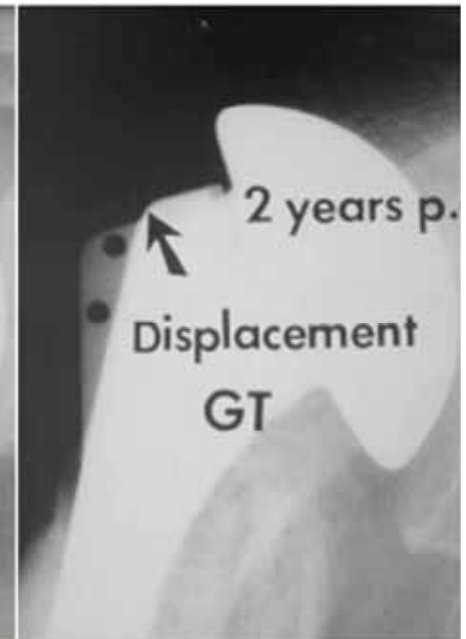
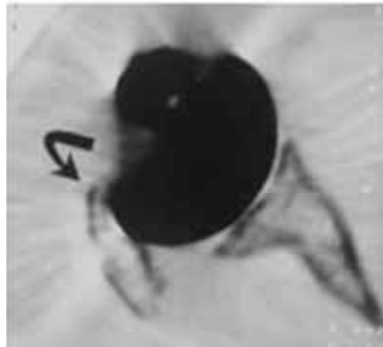
Outcome after primary hemiarthroplasty for fracture of the head of the humerus

A RETROSPECTIVE MULTICENTRE STUDY OF 167 PATIENTS

- **Pain** (7.8%) had severe pain, (13.2%) moderate, (38.9%) mild and (40.1%) no pain
- CS: 55 points
- 42% could flex the arm over 90 °

The Problem

- Factors associated with failure:
 - poor initial position of the prosthesis
 - poor position and fixation of the greater tuberosity



2014

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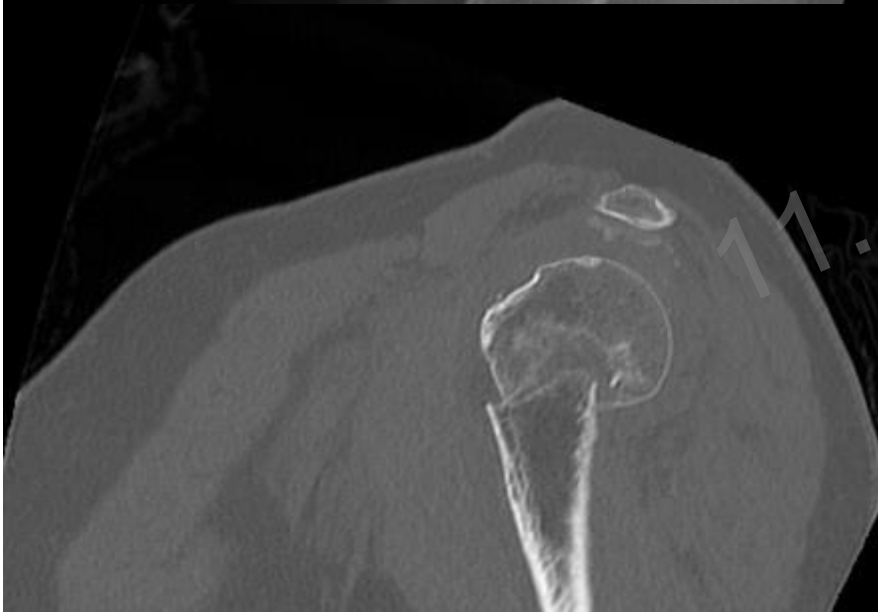
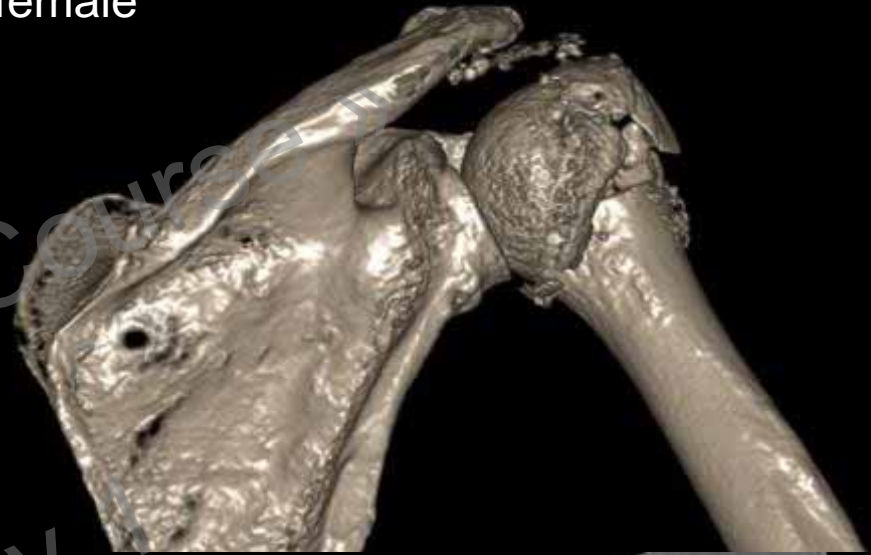
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(R)

85 year old female
Spitex



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R

1 week



(R)



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4 weeks

(R)



postop

R



86 years female
very low demand
nursing home



6 month

89 years female
very low demand
nursing home



6 month



Timing of shoulder arthroplasty in comminuted proximal humerus fracture, how much does it matter?

Amr Mohamed Abdelhady Eur J Orthop Surg Traumatol (2013) 23:515–519

Hemi/ RSA??

L

Legend

healthy female

active

Independent living

82 years

high expectations



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Severe rotator cuff pathology

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severe osteopenic bone

Hemi Versus Reverse Shoulder Arthroplasty Patient Selection

Age?

70/ 75 years

Hemi Versus Reverse Shoulder Arthroplasty Patient Selection

age 70/75

- 76 years
- 3x / week golf, tennis
- runs his own business
- No medical issues
- 67 years
- Coronary artery and Chronic lung disease
- Using a walker 200m
- Urinary Incontinence

Hemi Versus Reverse Shoulder Arthroplasty Patient Selection

Age?

