The Evaluation of The Unstable Shoulder

Christian Gerber, Zürich, Switzerland

INSTABILITY: HISTORY
IN WHICH POSITION ARE YOU UNCERTAIN?

If a patient feels unstable with the arm in

abduction / external rotation

he suffers from anterior instability

INSTABILITY: HISTORY
IN WHICH POSITION ARE YOU UNCERTAIN?

If a patient feels unstable with the arm in

flexion / internal rotation

she suffers from posterior instability

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INSTABILITY: HISTORY
IN WHICH POSITION ARE YOU UNCERTAIN?

If a patient feels unstable with the arm in

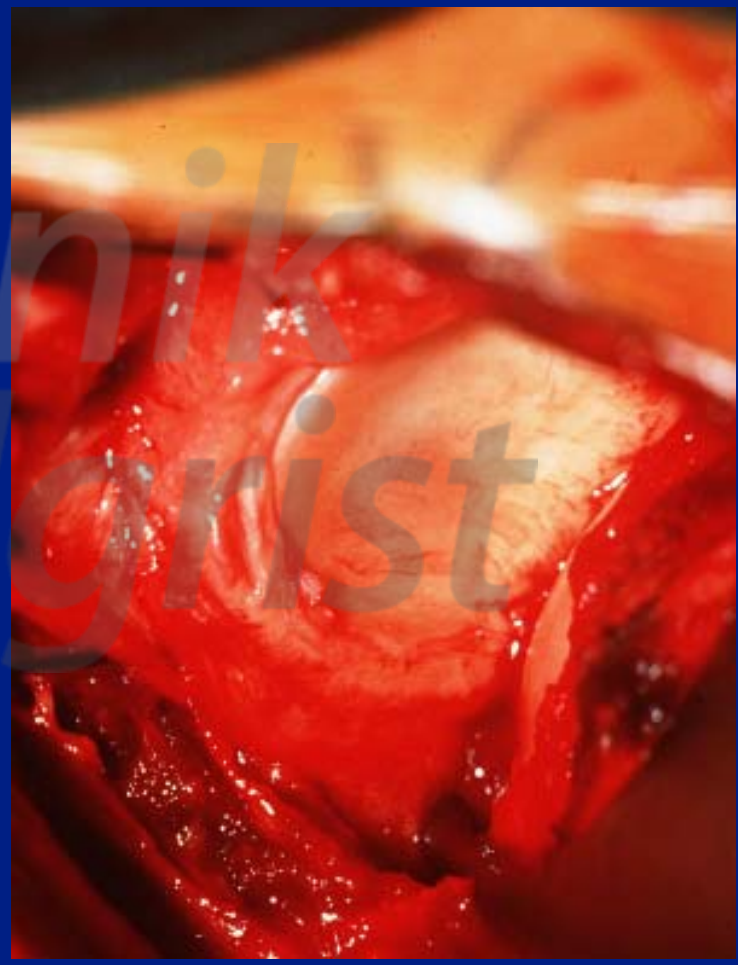
flexion / internal rotation

she suffers from posterior instability

ANTERIOR INSTABILITY

IGHL - lesion

“Bankart - lesion“



HYPERABDUCTION TEST (HAT)

