

ORTHOPAEDICA BELGICA 27-28 April 2023

# Case report : **Anterior fracture- dislocation of the glenoid**

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# Main information

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Age: 24 years old

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Gender: male

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High energy trauma : motorcycle accident

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Fracture: glenoid neck fracture of right scapula

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Associated injuries: No

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Dominant side: Right

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# Radiography



# Computed tomography

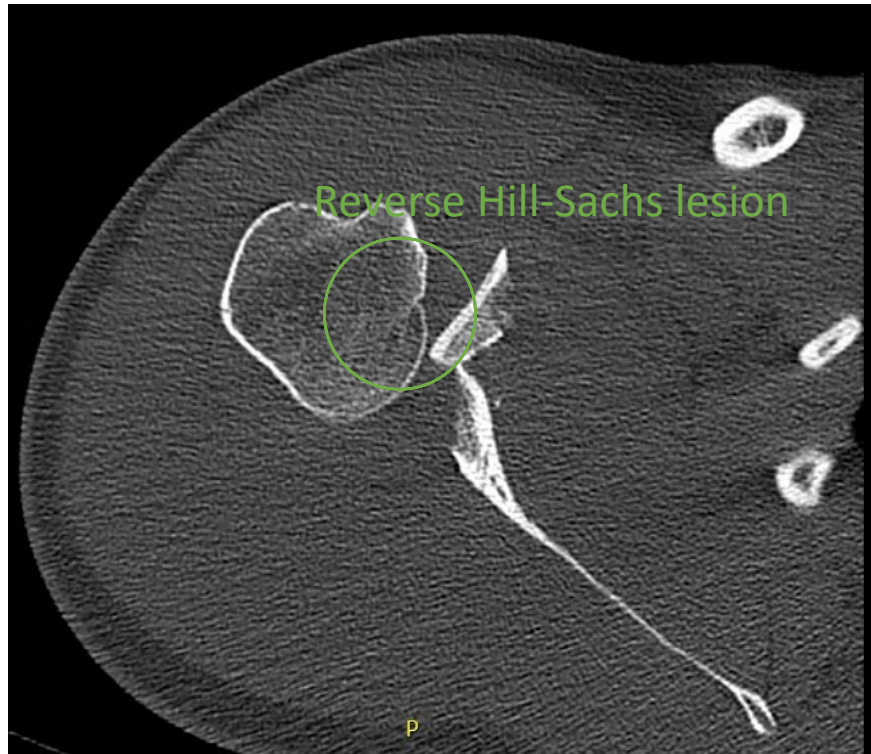


# Computed tomography



# Pathoanatomy

- The anterior fracture impaction of the humeral head (reverse Hill-Sachs fracture) suggests that a posterior dislocation of the shoulder occurred.