General health status
Activity level

Hemi Versus Reverse Shoulder Arthroplasty Patient Selection

surgery mandatory
ORIF not possible/ successful

RSA:

old, poor bone quality, independent living,
need for overhead activity

Hemi:

Too young and too active for RSA, good bone,
ability to follow treatment regimens

Hemi/ RSA??

L

Legend

healthy female

active

Independent living

82 years

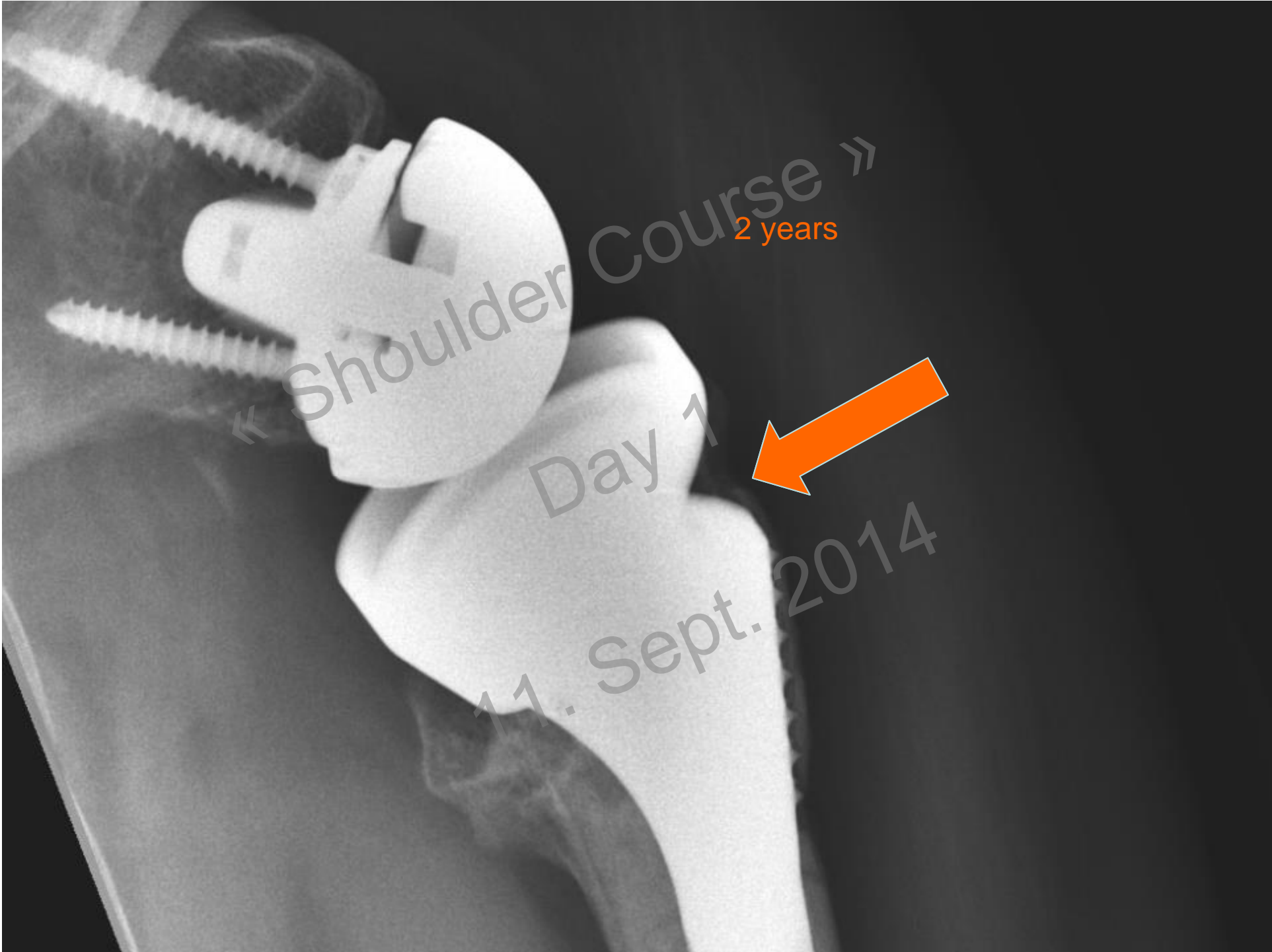
high expectations



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J Shoulder Elbow Surg (2013) 22, 38-44



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Improvement in shoulder rotation in complex shoulder fractures treated by reverse shoulder arthroplasty

David Gallinet, MD^{a,*}, Antoine Adam, MD^b, Nicolas Gasse, MD^b, Severin Rochet, MD^b, Laurent Obert, PhD^b

^a*Saint Vincent Private Hospital, Besançon, France*

^b*Orthopedic, Traumatology, Plastic and Hand Surgery Unit, University Hospital Jean Minjot, Besançon, France*