INSTABILITY

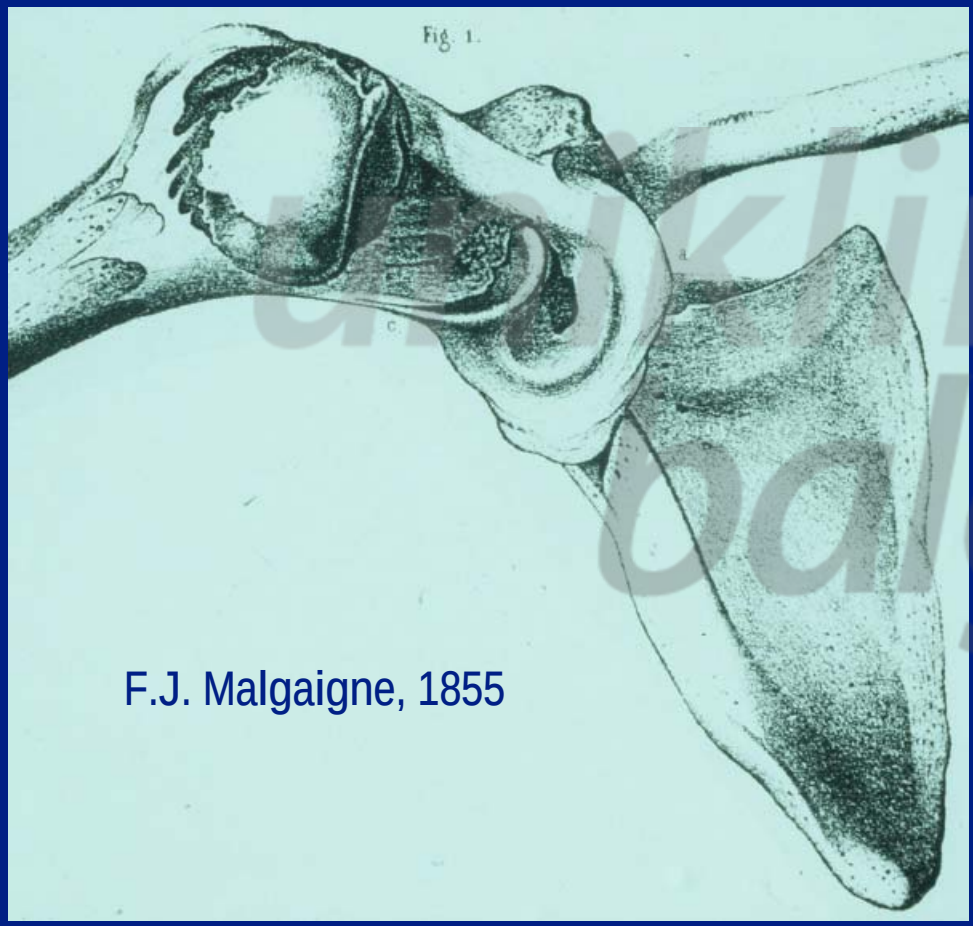
Hyperabduction Test

for anterior instability

APPREHENSION TEST

APPREHENSION TEST

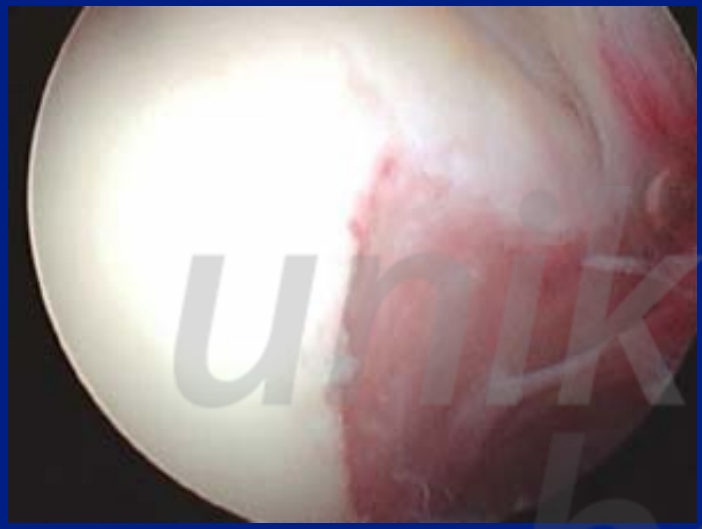
THE ESSENTIAL LESIONS

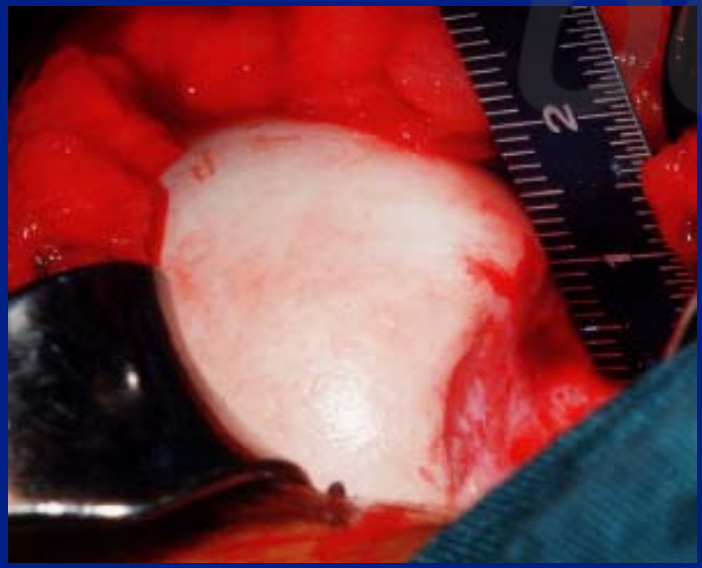


F.J. Malgaigne, 1855

Malgaigne	1855
Hill, Sachs	1940

THE “HILL - SACHS“ LESION





THE 20/20 VIEW

Johner, Rev Méd Suisse Romande 102:1143, 1982

THE 20/20 VIEW

Johner, Rev Méd Suisse Romande 102:1143, 1982

THE 20 / 20 VIEW

THE 20/20 VIEW

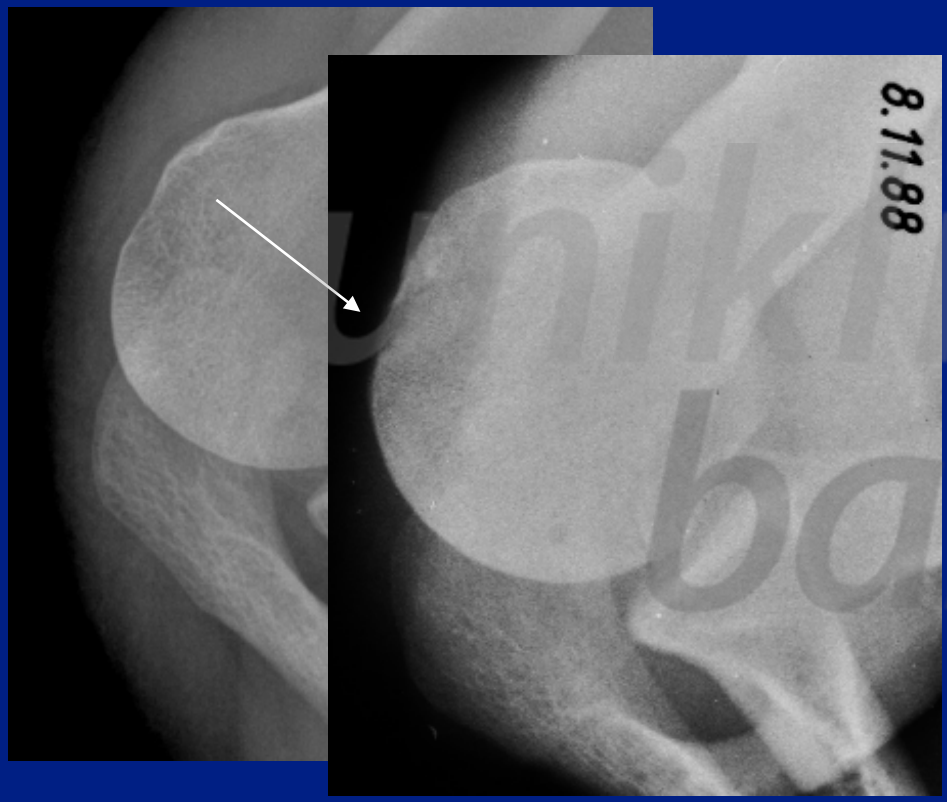
normal

THE 20/20 VIEW

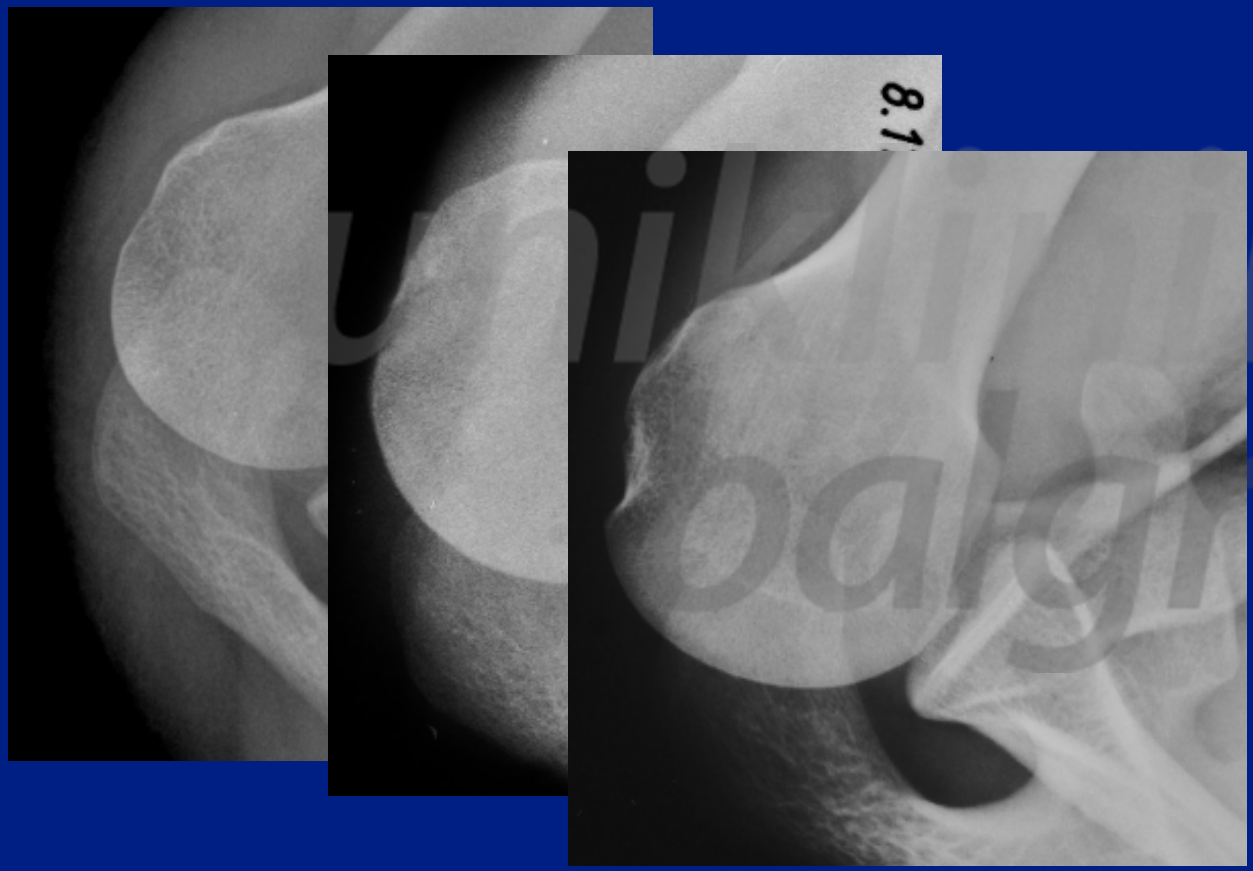
normal

Hill - Sachs

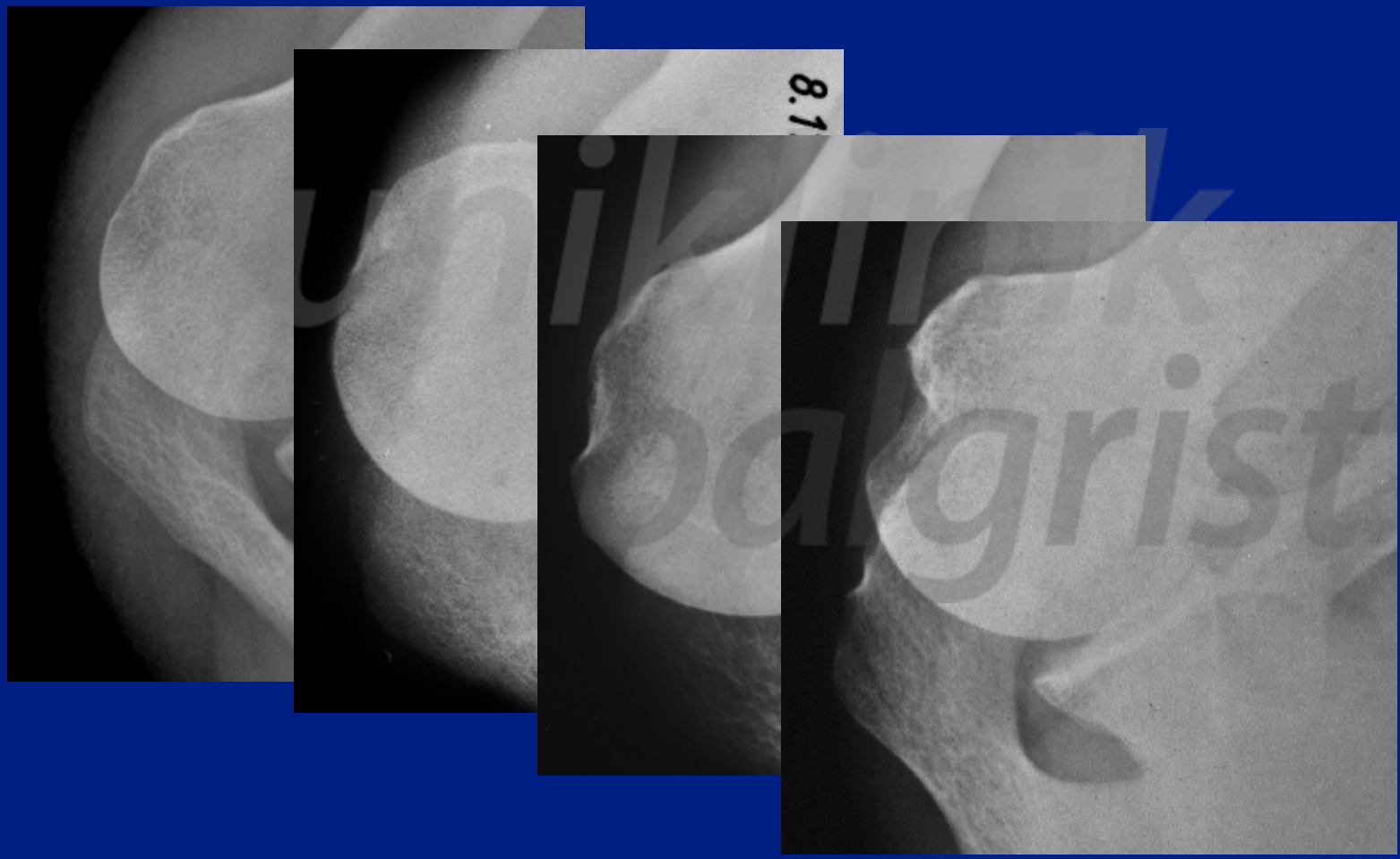
THE 20/20 VIEW



THE 20/20 VIEW



THE 20/20 VIEW



ANTERIOR INSTABILITY VERY UNLIKELY

ANTERIOR (SUB-) LUXATION PROVEN

THE STRYKER - NOTCH VIEW

Hall,RH, JBJS 41-A: 489, 1959

