



6th Advanced Course on Knee Surgery

January 31st – February 5th, 2016 Val d'Isère - France

www.kneecourse.com

Imaging in ACL failure / revision

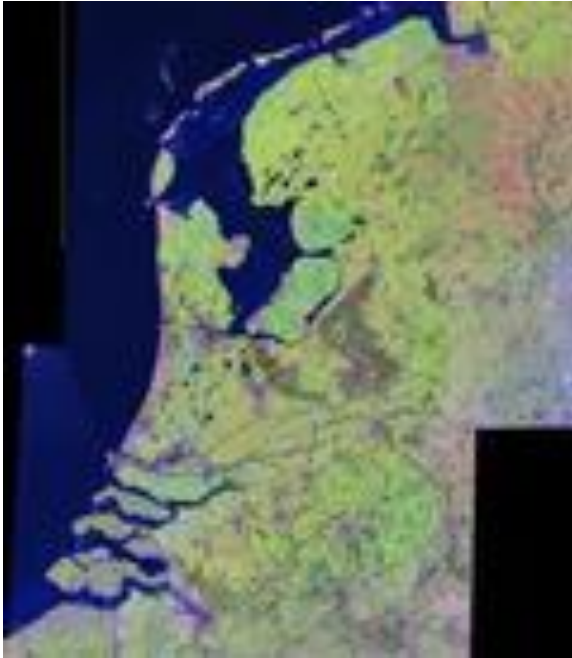
Burt Klos

ICONE

The Netherlands



ICONE EINDHOVEN NL



Imaging Causes of failure

Positioning

X ? MRI ?

Fixation

X / MRI

Biological failure /Low grade infection US ? MRI ?

Extra articular insufficiency Dynamic US

Secondary injury MRI



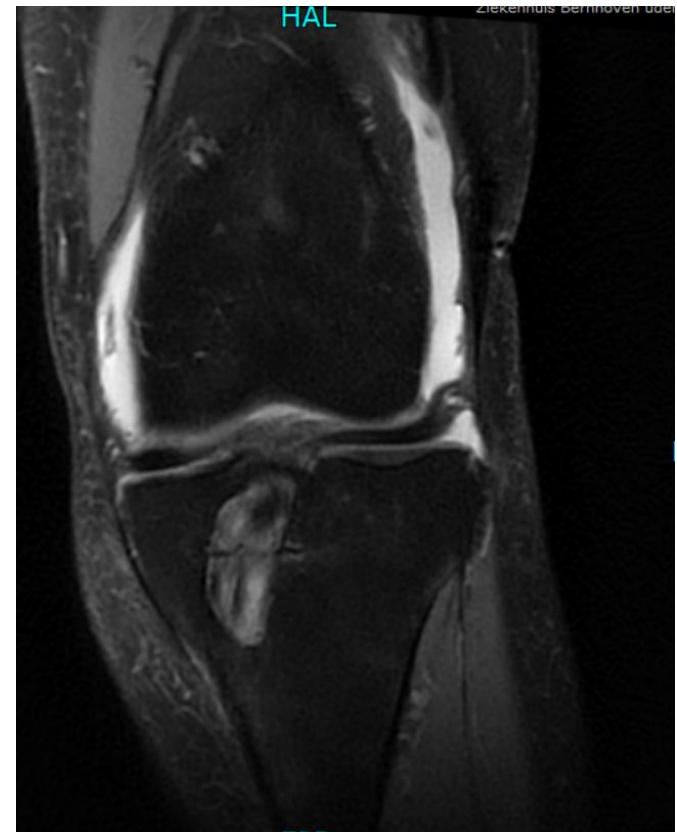
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Postoperative X ray



Insufficient plasty ?