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1 year FX RSA left



64 years male

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Day 1

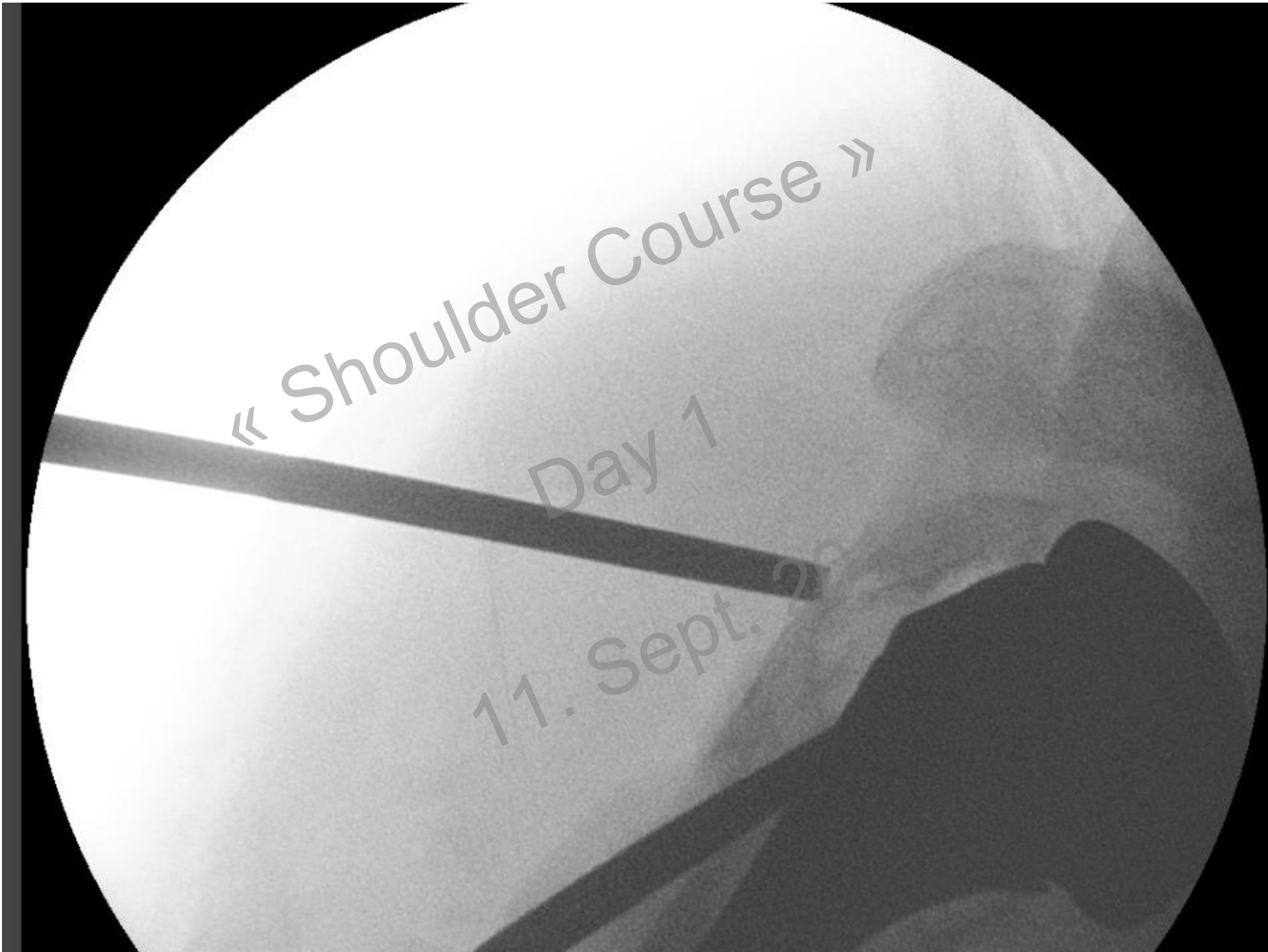
Dr. Scp 14



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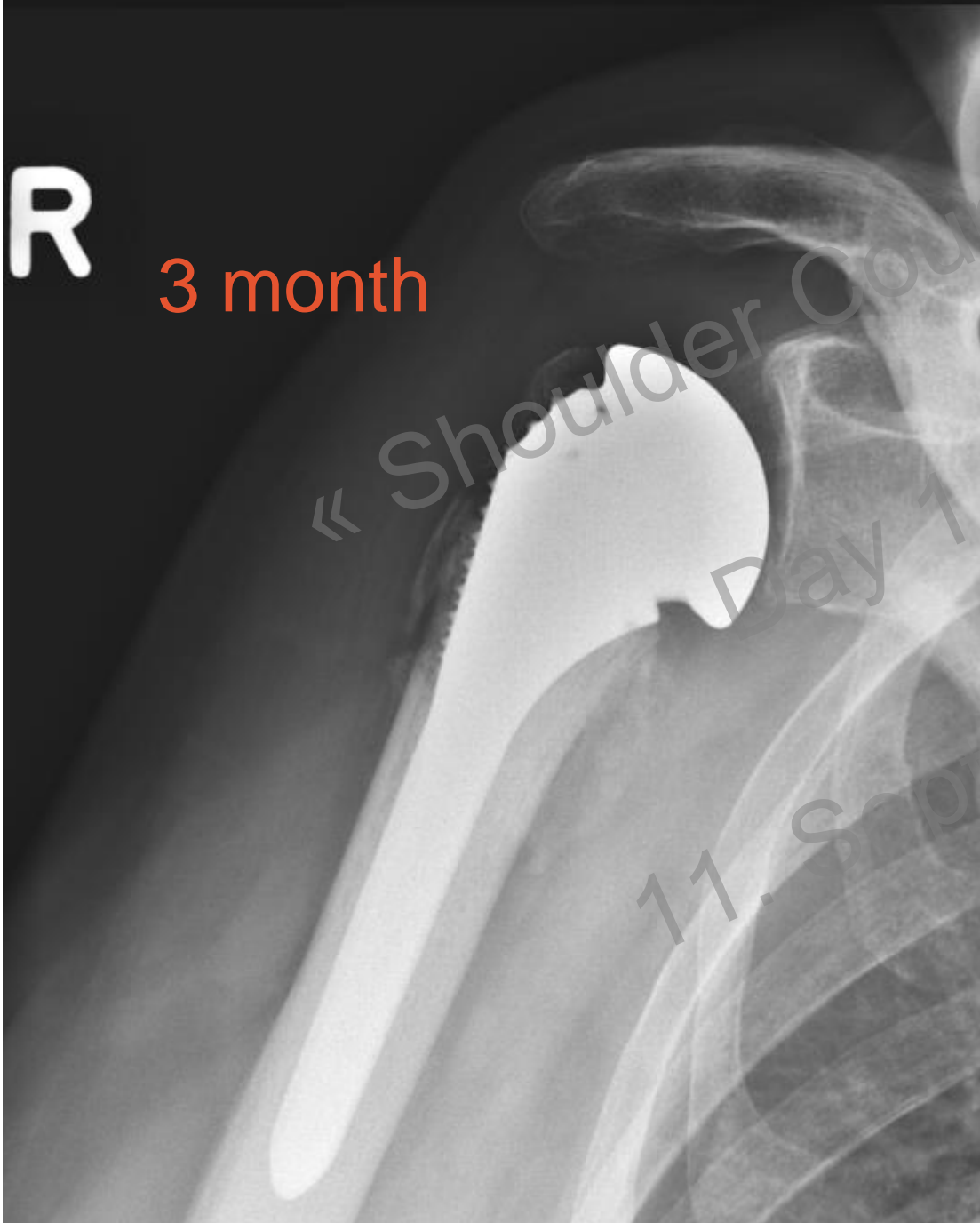
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R