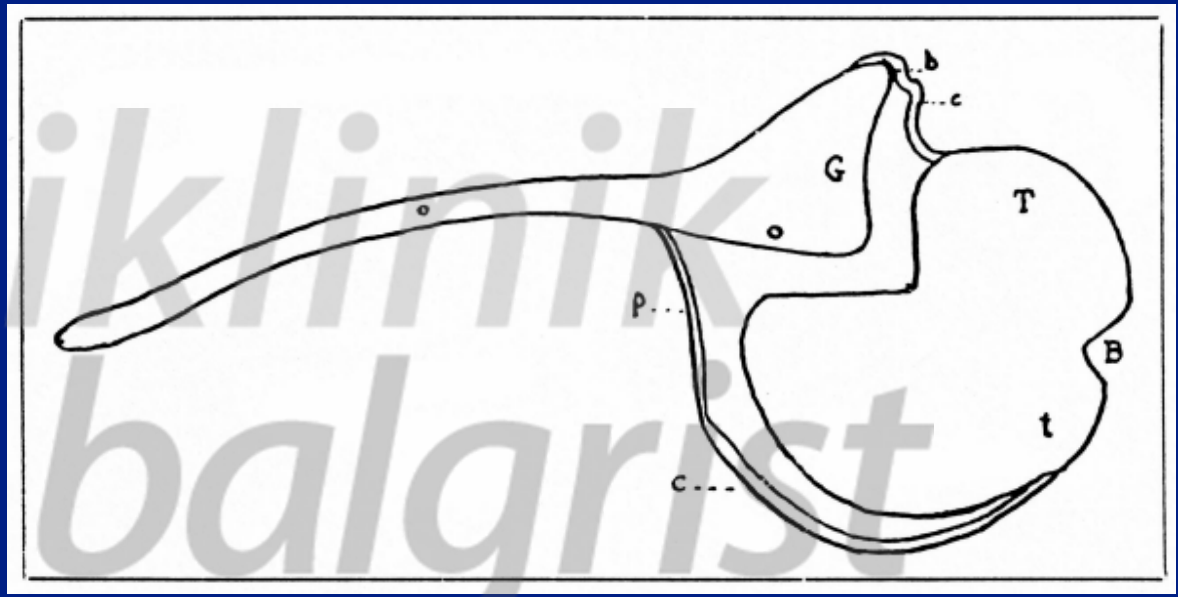
STRYKER - NOTCH VIEW

THE ESSENTIAL LESIONS

Broca A, Hartmann H

Bull Soc Anat Paris

4: 312, 1890



Perthes 1906

Bankart 1923

Bach 1988

LESIONS OF THE ANTERIOR GLENOID RIM

loss of anterior glenoid rim on a.-p. view

LESIONS OF ANTERIOR GLENOID RIM

normal

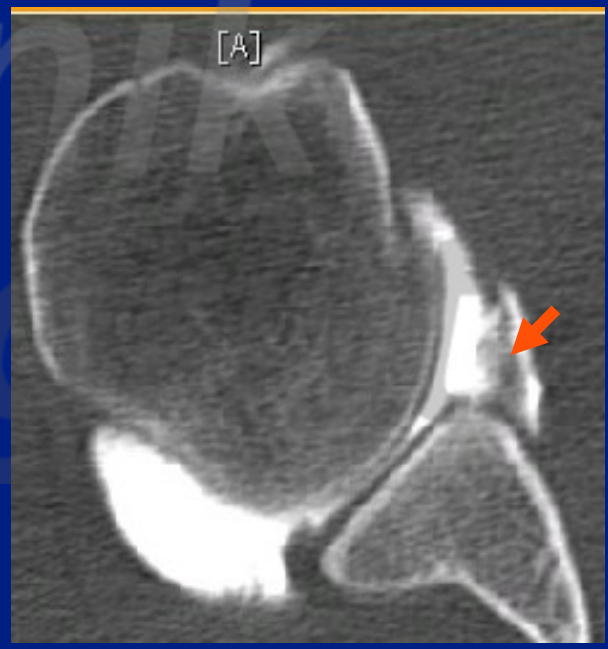
anterior instability

ANTERIOR GLENOID RIM DEFECT

Standard a.-p. X-ray in neutral rotation

?

CT scan (gold standard)



loss of subchondral sclerosis sign (SSS)

→

anterior glenoid rim defect or fracture

PATIENTS (n=89)

- anterior instability 36
- stable shoulders 16
- posterior instability 37

ALL PATIENTS (n=89)

loss of subchondral sclerosis sign for anterior glenoid rim defect

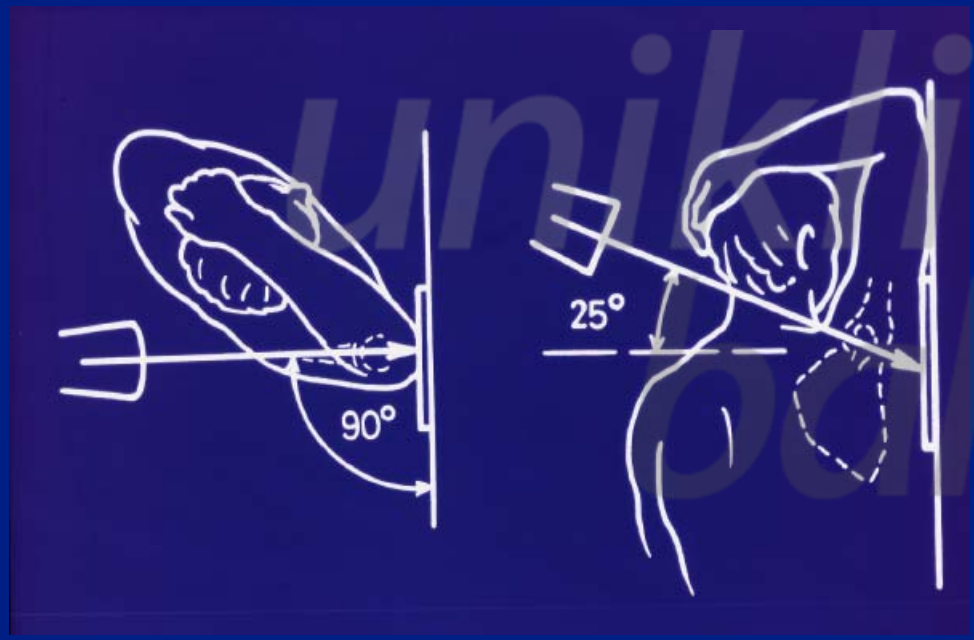
•sensitivity	observer 1	65%
	observer 2	53%
•specificity	observer 1	100%
	observer 2	100%

