

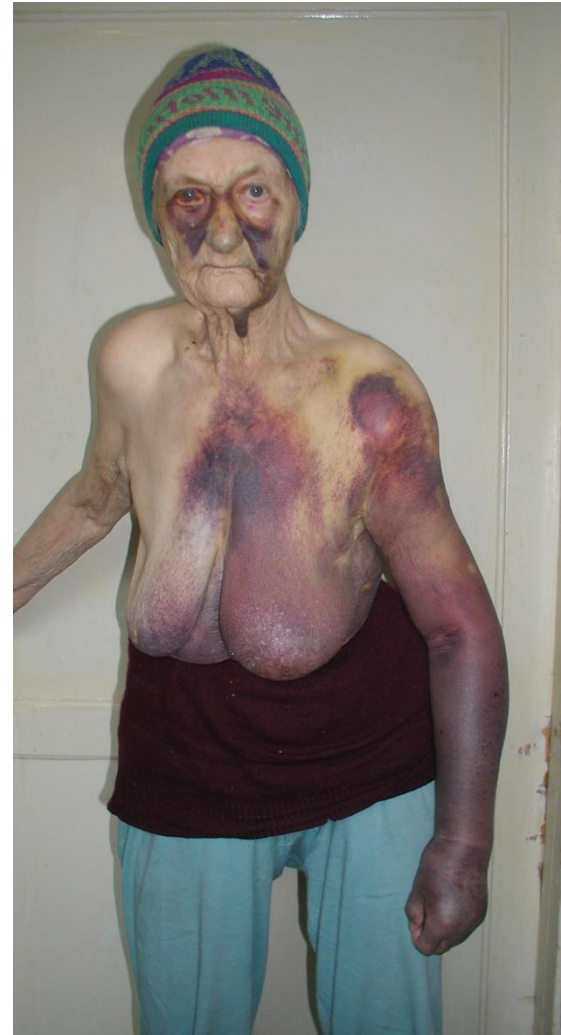
Fractures of the upper limb

Sergey Sergeev, MD, PhD

Moscow

2017

Is it simple fracture?



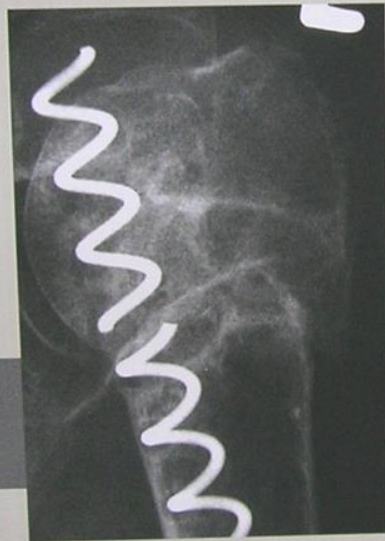
Evolution

K-Wires



Migration

Helix Wire



Pseudoarthrosis

Nails



Obsolete

Plates



Invasive

Why it happened ?

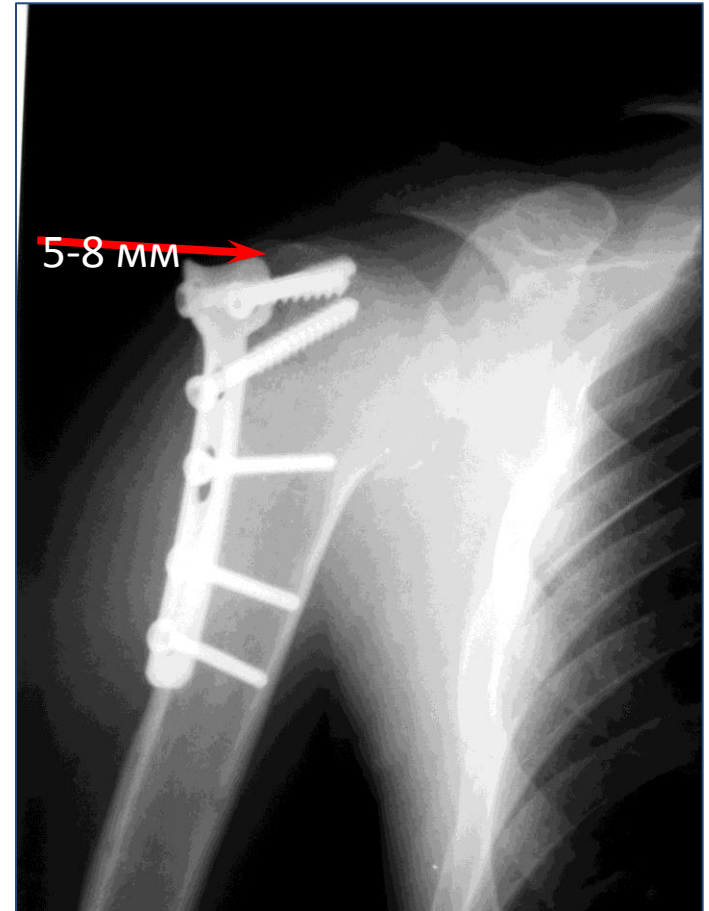
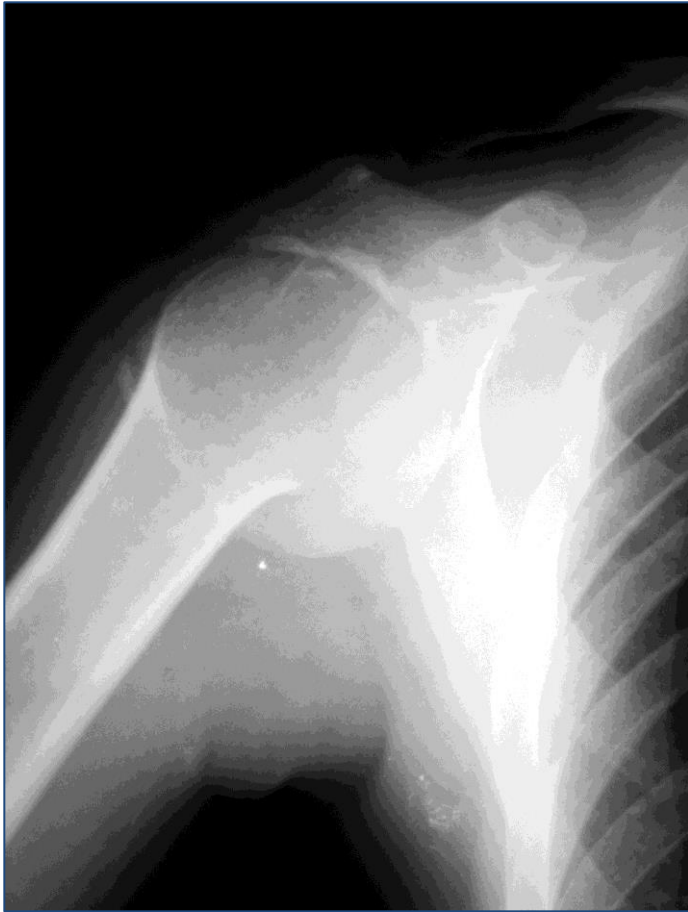




Why it happened ?



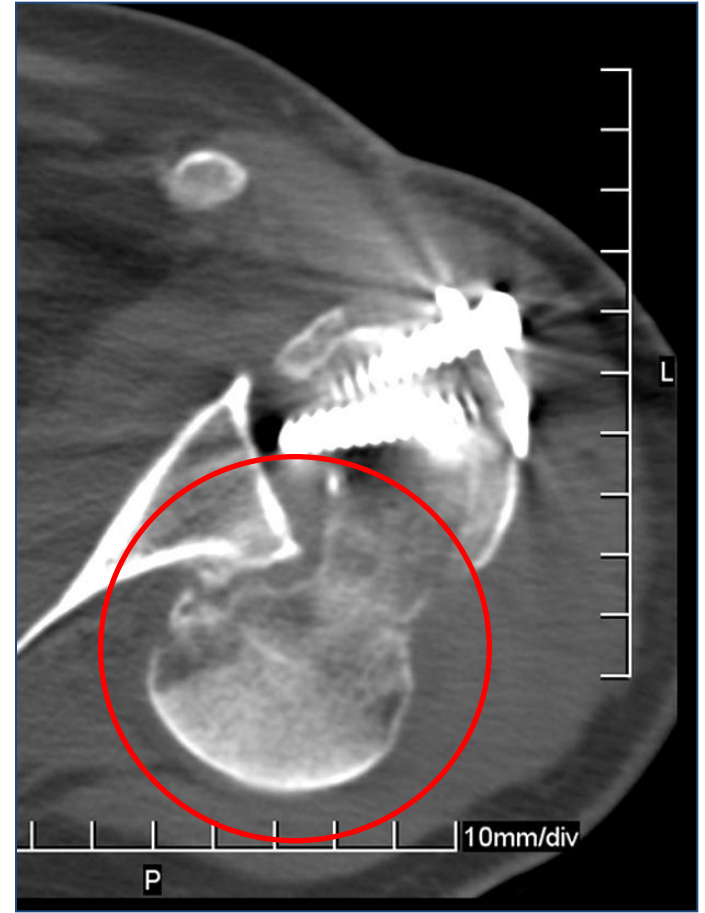
Impingement-syndrome





Malposition of fragments and incorrect fixation





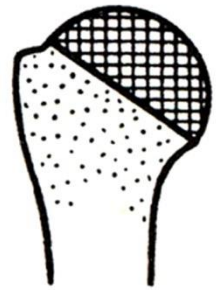
AO/ASIF classification (morphological aspects of fracture)