3 month



6 weeks



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3 Month

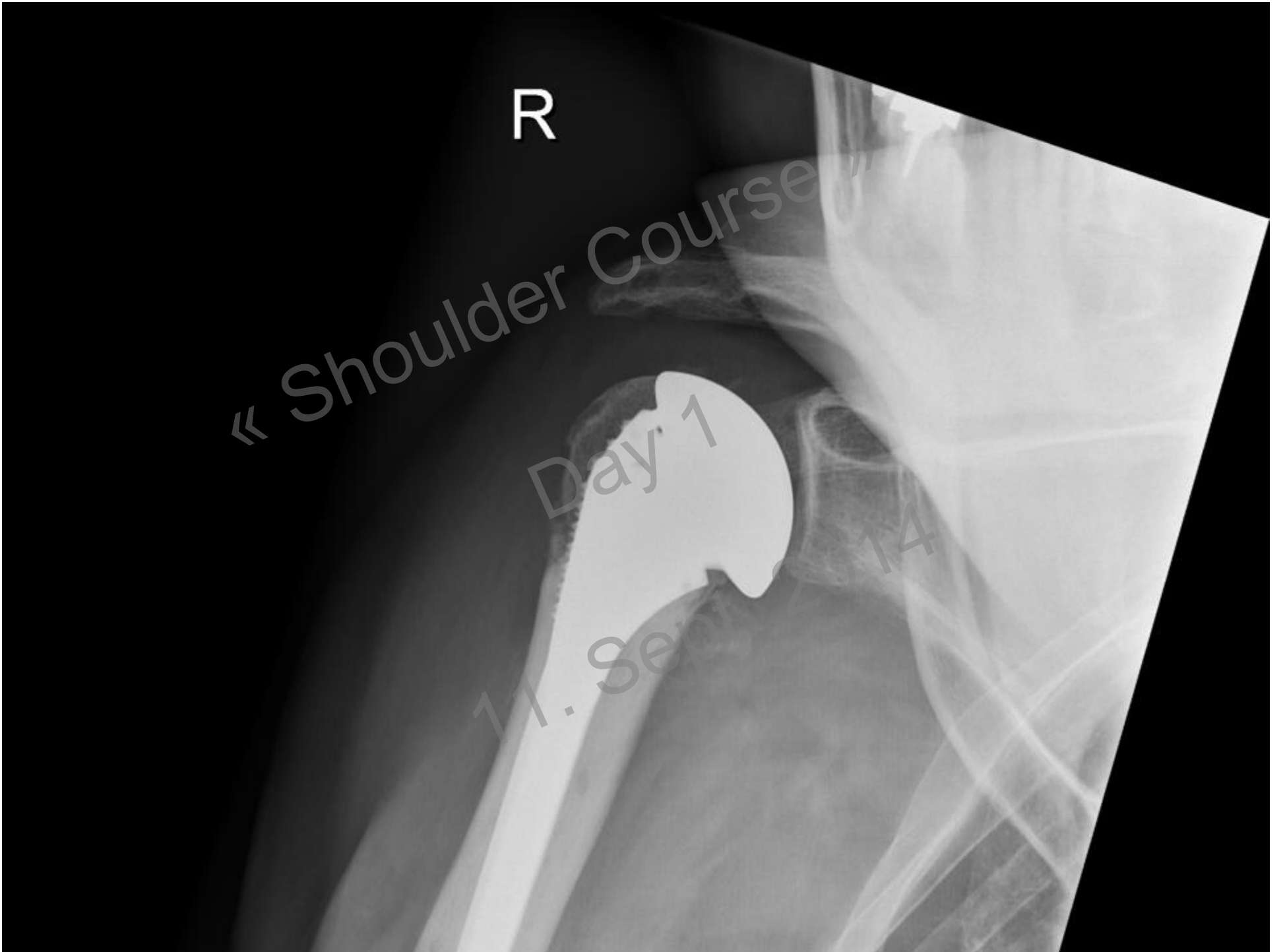


R

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Proximal Humerus FX Solothurn

	2012	2013
Locking plate	47	48
FX- Hemi	2	0
FX – RSA	15	11
Non operative	?	?

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

- 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)

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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

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FX dislocation; without vascular and neurologic pathology

- male; 88 years old, rhd;
- no severe medical issues
- lives at home; wife

Send from family doctor 1 week after trauma
Inadequate reduction in the OR – Fracture RSA

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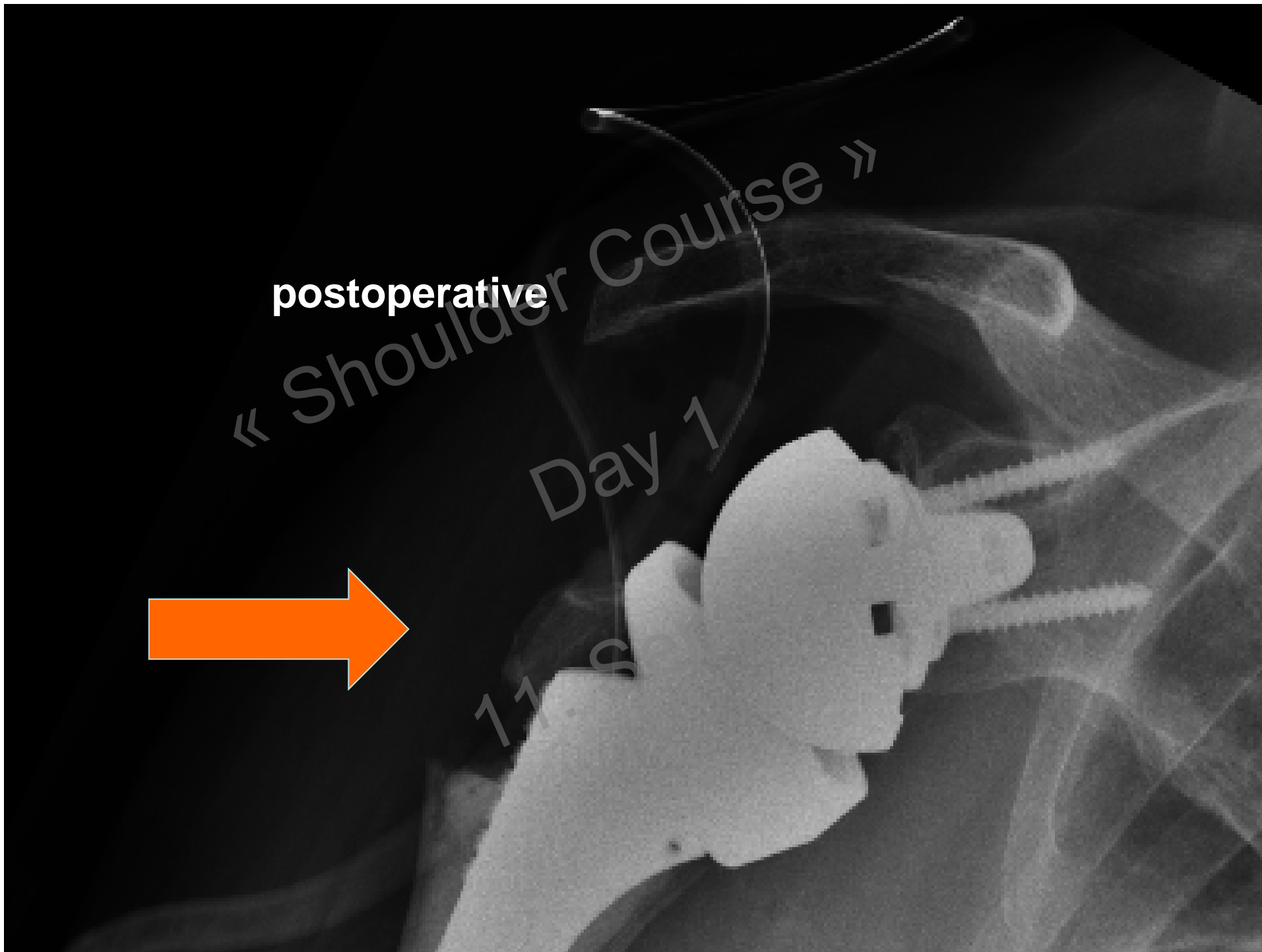