interobserver reliability – Cohen's kappa value 0.88

CONCLUSION

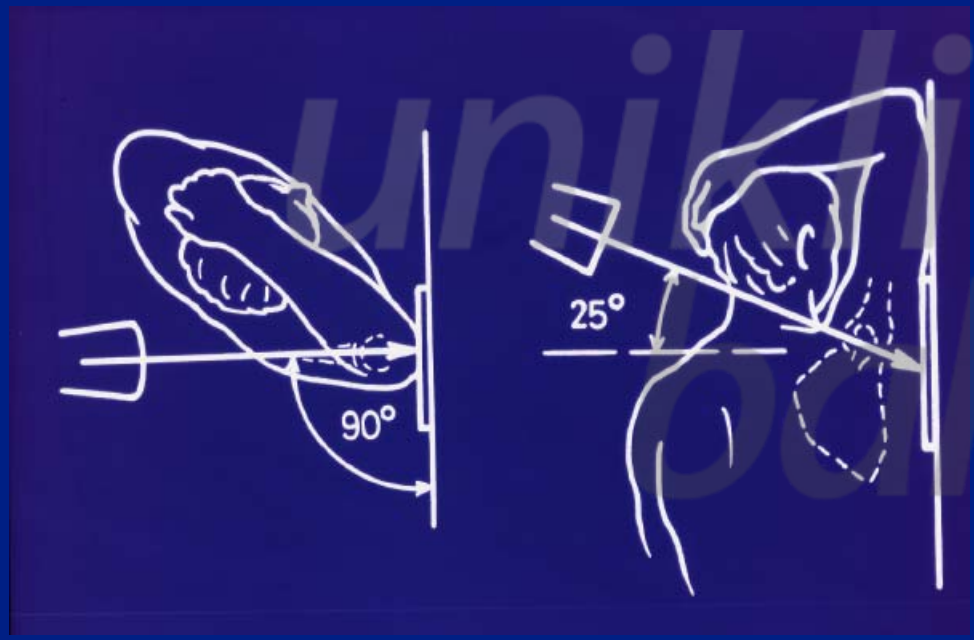
The loss of the subchondral sclerotic line or a positive subchondral sclerosis sign (sss) is highly specific for anterior glenoid rim defects in anterior instability

THE “PROFIL GLENOIDIEN“



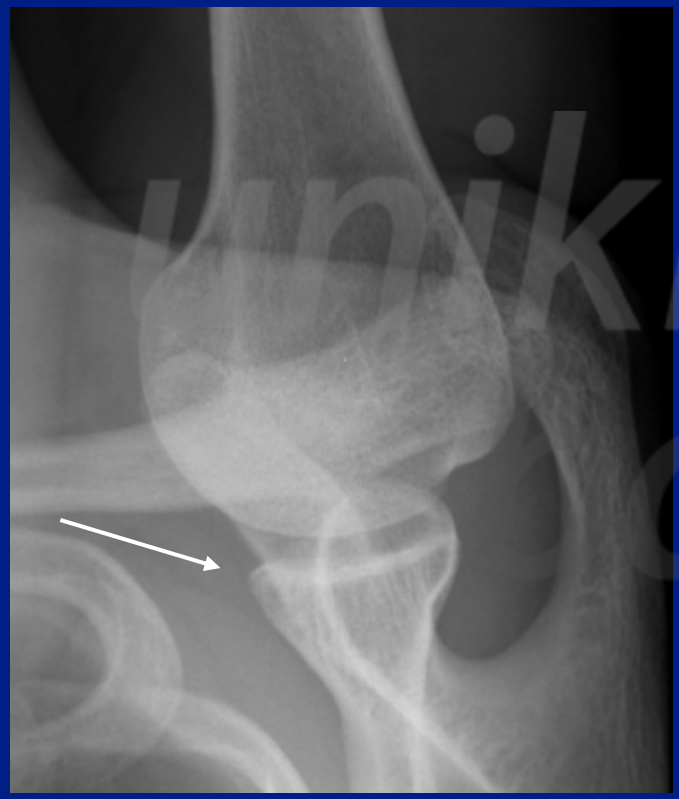
Bernageau: Rev chir orthop 62, suppl II: 142, 1975