A

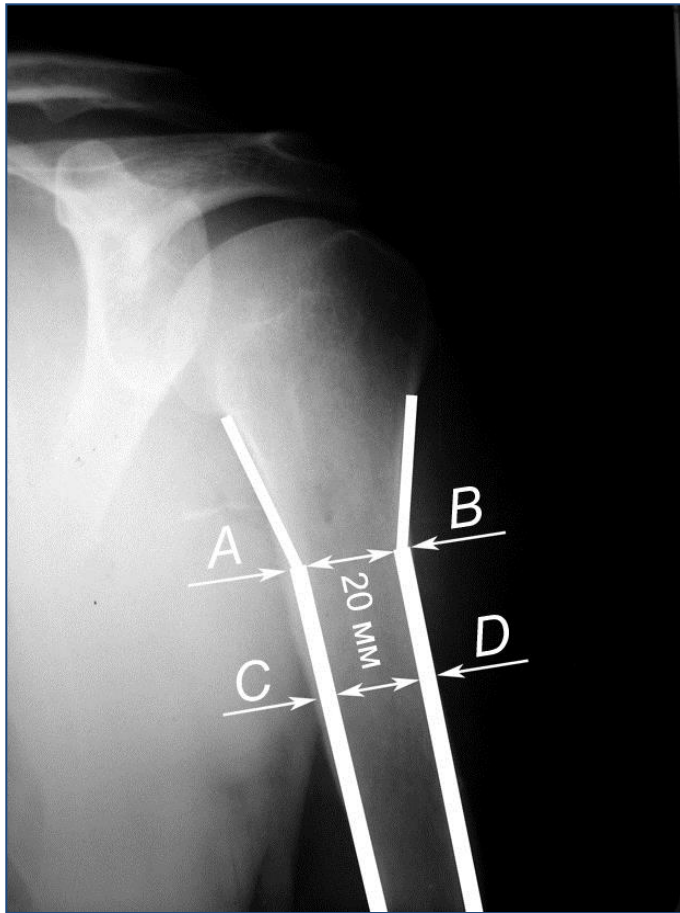


B



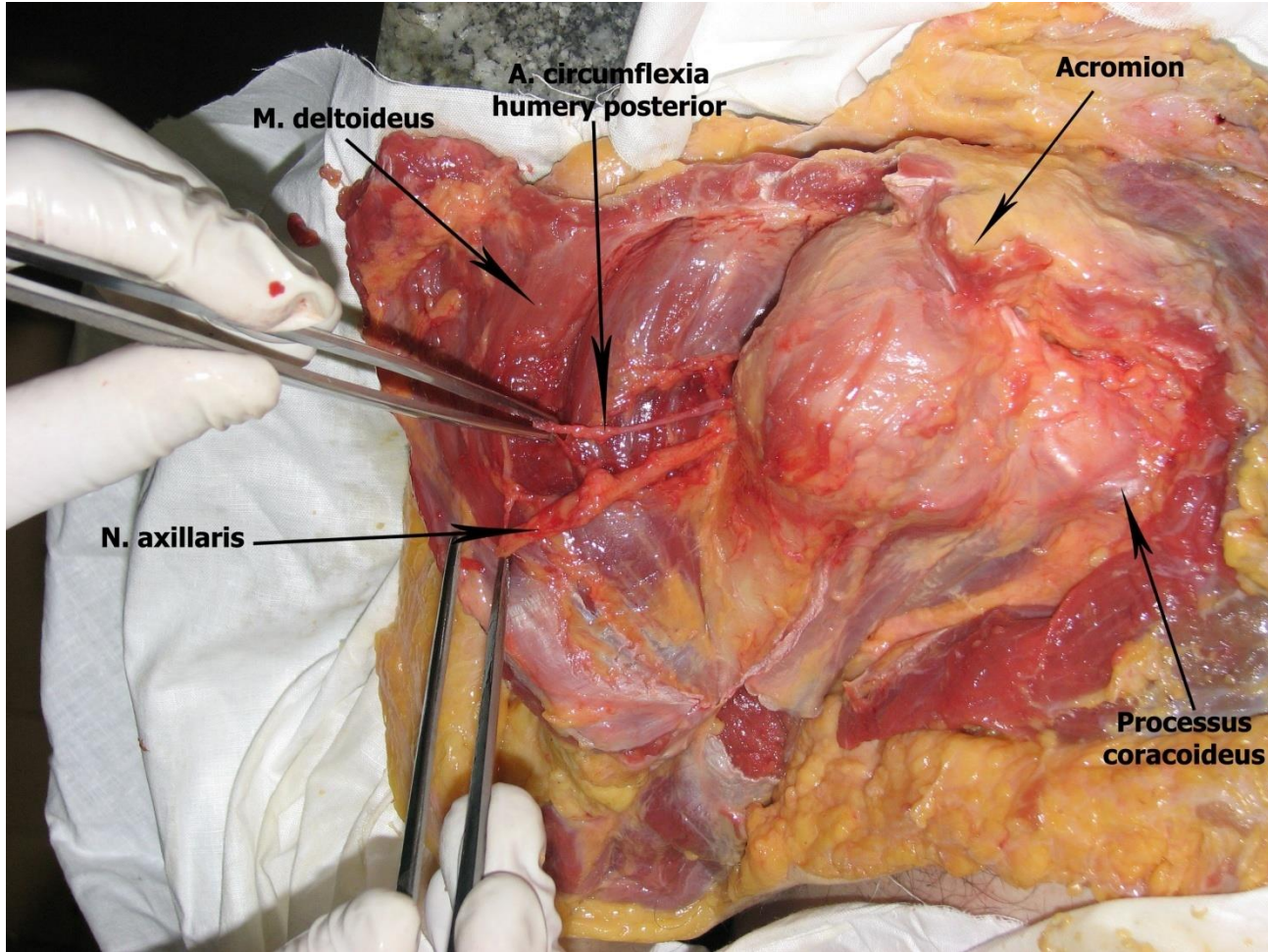
C

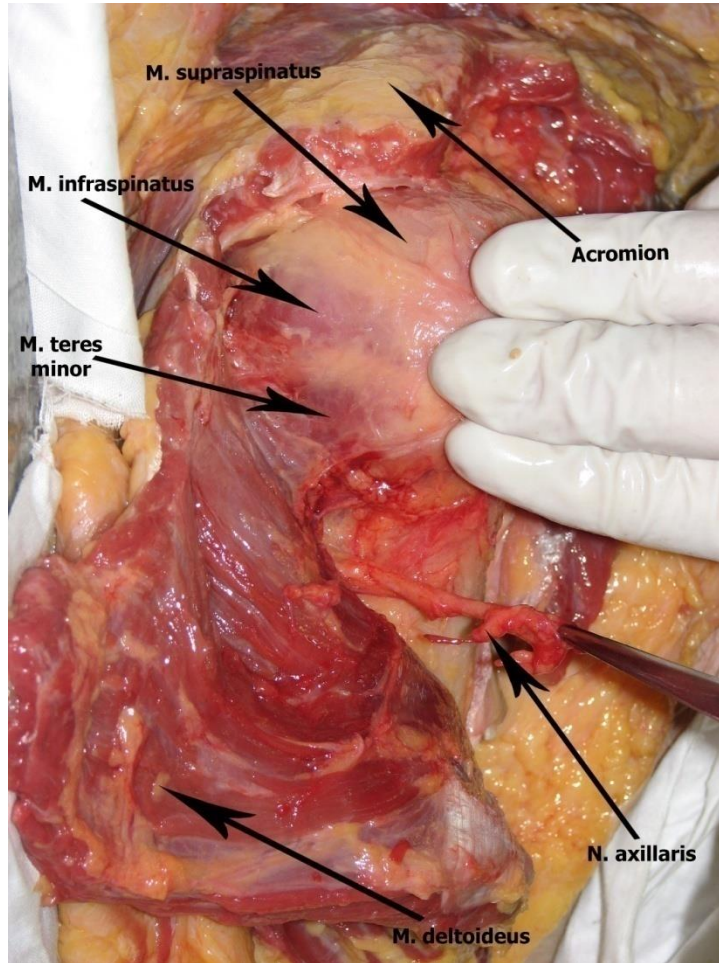
Cortical thickness index (Tingart M. J., 2003)

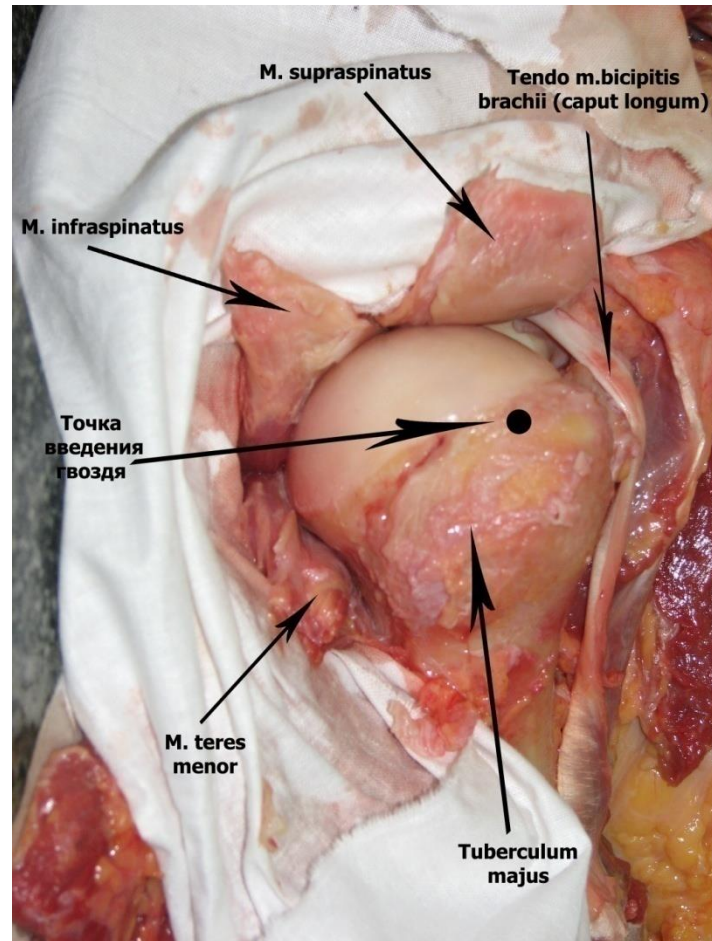


Bone quality – the choice of
the type of osteosynthesis

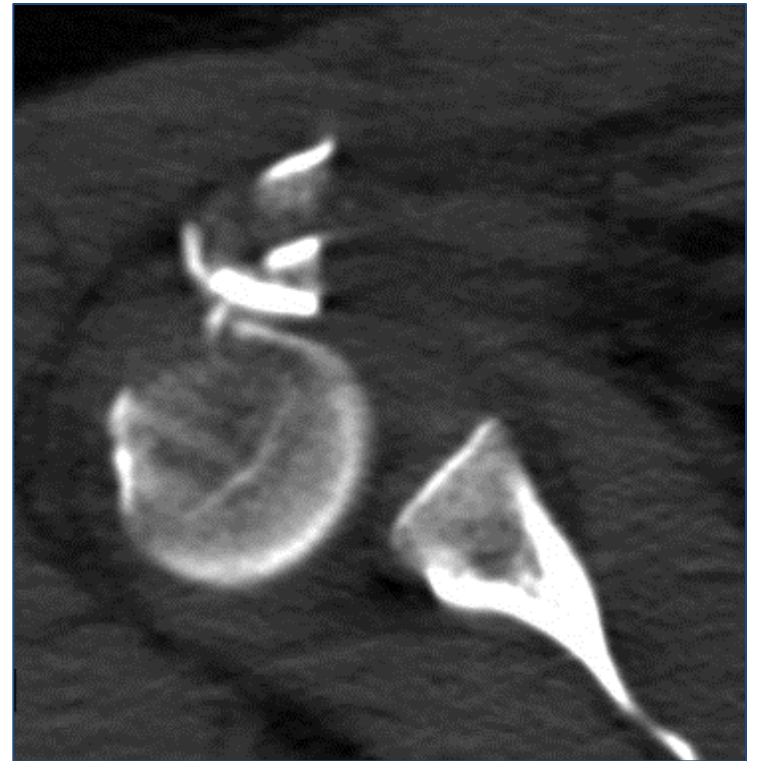
Anatomy of PH



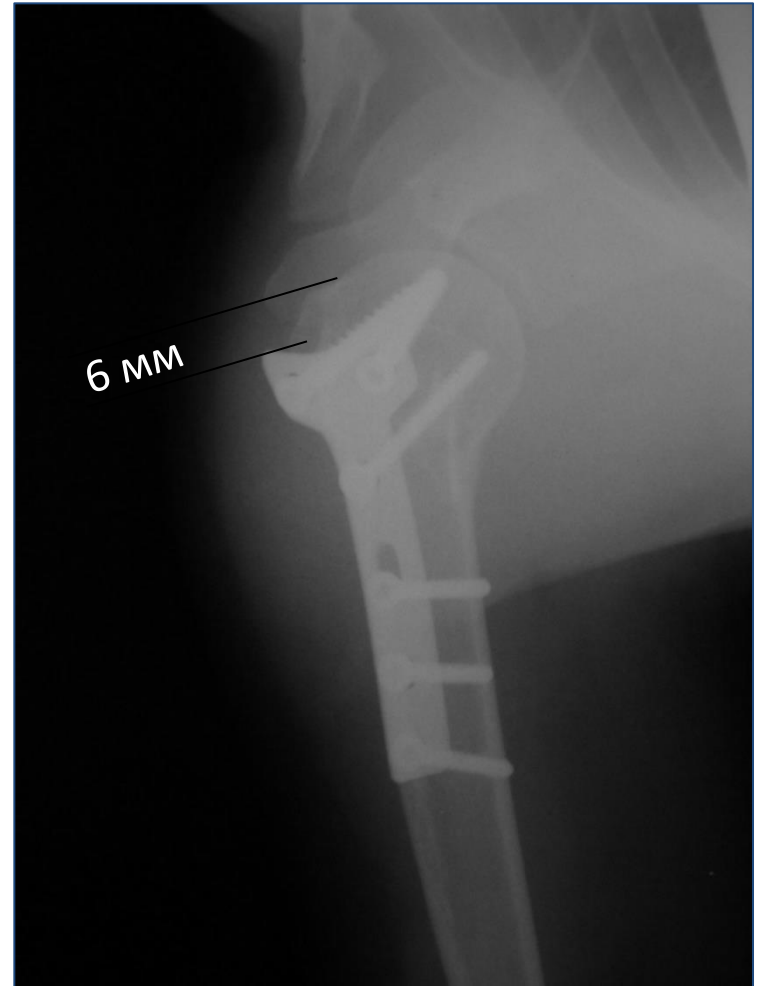
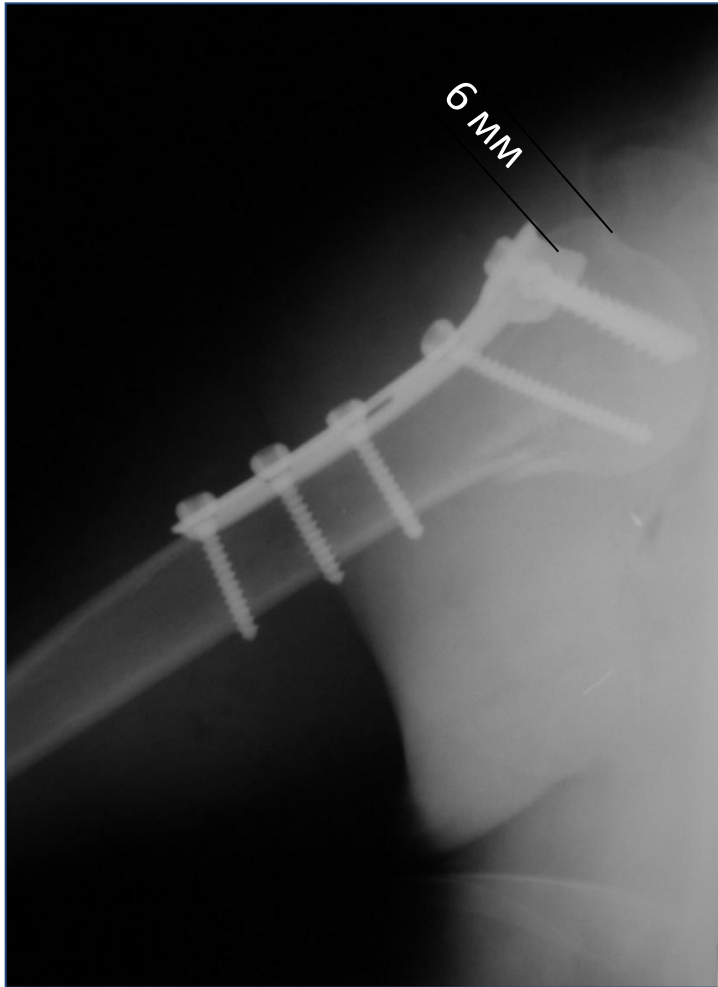