postoperative

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11.90



1 year



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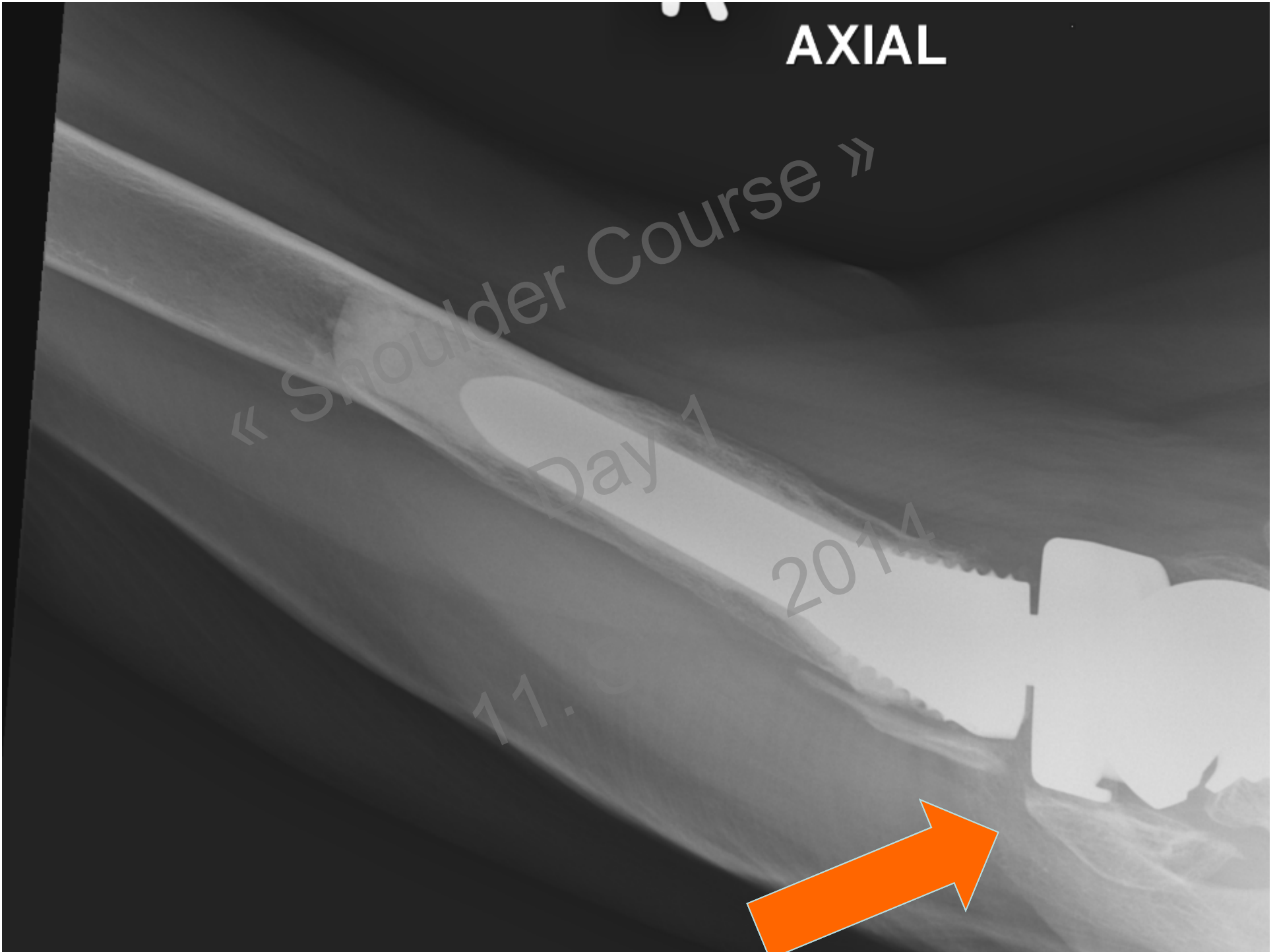
AXIAL