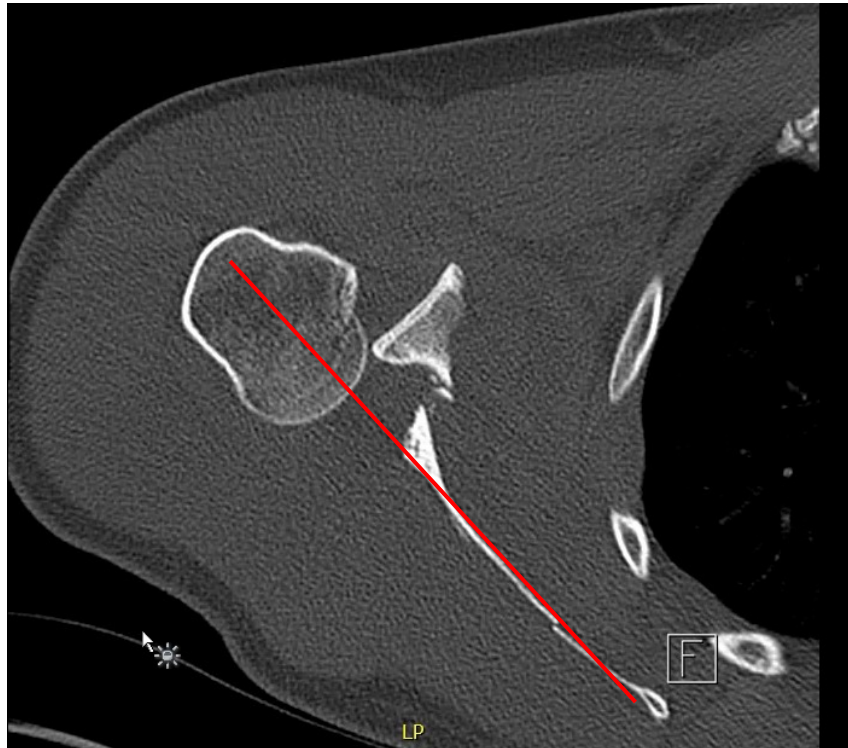
# Pathoanatomy

- We suggested that this dislocation leads to anterior fracture and displacement of the glenoid vault with the pillar of the scapula.



# Pathoanatomy

- The humeral head has pushed the glenoid anteriorly.
- The humeral head is perfectly aligned with the body of scapula.





# Classification

What kind of fracture ?

The glenoid rim is intact

Maybe an infrequent type of fracture

# Classification

It's not a F0, F1, F2 fracture..  
Not classifiable

# Management

- Which surgical approach ?

