

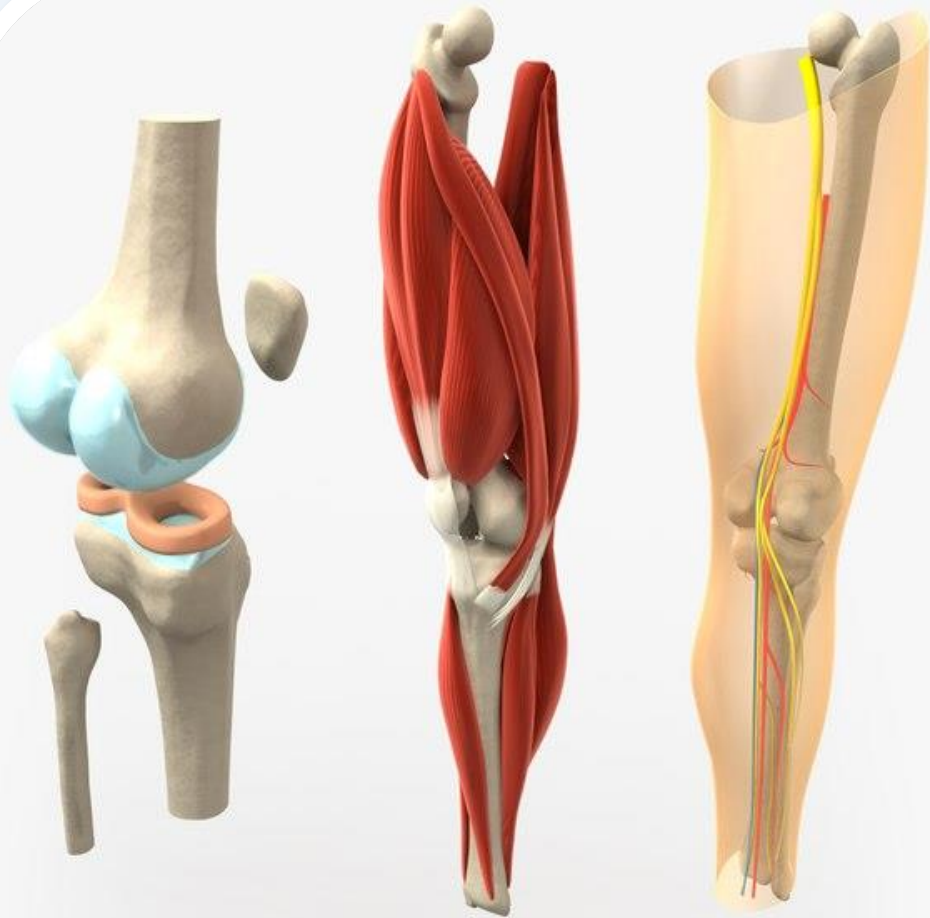
Diagnostic d'une Gonalgie

à l'aide de l'Echographie

Dr.Boudiaf

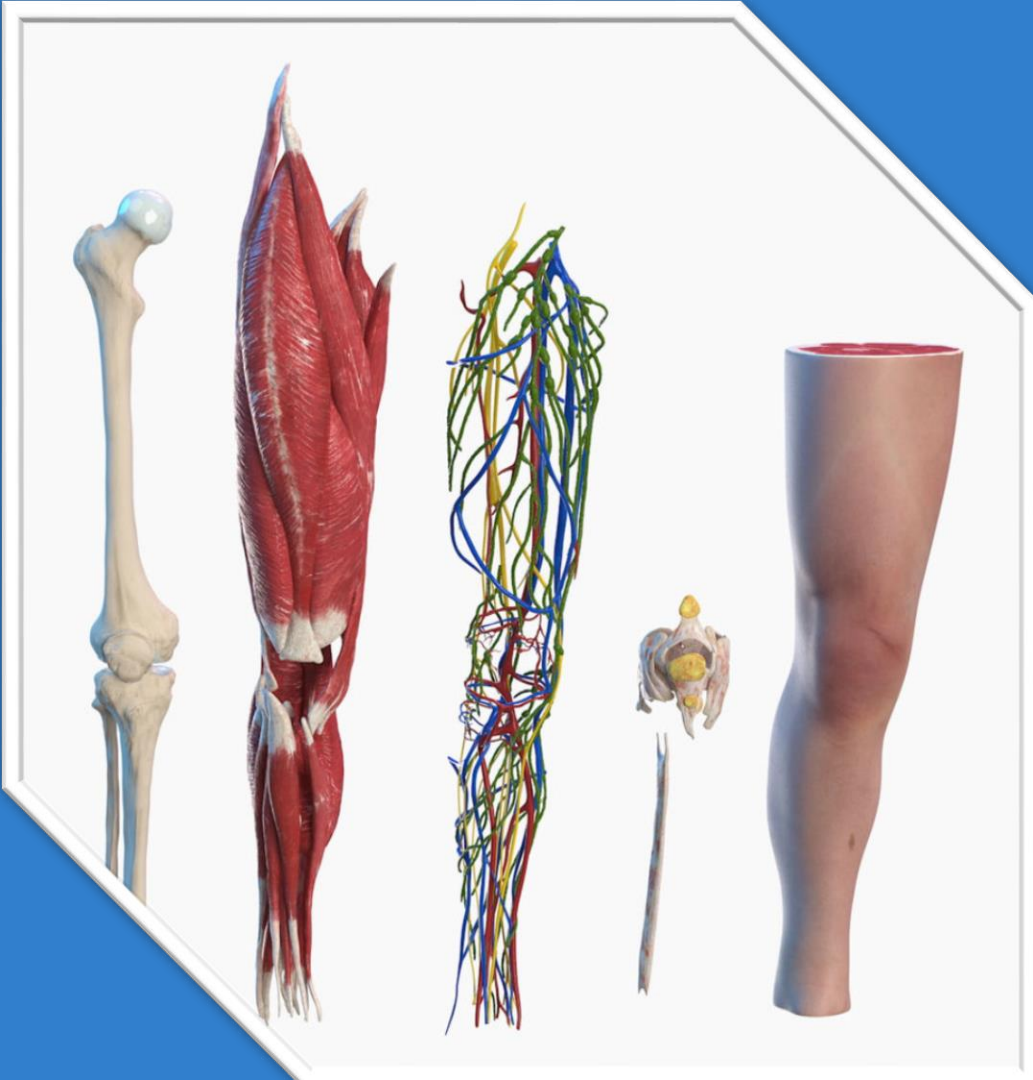
Rhumatologue privé - ARAP





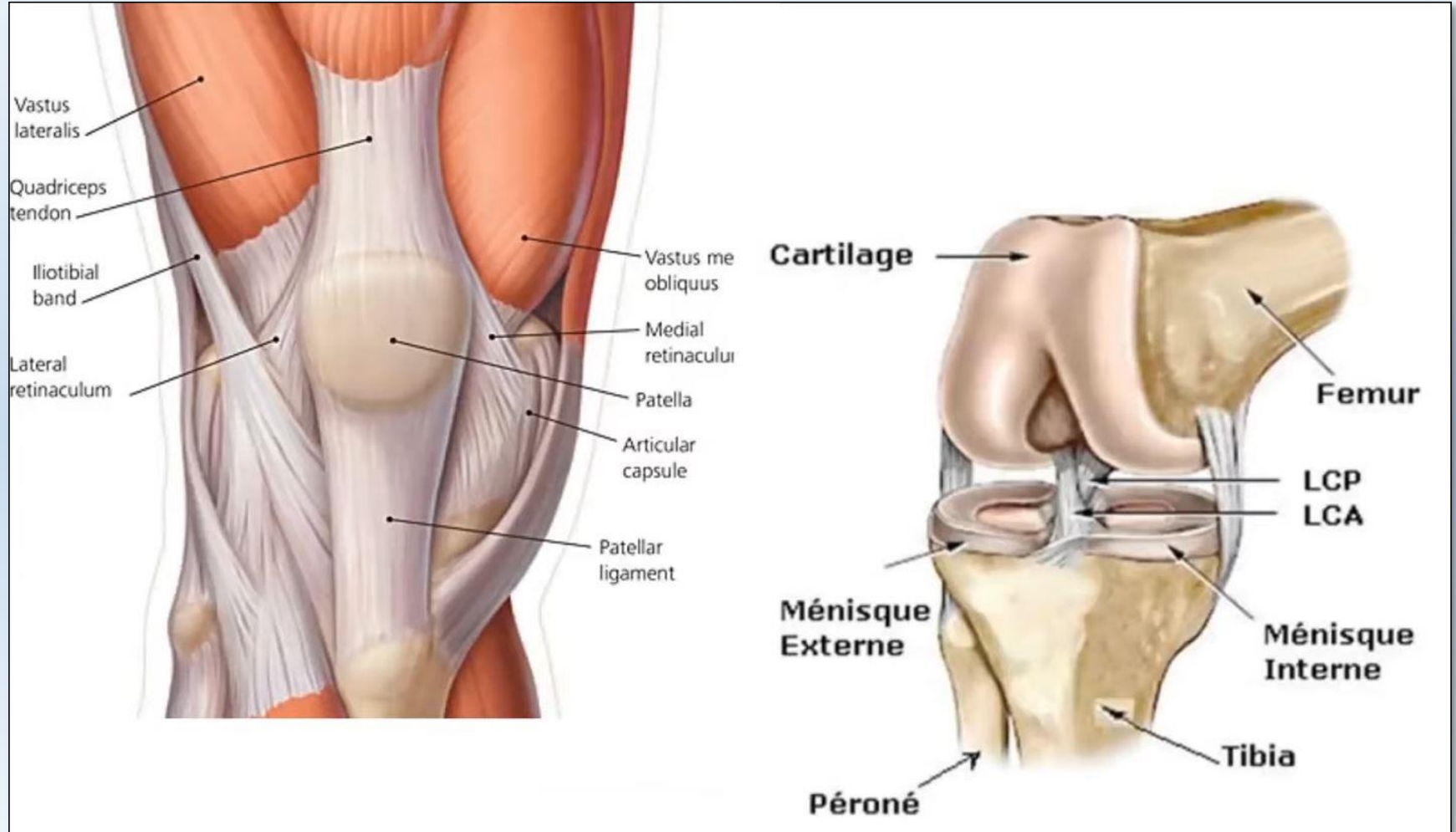
Introduction

Le **genou** est l'**articulation la plus complexe** de notre organisme, d'une part du fait de son **anatomie très complexe**, et d'autre part de sa **fonction** tout aussi **complexe**. Cette complexité nécessite une **démarche diagnostique très rigoureuse**