THE “PROFIL GLENOIDIEN“



Bernageau: Rev chir orthop 62, suppl II: 142, 1975

GLENOID PROFILE



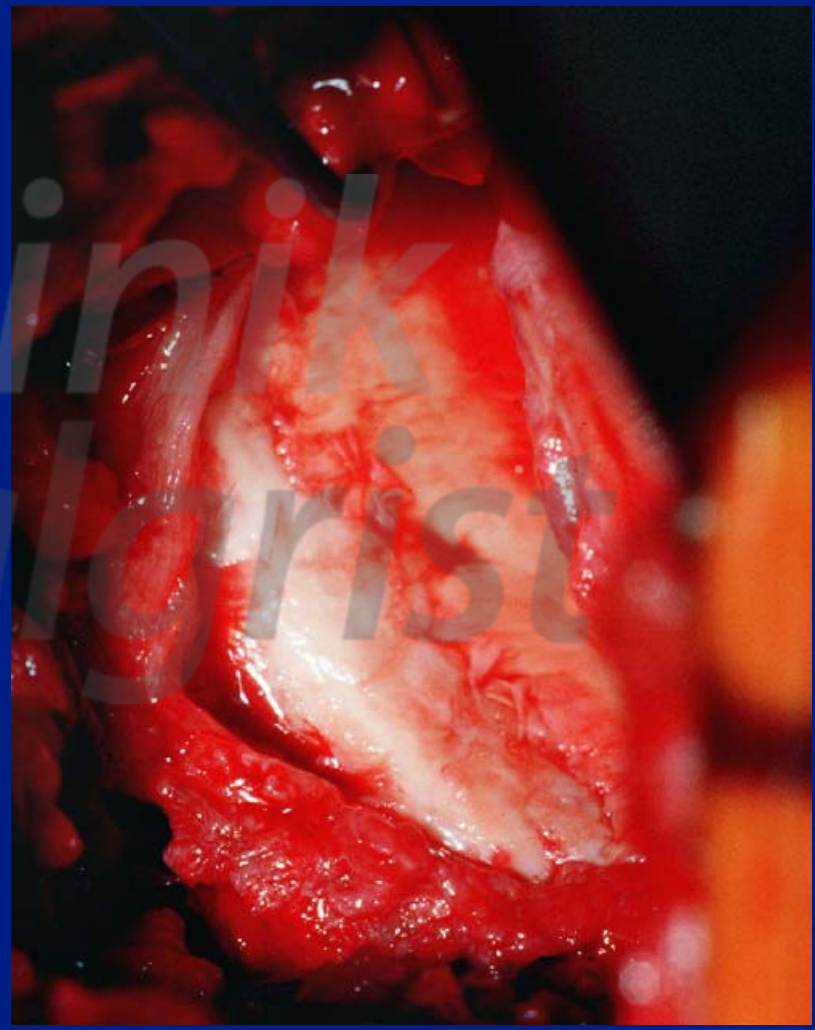
normal

GLENOID PROFILE

normal

ant. glenoid rim fx

ANTERIOR EROSION - SUBLUXATION



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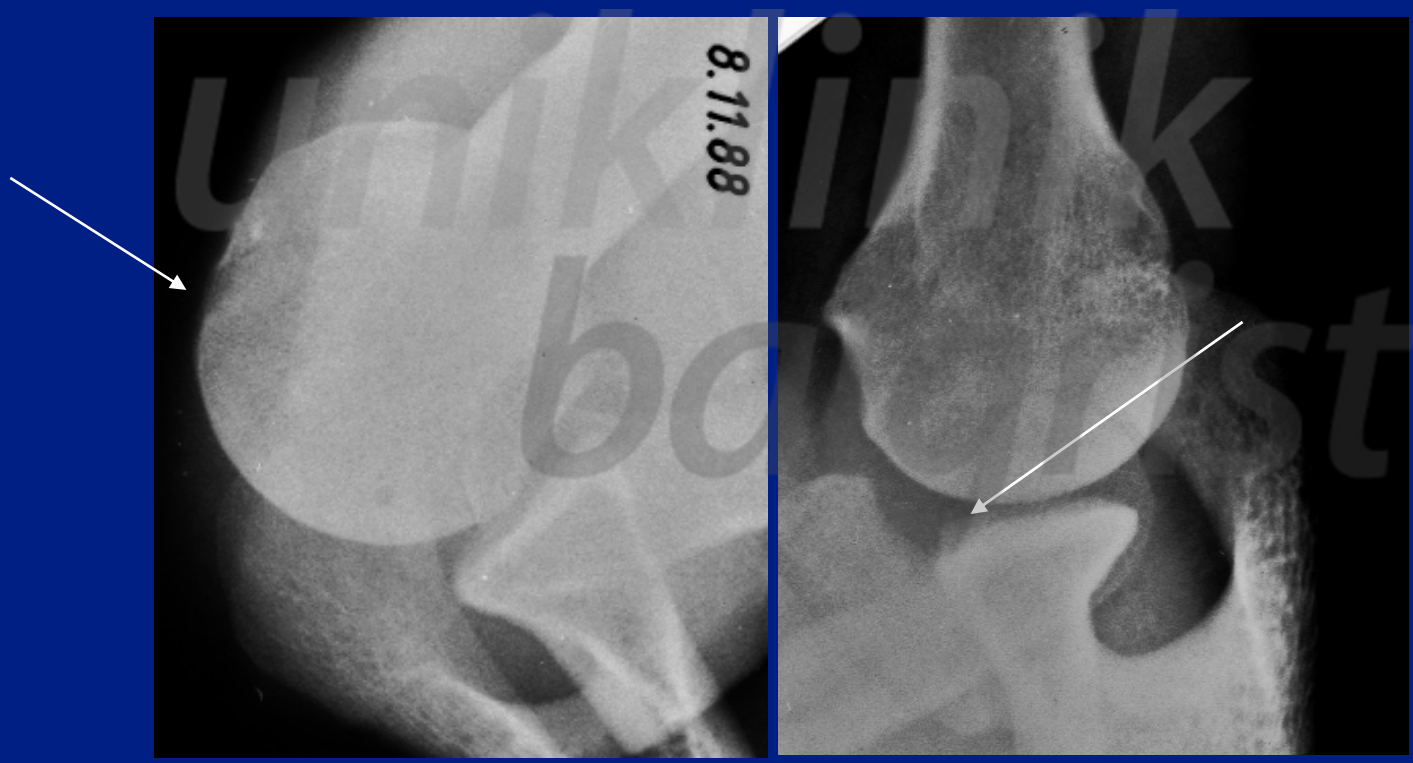
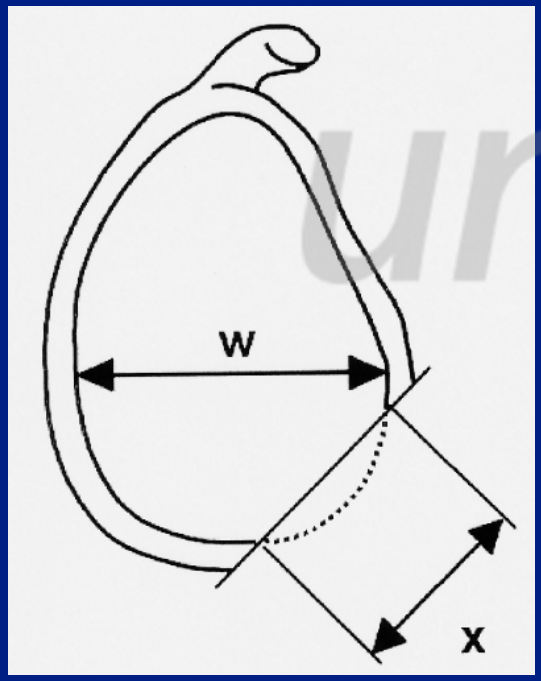
DIAGNOSIS ANTERIOR INSTATBILITY CONFIRMED BY PLAIN X-RAY IN <95%

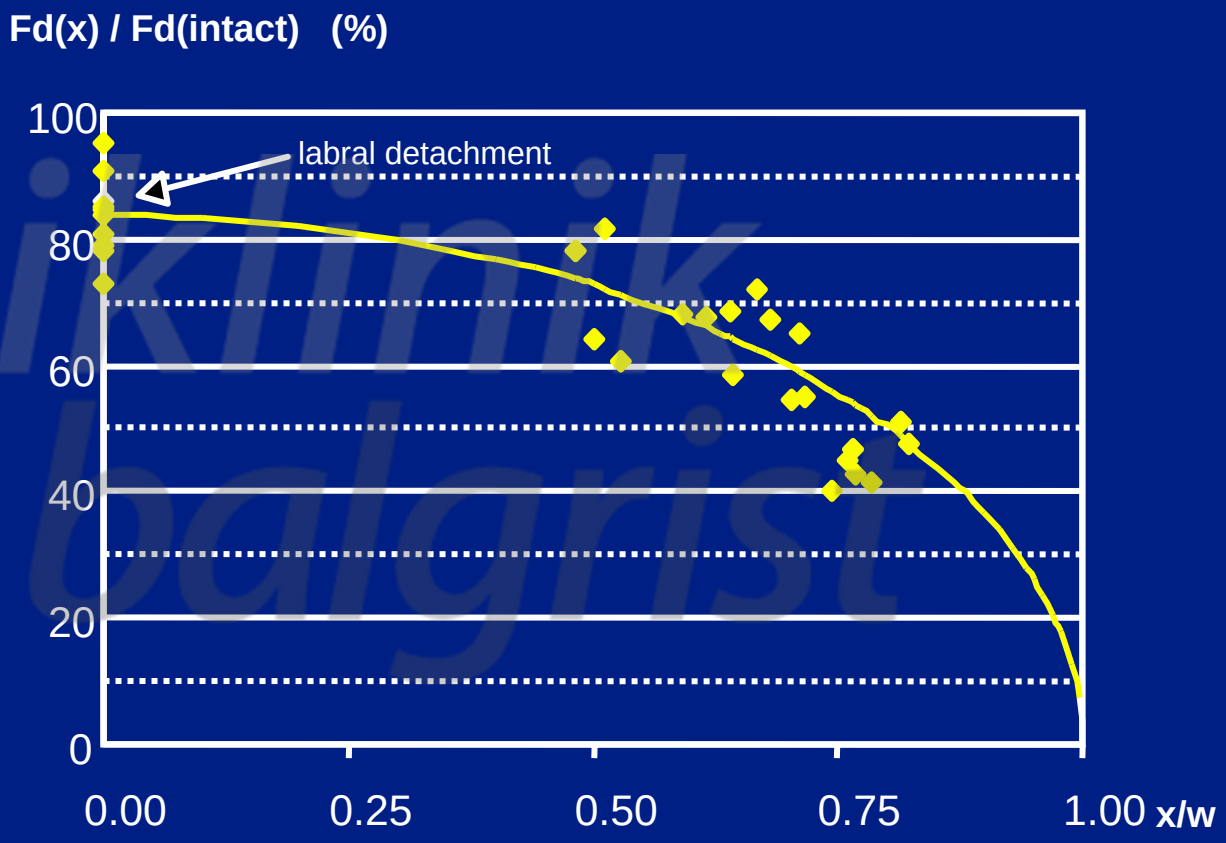
20/20

GLENOID PROFILE



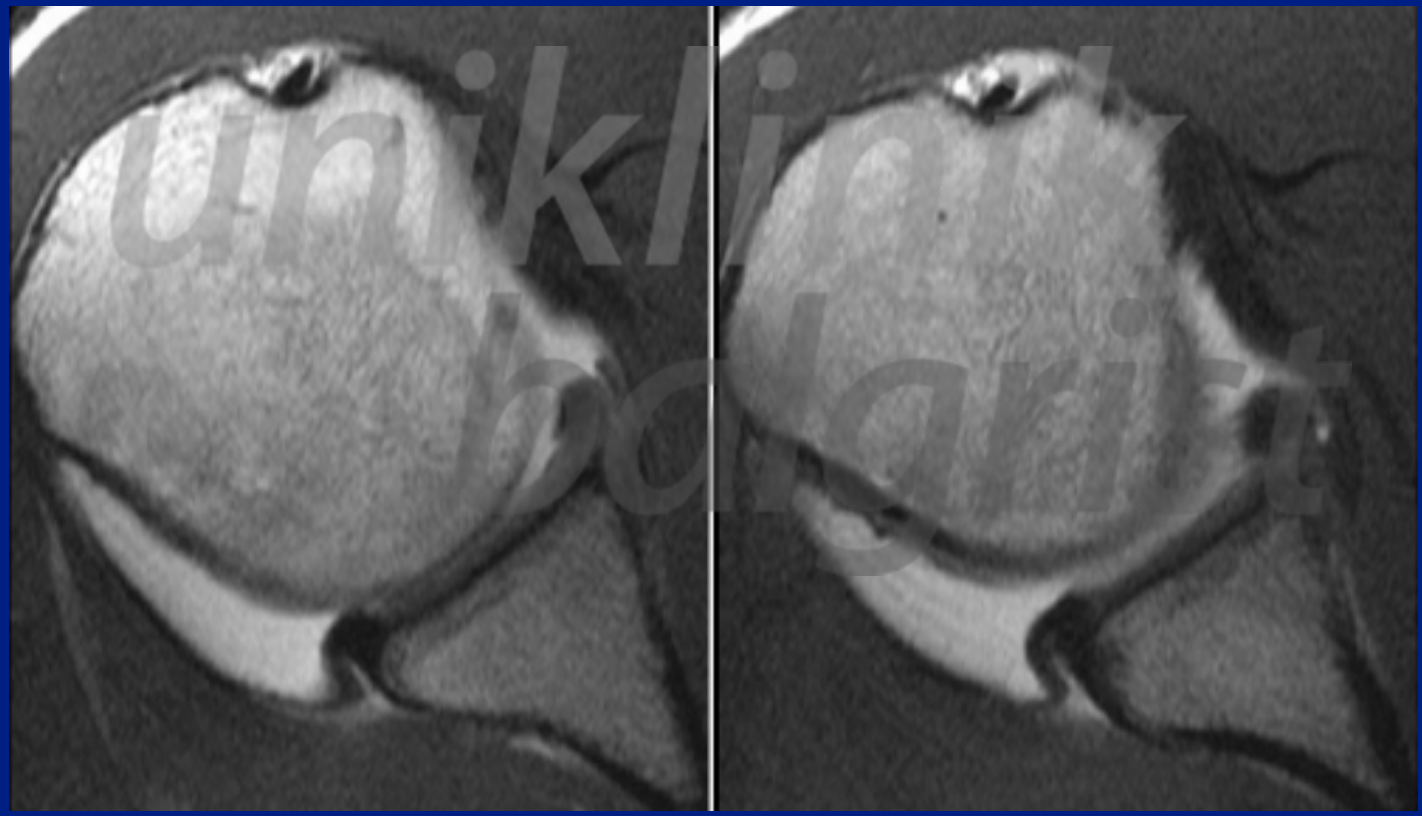
OPEN OR ARTHROSCOPIC STABILIZATION?