Anterior and/or posterior and/or superior

# Management

- WHAT WE SUGGEST

- ORIF with anterior and superior approaches

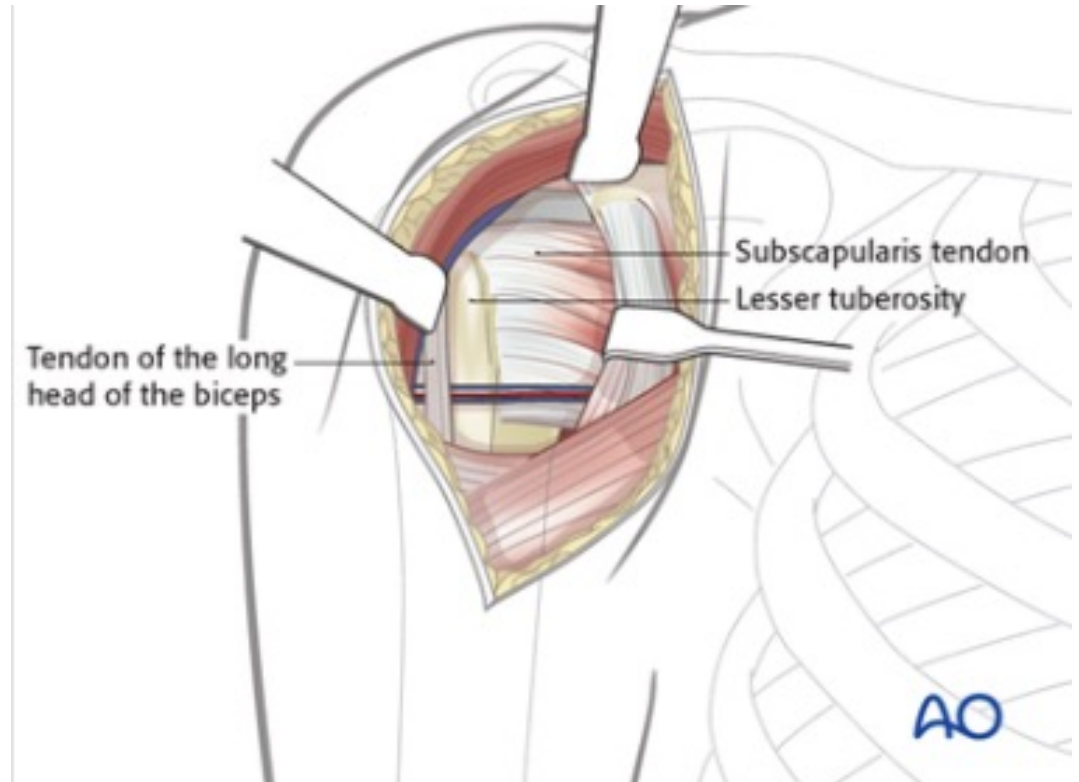
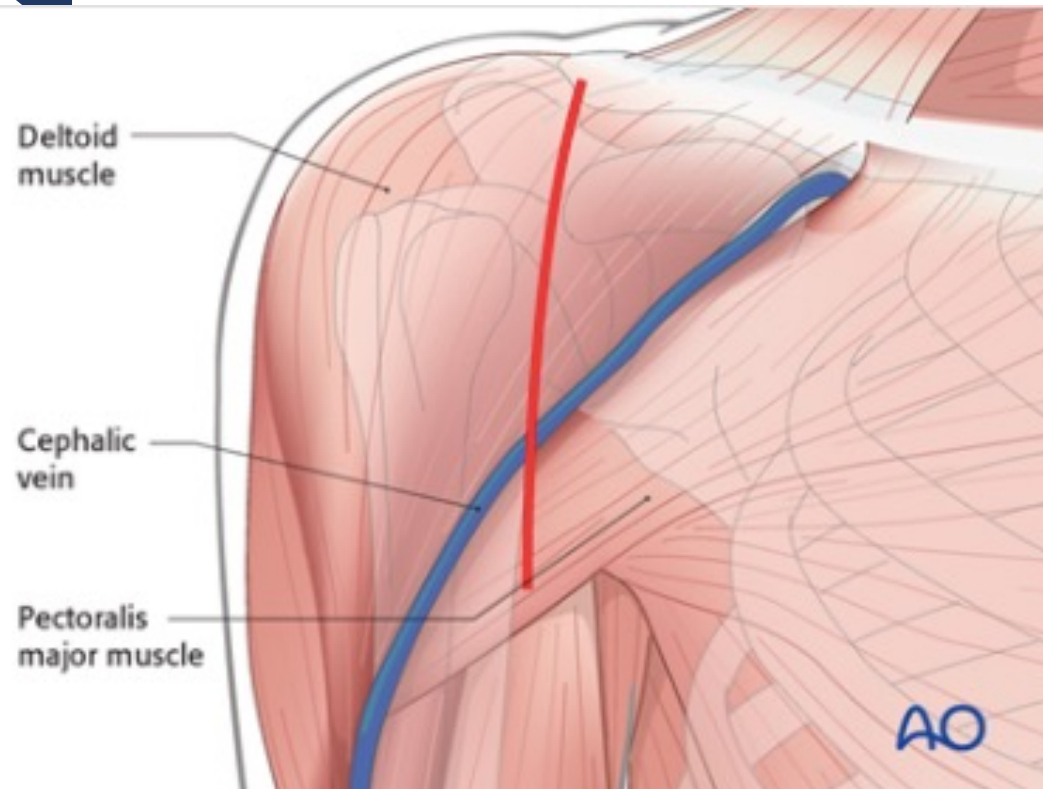
# Management

- Delay before surgery : 11 Days
- Beach chair position
- 2 approaches
- First, anterior approach (deltopectoral approach) :
  - Osteotomy of lesser tubercle
  - Reduction of the glenoid fracture
  - Tenodesis of the biceps (long head)
  - Fixation of the subscapularis muscle with anchors



# Management

- First, anterior approach (deltopectoral approach) :