1.1 A3, CTI = 4,5 mm



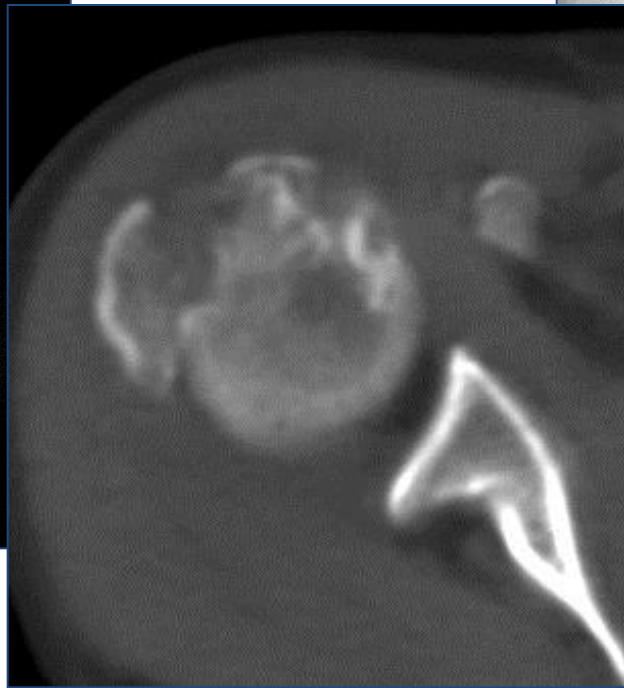
Conventional plate osteosynthesis



Function – Full range of motion



1.1B2 LCP fixation



LCP fixation

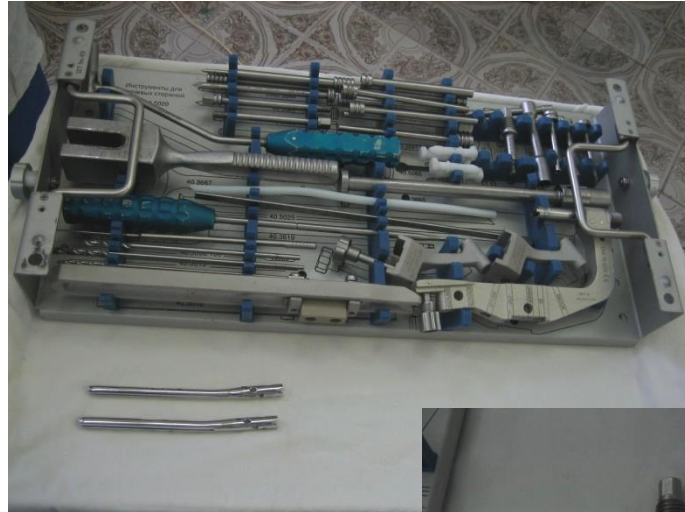


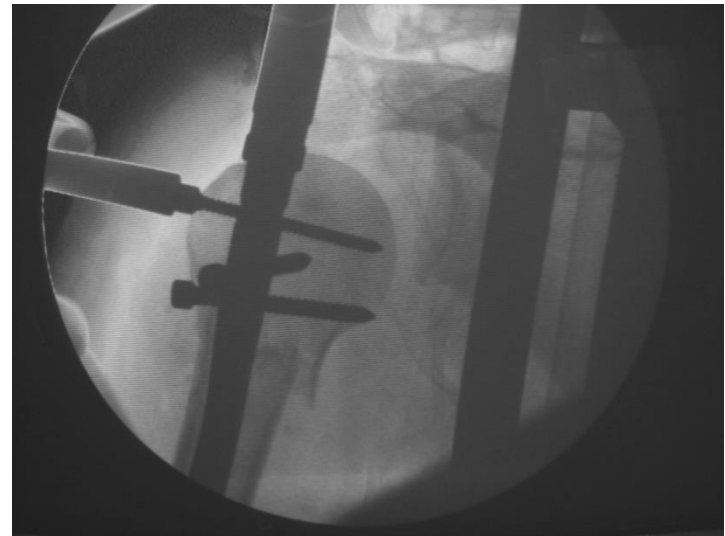
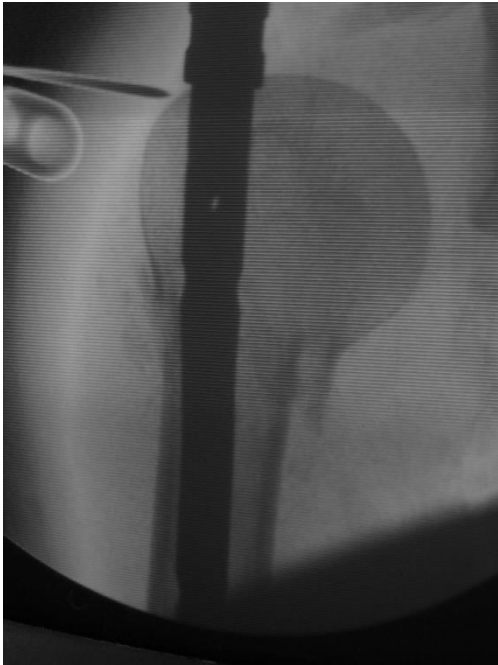
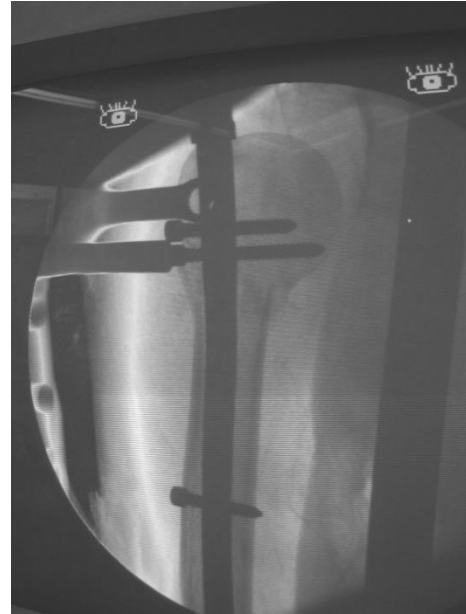
Function – Full range of motion



PHN

Surgical technique





Aquilion PRIME

FP

V-TCOT/FC08/AIDR 3D STD/C
Skifosovsky Research Institute

24167-13

LL: (196.65)
6236: 5: 7
+0.0D

FOKIN S.V.

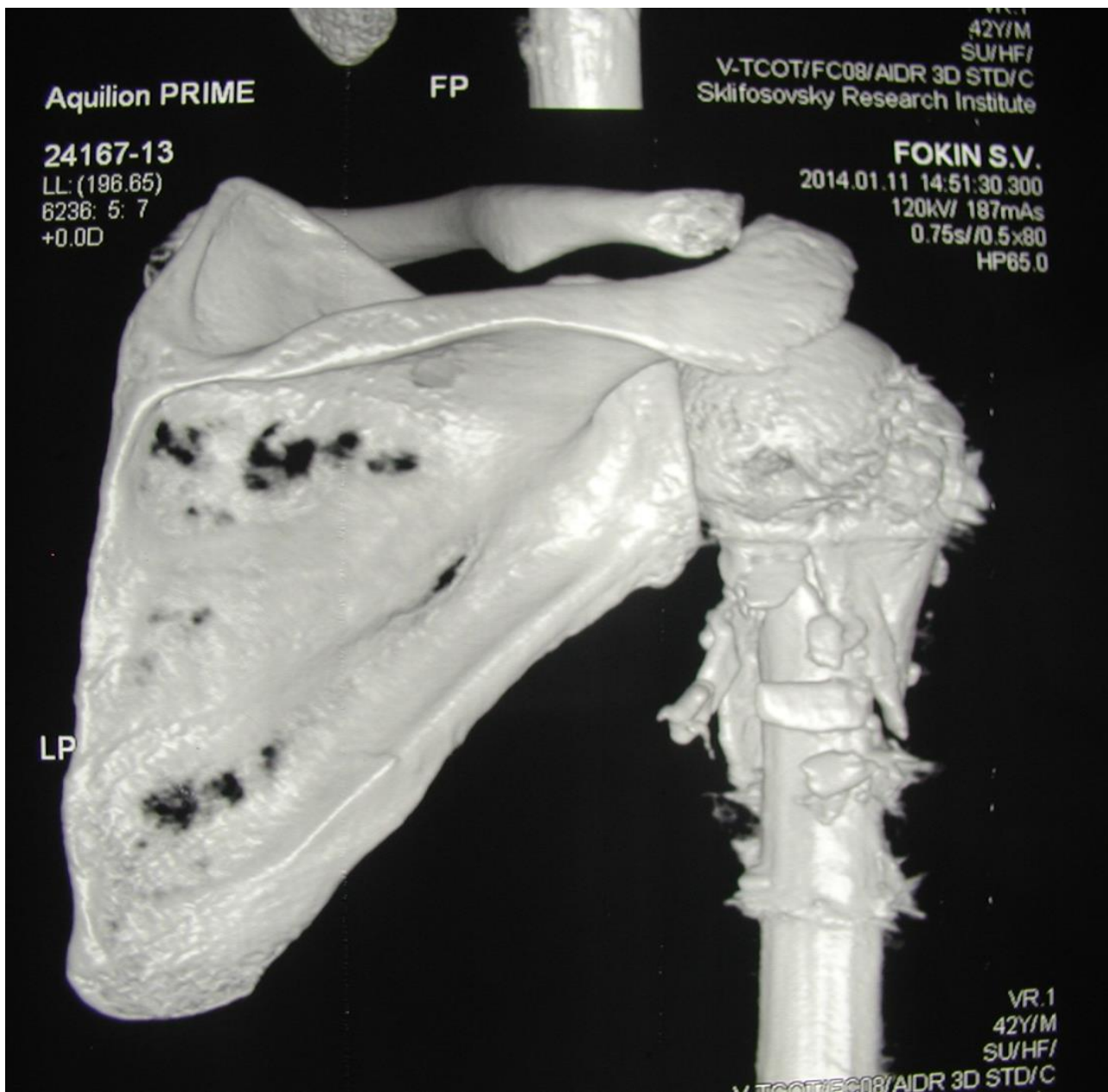
2014.01.11 14:51:30.300
120kV/ 187mAs
0.75s/0.5x80
HP65.0