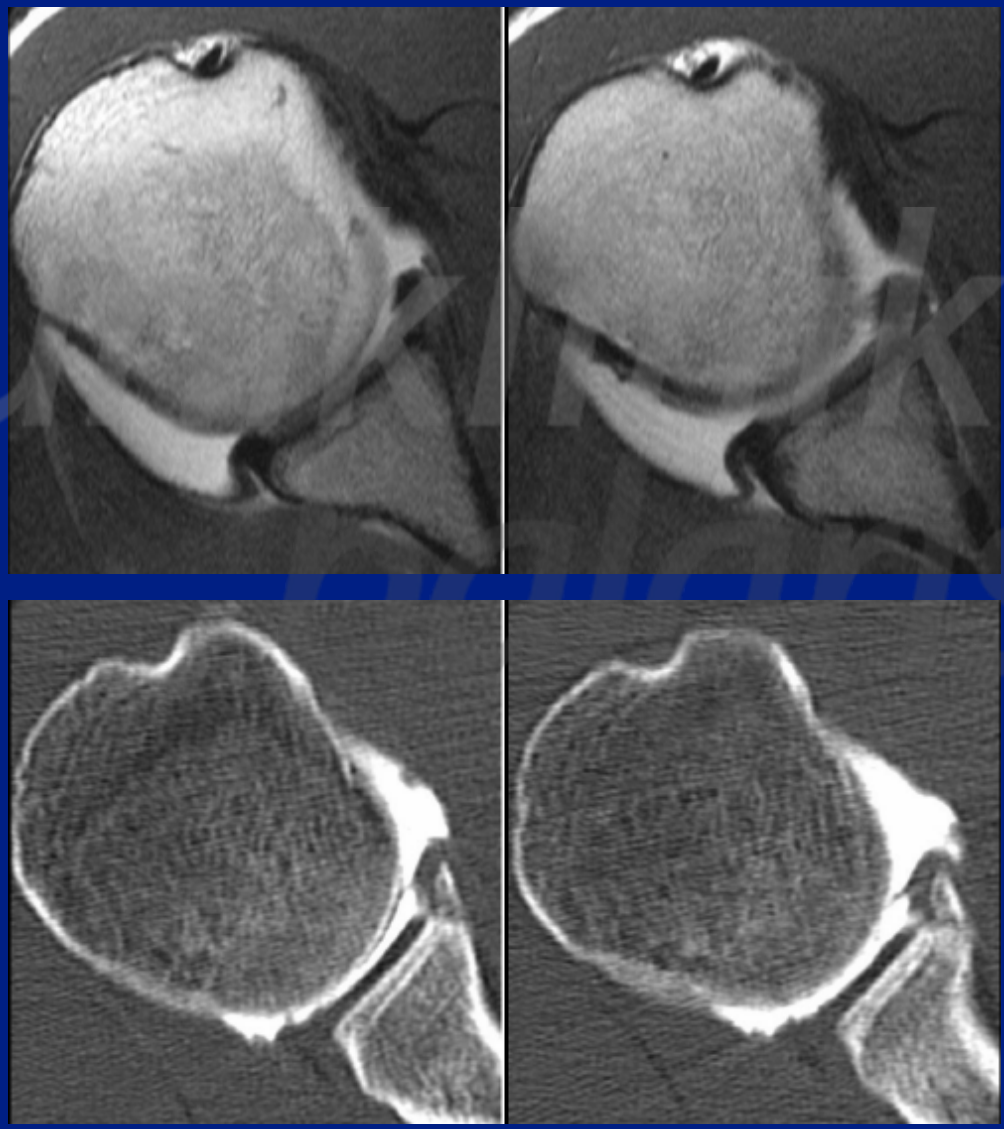


Gerber, CORR 400:65, 2002

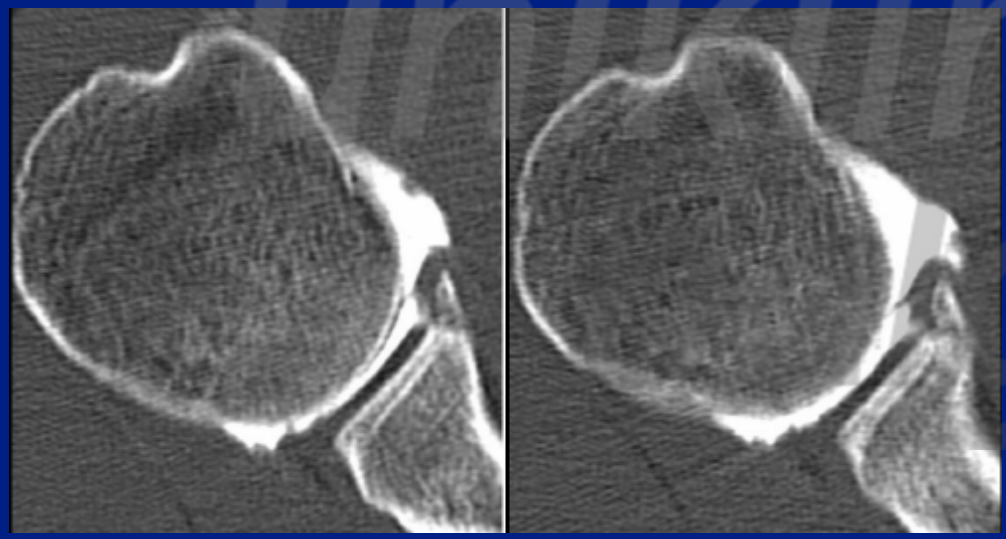
OPEN OR ARTHROSCOPIC?