- Jan 2015 , primary plasty , MRI aug 2015



X AP 10 mths



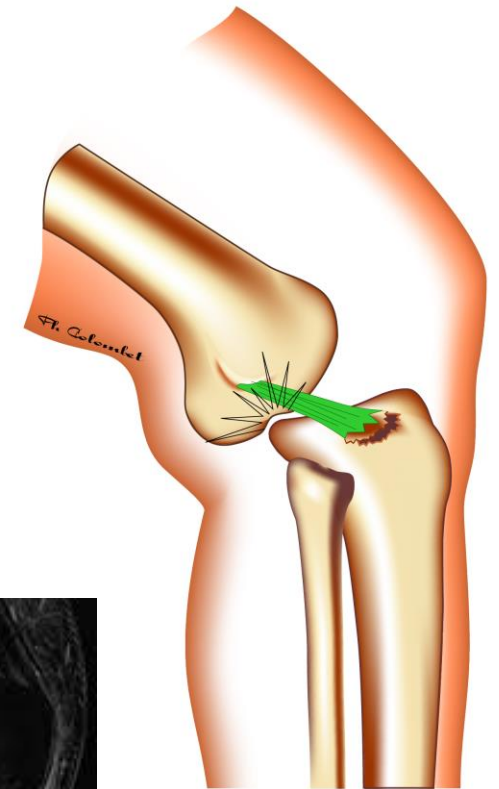
Enlargement femoral tunnel



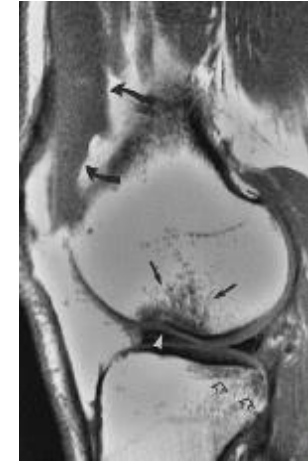
8 mnths



Primary injury / plain X ray information

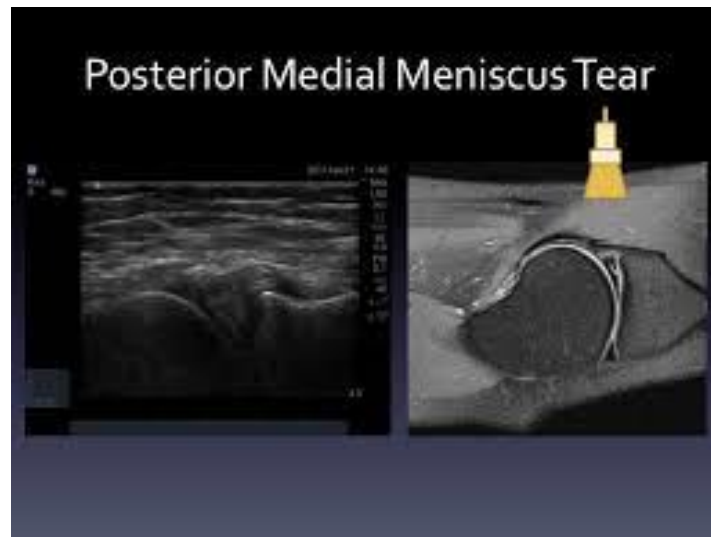


Segond and Impression fractures



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



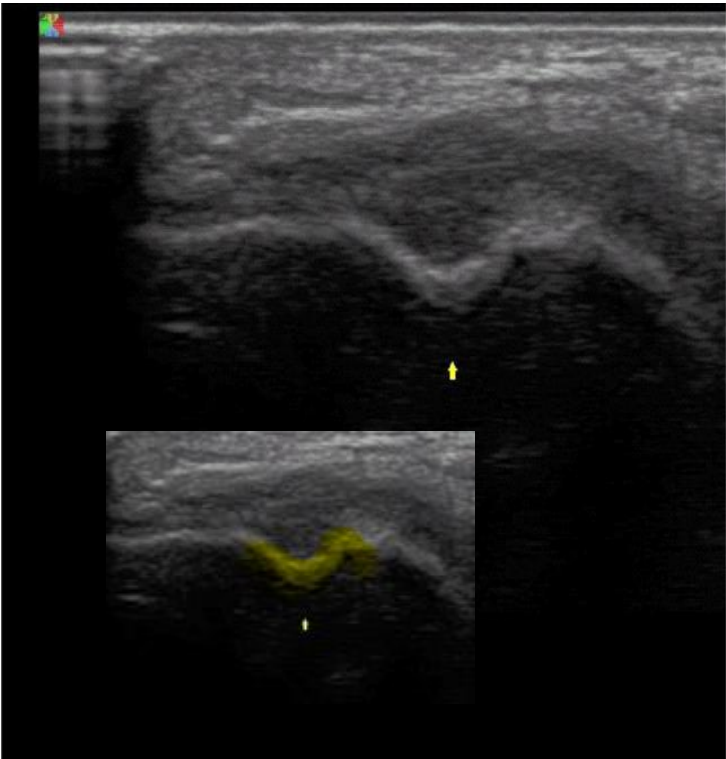
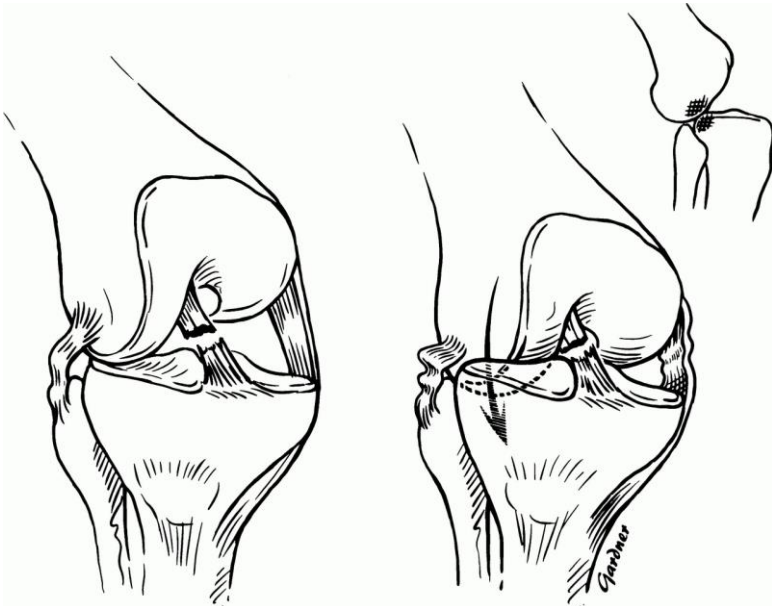
HR Dynamic Ultrasound