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2014

11.0



1 year



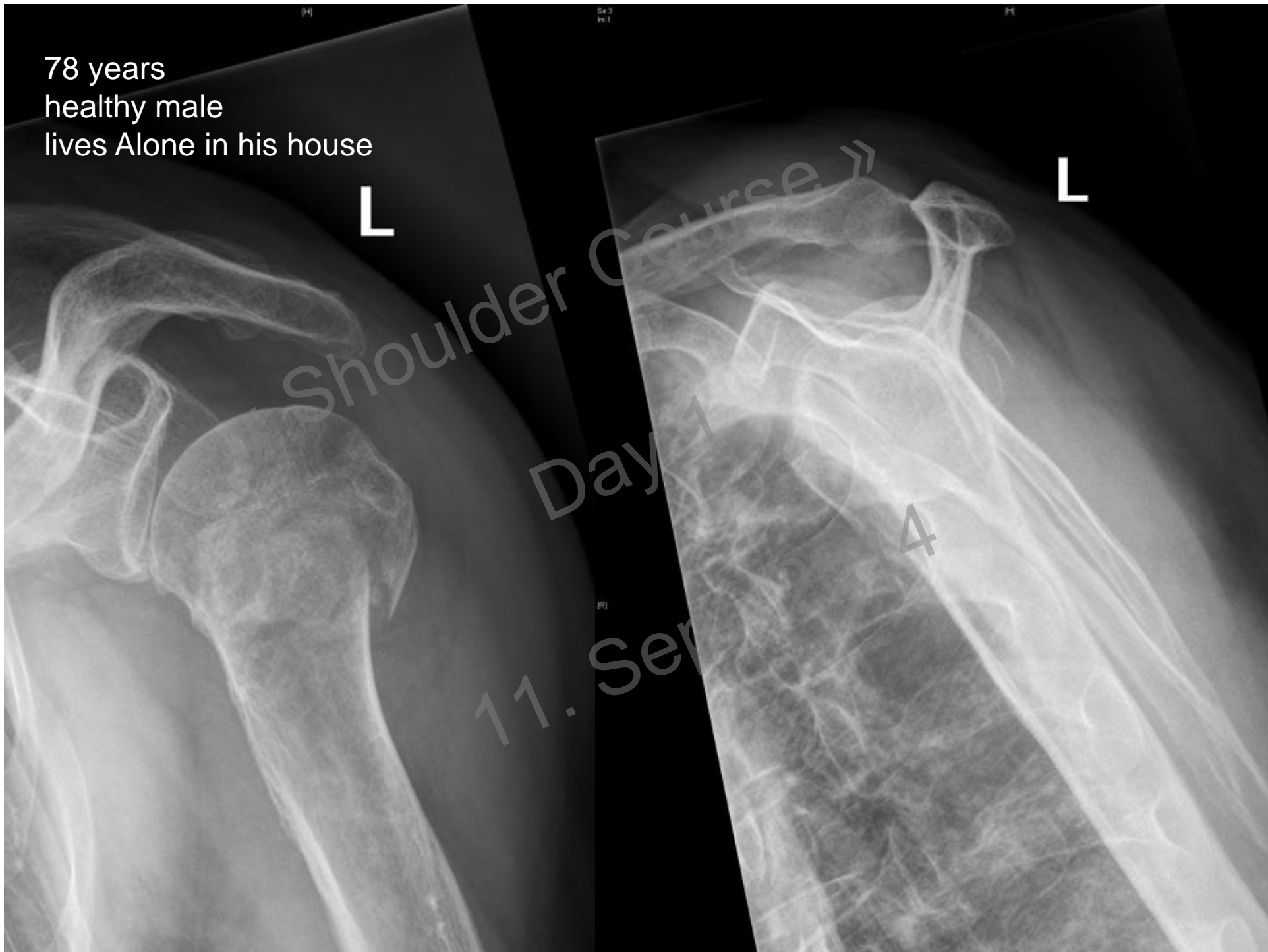
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78 years
healthy male
lives Alone in his house

L

L

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Day 1
11. Sep 2014



10 days

« Shoulder course »

Day 1

1. Sept. 2014



« Shoulder Course »
Day 1
11. Sep. 2014

Postop

L



2 Jahre

L



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2 years

« Shoulder Course »

