



# 6th Advanced Course on Knee Surgery

January 31<sup>st</sup> – February 5<sup>th</sup>, 2016 Val d'Isère - France

[www.kneecourse.com](http://www.kneecourse.com)

## Imaging in ACL failure / revision

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ICONE

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# Causes of failure

Positioning

X ? MRI ?

Fixation

X / MRI

Biological failure / Low grade infection US ? MRI ?

Extra articular insufficiency Dynamic US

Secondary injury MRI



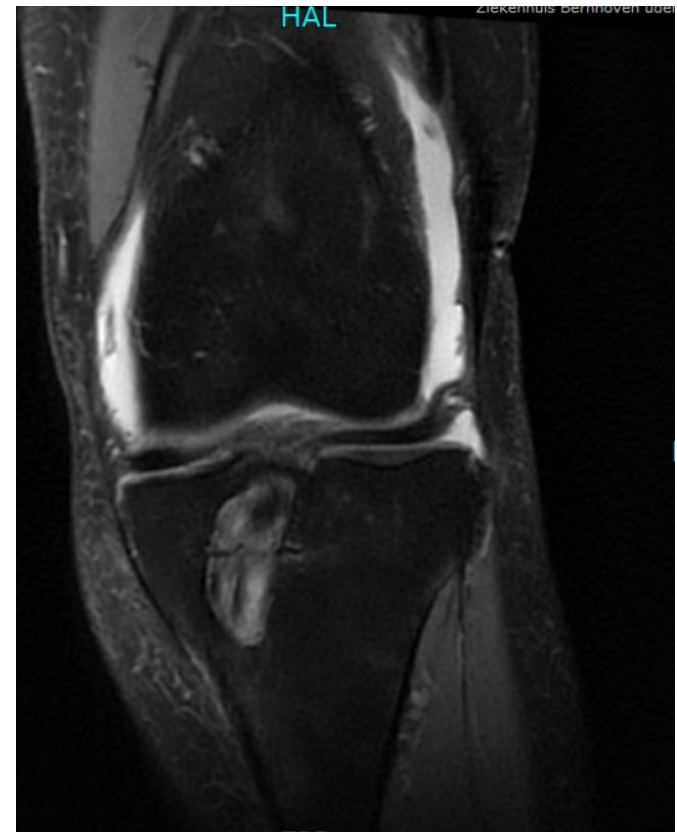
ICONE

# Postoperative X ray



# Insufficient plasty ?

- Jan 2015 , primary plasty , MRI aug 2015



X AP 10 mths