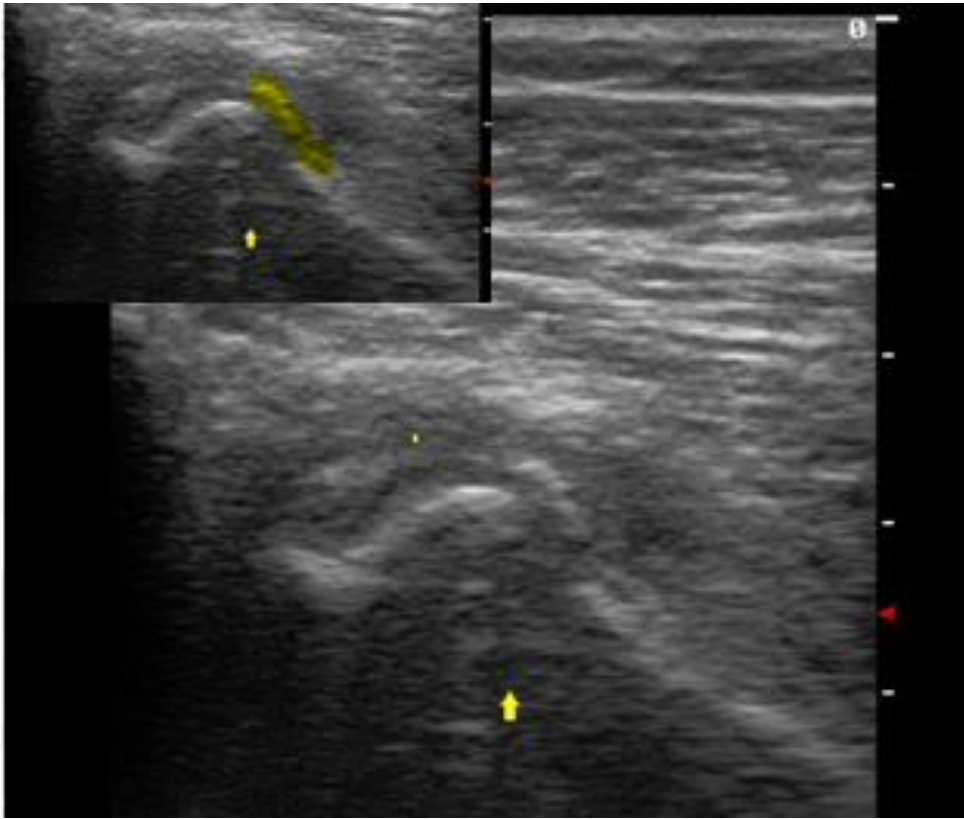
- Meniscus video



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