May 11
Sept. 2014



2 years



Tips and Tricks



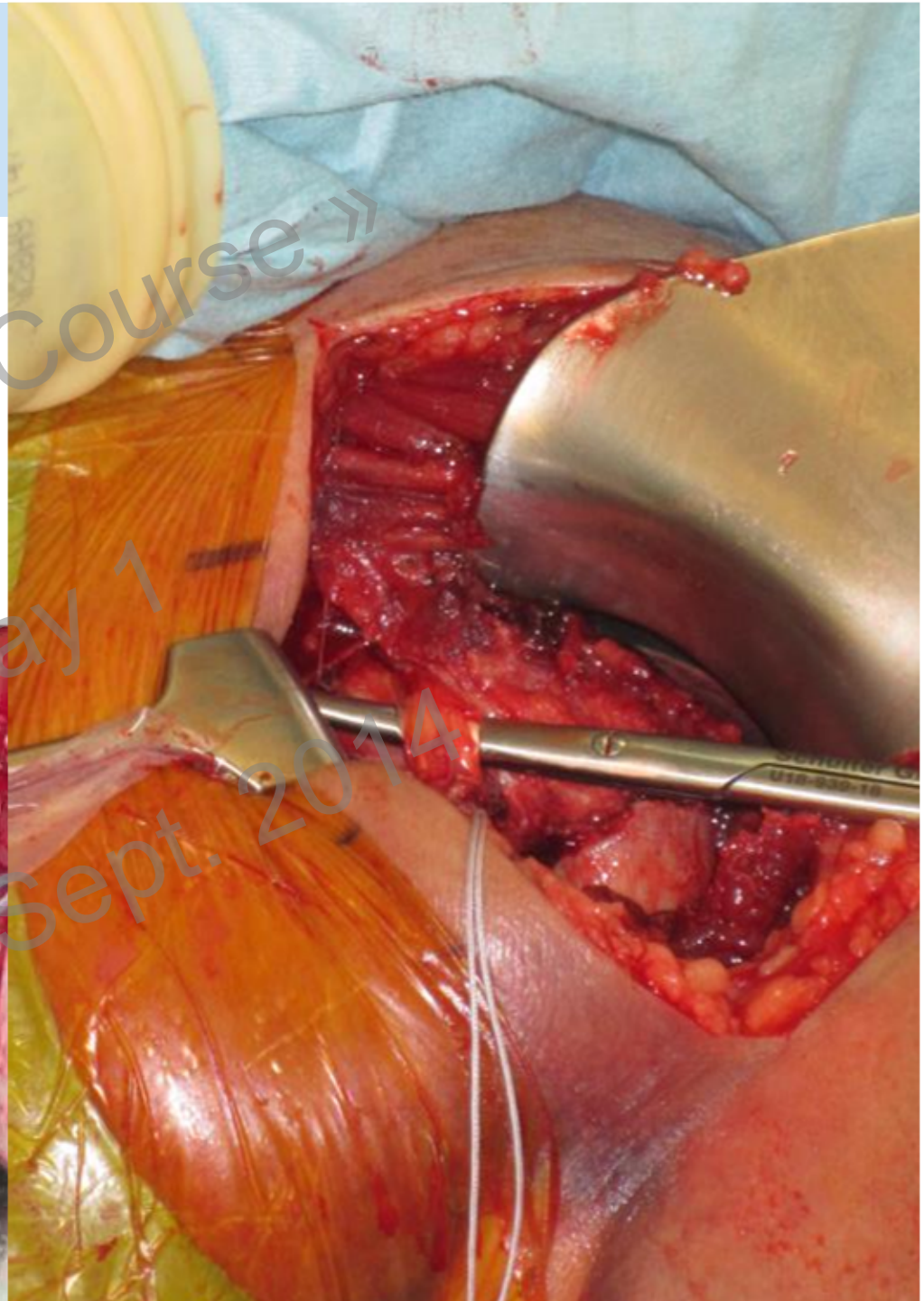
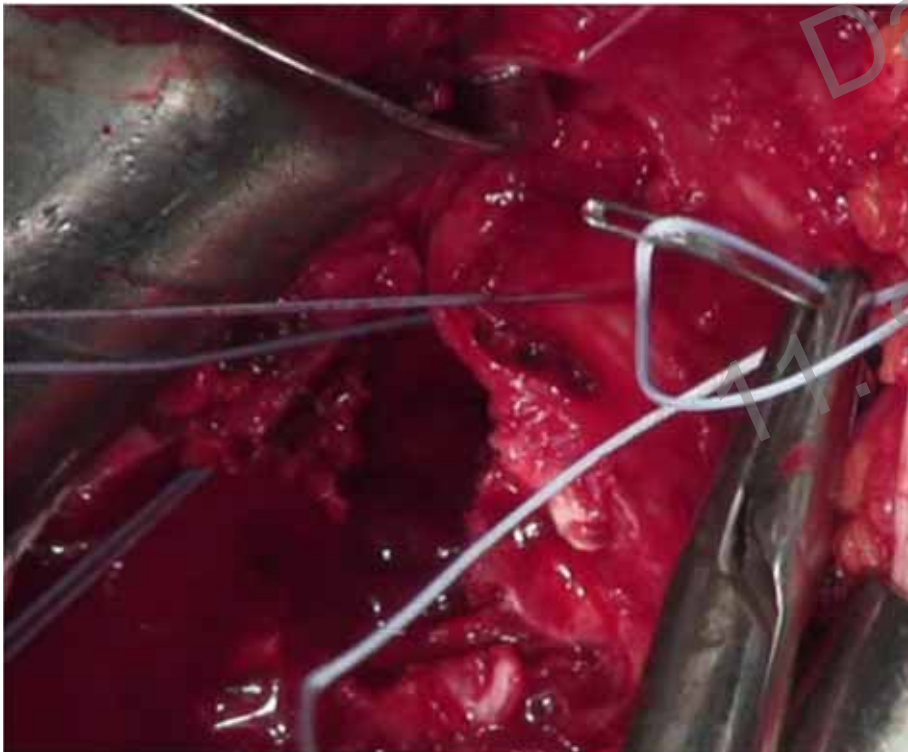
How we do it

- Beach Chair, pneumatic arm holder,
- standard draping of the sterile surgical field



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- Delto-pectoral approach
- Suture fixation of the tuberosity
- Bicepstenotomy

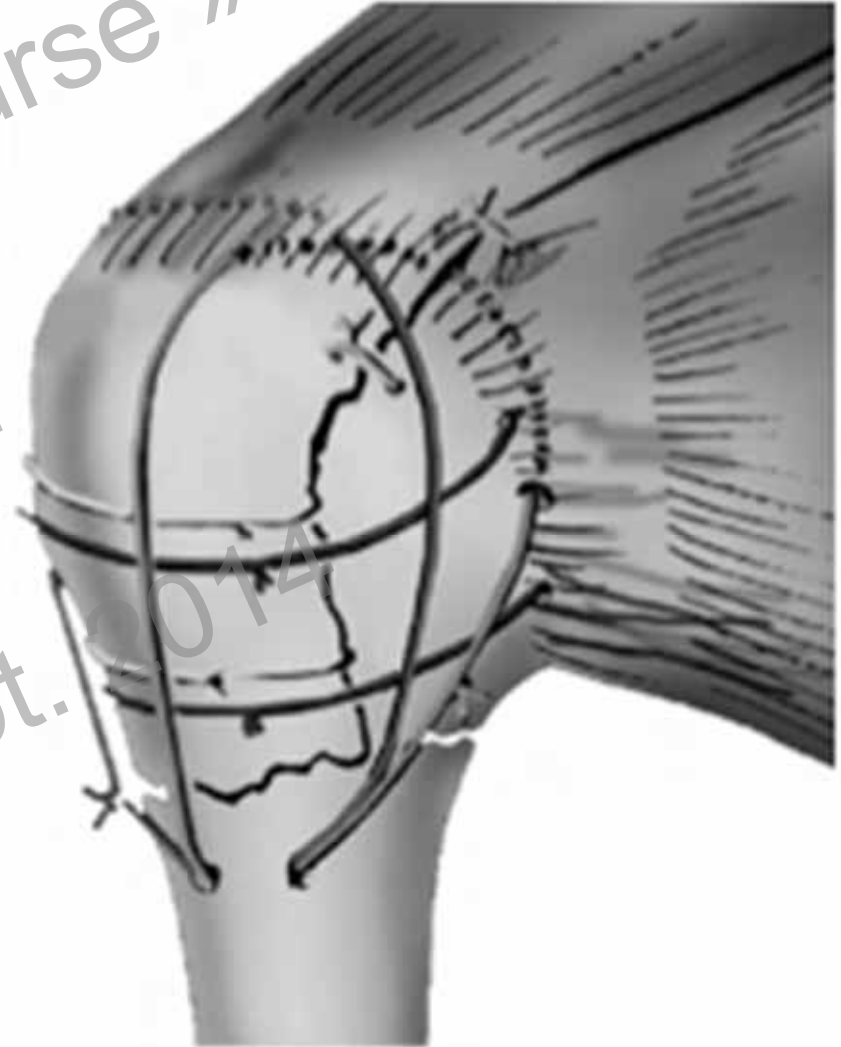


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Improvement in shoulder rotation in complex shoulder fractures treated by reverse shoulder arthroplasty David Gallinet, J Shoulder Elbow Surg (2013) 22, 38-44