LP

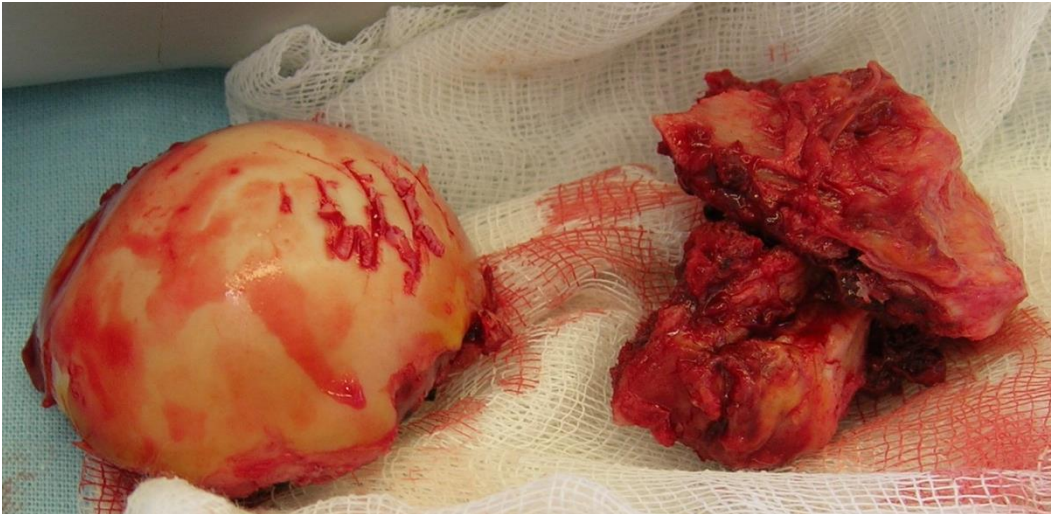
VR.1

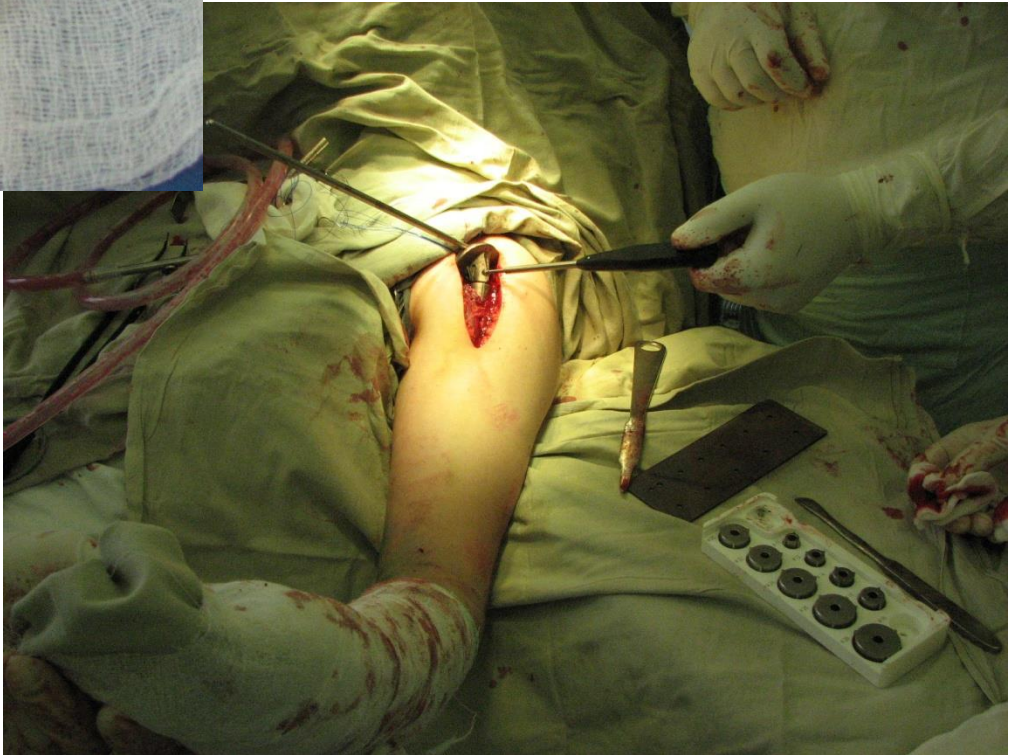
42Y/M
SU/HF/

V-TCOT/FC08/AIDR 3D STD/C

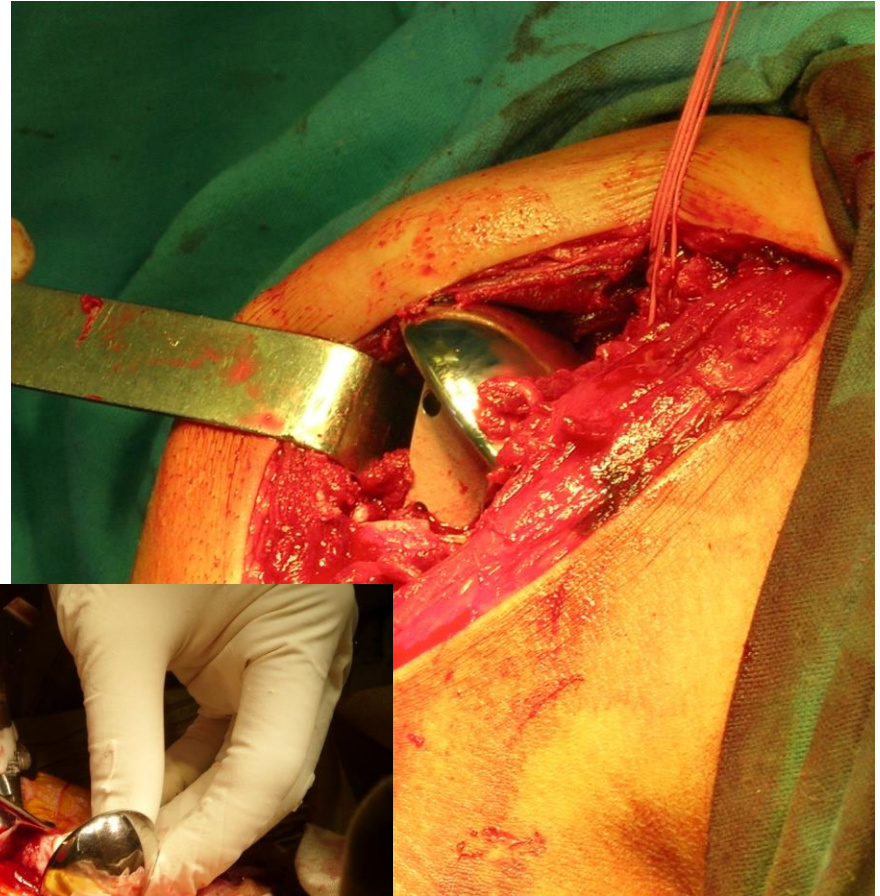
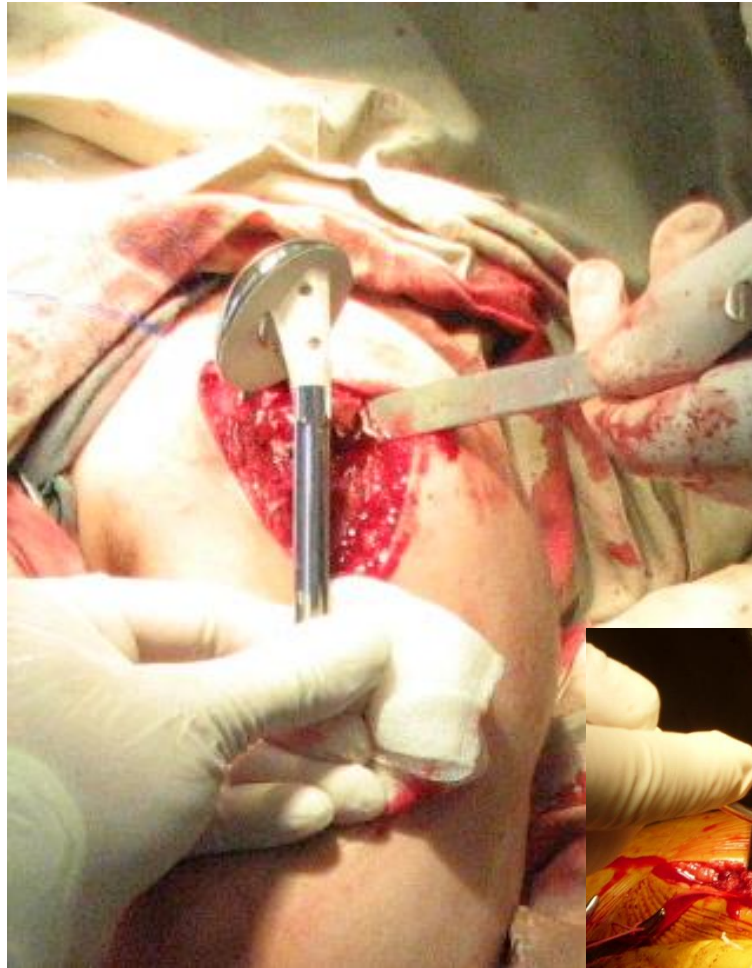


Primary endoprosthesis
Neer 3-4

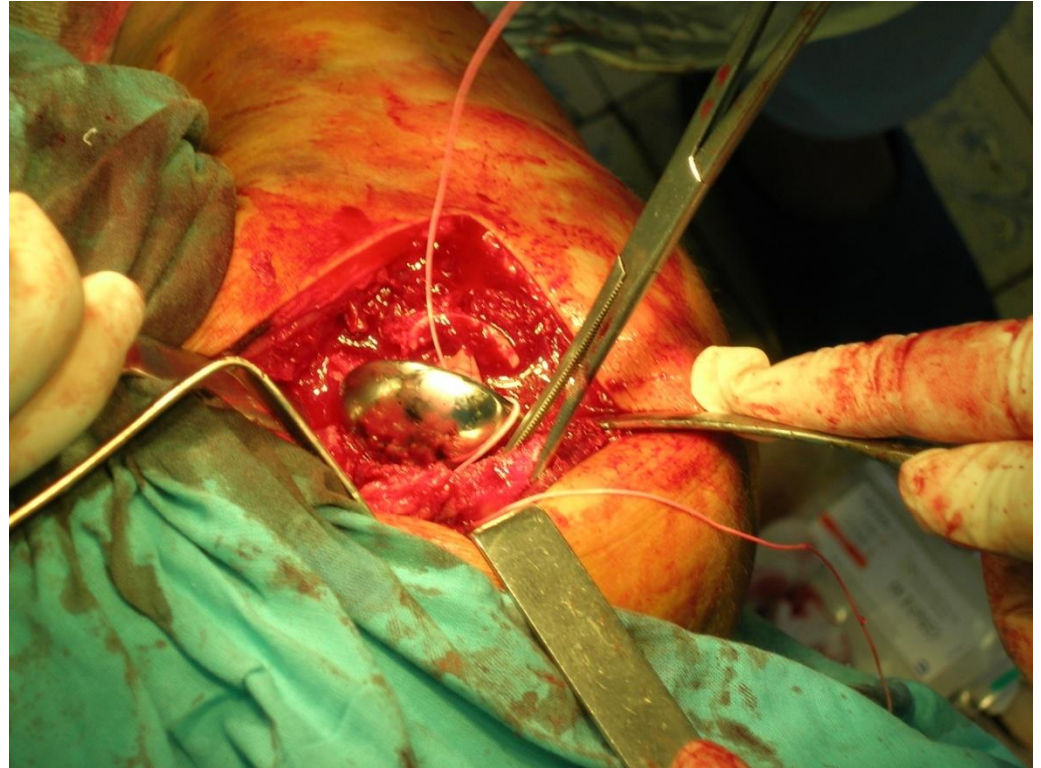
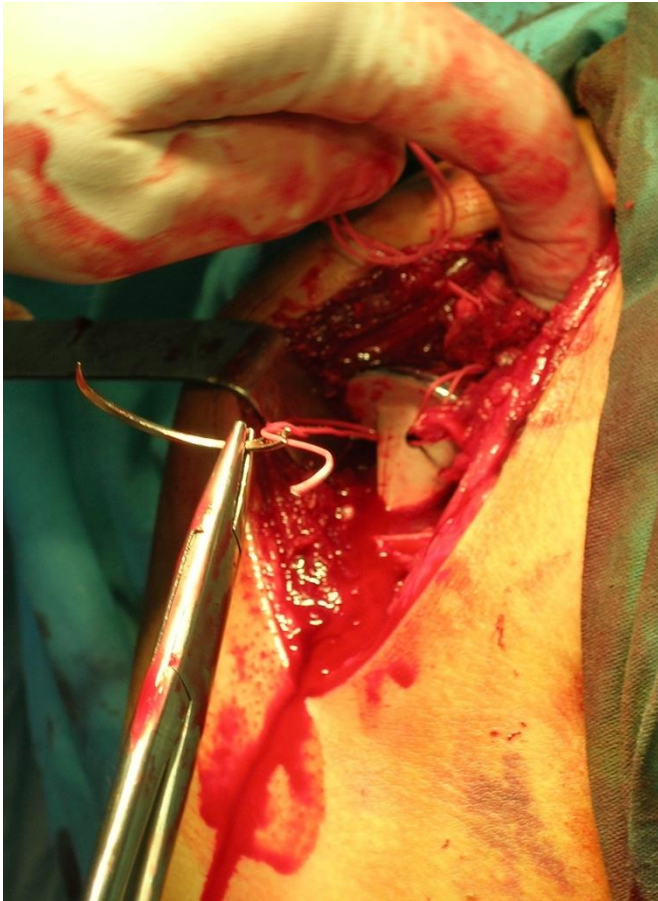


