



SICOT 2011

**XXV Triennial
World Congress**

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Prague, Czech Republic**

Femoro-Acetabular Impingement

Concept

Pathology

Treatment options



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Concept

**Abutment
of
Femoral head-neck Junction
on
Acetabular Rim**





Why ?

Wide Range of Motion

But

Very Congru



Why is it specific to the hip?

How ?

High Range of Motion
Sporting Activities

Deep hip Flexion



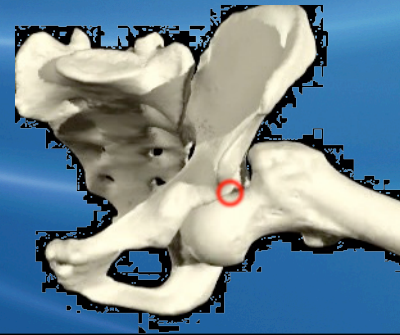
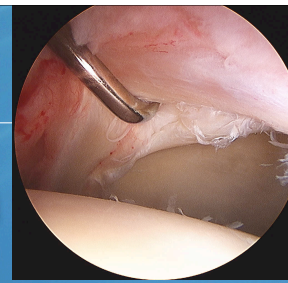
How can it happen?

How ?

High Range of Motion

Sporting Activities

Deep ABDuction



How can it happen?

Acute or repetitive trauma = isolated traumatic labral tear more often

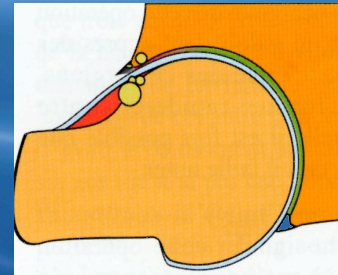
Predisposing factors

Limits Range of Motion

(Hip Flexion and Internal Rotation)

1- Morphologic Alteration of the femur

Cam effect



Predisposing factors will increase the risk of FAI

Predisposing factors

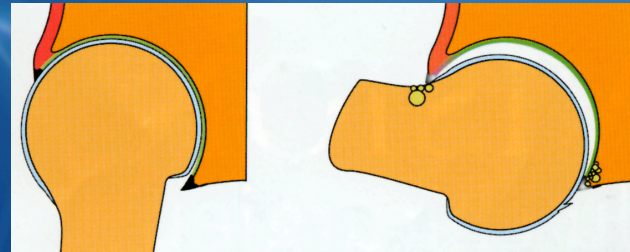
Limits Range of Motion

(Hip Flexion and Internal Rotation)

2- Morphologic Acetabular Alteration



Pincer effect

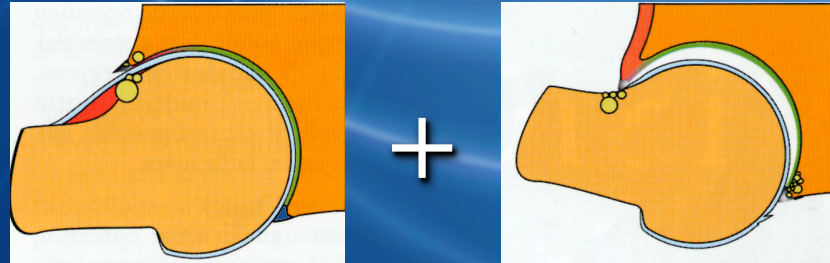


Predisposing factors

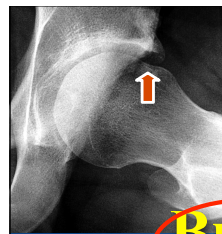
Limits Range of Motion

(Hip Flexion and Internal Rotation)

Combined Cam *and* Pincer effect

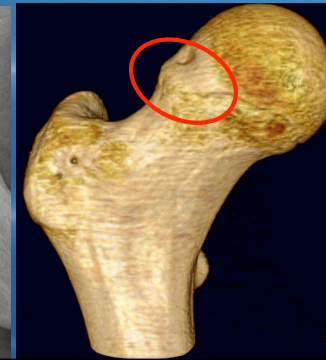
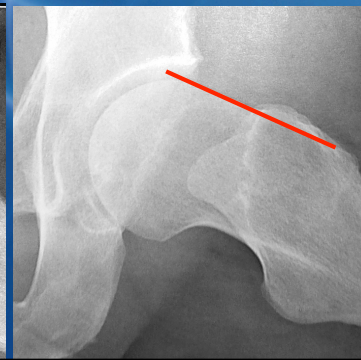