- Tuberosity Fixation



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Glenoid preparation





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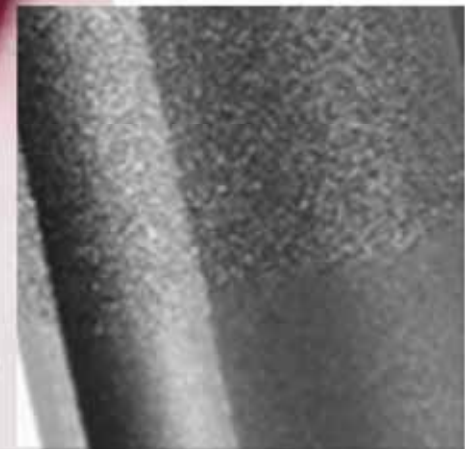
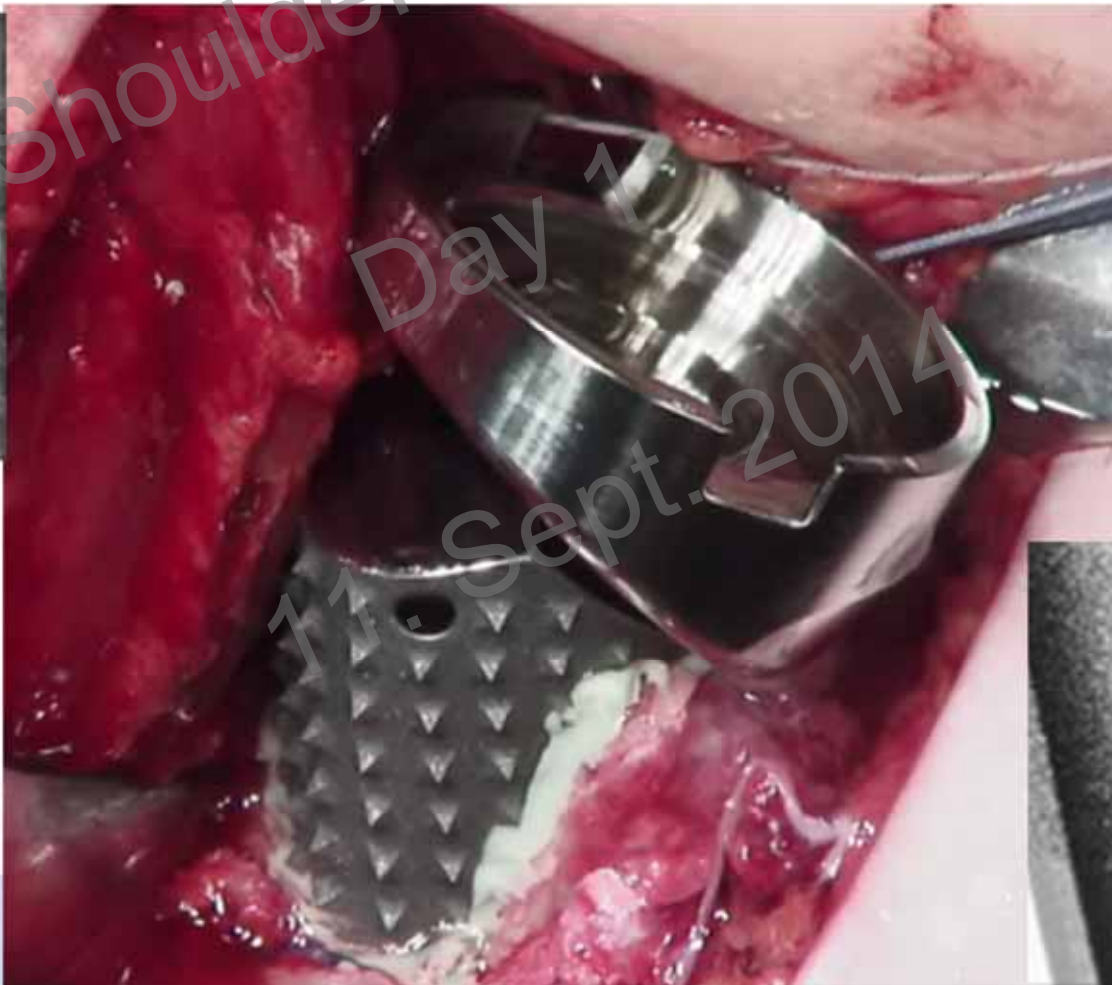
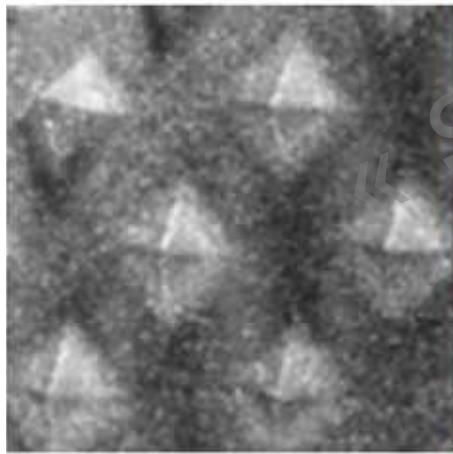
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female; 93 years



Stem preparation (0 ° -20 ° retro)



POST OPERATIVE PROTOCOL

- Wound drain
- Sling
- Active assisted and active rom
- Early ADL
- No upper extremety weight bearing and transfer for 6 weeks

CONCLUSION

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CONCLUSION

Hemiarthroplasty

- Technically demanding
- good outcomes regarding function, level of patient satisfaction, pain and complication rate
- associated with poor outcomes
- Patient: younger, active, good bone, high patient compliance

Reverse shoulder arthroplasty

- Technically less demanding than Hemi
- good outcomes regarding function, level of patient satisfaction, pain and complication rate
- Long term?
- Patient: elderly, “active”, independent with a need for overhead activity



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Day 1

Sept. 1-14





ulf.riede@spital.so.ch