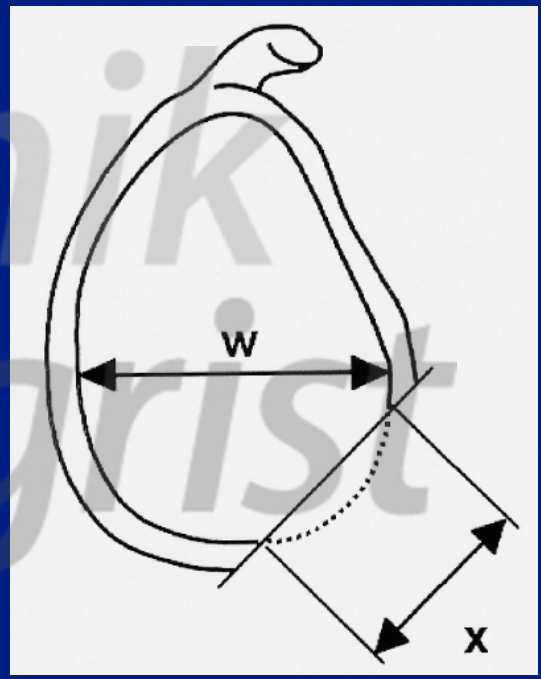


ARTHRO - CT: BETTER FOR CORTICAL BONE



ARTHRO CT: SIZE OF BONY DEFECT

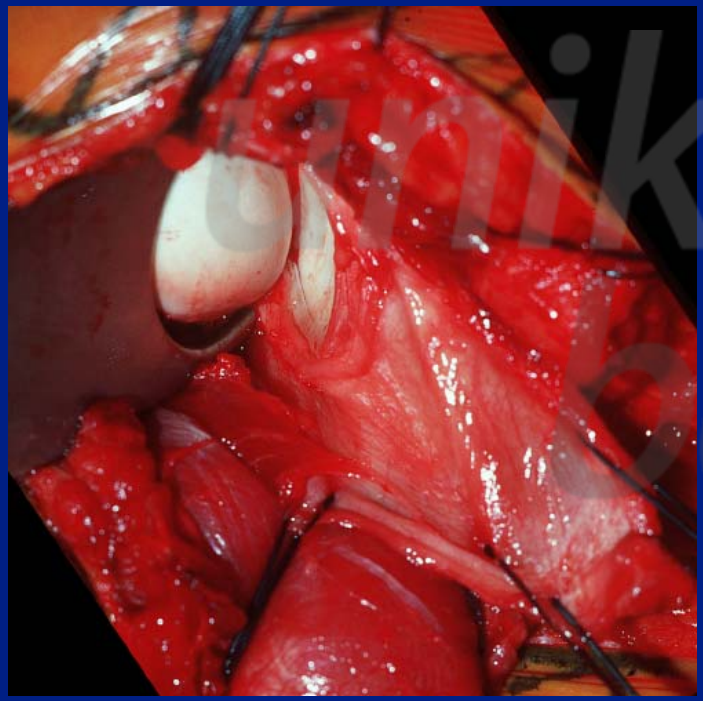




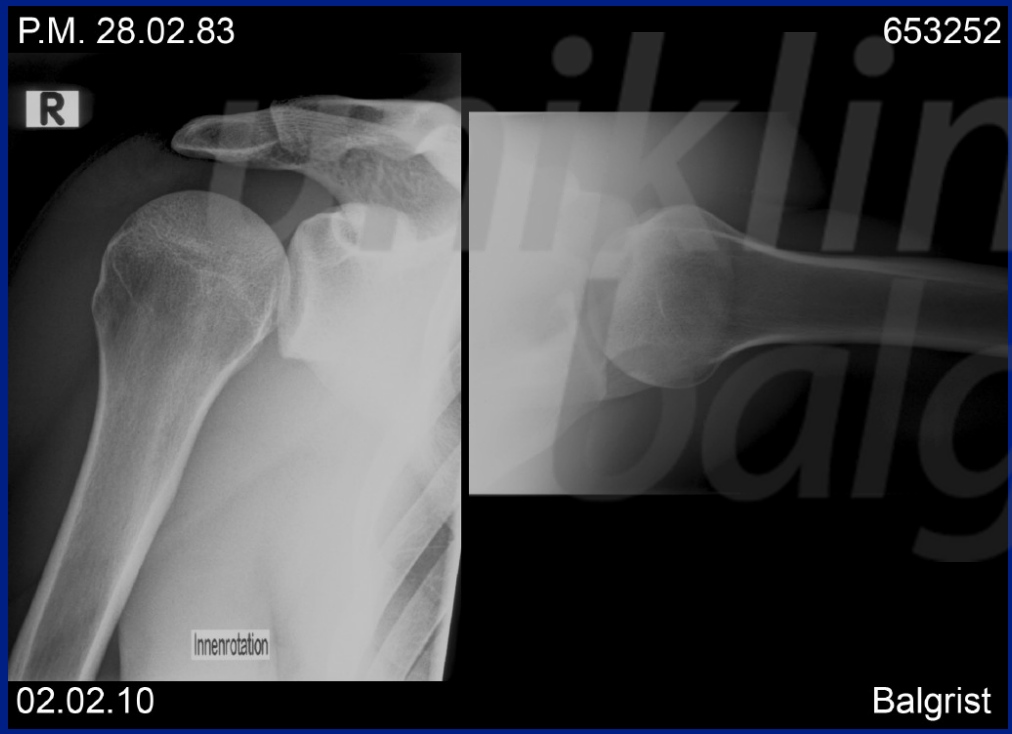
INSTABILITIES

POSITIONAL POSTERIOR SUBLUXATION

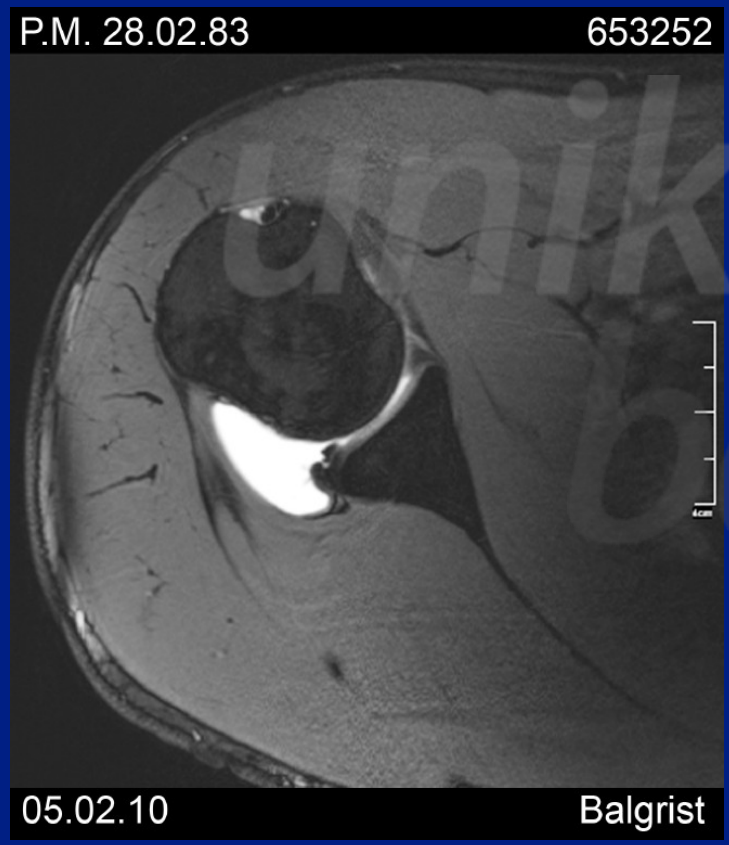
LESIONS IN POSTERIOR INSTABILITY



CONVENTIONAL RADIOGRAPHS



CT FINDINGS



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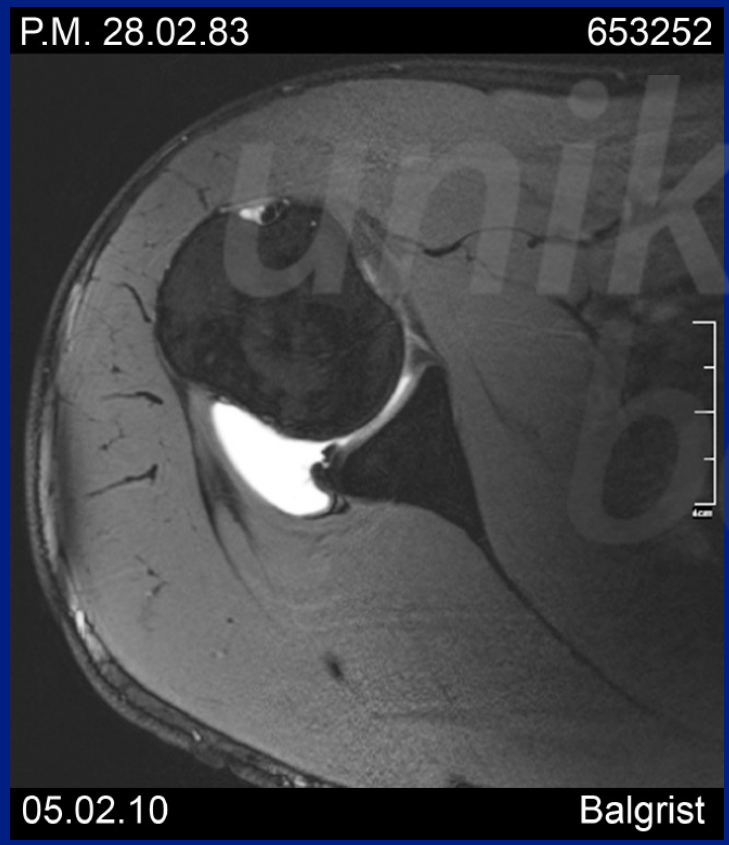