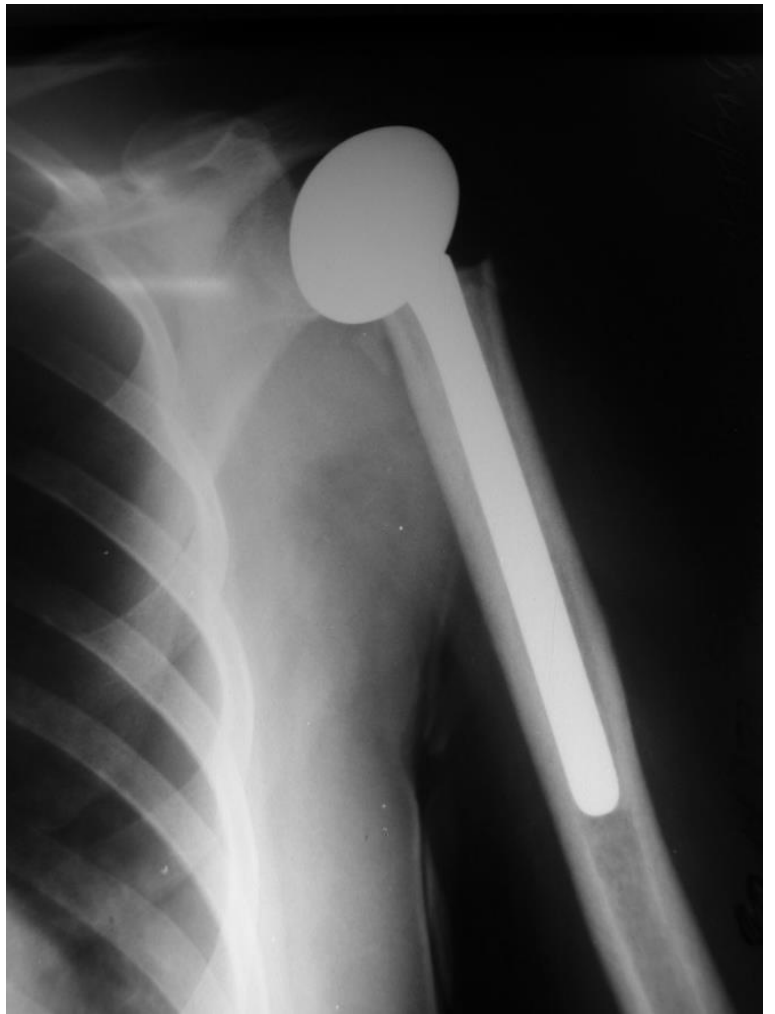


Fracture hemiendoprosthesis

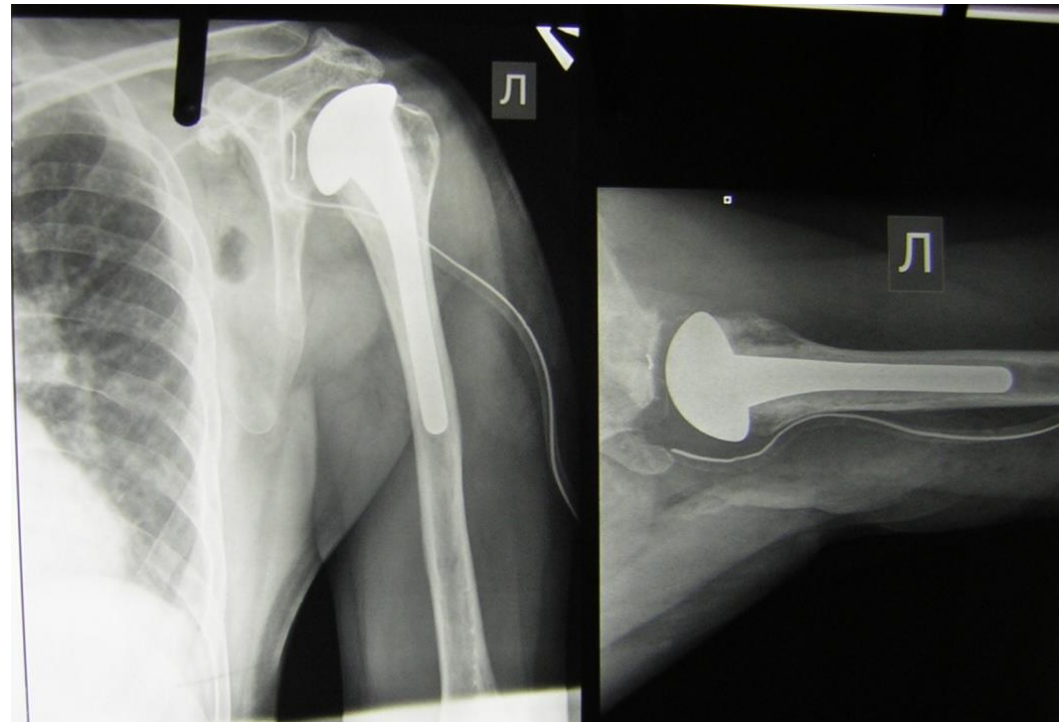
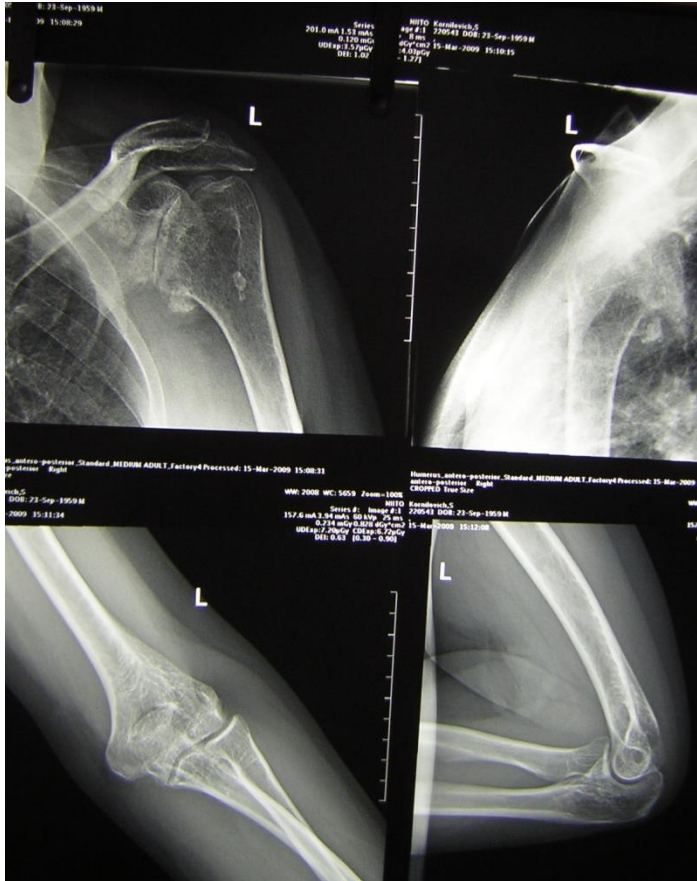