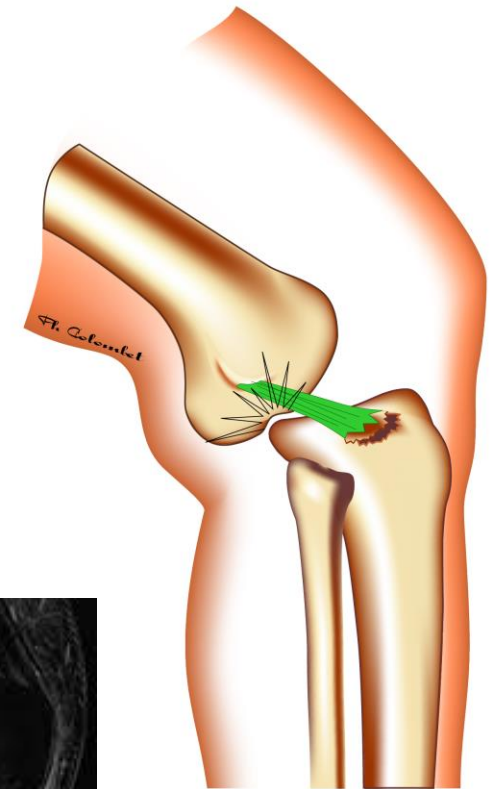
# Enlargement femoral tunnel



8 mnths

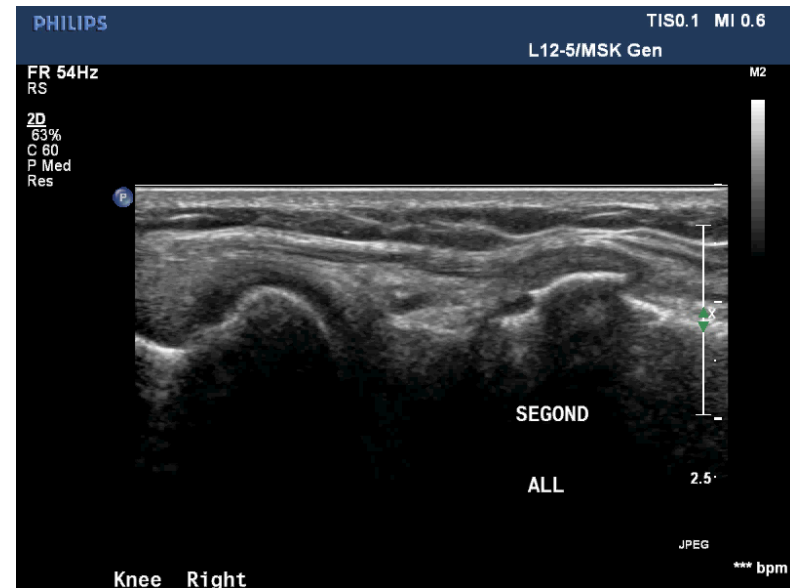
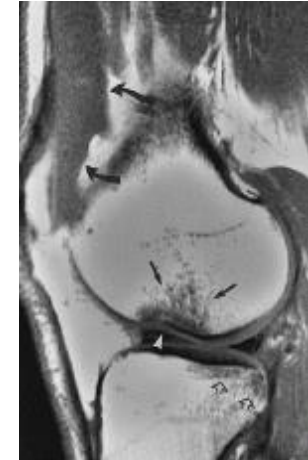


# Primary injury / plain X ray information





# Segond and Impression fractures



# Knee injuries

- X knee / with special projections
- Dynamic ultrasound knee
- CT knee
- MRI knee
- Arthro MRI
- CT Spect
- Bonescan



# Additional projections

Patella axial

Flexion

Weight bearing

$\frac{3}{4}$



In flexion

- Anterior meniscus
- ACL
- Bone lesions

Prone

- Posterior meniscus
- PCL



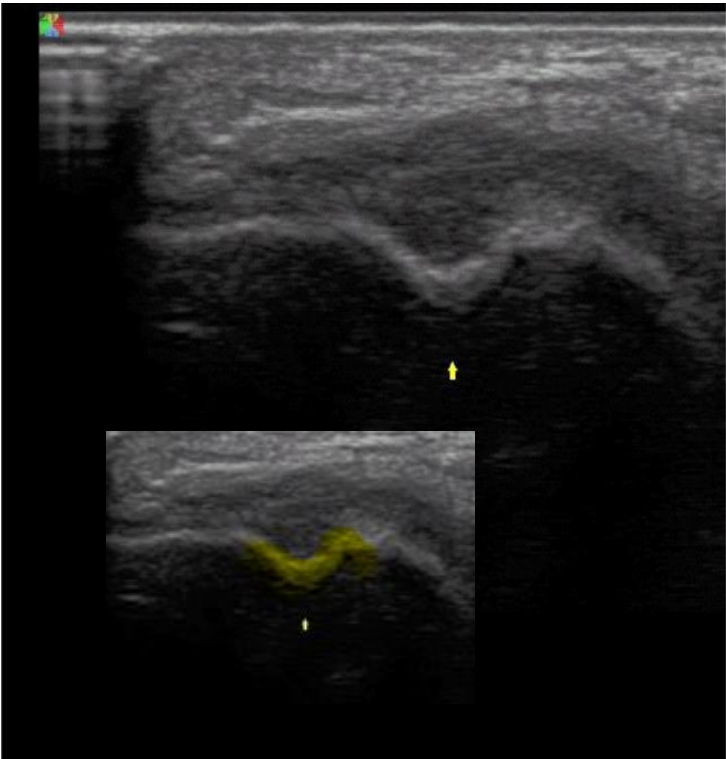
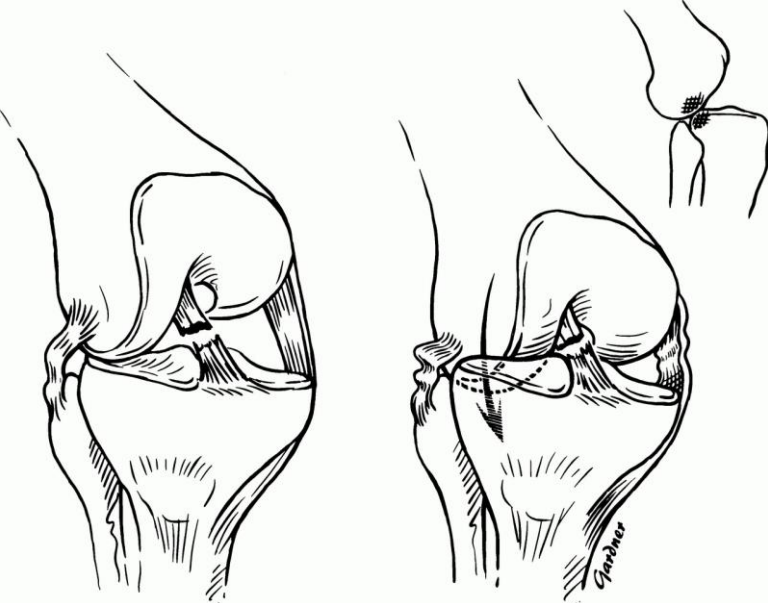
# Dynamische echografie