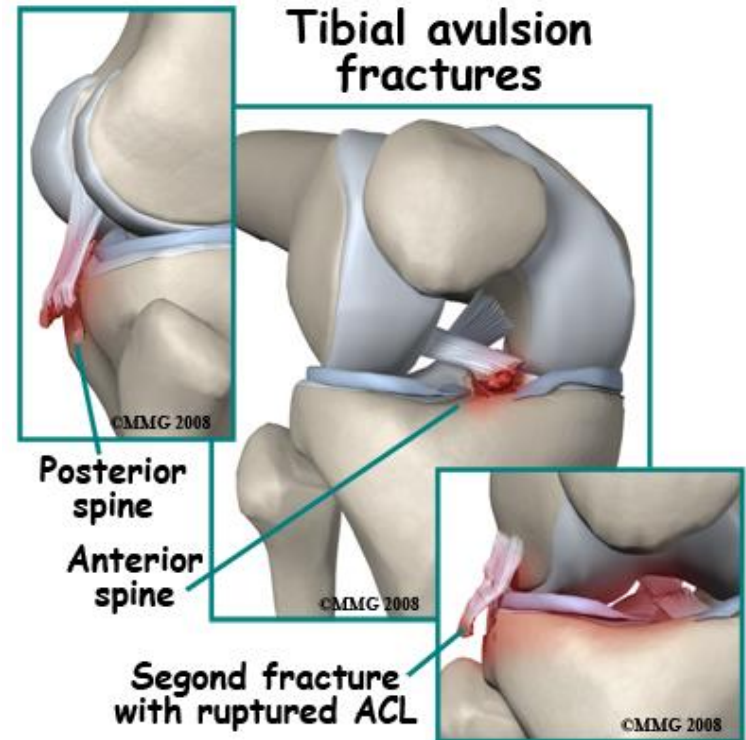
Impaction lateral FC



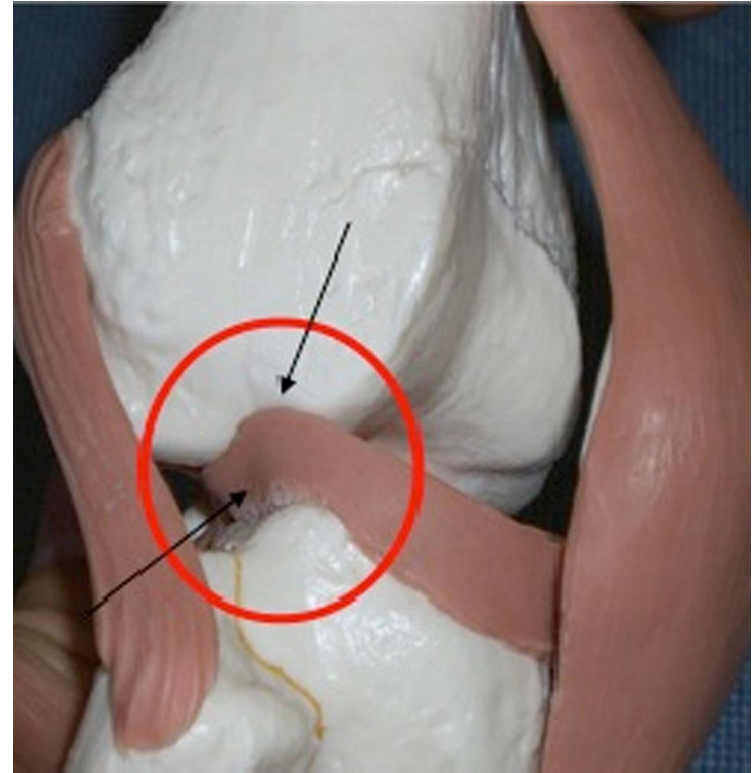
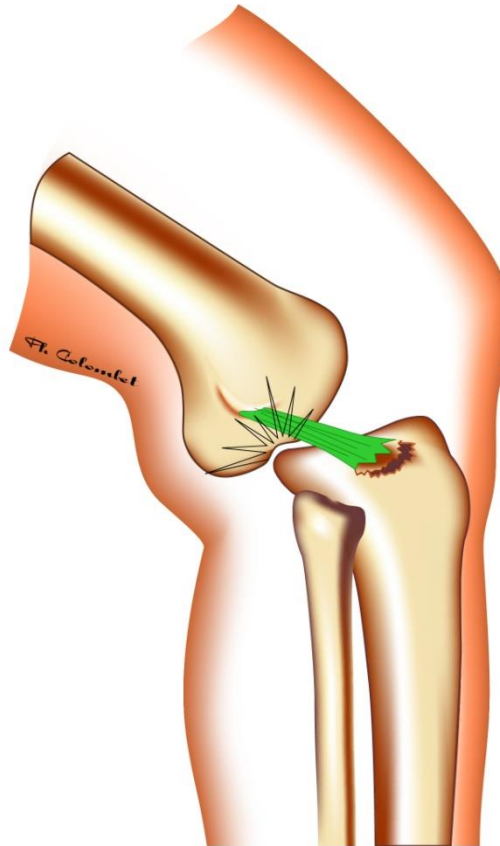