Rappel Anatomique

Rappel anatomique du genou

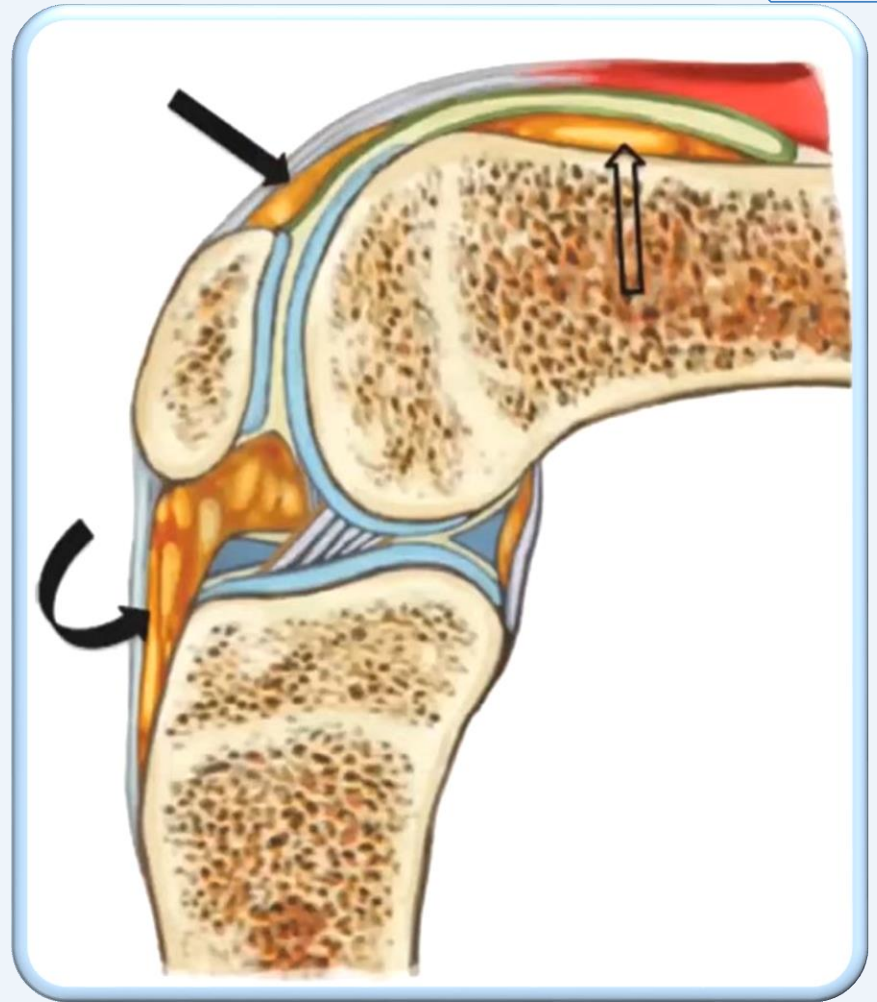


FAT PAD

→ FP sous-quadricipital

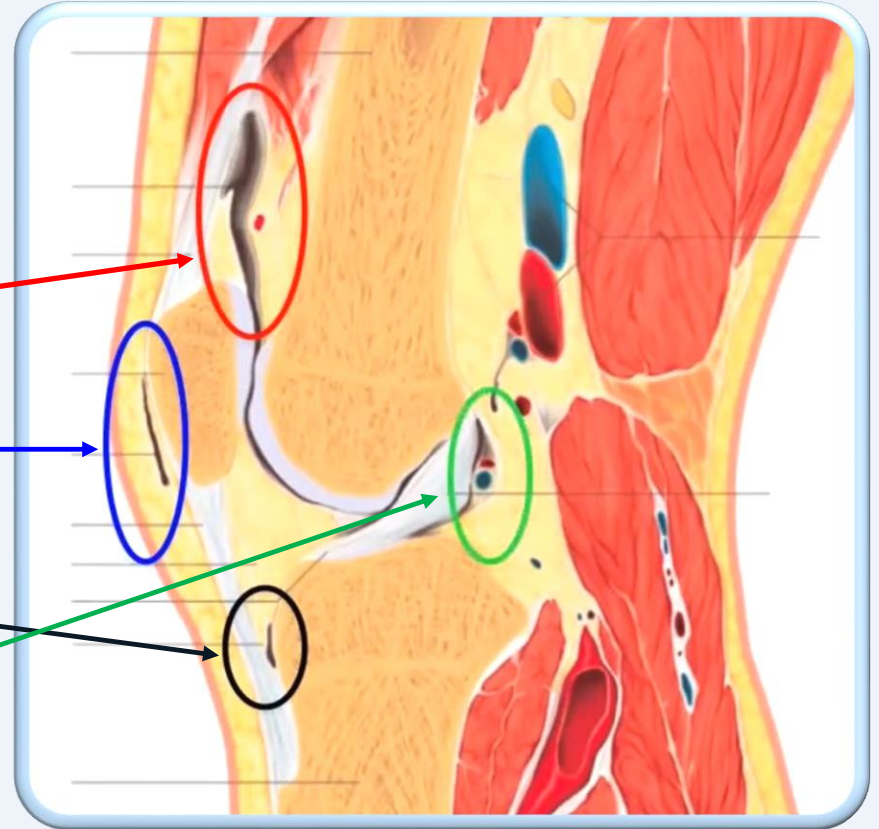
⇨ FP pré-fémoral

↪ FP de HOFFA

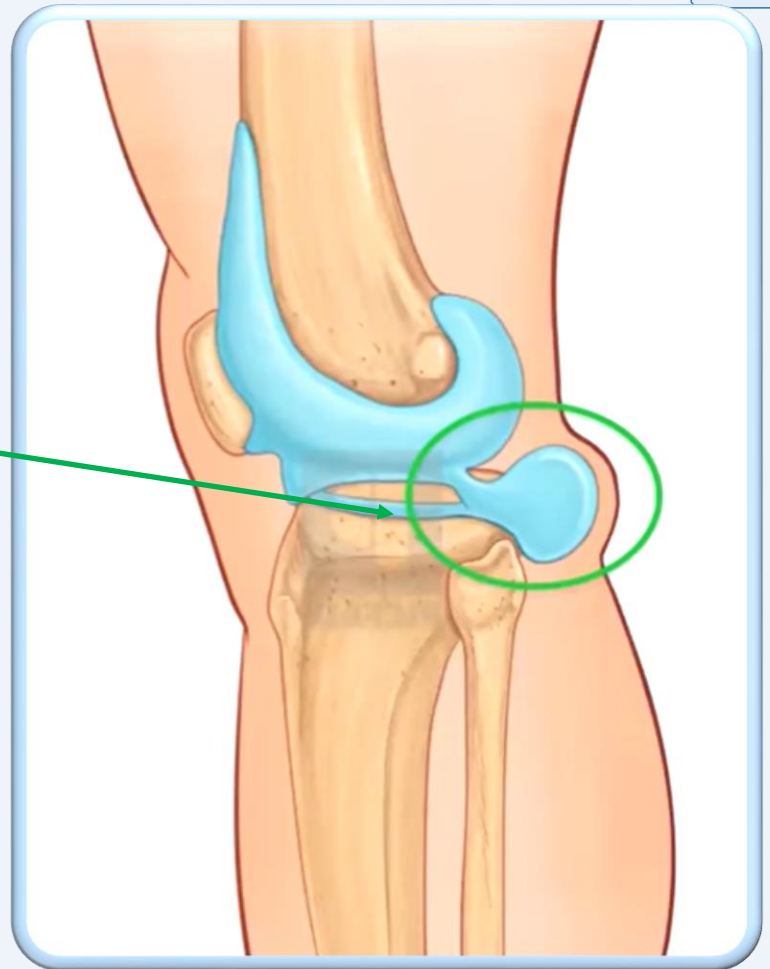


Bourses séreuses

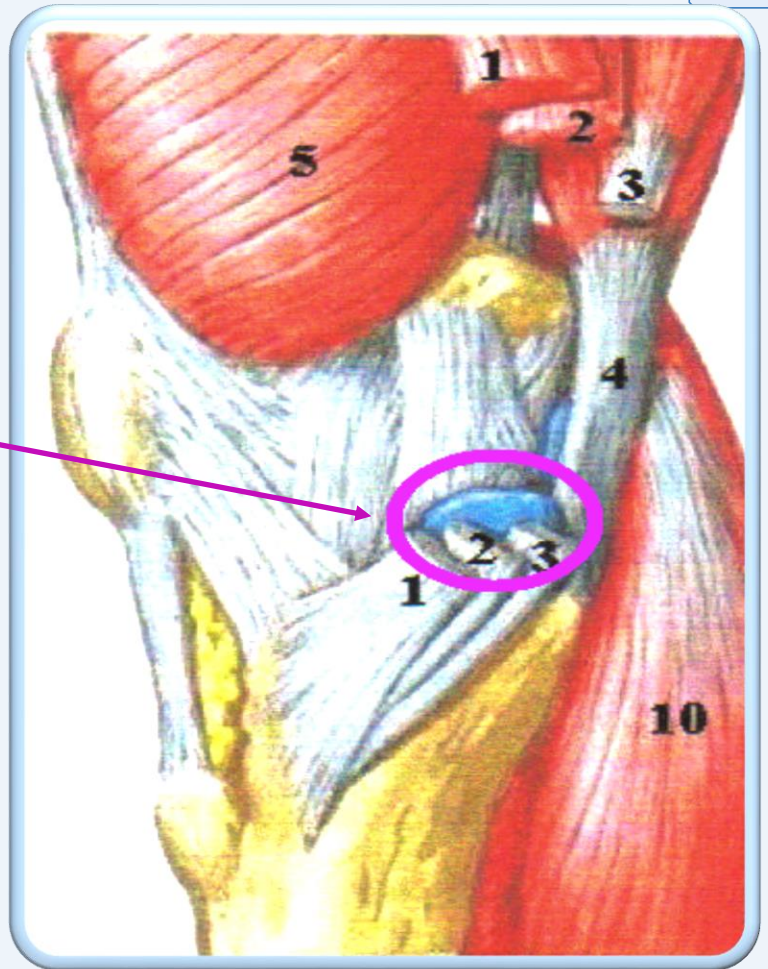
- ❑ B. supra-patellaire
- ❑ B. pré-patellaire
- ❑ B. infra-patellaire
- ❑ Kyste poplité



- Kyste poplité

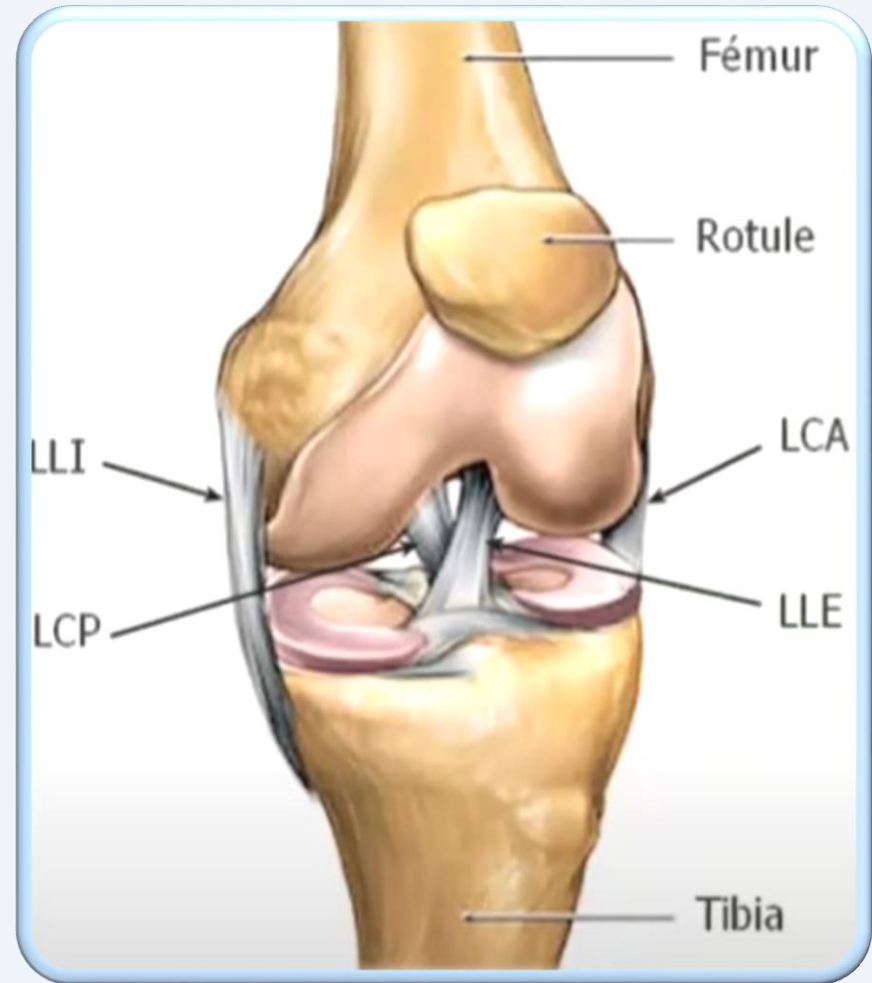


- B. Tendon Patte d'Oie



Panorama lésionnel

- ❖ **Lésion osseuse** et/ou **cartilagineuse**: fémur, tibia, fibula, patella
- ❖ Lésion **ligamentaire** :
pèriph > croisés
- ❖ Lésion **méniscale** : Int > Ext
- ❖ Lésion **tendineuse** : **TQ** et **TP**
- ❖ **Bursite**