Refixation of rotator cuff





Total arthroplasty

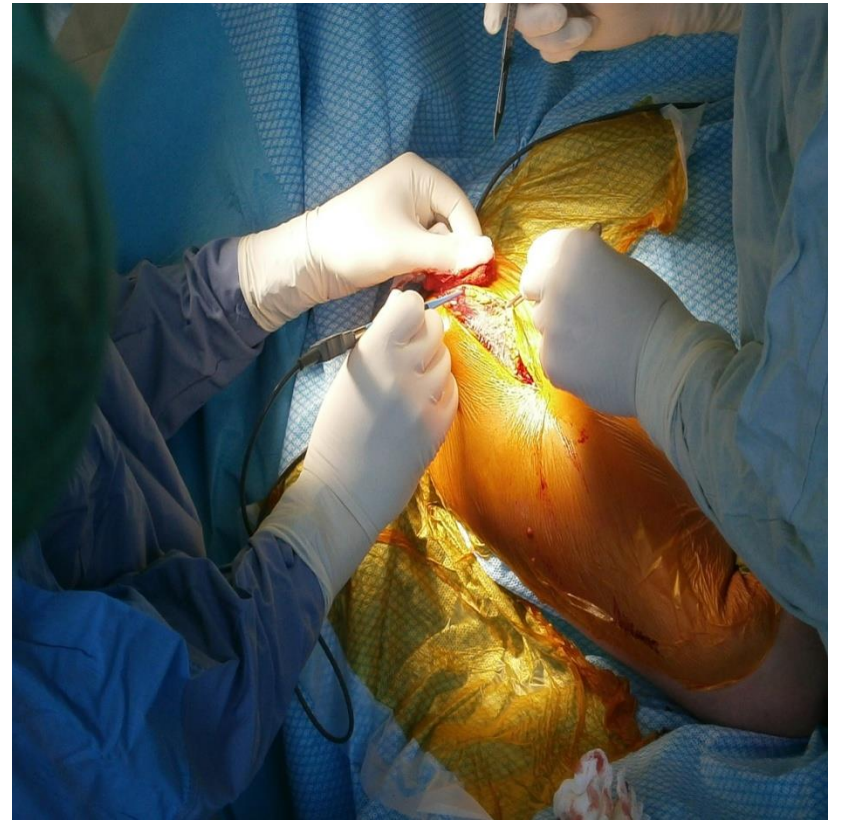


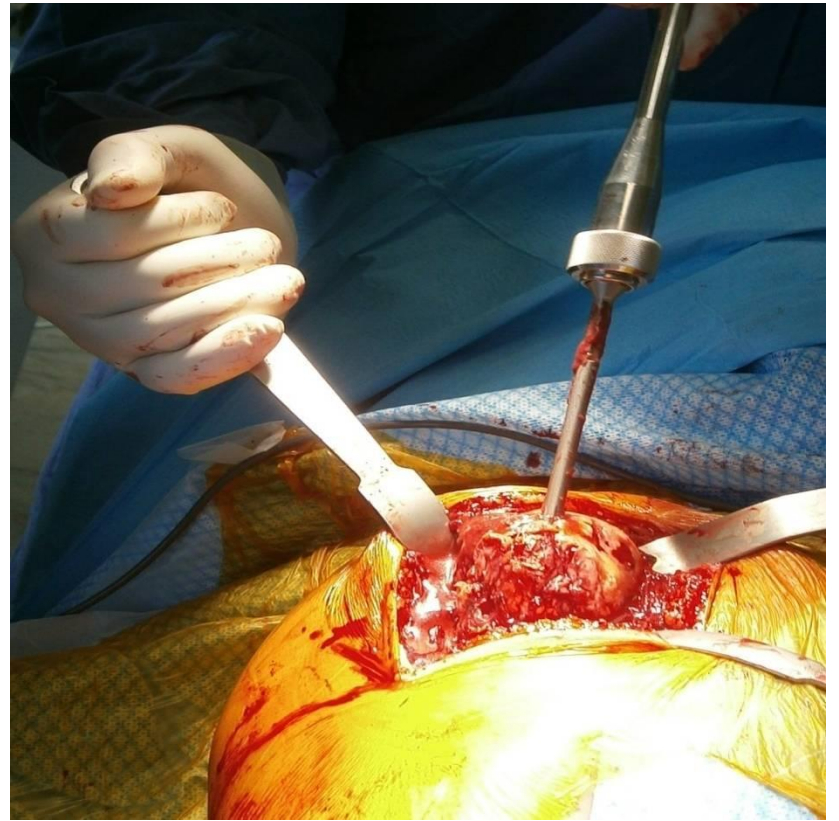
Reverse arthroplasty

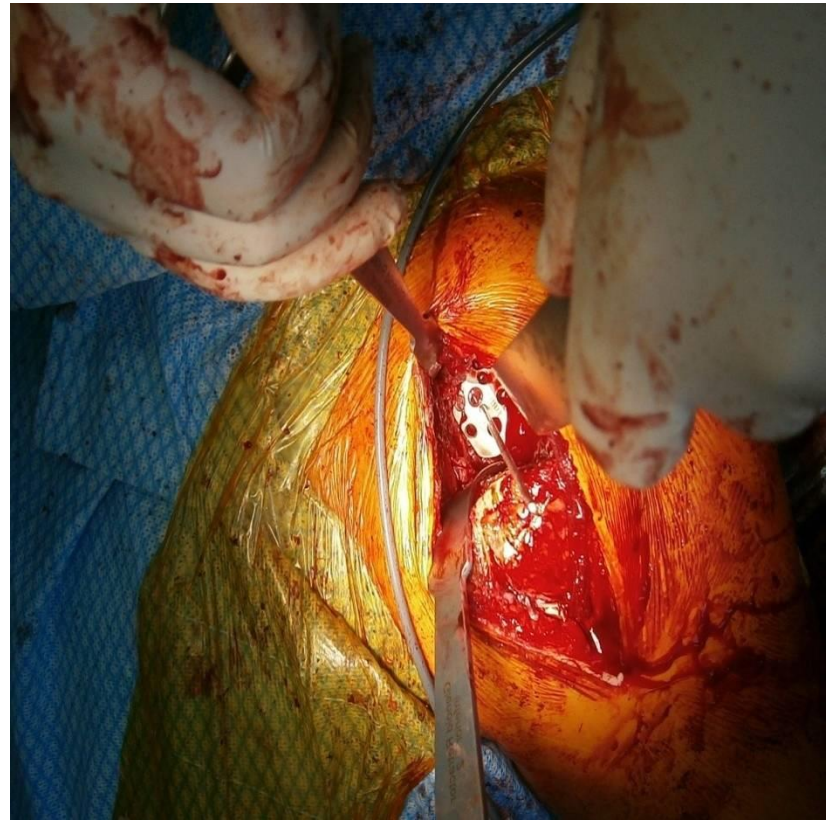
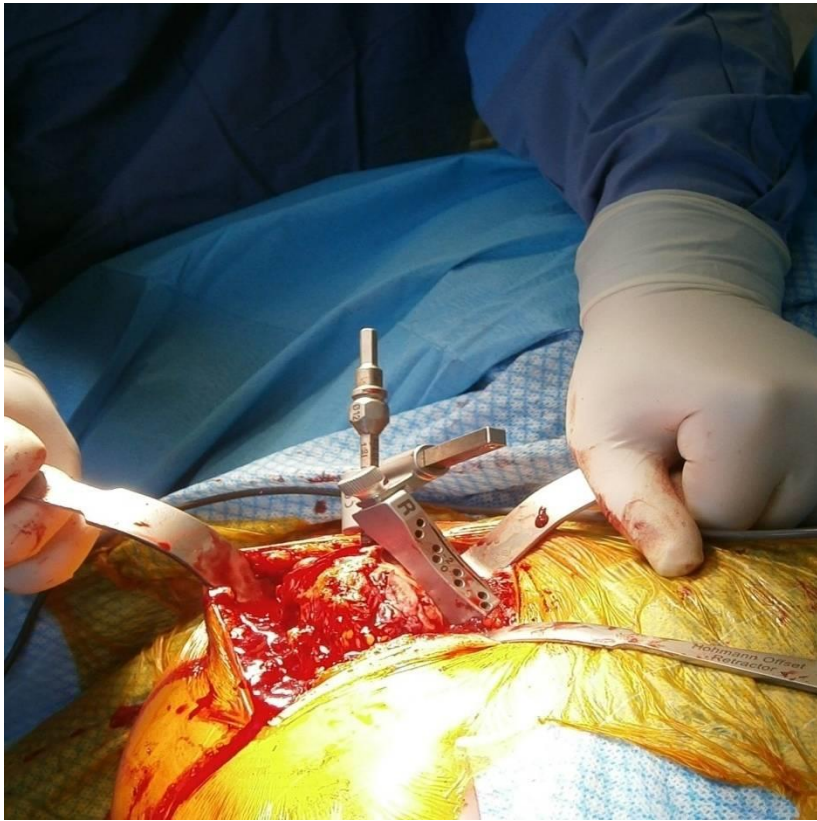




Surgical technique











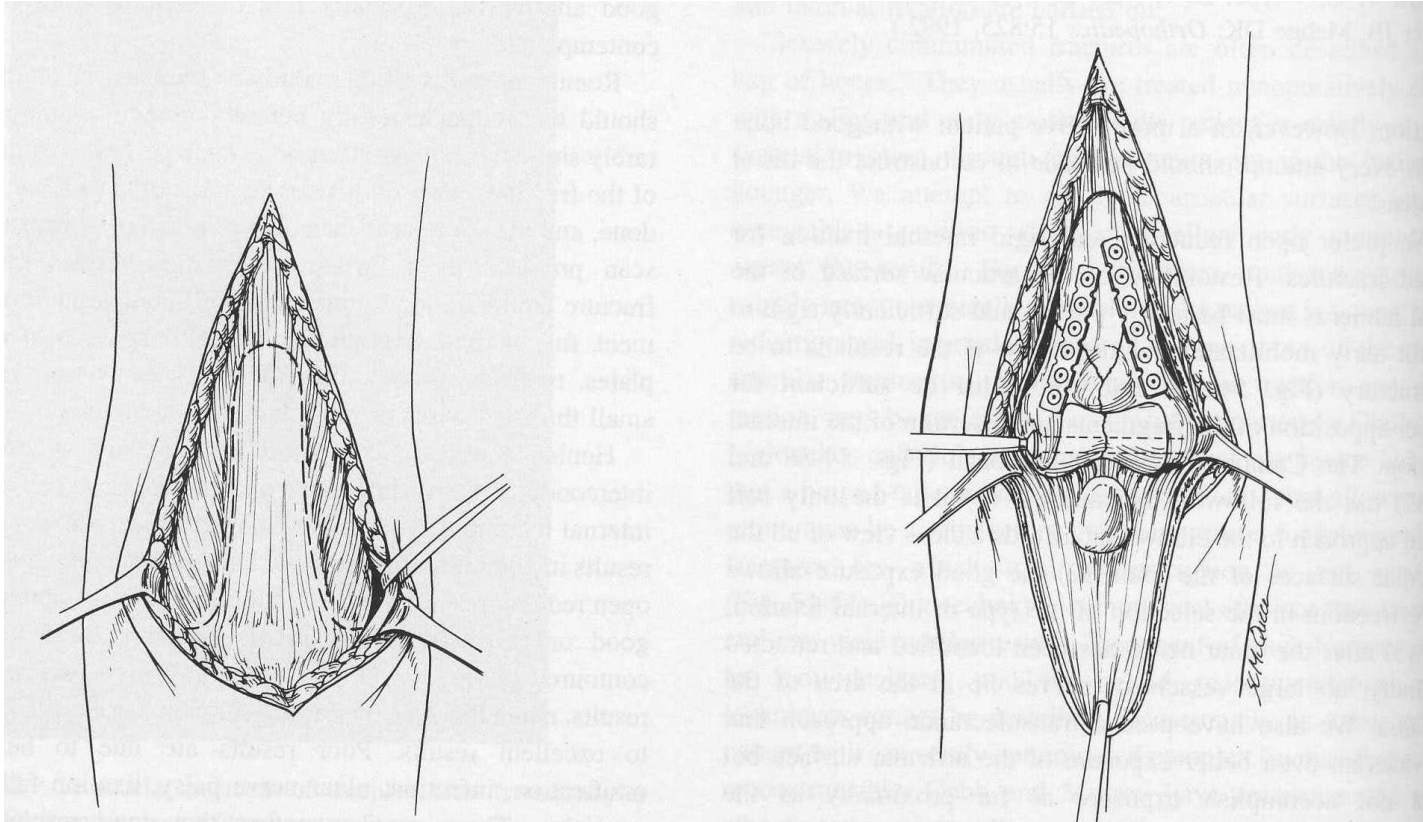
J. Sanchez-Sotelo, Mayo Clinic

- Hemiarthroplasty is good when done right
- Revision of failed reverse not easy
- Tuberosities extremely important either way

Fractures in the distal part of
the Humerus.

Surgical treatment.

Evolution of surgical approaches



Campbell's posterior approach

Transeolecranon approach



Selfmodified approach

Triceps mobile bundle





Two columns model of functional anatomy

- Architectonics as a triangular figure (most resistant structure)
- Osteosynthesis must be done in accordance to loading of these columns

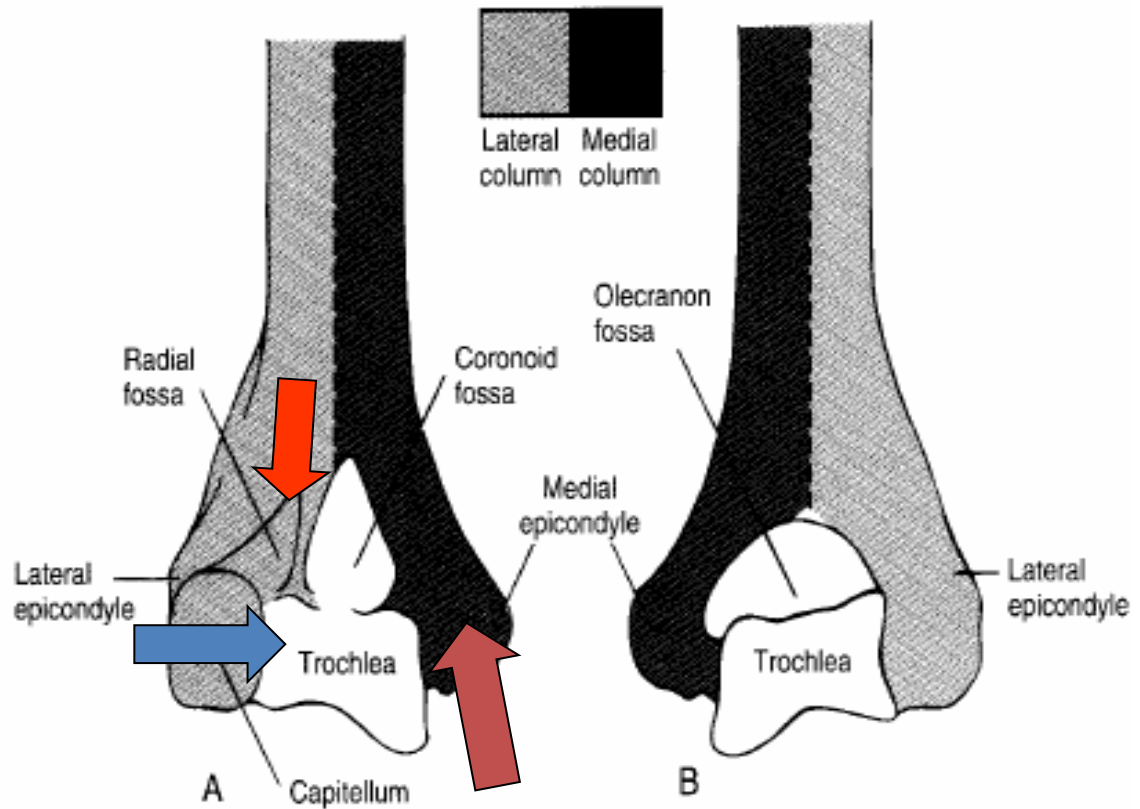
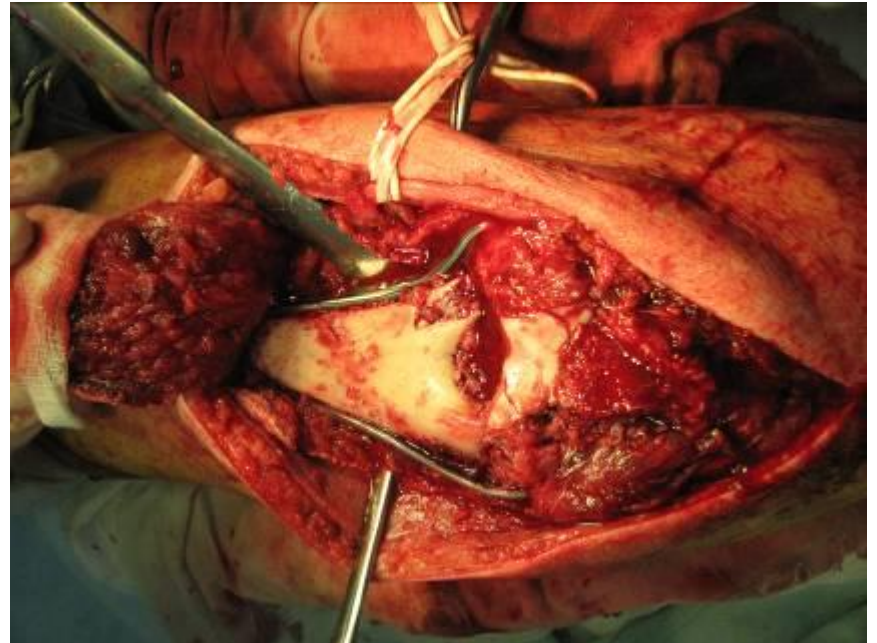