Mixt effect = 50 - 80%



1- Cam effect

Bump head-neck Junction
Anterior head-neck Offset reduction





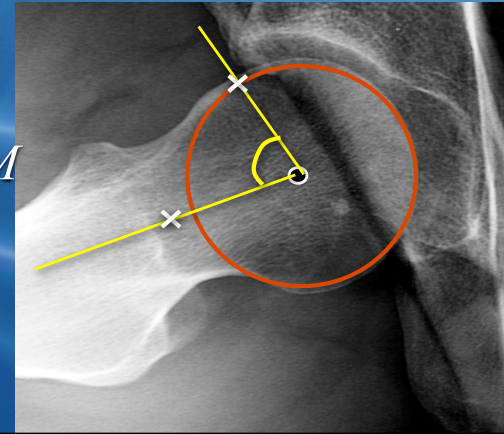
1- Cam Measurement

Offset Alpha Angle ($< 50^\circ$)

Notzli JBJS Br, 84(4), 2002

Axial/ Radial MRI /TDM

Axial Xr Profil



You have to know how to measure the head sphericity to be able to restore it



1- Cam Measurement

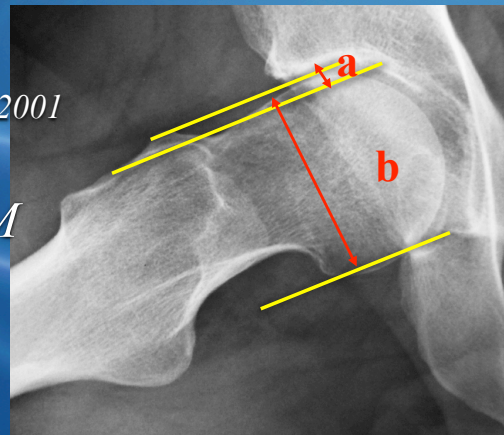
Anterior Head Neck Offset Ratio

$(a/b > 0,19)$

Eijer, J Orthop Trauma, 15(7), 2001

Axial/ Radial MRI /TDM

Axial Xr Profil

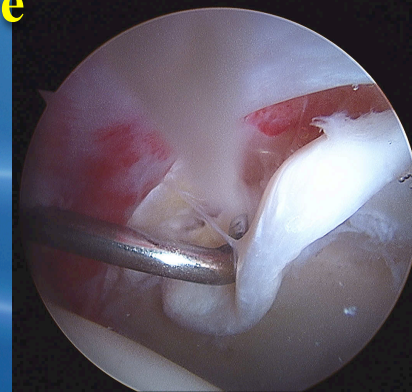
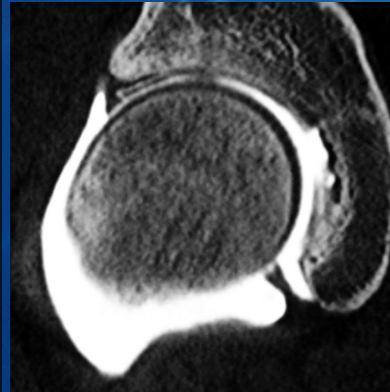