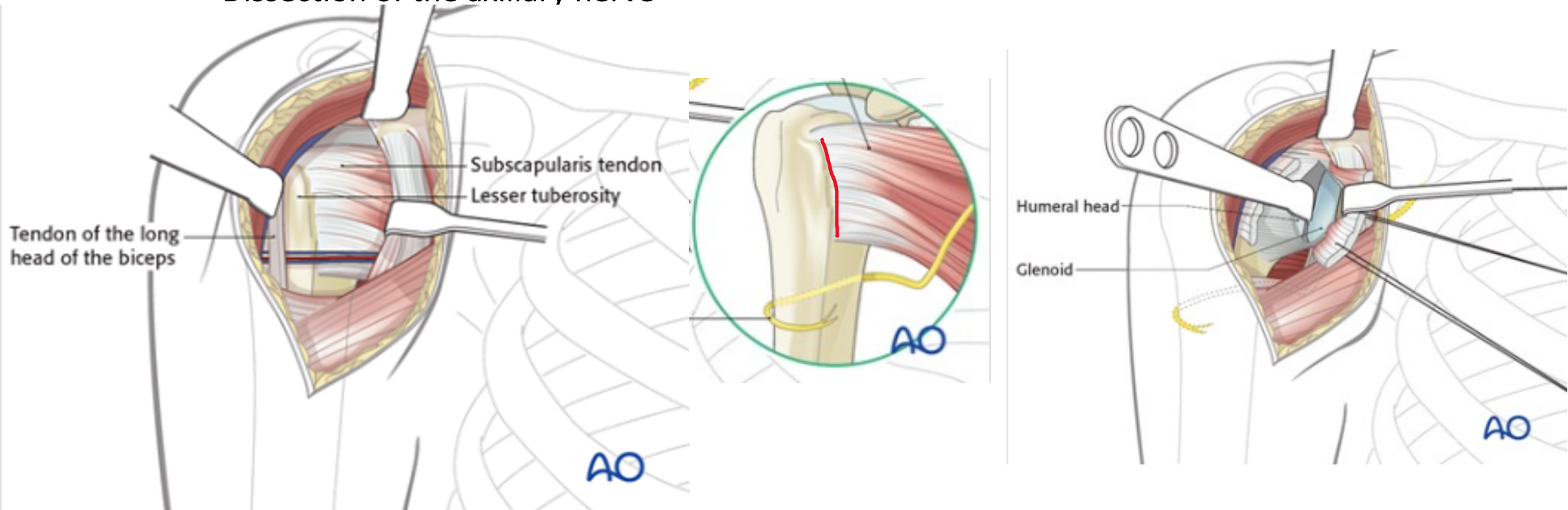


# Management

- Anatomy:
  - Cephalic vein
  - Musculocutaneous nerve
  - Axillary nerve
  - Anterior and posterior circumflex humeral artery
  - Ascending arcuate branch of the anterior circumflex humeral artery