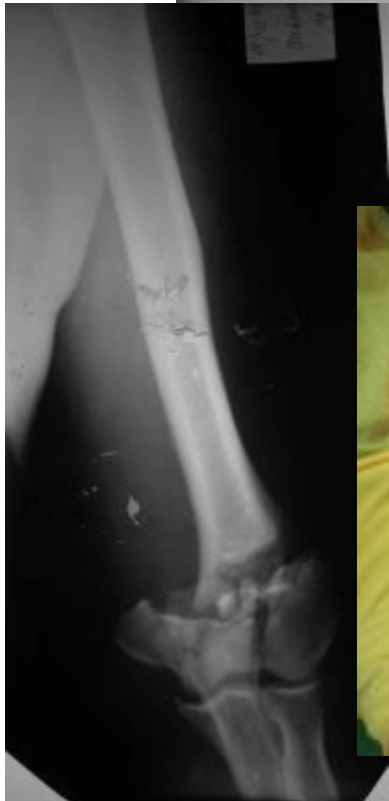
Plate osteosynthesis



1.3 C1 fracture



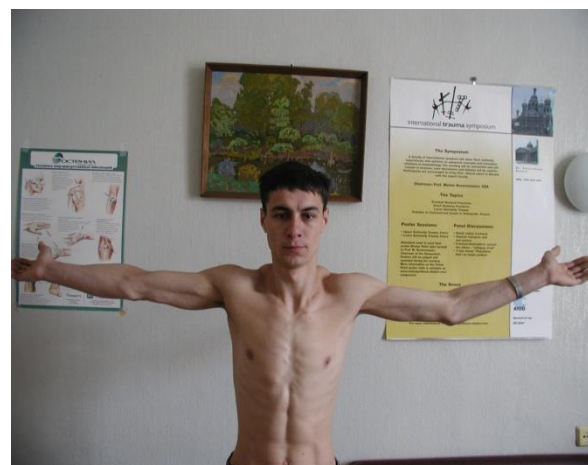
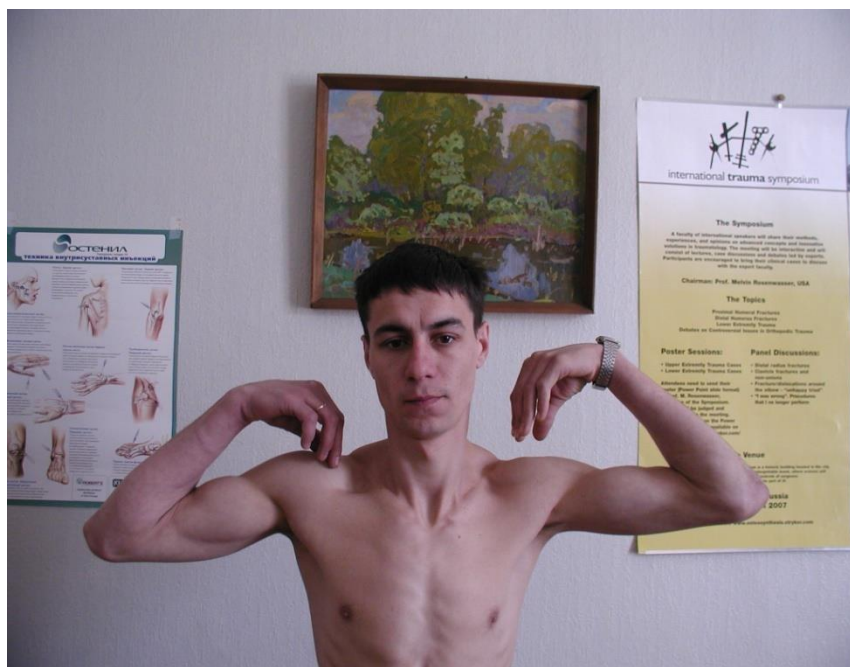
1.3 C2 fracture