Pas de conflit si angle alpha < 50°



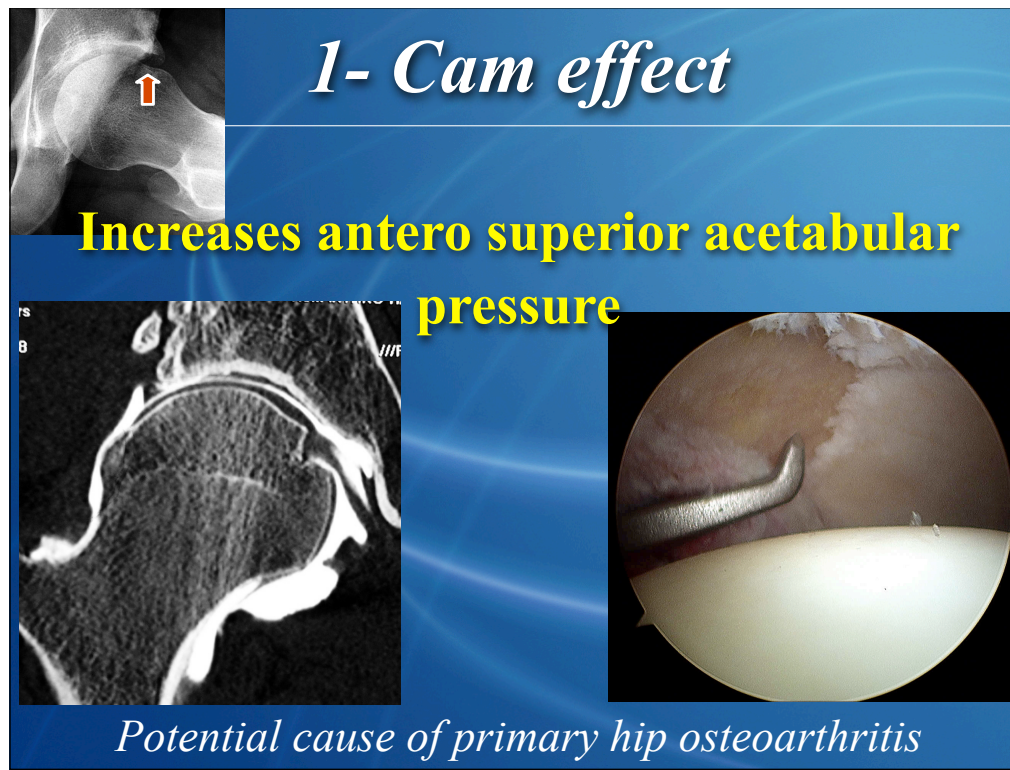
1- Cam effect

Increases antero superior acetabular pressure

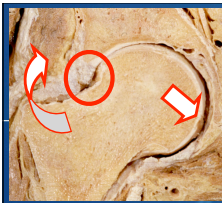


Leads to chondral delamination and labral detachment

In cam effect, this impingement during hip flexion increases pressure against the acetabular rim leading to chondral delamination and labral detachment



This labral and chondral injuries have been implicated as a potential cause of primary hip osteoarthritis



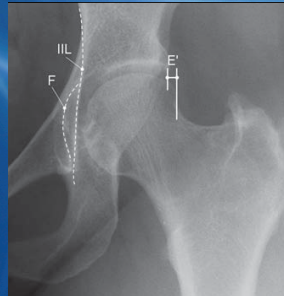
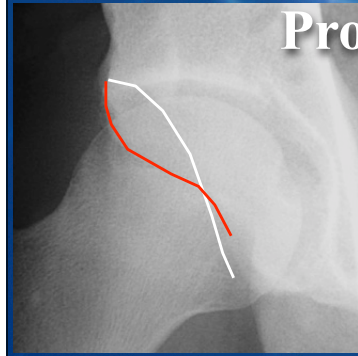
2- Pincer effect

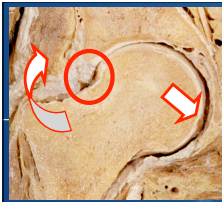
Acetabular Anterior Overcoverage

Retroversion

Coxa Profunda

Protrusio Acetabuli

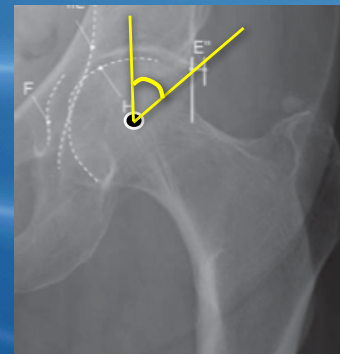
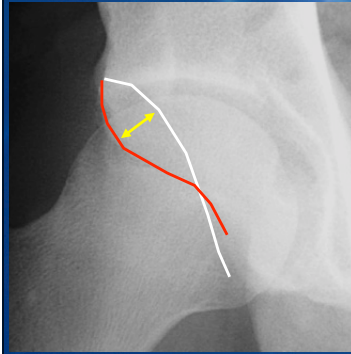


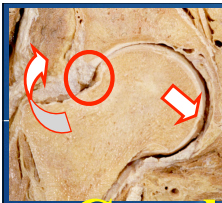


2- *Pincer Measurement*

Retroversion (*Crossing Sign*)