Bone lesions

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

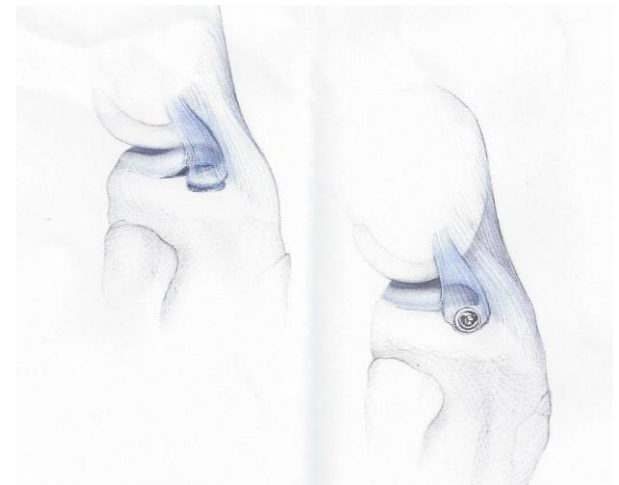


Combined lesions.



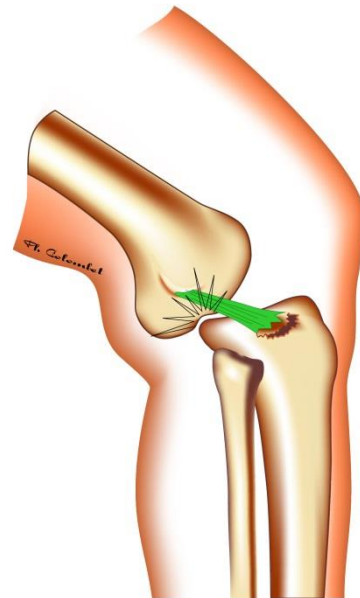
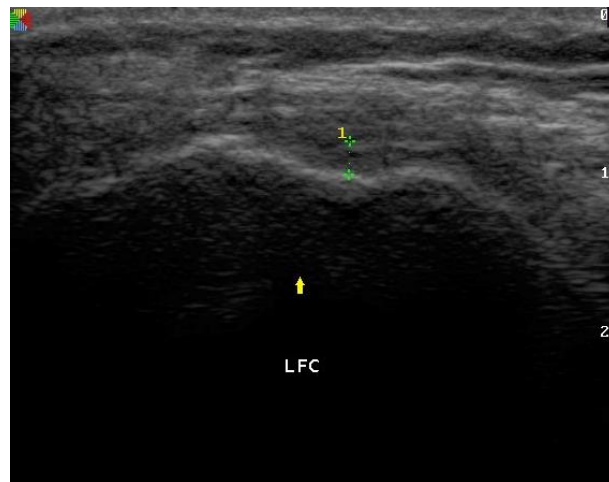
Imaging Segond avulsion