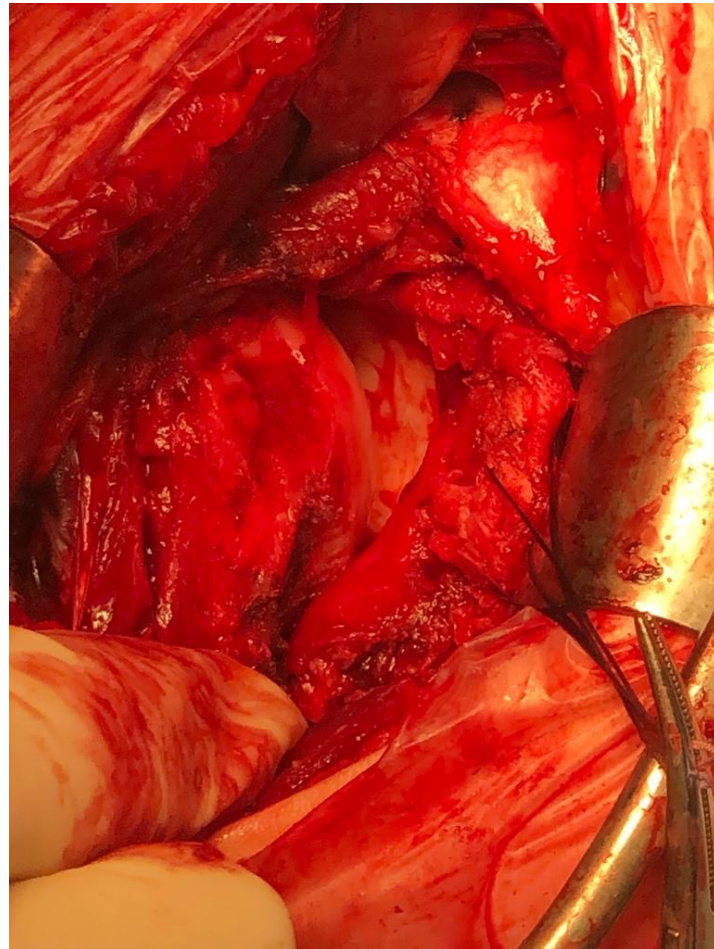
# Management

- Osteotomy of lesser tubercle
  - Dissection of the axillary nerve



# Management

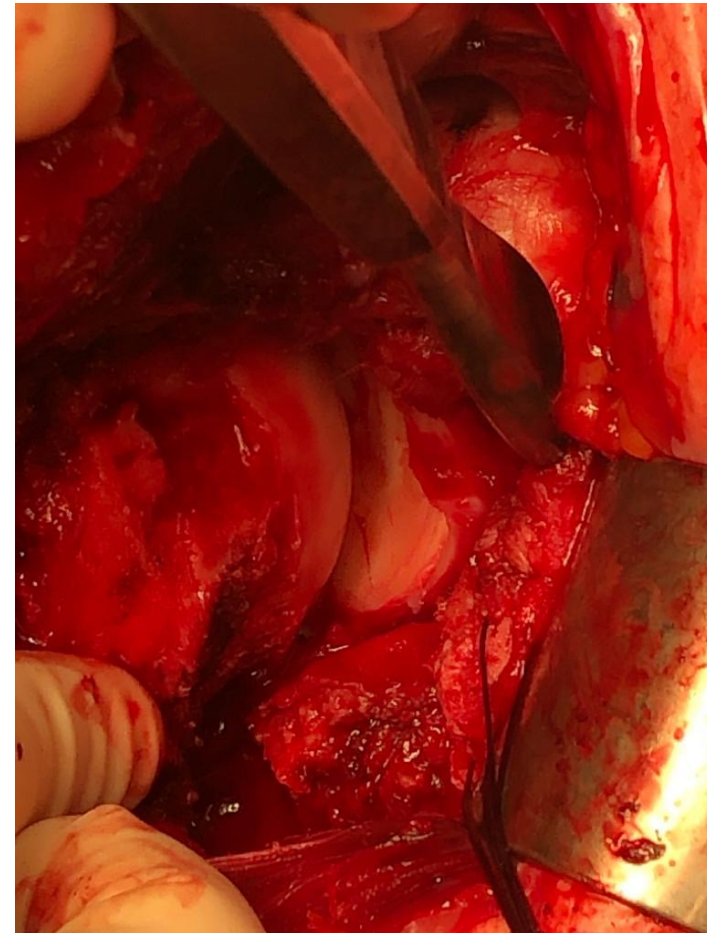
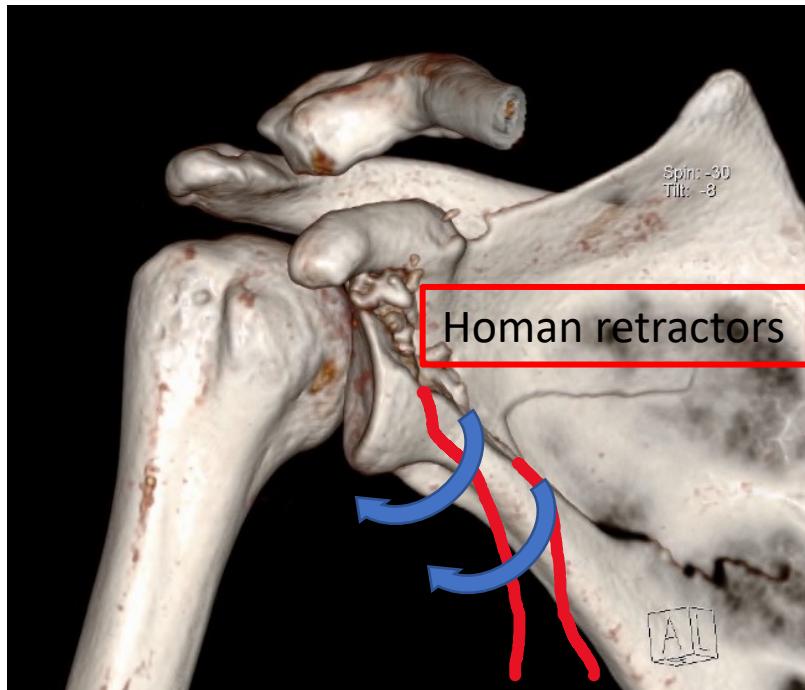
- Osteotomy of lesser tubercle
  - Dissection of the axillary nerve