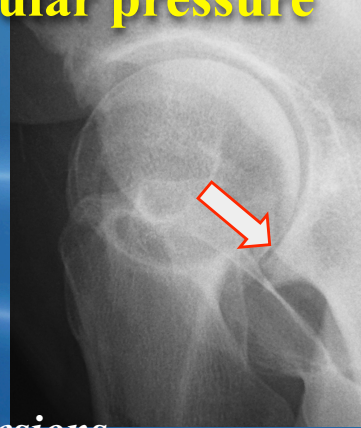
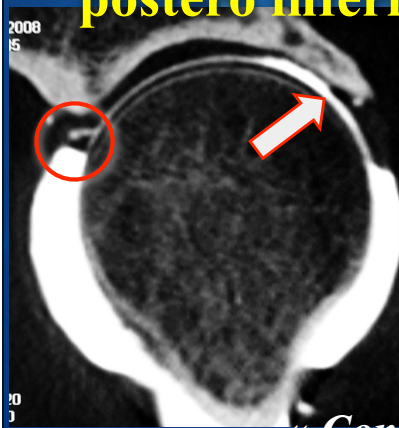
Coxa Profunda/Protrusio Acetab. (*VCE*)





2- *Pincer effect*

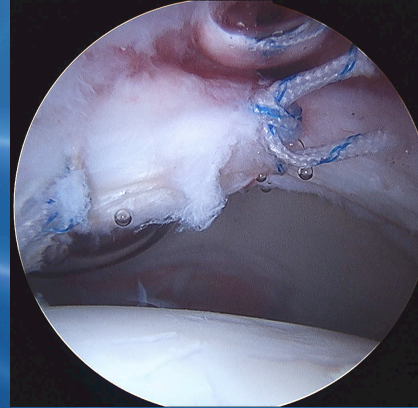
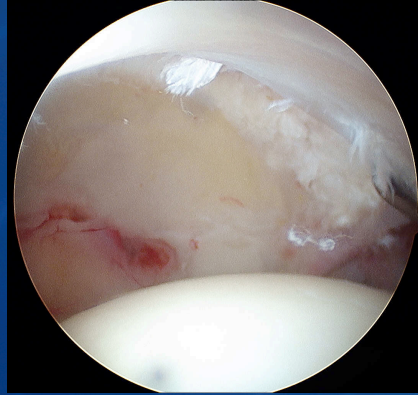
**Crushes the Labrum & Increases
postero inferior acetabular pressure**



« Contre-Coup » lesions

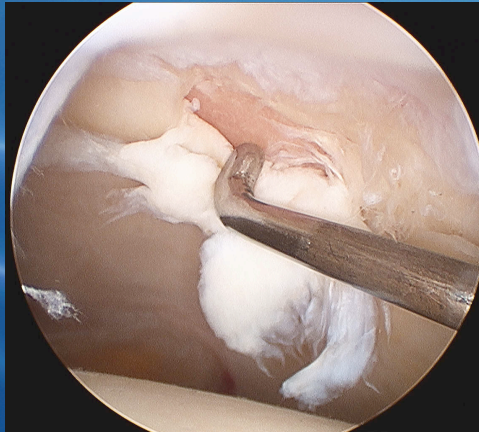
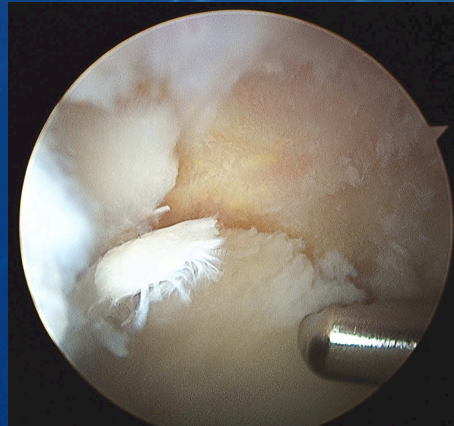
Treatment options