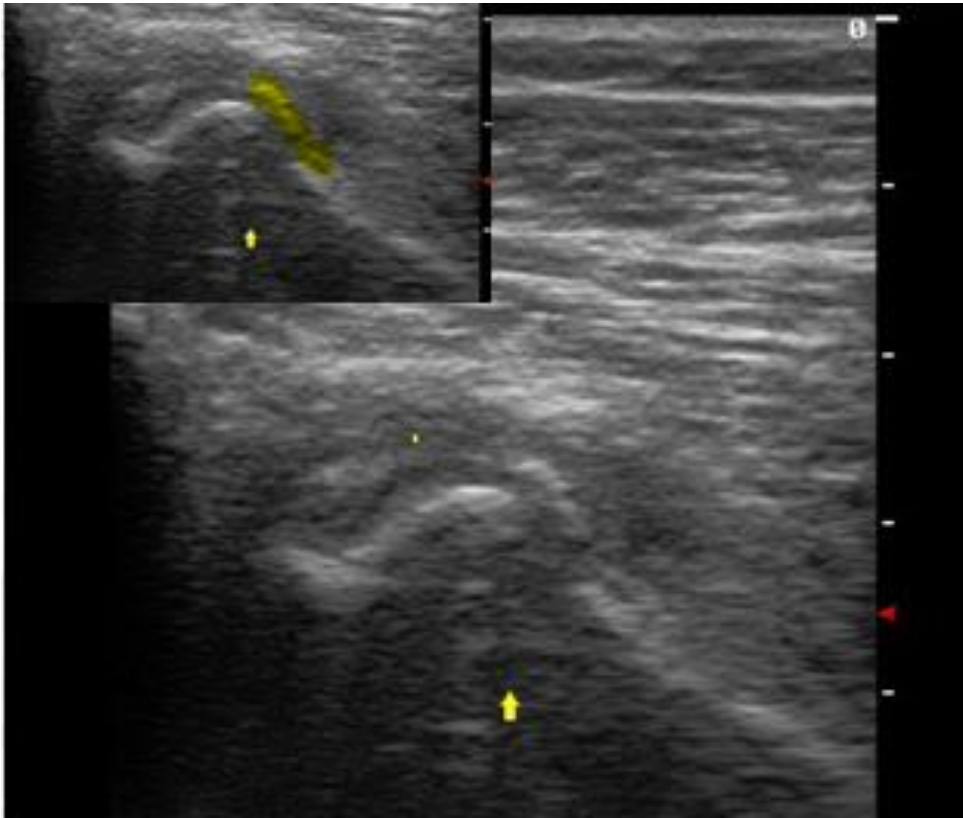
- Meniscus video



MRI	Echografie
Expensive	Cheap
Extensive information	Focused information
Static	Dynamic
Availability / waiting time	Depending local situation / less waiting
Patient non friendly Claustrobic ( 5 % )	Patient friendly Interactive .
Patient passive role	Interactive role patient