# Management

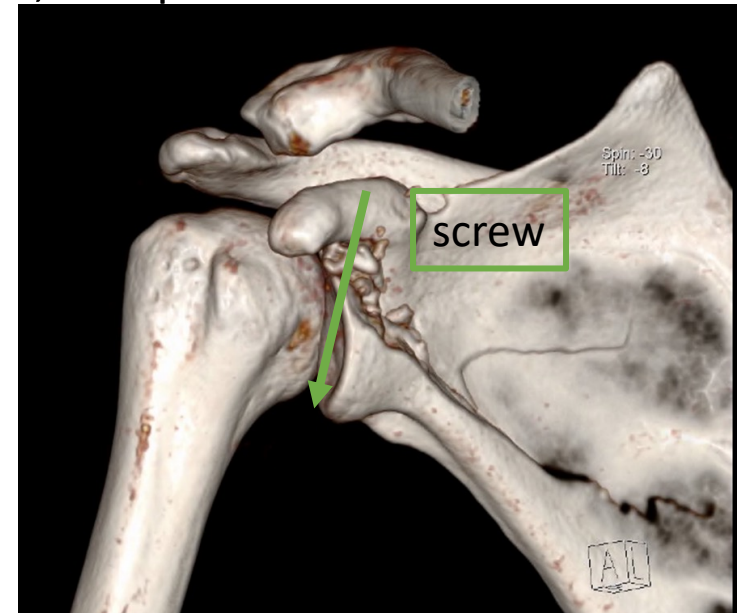
- Reduction of the fracture with Homan retractors.