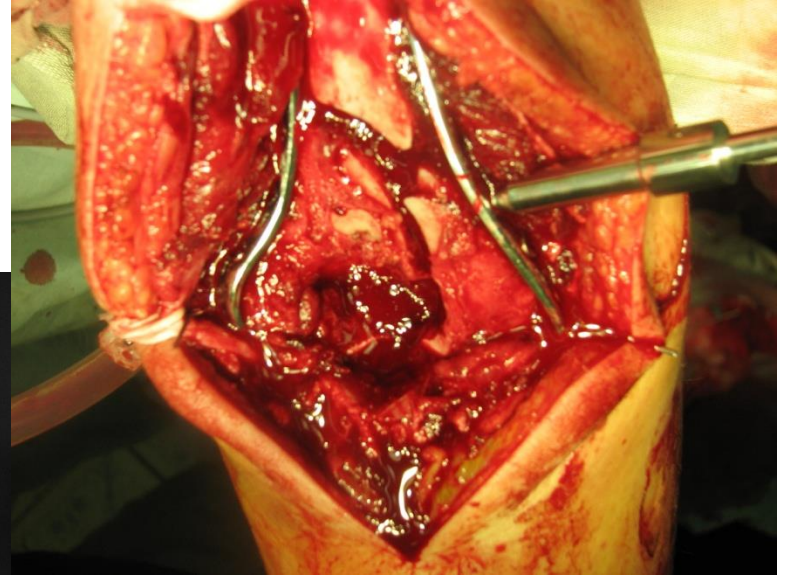
Roentgen graphical outcome



Functional result

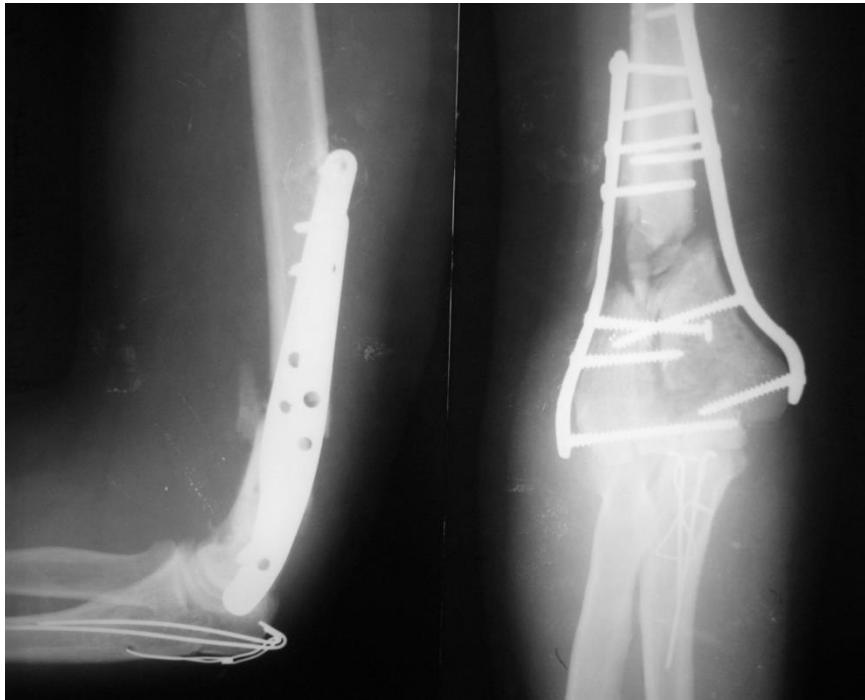


1.3 C3 fracture



3 months follow-up

For better rehabilitation the K-wires were removed



Functional result confirmed this idea

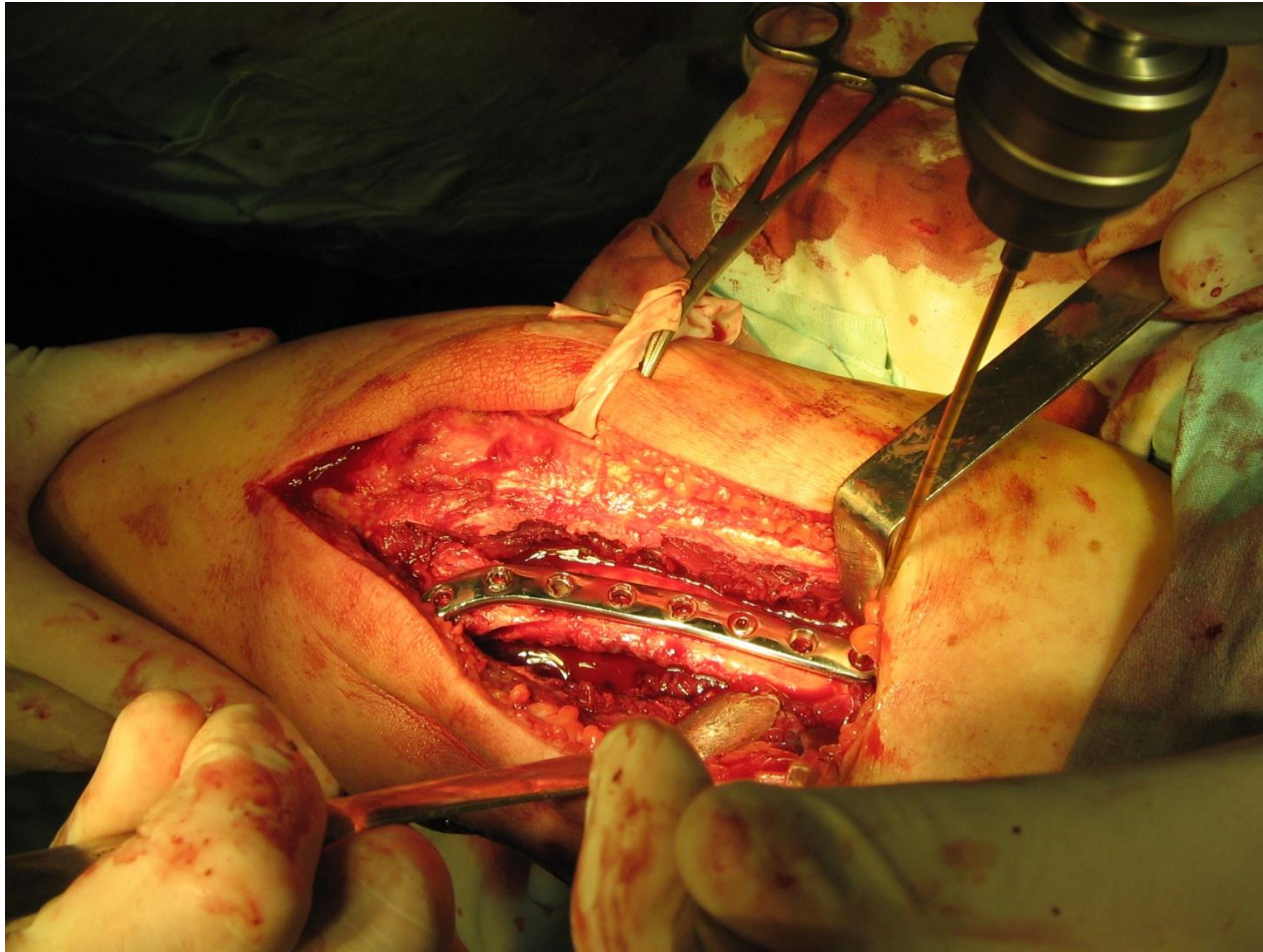


Triceps mobile bundle

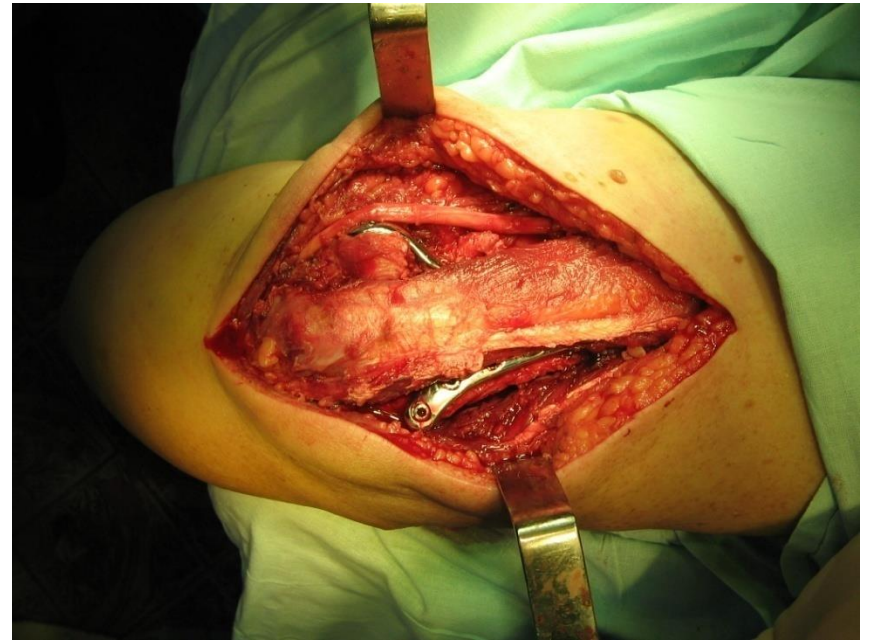
Fixation of medial column



Fixation of lateral column



Final picture

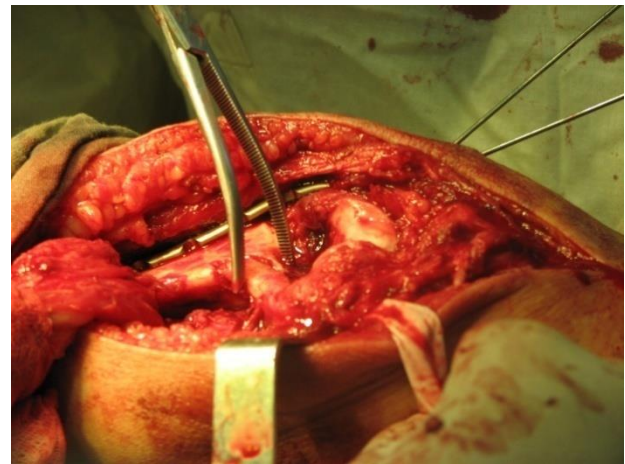
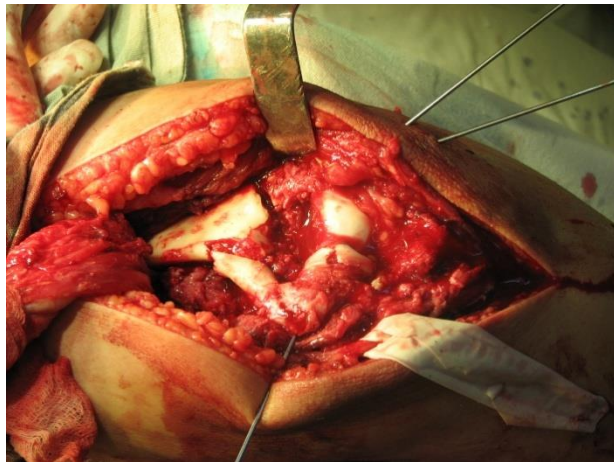
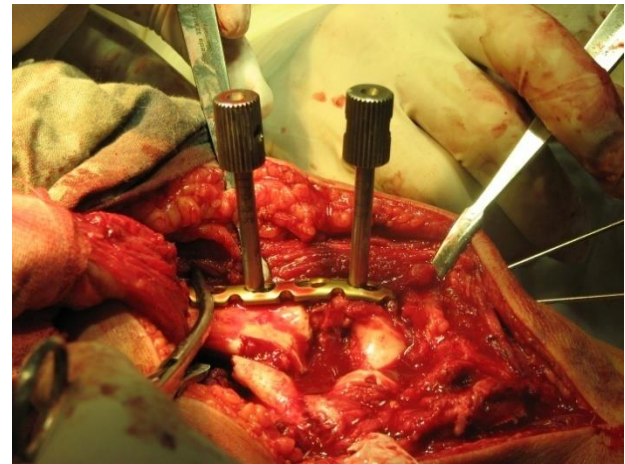


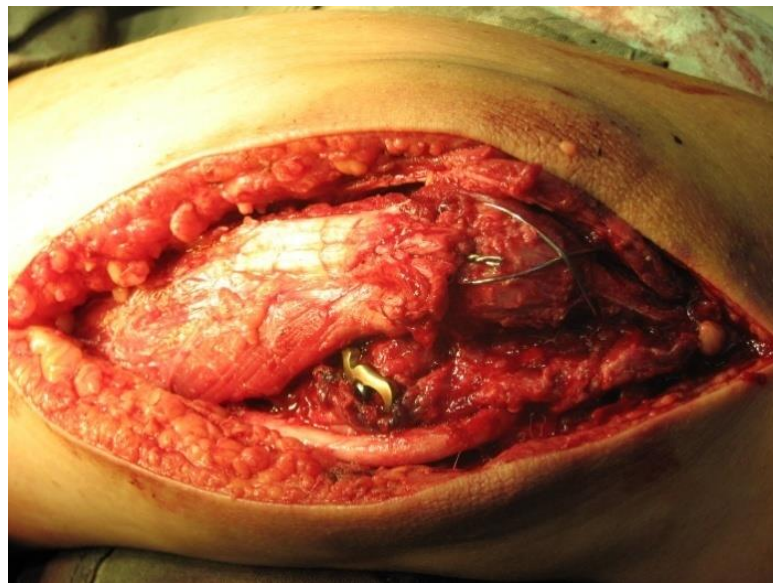
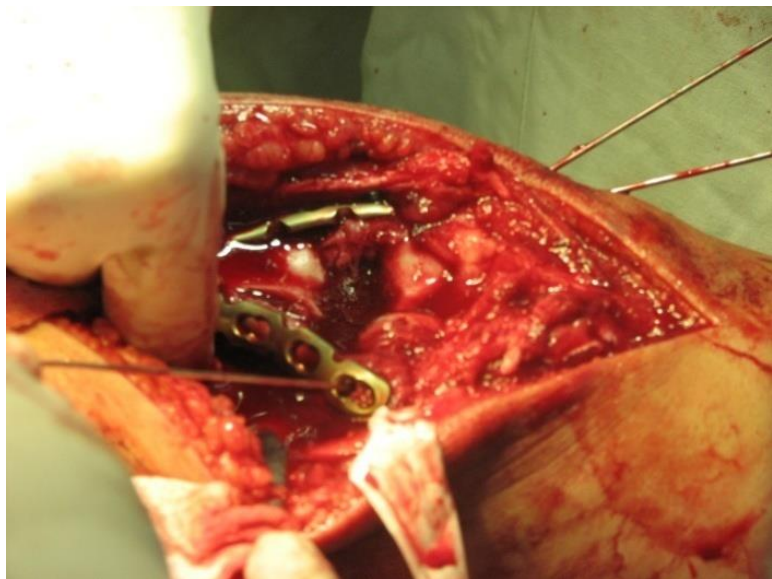
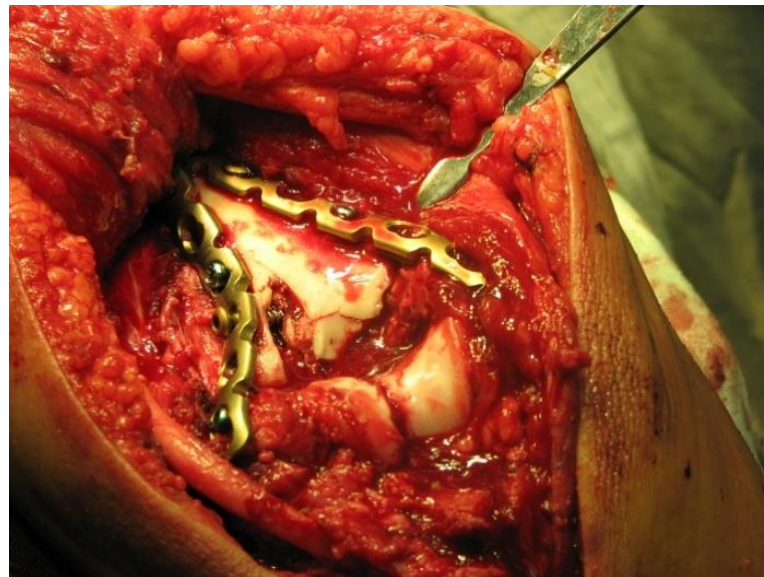
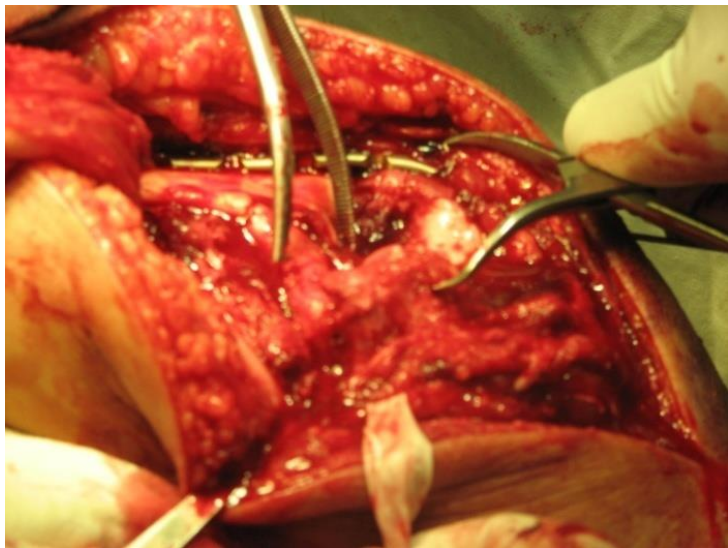
Surgical technique

LCP (Distal Humerus Plates)



Surgical technique LCP (Distal Humerus Plates)

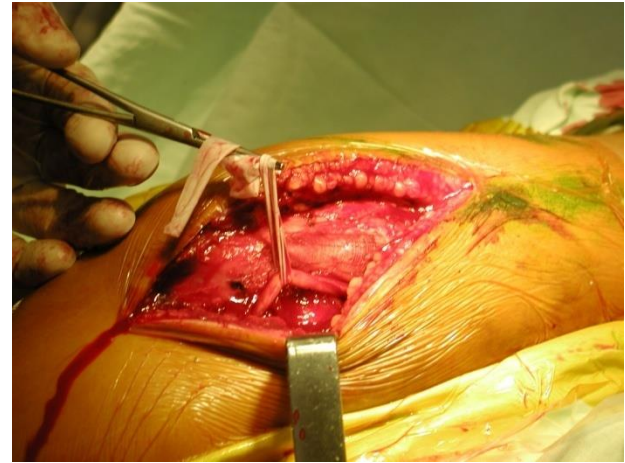


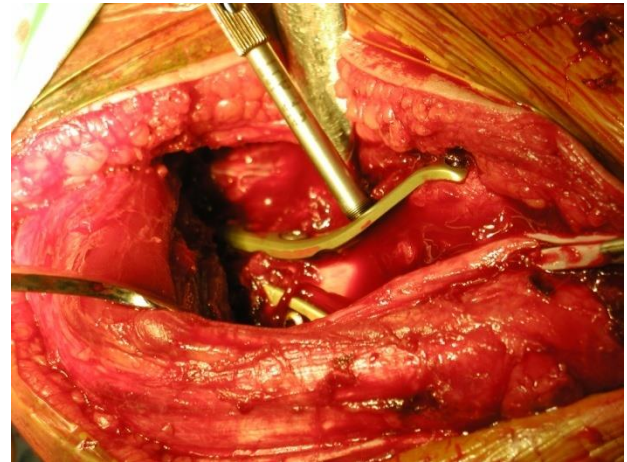
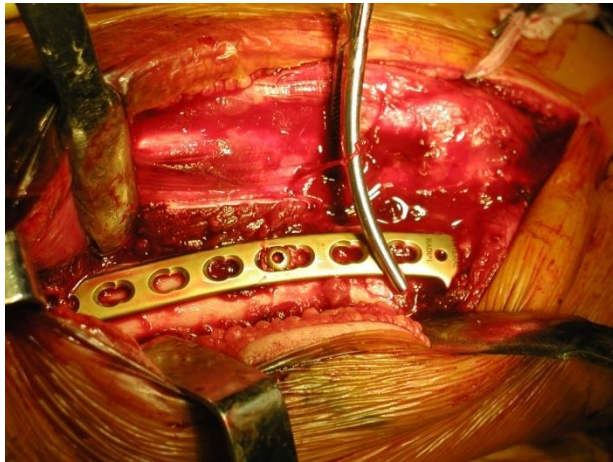
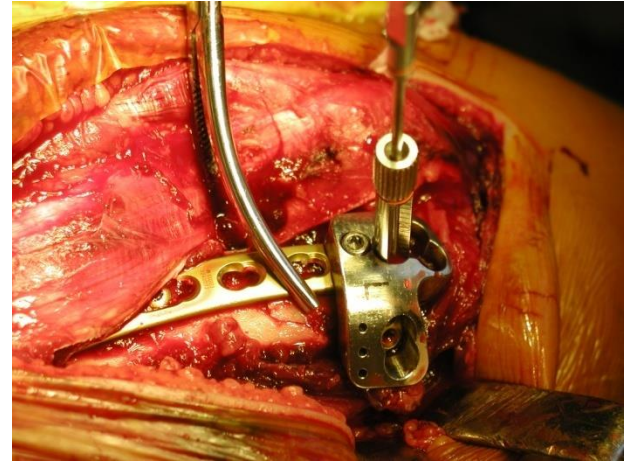


1.3 C2 fracture



Triceps mobile bundle in a case of B type fracture





1.3 B2 fracture



1.3 C3 fracture



A.H.Crenshaw

(Campbell's Operative Orthopaedics, 2003)

- To routinely perform open reduction and internal fixation of all fractures involving the condyles of the humerus is unwise as the defeatist attitude of treating them all nonsurgically with early motion and accepting the results
- If open reduction is delayed by indecision follows failure of closed methods, the best time for surgery may be lost and soft tissue contractures, myositis ossificans, and a more difficult reconstructive procedures are more likely

Endoprosthesis replacement of the elbow