- 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

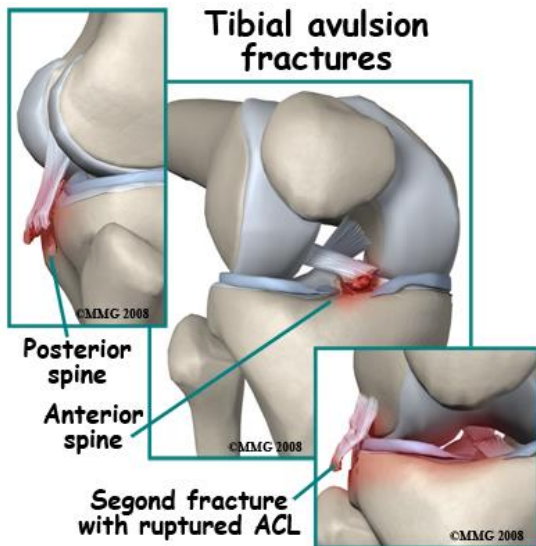


ALL relation with Segond # ?



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



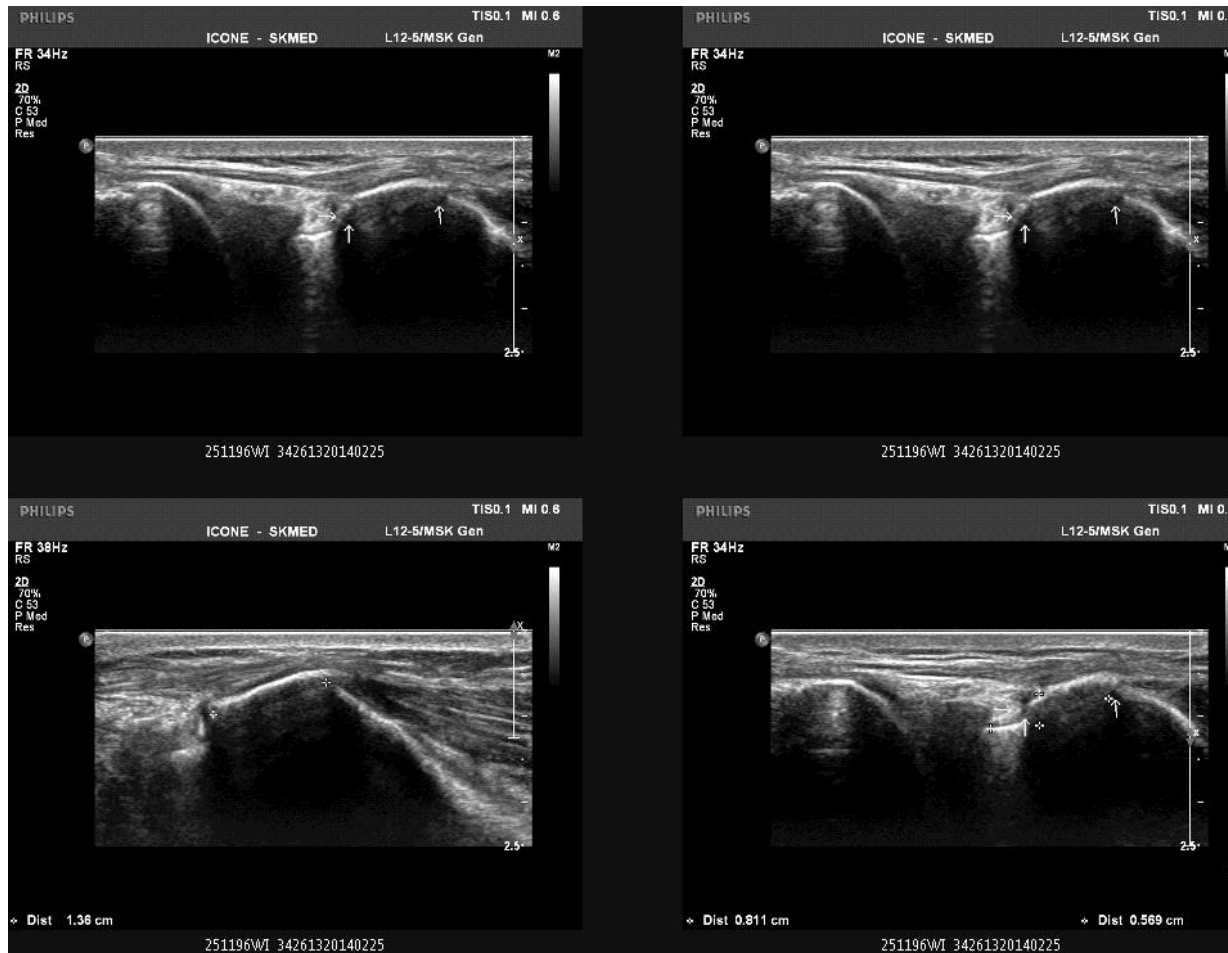