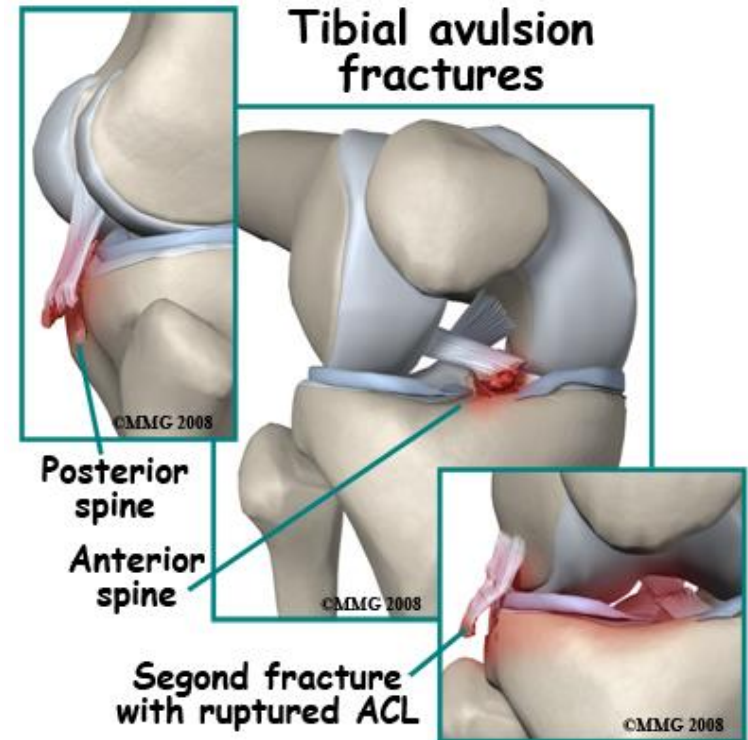
# Impaction lateral FC





# Bone lesions

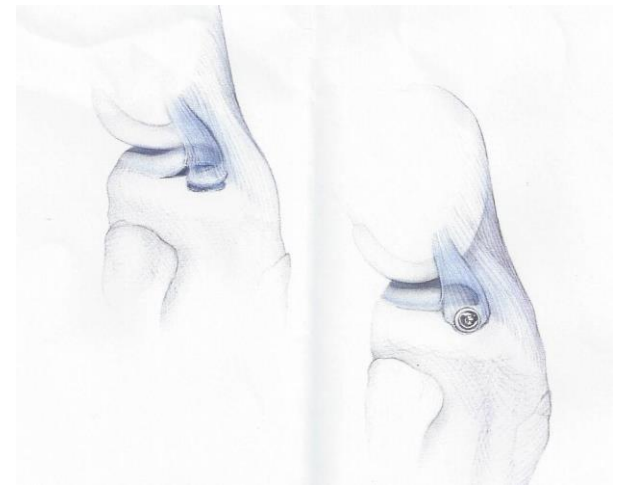
- Segond fracture
- Tibia plateau lateral posterior avulsion
- Impaction LFC





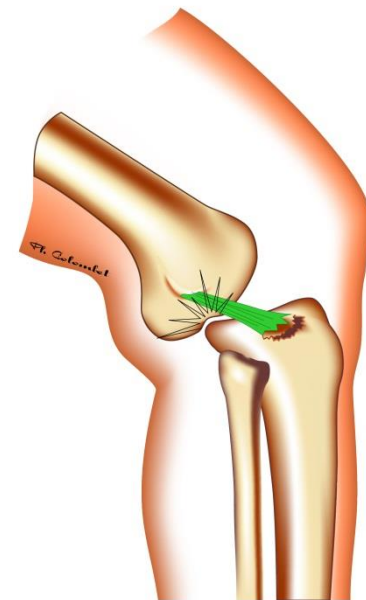
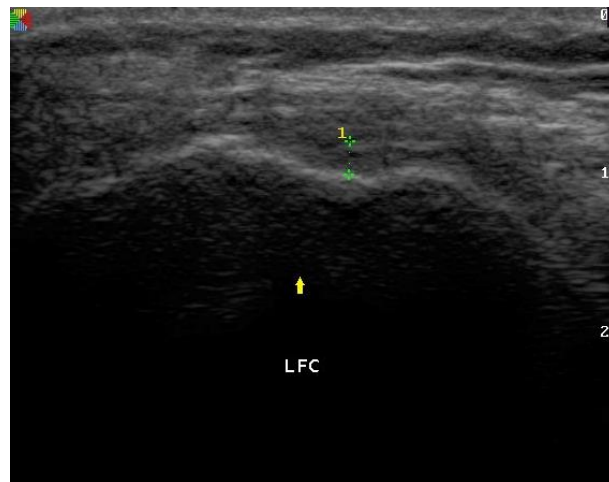
# Imaging Segond avulsion

- Incidence in MRI 3 % Resnick USA
- Incidence in X ray CORR Hess D 9 %
- Incidence ultrasound 29 % (ICONE)
- Higher velocity trauma ?
- Refixation / Feagin :



# Ultrasound imaging

- 88 patients with ACL #
- 25 Segond lesions
- 70 Impaction # lateral FC

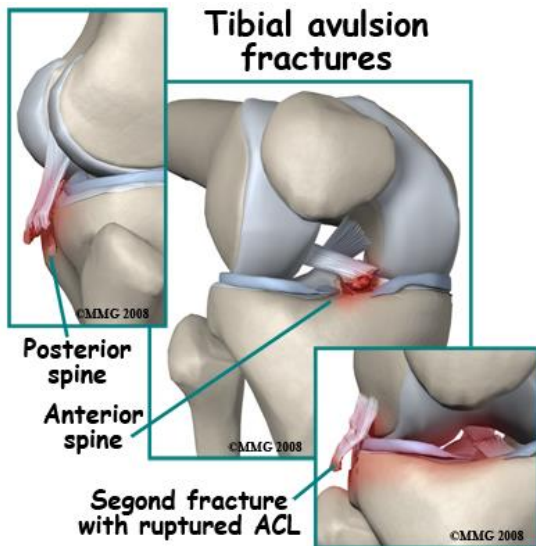


# ALL relation with Segond # ?



# Hypothesis

- Avulsion lesions are a possible goal for refixing important lateral structures.
- The same approach we have for lateral fibula and tibial spine avulsion fractures



# Stability testing ACL



# Stability after ACL R



# Conclusion

- Additional possibilities
- Dynamic ultrasound
- Secondary restrains
- Extra articular structures