FAI =
Labral lesions



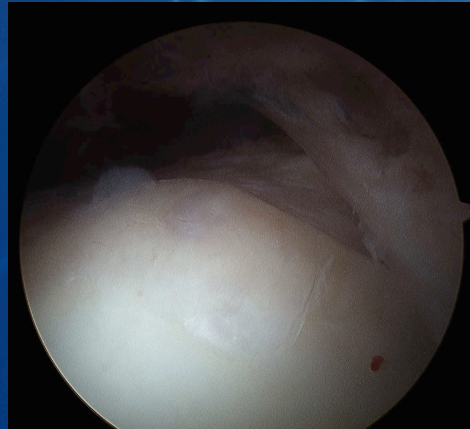
Treatment options

FAI =
Chondral lesions



Treatment options

FAI =
Cam lesion

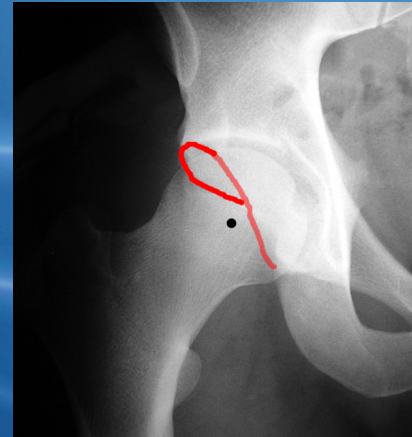
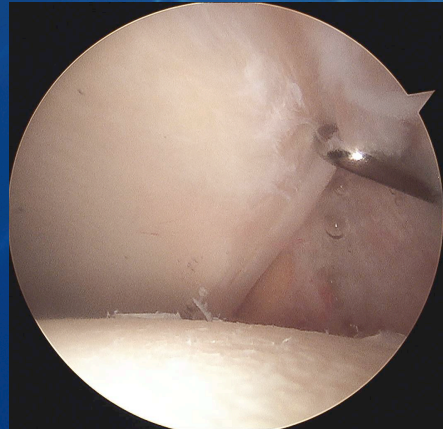


Treat the Cause of FAI!!

You have to treat the predisposing factors if you want good results : the cam lesion

Treatment options

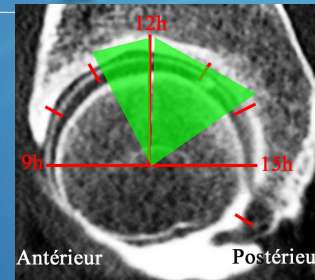
FAI =
Pincer lesion



Treat the Cause of FAI!!