Mat erie I

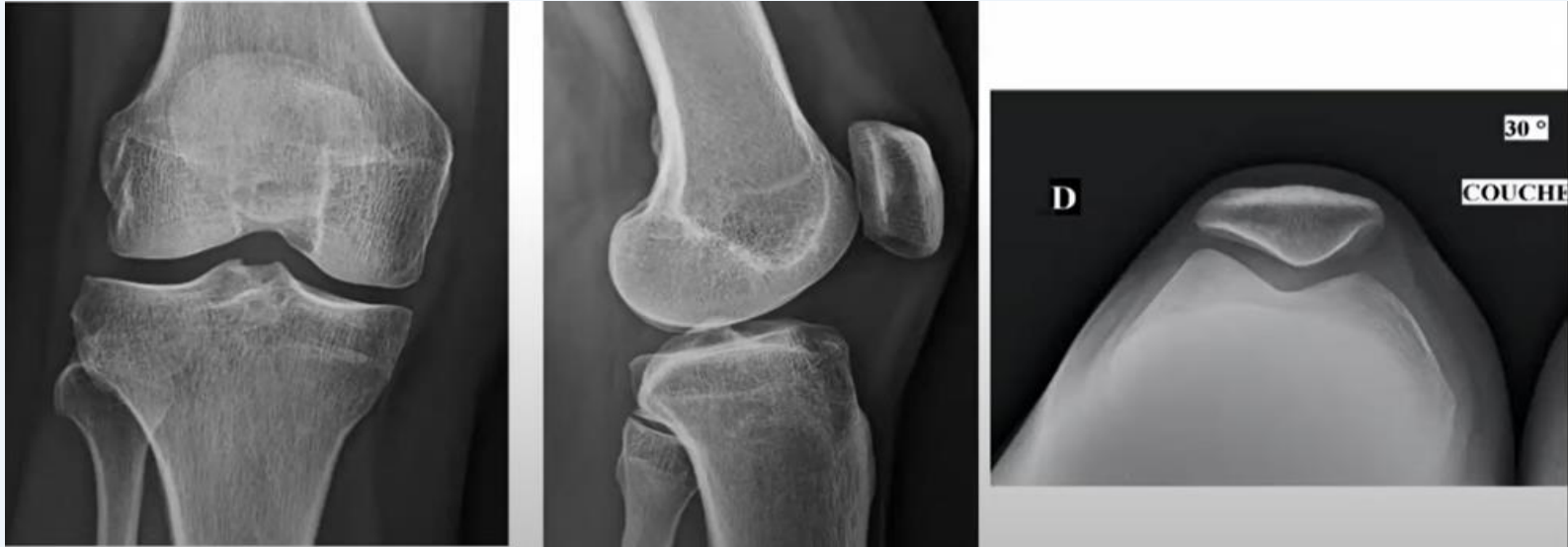


Matériel :

- Appareil de **haute gamme**
- Sonde **linéaire haute fréquence**
- **Position** sonde / patient
- Avantages / inconvénients

L'intérêt de l'échographie :

- Prolongation d'un examen clinique
- Examen Bi-latéral, comparatif & dynamique
- **Complément des radiographies standards +++**



Apport de l'Échographi e

Devant la nécessité d'un diagnostic rigoureux et un patient douloureux, Quel est **l'apport de l'échographie** et jusqu'ou peut-elle nous accompagner dans le **diagnostic d'une Gonalgie ?**



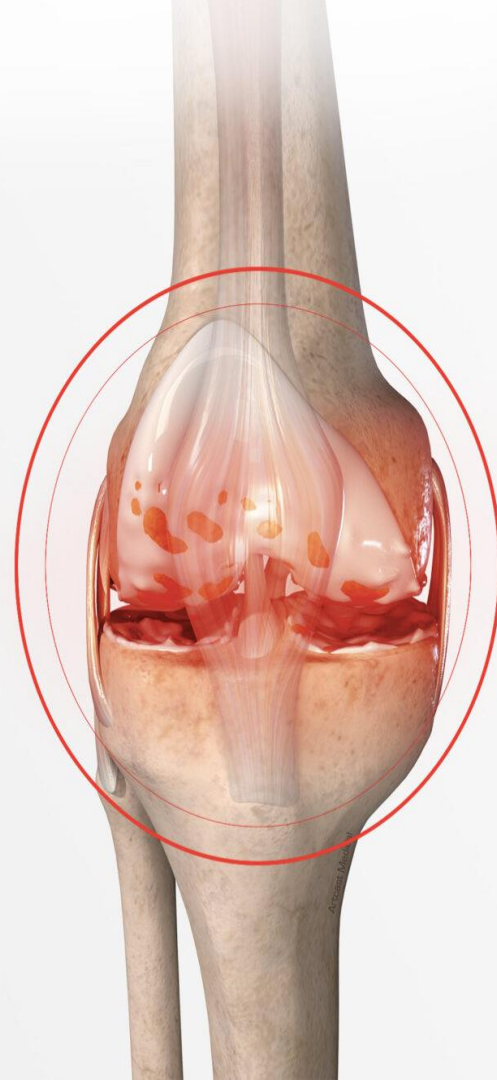
Apport de l'Echographie

1. Pathologies **articulaires**
2. Pathologies **abarticulaires**
3. **Ressaut** du genou « Snapping knee »
4. Lésions **méniscales**
5. Lésions **ligamentaires**
6. Pathologies **osseuses**

01.

Pathologies articulaires

- Gonarthrose
- Pathologies Microcristallines
- Instabilité fémoro-patellaire



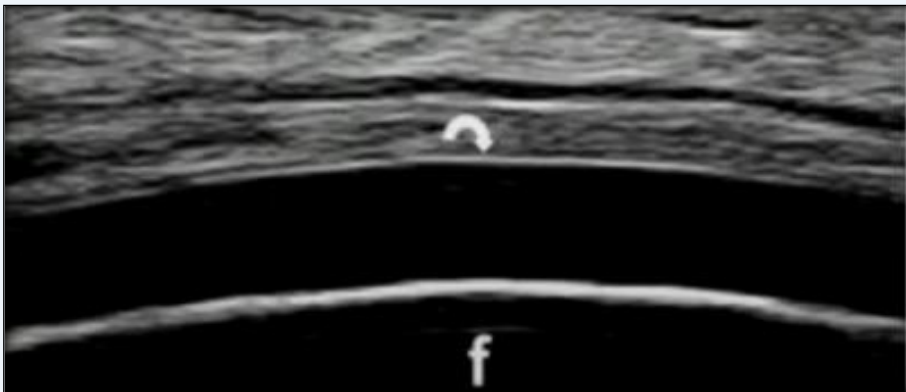
A-

Gonarthrose

(arthrose du genou)

Quatre (4) éléments à analyser :

- Epaisseur (3 mm)
- Limites
- Transparence
- Homogénéité



**Osteoarthritis
and Cartilage**

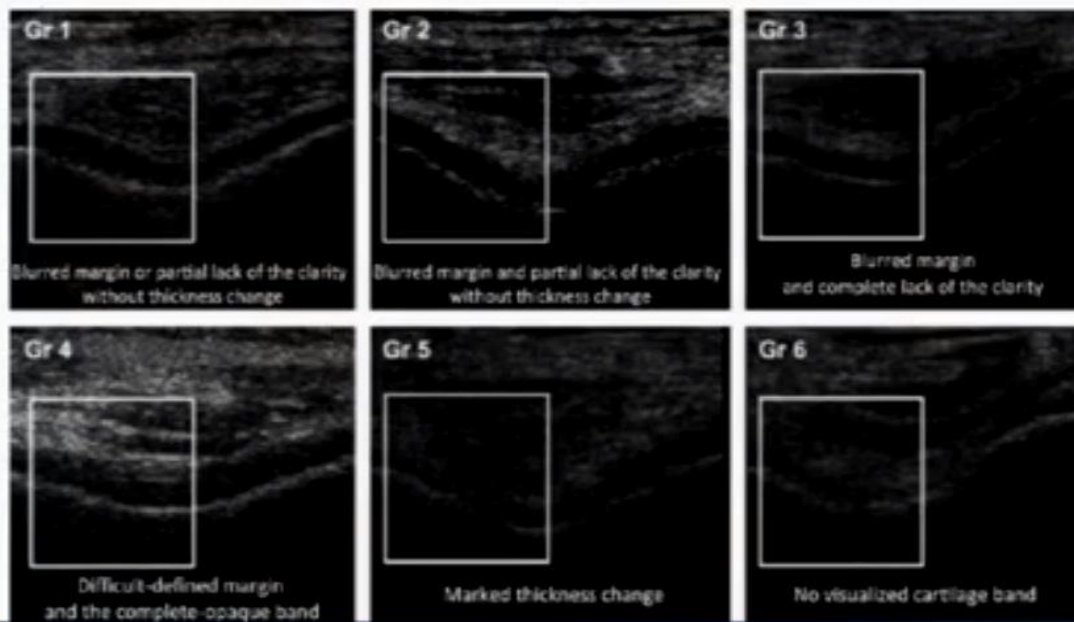
I **C** R S

International
Cartilage
Repair
Society

OARSI  **OSTEOARTHRITIS
RESEARCH SOCIETY
INTERNATIONAL**

The validity of *in vivo* ultrasonographic grading of osteoarthritic femoral condylar cartilage: a comparison with *in vitro* ultrasonographic and histologic gradings[†]

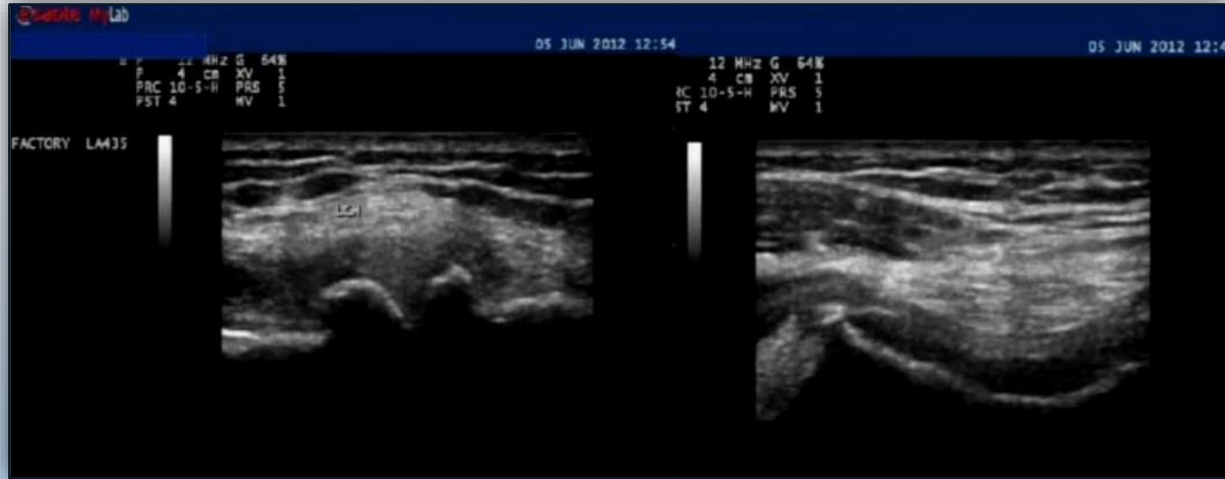
C.-L. Lee M.D., M.S.[†], M.-H. Huang M.D., Ph.D.^{†||}, C.-Y. Chai M.D., Ph.D.^{†¶},
C.-H. Chen M.D., Ph.D.^{†||}, J.-Y. Su M.D.^{§#} and Y.-C. Tien M.D., Ph.D.^{§#*}