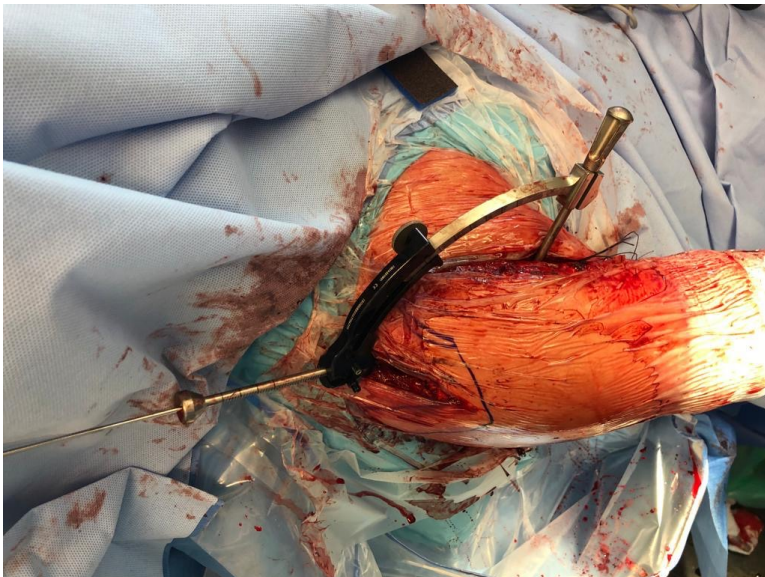
# Management

- Second, superior approach:
  - Superior approach was performed through the trapezius muscle behind the supraspinatus muscle
  - **Dissection of the suprascapular nerve**
  - A PCL guide, introduced through the superior approach, was placed between the superior and inferior tubercles of the glenoid
  - One 4.5 cannulated screw



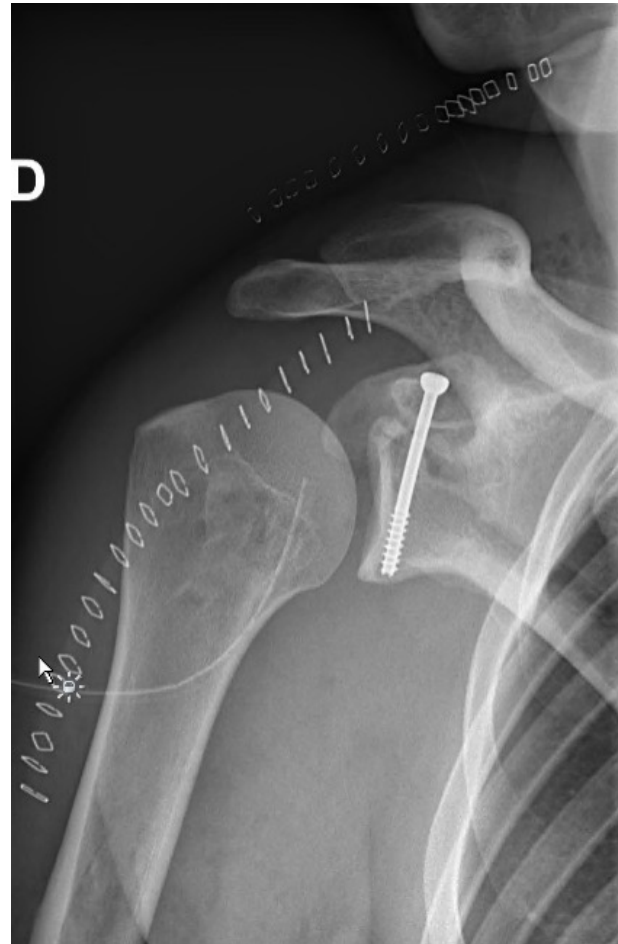
# Management

- Second, superior approach:
- With the guide in place, the reduction was maintained, and a K-wire was drilled from proximal to distal under fluoroscopic control. The reduced glenoid fracture was fixed with a 4.5 mm diameter cannulated screw.



# Management

- Postoperative X-Rays



# Postoperative treatment

- Immobilization : neutral rotation Brace for 4 weeks
- Avoid external rotation for first 6 weeks
- As soon as possible : pendulum exercises
- 3-6 weeks postoperative : Passive range of motion (forward flexion), active hand and forearm use
- From 6 weeks : stop immobilization, active assisted range of motion, progressive resistance exercises, scapular stabilizers with elastic devices

# Follow-up

- Postoperative X-rays and computed tomography
- 2 weeks : X-rays
- 8 weeks : X-rays and computed tomography
- 16 weeks : X-rays
- 5 months: computed tomography