Stability testing ACL



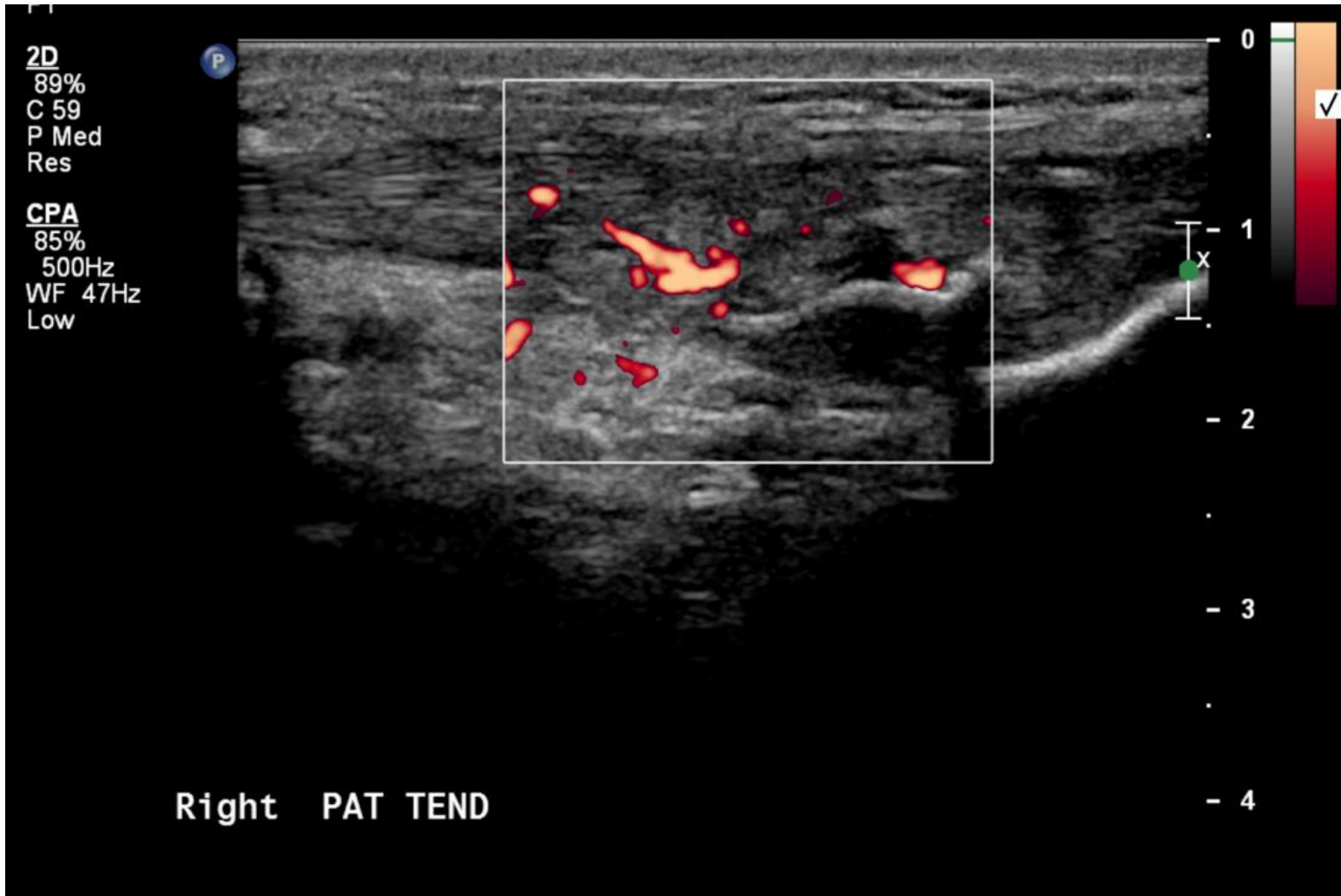
Stability after ACL R



US static / dynamic



Doppler ultrasound inflammation



Conclusion

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