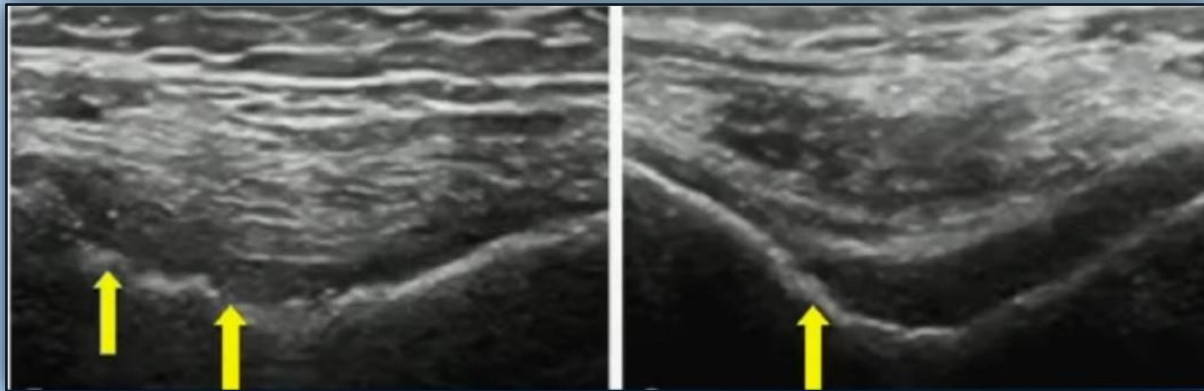
Données Echographique dans la Gonarthrose



Ostéophytoses



Erosions



Pourquoi l'Echographie au lieu de la Radiographie ?

- Permet une **visualisation directe** des **anomalies cartilagineuses**
- Peut détecter même les **ostéophytoses minimales**
- Assez sensible pour détecter les stages **précoces de l'arthrose**

Démonstré par une étude faite par l'Université d'Oxford



RHEUMATOLOGY

Rheumatology 2016;55:2040–2049
 doi:10.1093/rheumatology/kew304
 Advance Access publication 24 August 2016

Original article

OXFORD
ACADEMIC

Ultrasonographic evaluation of joint damage in knee osteoarthritis: feature-specific comparisons with conventional radiography

Tadashi Okano^{1,2}, Emilio Filippucci¹, Marco Di Carlo¹, Antonella Draghessi¹, Marina Carotti³, Fausto Salaffi¹, Gary Wright⁴ and Walter Grassi¹

Abstract

Objective. The main aim of this study was to compare ultrasonography (US) with conventional radiography for the assessment of joint damage in knee OA.

Methods. A total of 166 knees of 84 patients (59 women and 25 men) with primary knee OA were included in this study. The femoral hyaline cartilage of the medial para-patellar aspect and the osteophytes of both the medial and lateral femoral condyle were assessed. The cartilage and osteophytes were both quantitatively and qualitatively assessed. The US assessment was feature-specifically compared with conventional radiography.

Results. There was a strong correlation between the radiographic medial tibiofemoral narrowing grade and the US medial cartilage grade ($r_s = 0.7144$, 95% CI: 0.6218, 0.7873, $P < 0.0001$). In the detailed analysis, US could assess cartilage damage more correctly by using the direct visualization technique. A strong correlation was also found between the radiographic and the US medial femoral osteophyte grade ($r_s = 0.7515$, 95% CI: 0.6659, 0.8176, $P < 0.0001$) and between the radiographic and the US lateral femoral osteophyte grade ($r_s = 0.6947$, 95% CI: 0.5941, 0.7739, $P < 0.0001$). US detected osteophytes in 46 sites at which conventional radiography did not detect any osteophytes.

Conclusion. The present feature-specific comparison study provides evidence supporting the concurrent validity of US in the assessment of knee joint damage due to OA through its agreement with conventional radiography. Moreover, US was found to be a sensitive imaging technique for revealing cartilage damage and even minimal osteophytes, especially in the early radiographic stages of knee OA.

Key words: osteoarthritis, knee, cartilage, osteophyte, ultrasonography, conventional radiography

Rheumatology key messages

- The comparison between ultrasonography and conventional radiography provides evidence supporting its agreement in OA.
- Ultrasonography allows for direct visualization of the cartilage damage and can detect even minimal osteophytes in OA.
- Ultrasonography is sensitive for revealing cartilage damage and osteophytes, especially in early knee OA.

Une autre étude a comparé deux (2) groupes de patients **Gonarthrosique** **douloureux** symptomatique et asymptomatique ou l'échographie a permis de **détecter la cause** de cette douleur

L'étude a mis le point sur la **reproductibilité** de l'échographie et sa **corrélation avec** **le WOMAC** (Western Ontario & McMaster Universities Arthritis)

ORIGINAL ARTICLE

Ultrasonographic evaluation in symptomatic knee osteoarthritis: clinical and radiological correlation

Fevziye Ünsal MALAS,¹ Murat KARA,² Bayram KAYMAK,¹ Ayşen AKINCI¹ and Levent ÖZÇAKAR¹

	Group I (n = 61)	Group II (n = 61)	P
Clinical findings (%)			
Crepitus	91.8	93.4	0.848
Warmth	14.8	-	0.004
Ballotement	3.3	3.3	1.000
VAS	7.8 ± 1.6	5.0 ± 2.3	< 0.001
US findings			
Cartilage thickness (mm)			
LFC	1.83 ± 0.68	1.74 ± 0.69	0.246
ICA	2.20 ± 0.77	2.04 ± 0.74	0.103
MFC	1.78 ± 0.68	1.68 ± 0.74	0.348
Meniscal bulging (mm)	2.55 ± 2.78	2.29 ± 2.41	0.082
Cartilage grading	5 (1-6)	5 (1-6)	0.973
Other findings (%)			
Effusion	29.5	13.1	0.021
Baker's cyst	45.9	31.1	0.049
K-L grading	2 (1-4)	2 (1-4)	0.063

Meniscal bulging measurements and K-L grades were positively correlated ($r = 0.535$, $P < 0.001$)

B- Pathologies Microcristallines

Dépôts de microcristaux au niveau de:

- Cartilage hyalin
- Fibrocartilages
- Liquide synovial et membrane synoviale
- Tendon
- Tissu sous cutané



Un **Consensus international** a été établi pour **standardiser** toute les définitions :

Rheumatology Advance Access published May 13, 2015

RHEUMATOLOGY 266

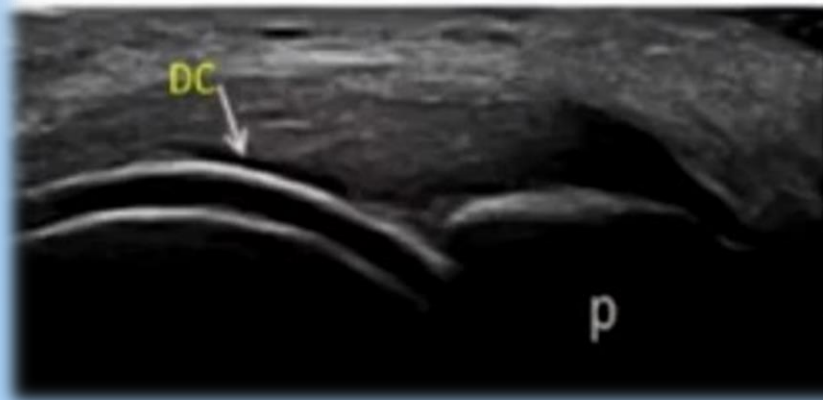
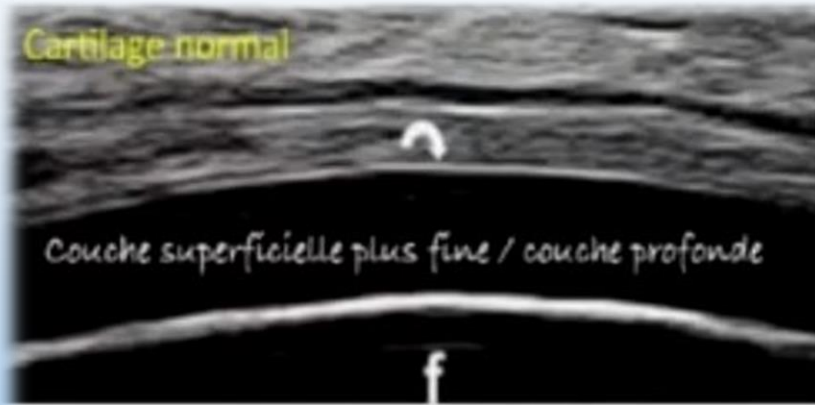
Original article doi:10.1093/rheumatology/kev112

International Consensus for ultrasound lesions in gout: results of Delphi process and web-reliability exercise

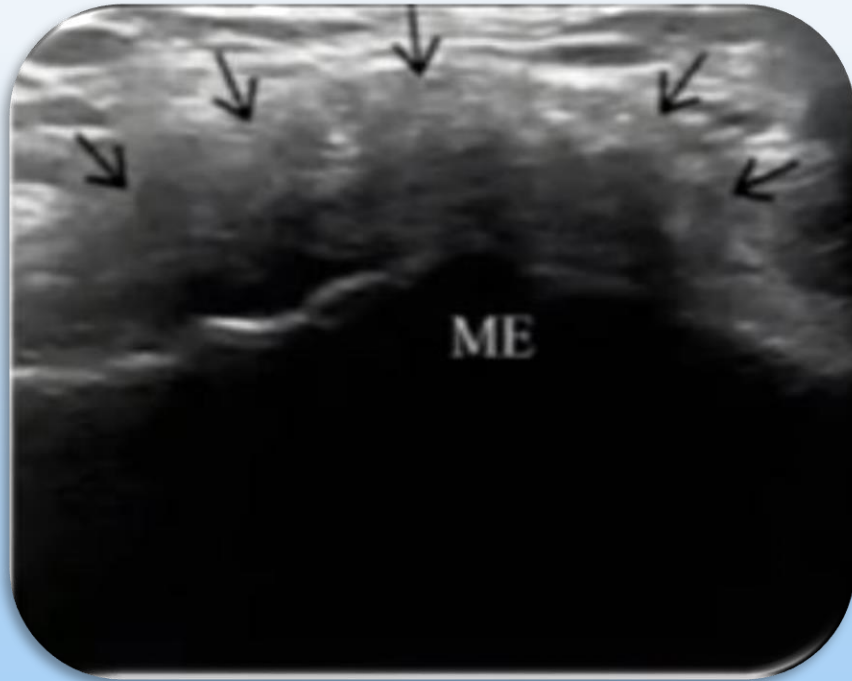
Marwin Gutierrez¹, Wolfgang A. Schmidt², Ralf G. Thiele^{3,*}, Helen I. Keen^{4,*}, Gurjit S. Kaeley^{5,*}, Esperanza Naredo^{6,*}, Annamaria Iagnocco^{7,*}, George A. Bruyn^{8,*}, Peter V. Balint^{9,*}, Emilio Filippucci^{1,*}, Peter Mandl^{10,*}, David Kane^{11,*}, Carlos Pineda^{12,*}, Andrea Delle Sedie^{13,*}, Hilde Berner Hammer^{14,*}, Robin Christensen^{15,*}, Maria Antonietta D'Agostino^{16,*} and Lene Terslev¹⁷, on behalf of the OMERACT Ultrasound Gout Task Force group

- ❖ **Double Contour:** abnormal hyperechoic band over the superficial margin of the articular hyaline cartilage, independent of the angle of insonation and which may be either irregular or regular, continuous or intermittent and can be distinguished from the cartilage interface sign.
- ❖ **Tophus:** independent of location (e.g. extra-articular/ intra-articular/intra-tendinous)]; a circumscribed, inhomogeneous, hyperechoic and/or hypoechoic aggregation (which may or may not generate posterior acoustic shadow), which may be surrounded by a small anechoic rim.
- ❖ **Aggregates:** independent of location (intra-articular/ intra-tendinous)]; heterogeneous hyperechoic foci that maintain their high degree of reflectivity, even when the gain setting is minimized or the insonation angle is changed and which occasionally may generate posterior acoustic shadow.
- ❖ **Erosion:** an intra- and/or extra-articular discontinuity of the bone surface (visible in two perpendicular planes).