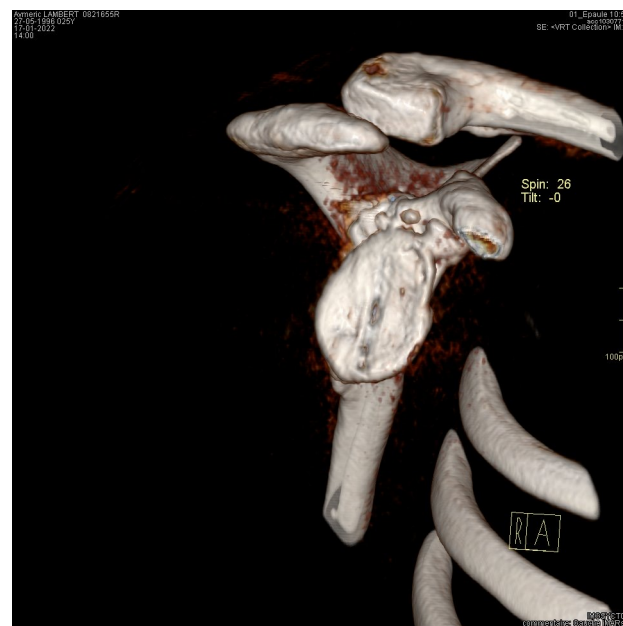
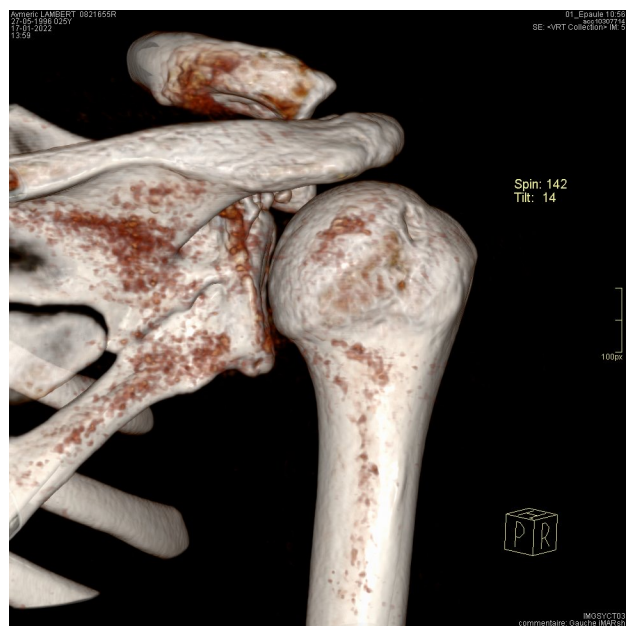
# Follow-up

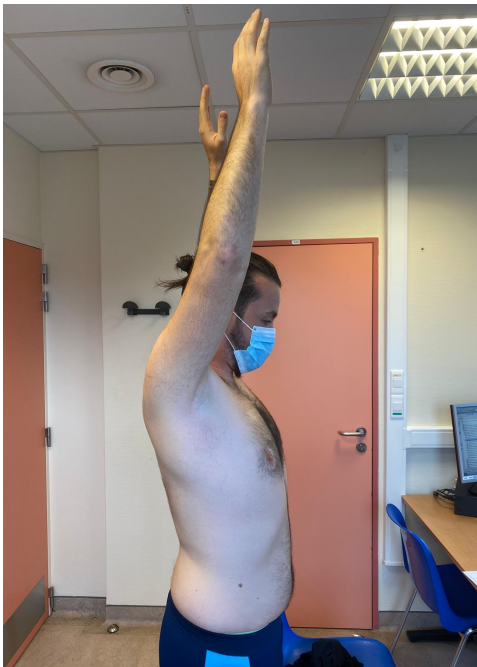
- 16 weeks : X-rays



# Follow-up

- 6 months computed tomography : X-rays





# Follow-up

16 weeks : functional outcomes.

# Conclusion

- Very unusual traumatism leading first to a posterior dislocation of the humeral head and then after to an anterior fracture pivot displacement of the glenoid and scapular pillar.
- Unusual type of glenoid neck fracture still attached to the scapular pillar.
- Use an anterior and superior approaches and not a posterior approach.
- Excellent radiological and clinical results.

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