You have to treat the predisposing factors if you want good results: the pincer

Cam Arthroscopic Management



Postero Superior Cam

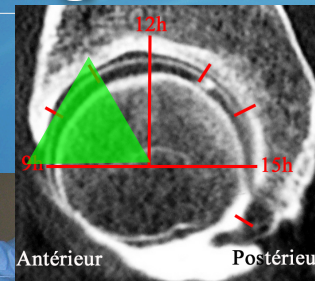


*Hip Extension +/- Traction
Neutral or External Rotation*

Cam Arthroscopic Management



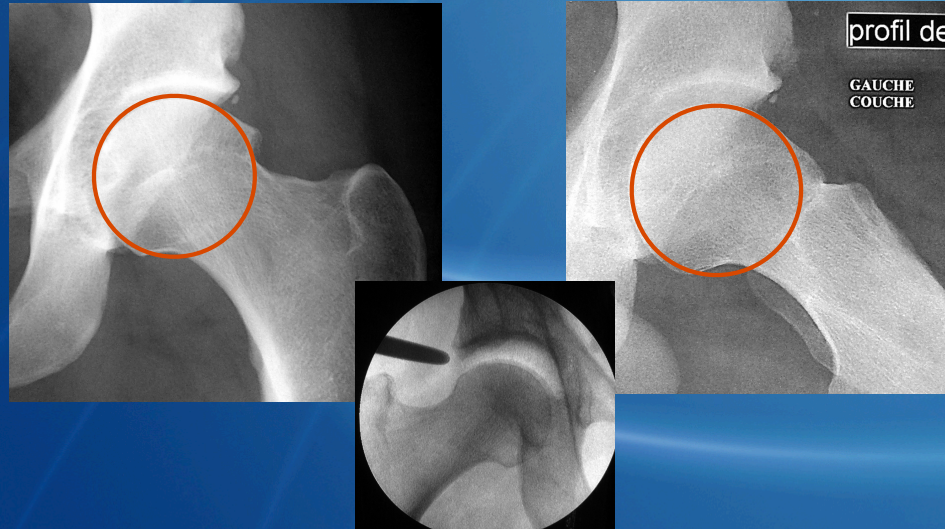
Anterior Cam



Hip Flexion + Internal Rotation

Cam Arthroscopic Management

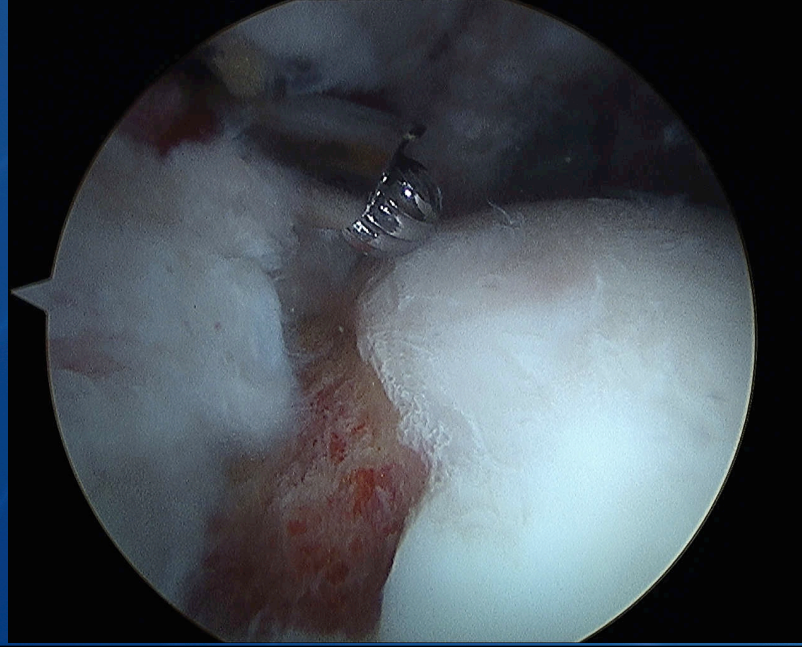
Find the Landmarks



Pre operative Planning ++

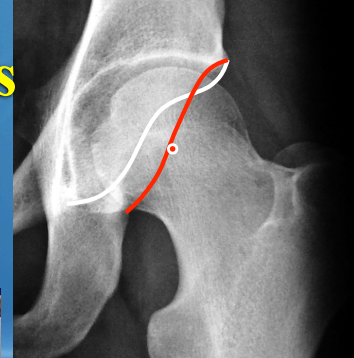
Fluoroscopy

Cam Arthroscopic Management



Pincer Arthroscopic Management

Find the Landmarks

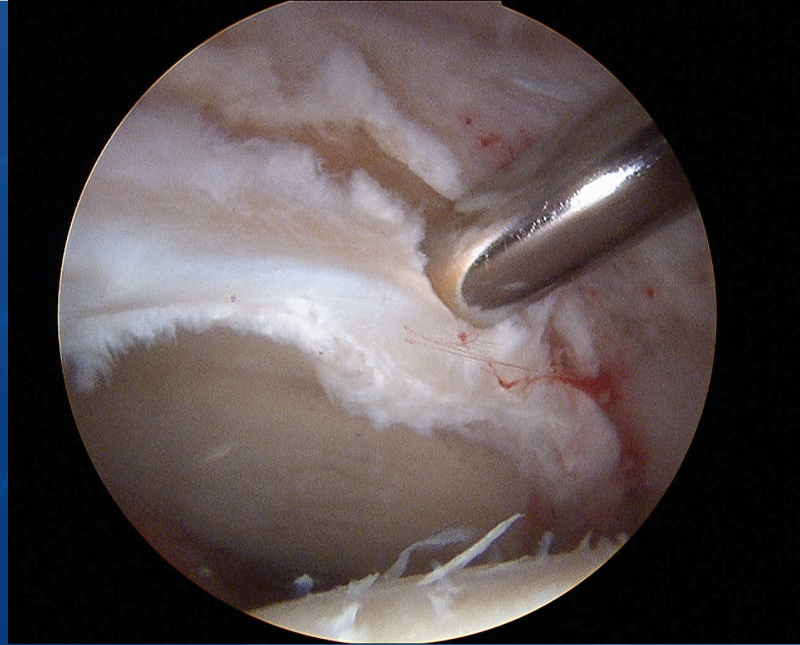


*Pre operative
Planning ++*



Hip Traction + Internal Rotation

Pincer Arthroscopic Management



Final Testing