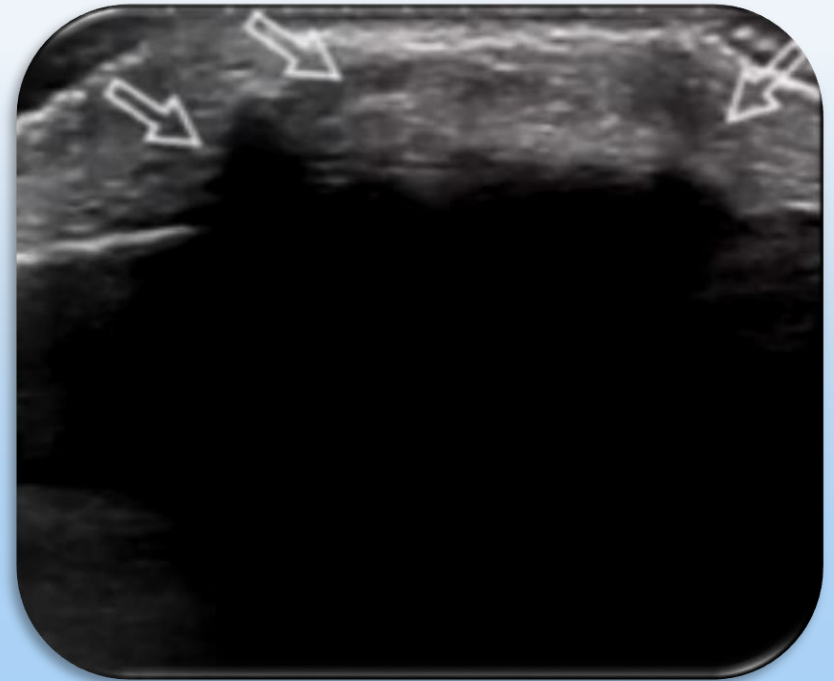
Double Contour



Tophus

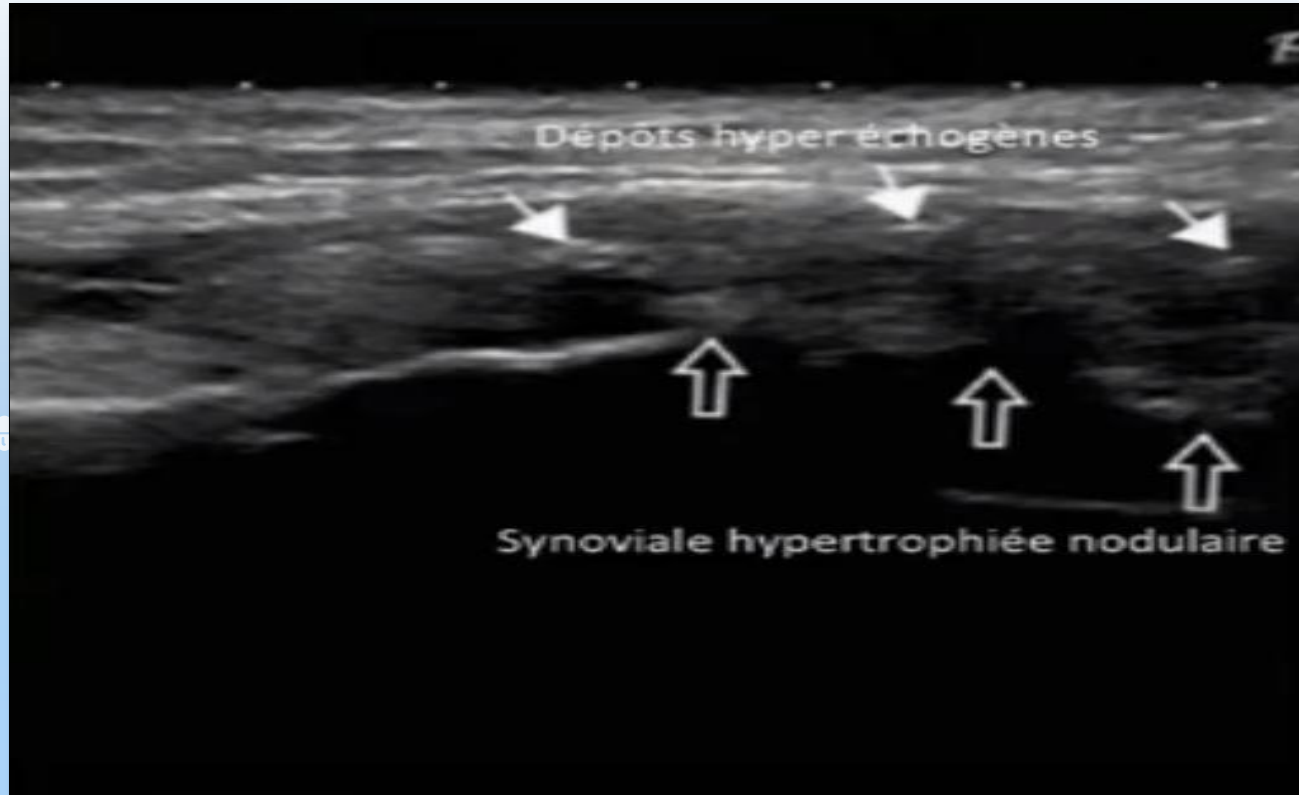


Coupe Trans condyle fémorale médial
Image hétérogène avec cône d'ombre post peu marqué

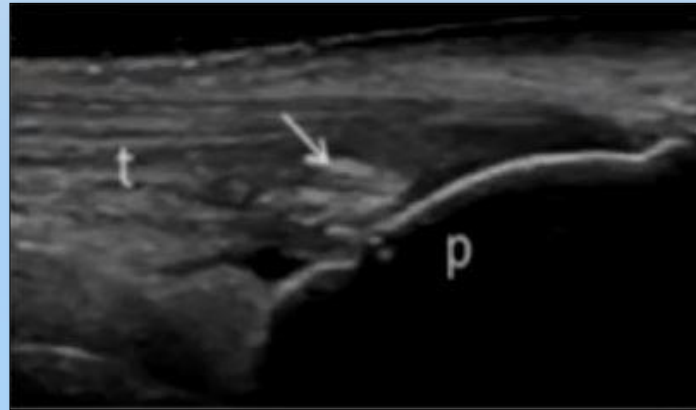
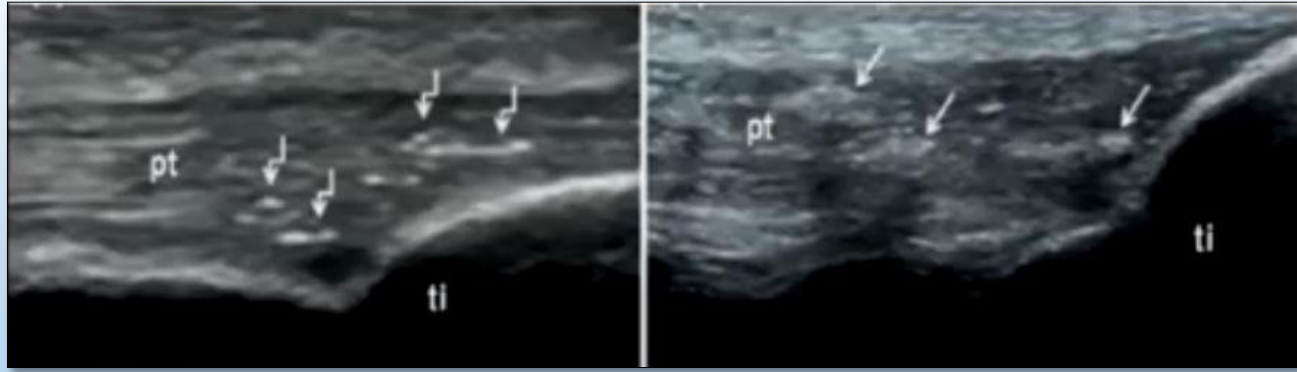


Coupe long condyle fémorale médial
Image hyper échogène avec cône d'ombre post bien marqué

Dépôts synoviaux



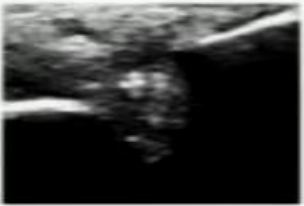

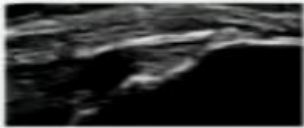
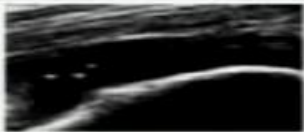
Dépôts intra-tendineux





Definition and Reliability Assessment of Elementary Ultrasonographic Findings in Calcium Pyrophosphate Deposition Disease: A Study by the OMERACT Calcium Pyrophosphate Deposition Disease Ultrasound Subtask Force

Georgios Filippou, Carlo A. Scirè, Nemanja Damjanov, Antonella Adinolfi, Greta Carrara, Valentina Picerno, Carmela Toscano, George A. Bruyn, Maria Antonietta D'Agostino, Andrea Delle Sedie, Emilio Filippucci, Marwin Gutierrez, Mihaela Micu, Ingrid Möller, Esperanza Naredo, Carlos Pineda, Francesco Porta, Wolfgang A. Schmidt, Lene Terslev, Violeta Vlad, Pascal Zufferey, and Annamaria Iagnocco

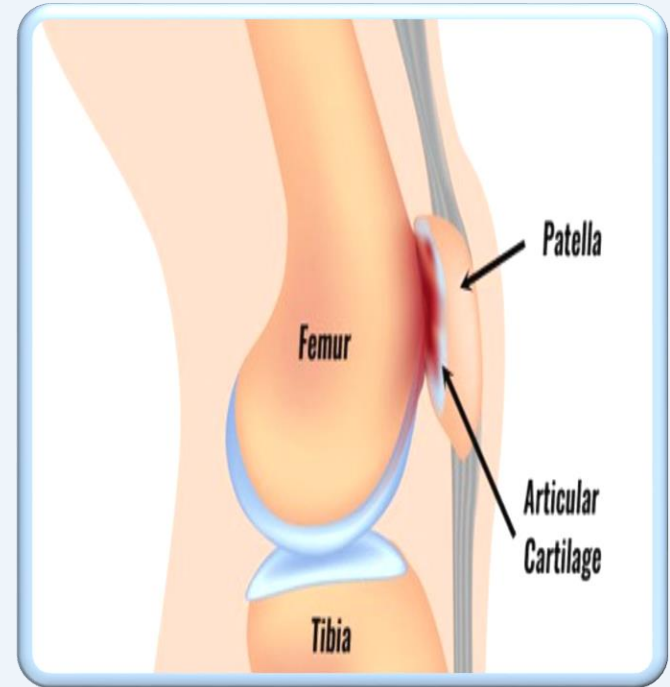
Structure	Shape	Echogenicity	Localization	Behavior at Dynamic Scanning	Example
Fibrocartilage	Deposits of variable shape.	Hyperechoic (similar to the bone cortex echogenicity).	Localized within the fibrocartilage structure.	Remain fixed and move together with the fibrocartilage during dynamic assessment (i.e., joint movement and probe compression).	
Hyaline cartilage	Deposits varying in size and shape.	Hyperechoic (similar to the bone cortex echogenicity) that do not create posterior shadowing.	Localized within the hyaline cartilage.	The deposits remain fixed and move together with the hyaline cartilage (i.e., joint movement and probe compression).	
Tendon	Multiple, linear (parallel to the tendon fibrillar structure and not in continuity with the bone profile) deposits.	Hyperechoic (in relation to the tendon echogenicity) that generally do not create posterior shadowing. The deposits maintain their high degree of echogenicity even at very low levels of gain and are not affected by anisotropy as the surrounding tendon.	Localized within the tendon.	Remain fixed and move together with the tendon during movement and probe compression.	
Synovial fluid	Deposits of variable size (from punctuate to large).	Hyperechoic (similar to the bone cortex echogenicity) that generally do not create posterior shadowing.	Localized within the synovial fluid.	Are mobile according to joint movement and probe pressure.	