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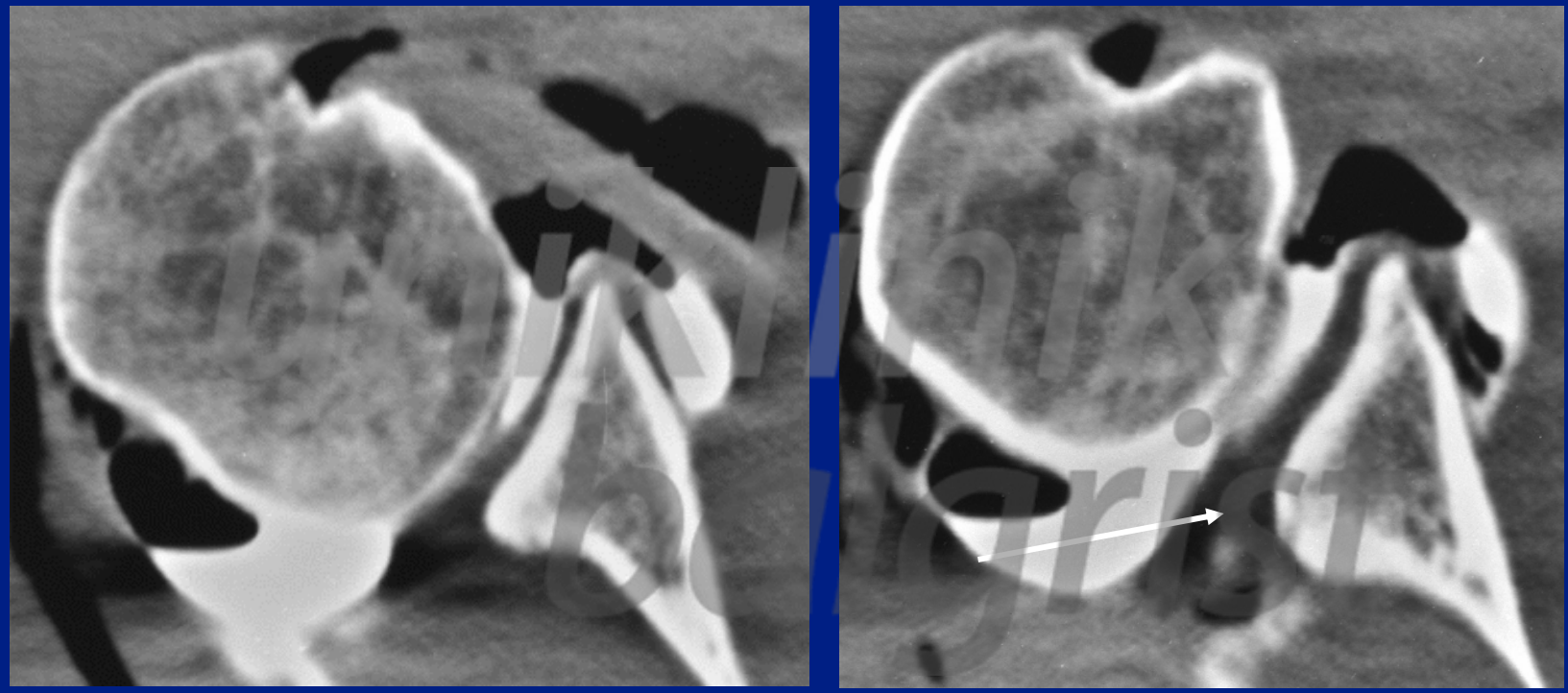
POSTERIOR GLENOID RIM LESION

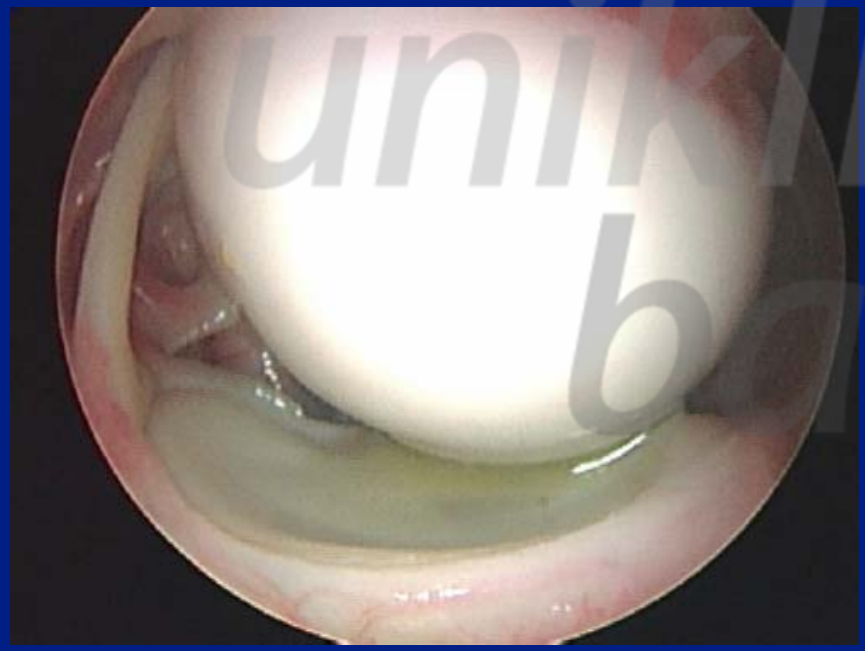


If superior - inferior extension of defect > 12mm,
probability of posterior instabilty > 85%*

*Weishaupt, Skeletal Radiol 29: 204, 2000

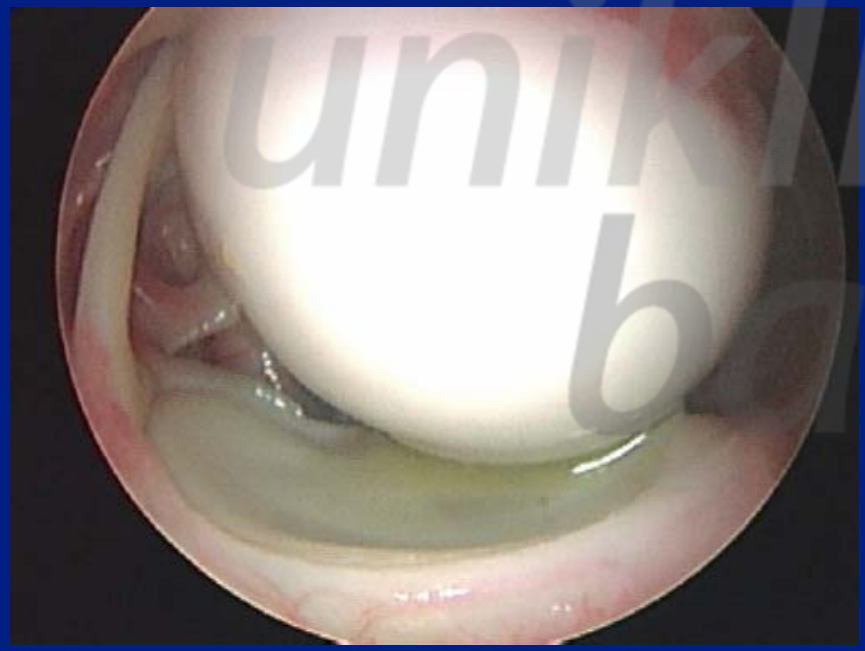
DIAGNOSTIC ARTHROSCOPY

DIAGNOSTIC ARTHROSCOPY



- painful apprehension,
  no dislocation
  no subluxation

DIAGNOSTIC ARTHROSCOPY

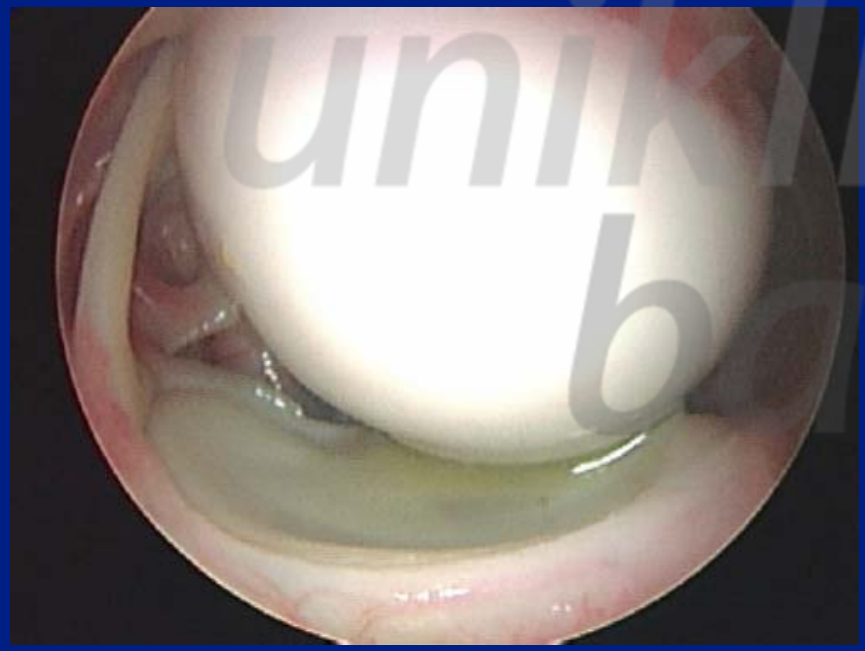


- painful apprehension,
  no dislocation
  no subluxation

- no skeletal lesion,
  direction(s) unclear

-

DIAGNOSTIC ARTHROSCOPY



- painful apprehension,
  no dislocation
  no subluxation

- no skeletal lesion,
  direction(s) unclear

- dislocation, subluxation no
  IGHL lesion on arthro-
  CT

CLASSIFICATION: WHO IS WHO?

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