C- Instabilité fémoro-patellaire

La stabilité patellaire est assurée par :

- De façon passive:
 - Trochlées et berges patellaires
 - Rétinaculum patellaire médial
- De façon active
 - Appareil extenseur et vaste médial

**Tous ces éléments sont accessible
à l'échographie**



Comment poser un diagnostic d'une Luxation / Subluxation avec l'échographie ?

- Décubitus dorsal
- Genou en extension
- Quadriceps contracté
- Sonde Transversale a la point inferieure de la patella

Puis ...

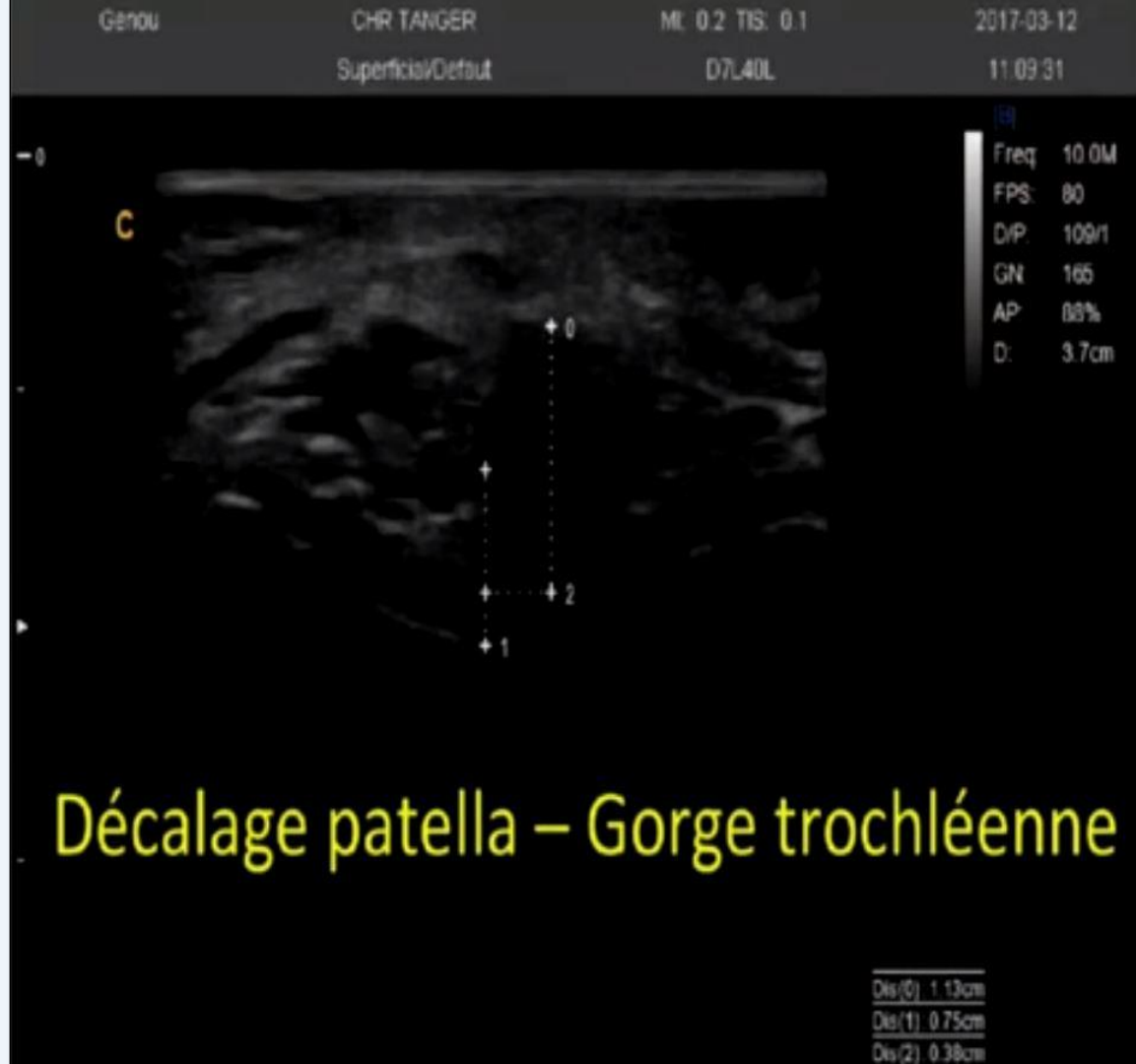


Tracez 2 verticales :

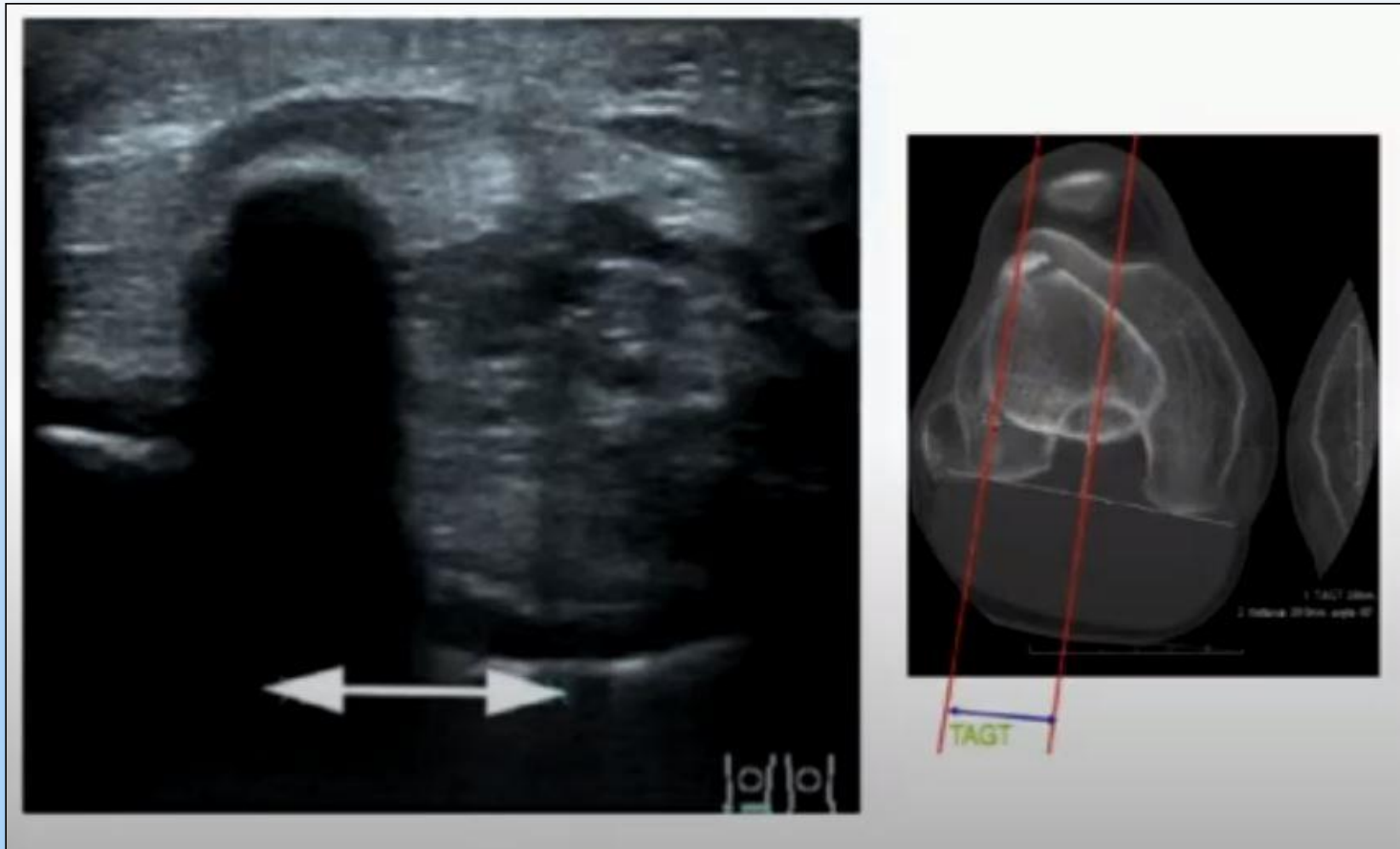
- ❖ La 1ere passe par le fond de la gorge trochléenne
- ❖ La 2eme passe par la pointe (ombre) au milieu de la patella

Un décalage pathologique

> 10 mm



exemple décalages de 15 mm

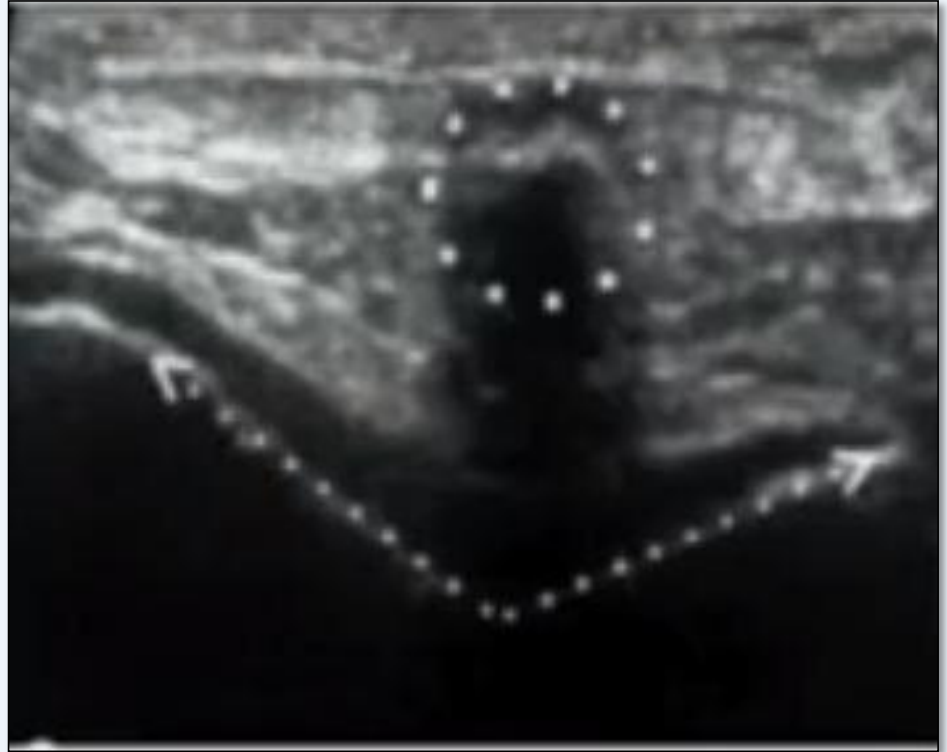


Comment poser un diagnostic d'une dysplasie de la trochlée fémorale?

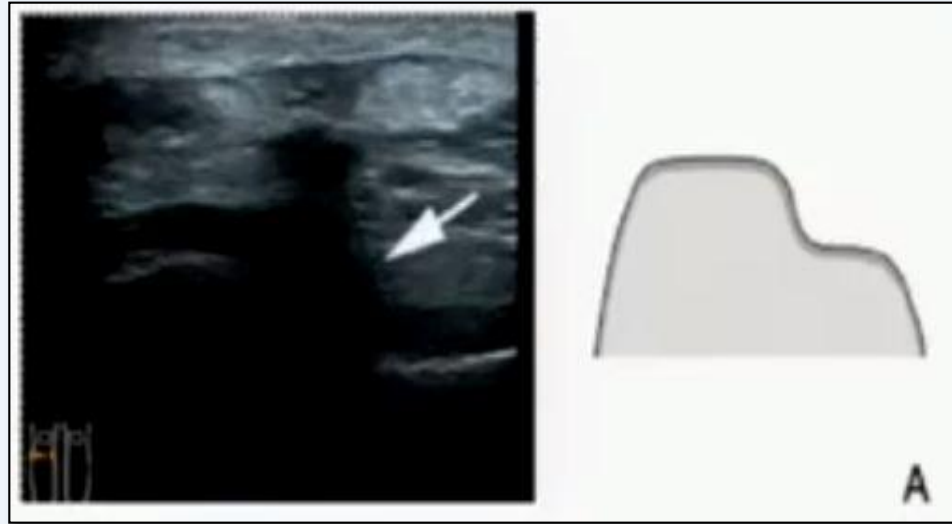
- Même position
- On mesure l'**angle** trochléen et étudiez la **forme** de la trochlée

Dysplasie Trochléenne si :

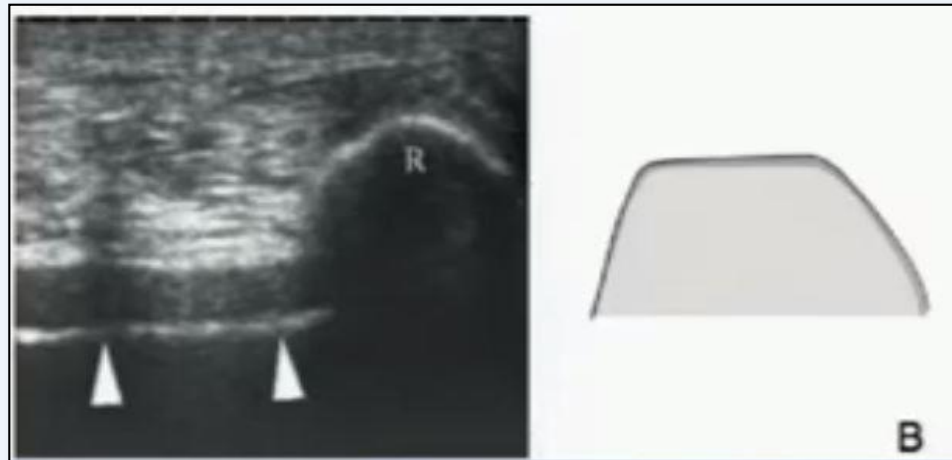
- 1** **Angle** trochléen genou en extension **> 141°**



2 Trochlée a 3 segments



3 Trochlée plate



Exploration des Rétinaculums patellaires



Comparaison entre échographie et IRM

une étude faite par **Shandong University** a comparé l'**échographie** à l'**IRM**, qui était considéré comme le standard, et n'as trouvé **aucune différence** dans le diagnostic de lésions du **rétinaculum médial**

Qu'il s'agisse de rupture complète ou de rupture partielle



Eur Radiol (2015) 25:274–281
DOI 10.1007/s00330-014-3407-3

MUSCULOSKELETAL

Evaluation of medial patellofemoral ligament tears after acute lateral patellar dislocation: comparison of high-frequency ultrasound and MR

Guang-Ying Zhang · Lei Zheng · Hong-Yu Ding ·
En-Miao Li · Bai-Sheng Sun · Hao Shi

Imaging study		Sensitivity	Specificity	Accuracy
Partial tear	US	90.8	96.3	94.6
	MR	81.6	95.7	91.3
	χ^2	2.707	0.080	2.026
	P	0.1	0.777	0.155
Complete tear	US	86.3	96.3	94.0
	MR	80.4	95.7	92.1
	χ^2	0.635	0.080	0.573
	P	0.425	0.777	0.449

Exemple rupture complete au niveau de l'attache femorale



Apport de l'Echographie

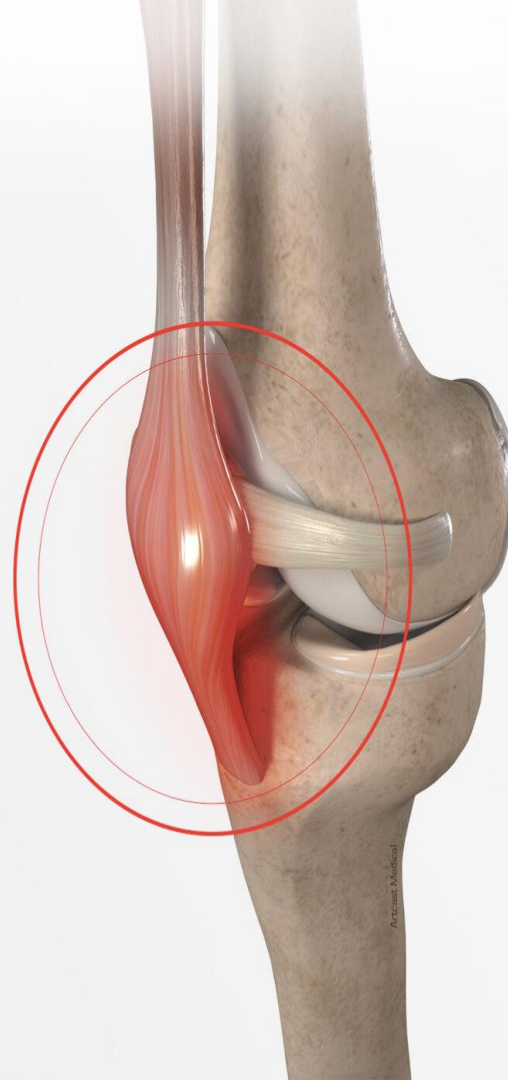
1. Pathologies **articulaires** ✓
2. Pathologies **abarticulaires**
3. Lésions **méniscales**
4. Lésions **ligamentaires**
5. **Ressaut** du genou « Snapping knee »
6. Pathologies **osseuses**

02

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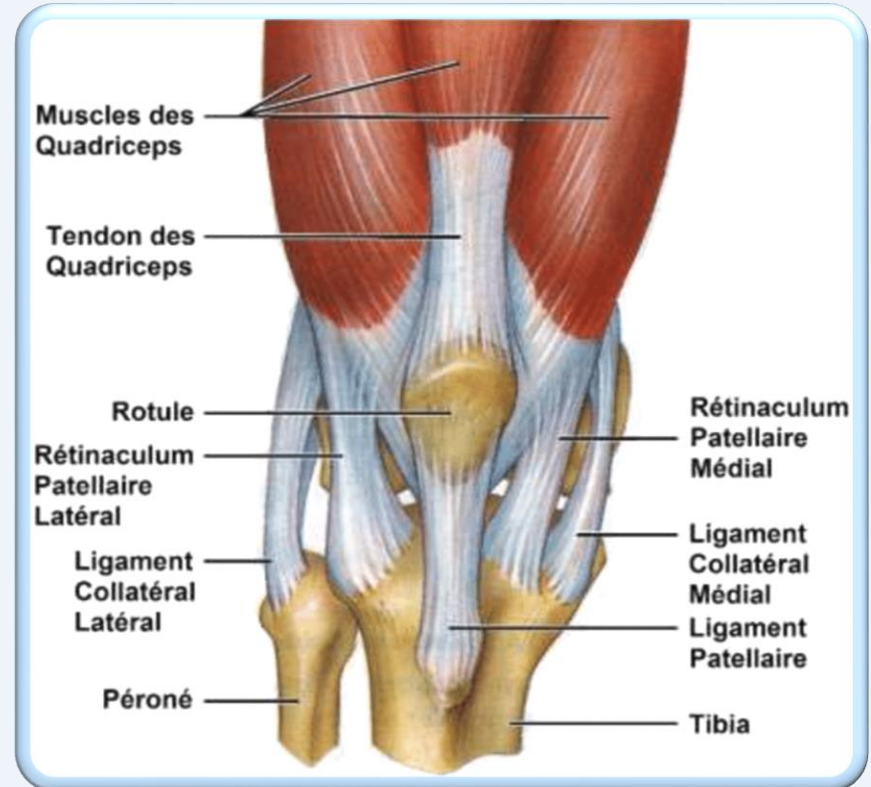
Pathologies abarticulaires

(Tendons ,kystes ,bourses ... etc)



A- En antérieur

1. Tendinopathies quadricipitales
2. Rupture du tendon quadricipital
3. Entésopathie proximale ligament patellaire (Jumper's Knee)
4. Rupture en plein corps du ligament patellaire
5. Ostéochondroses (Osgood Schlatter & Sinding Larsen Johansson)
6. Bursites antérieures

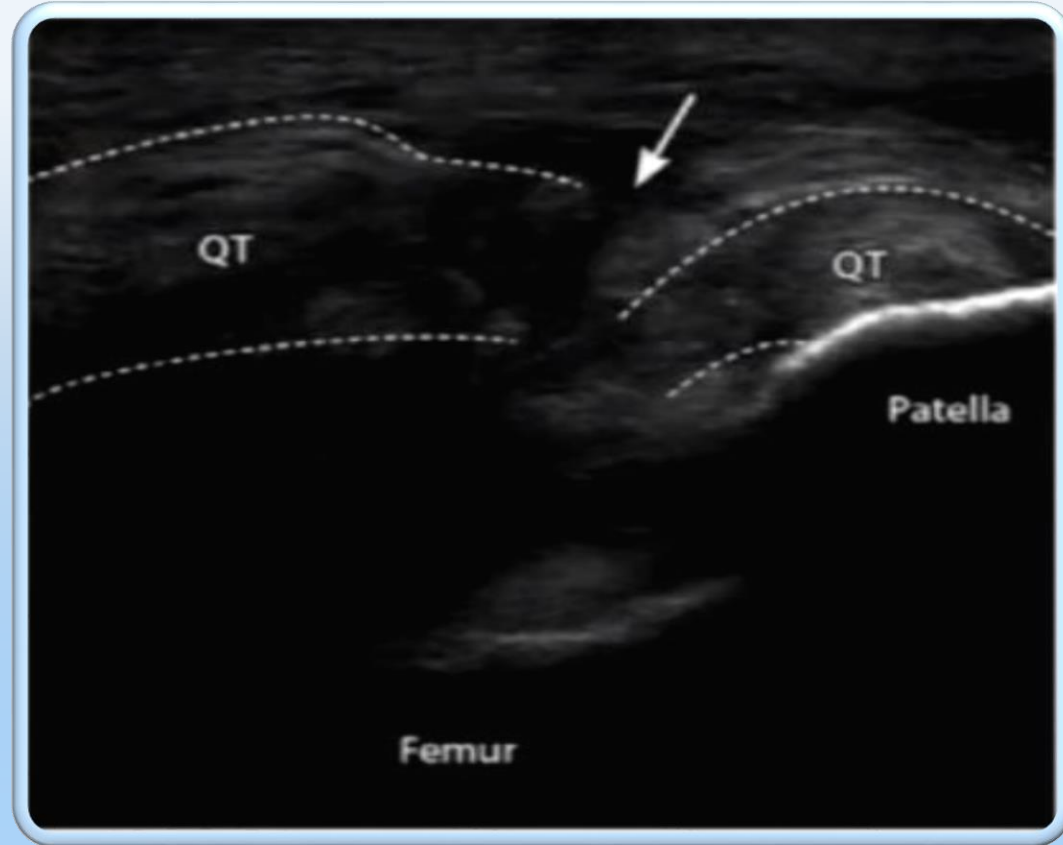


Tendinopathies quadricipitales

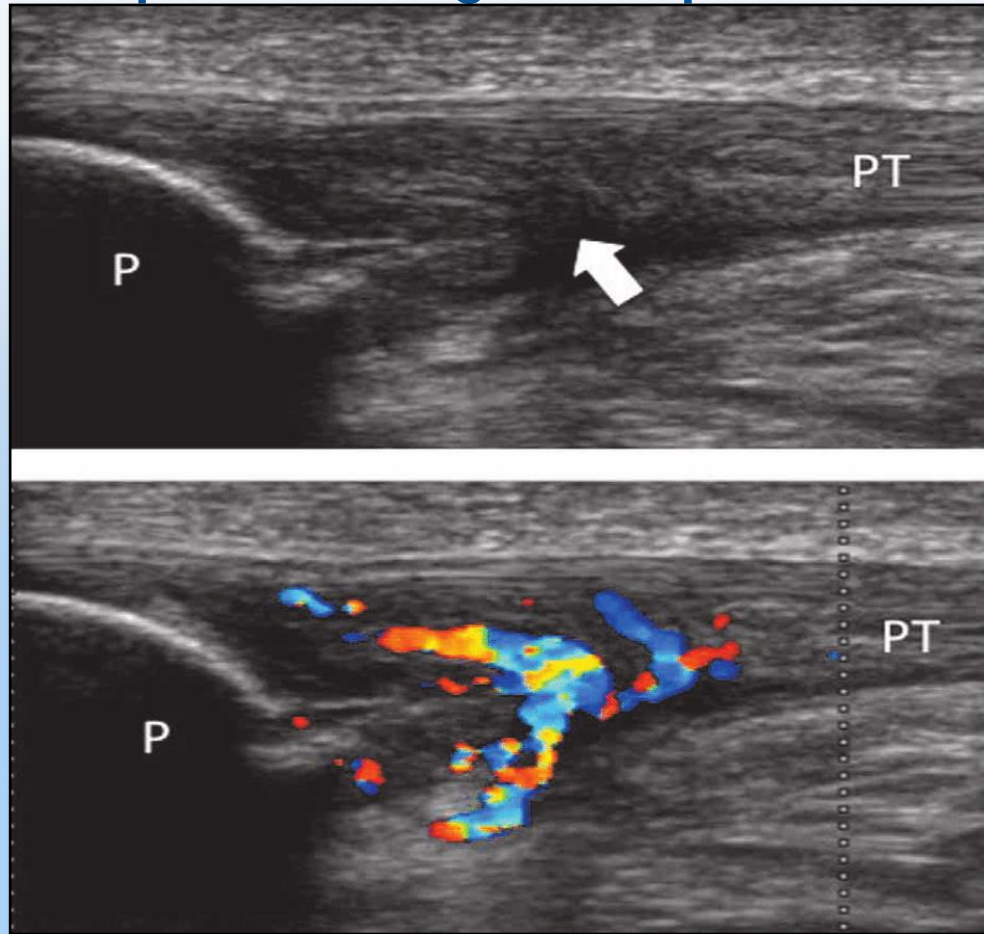


Rupture du tendon quadricipital

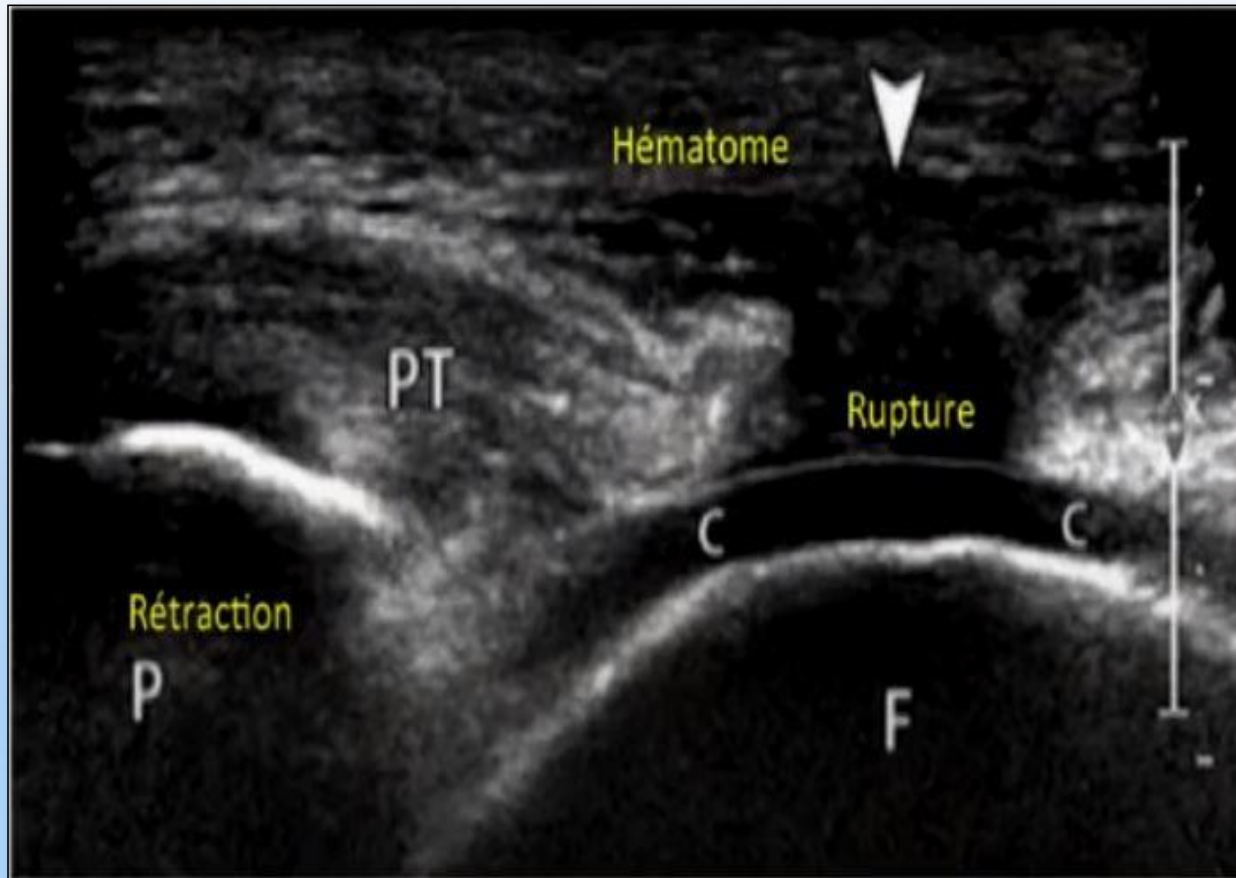
- ❖ **Perte** de l'aspect **fibrillaire** et **solution de la continuité** de tendon (Partielle → contraction)
- ❖ **Hématome** (→ extra articulaire)
- ❖ **1 a 2 cm** de l'insertion patellaire = **zone de fragilité**



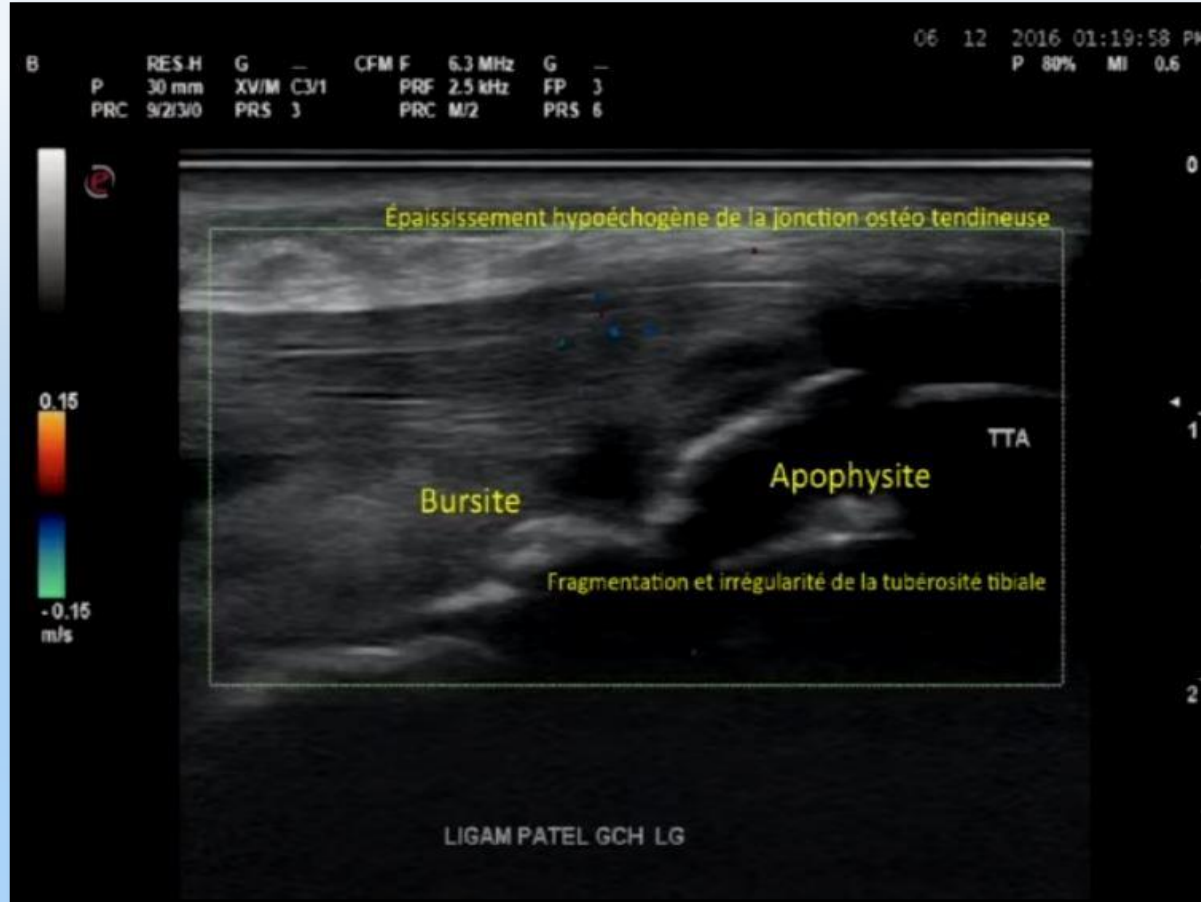
Entéropathie proximale ligament patellaire (Jumper's



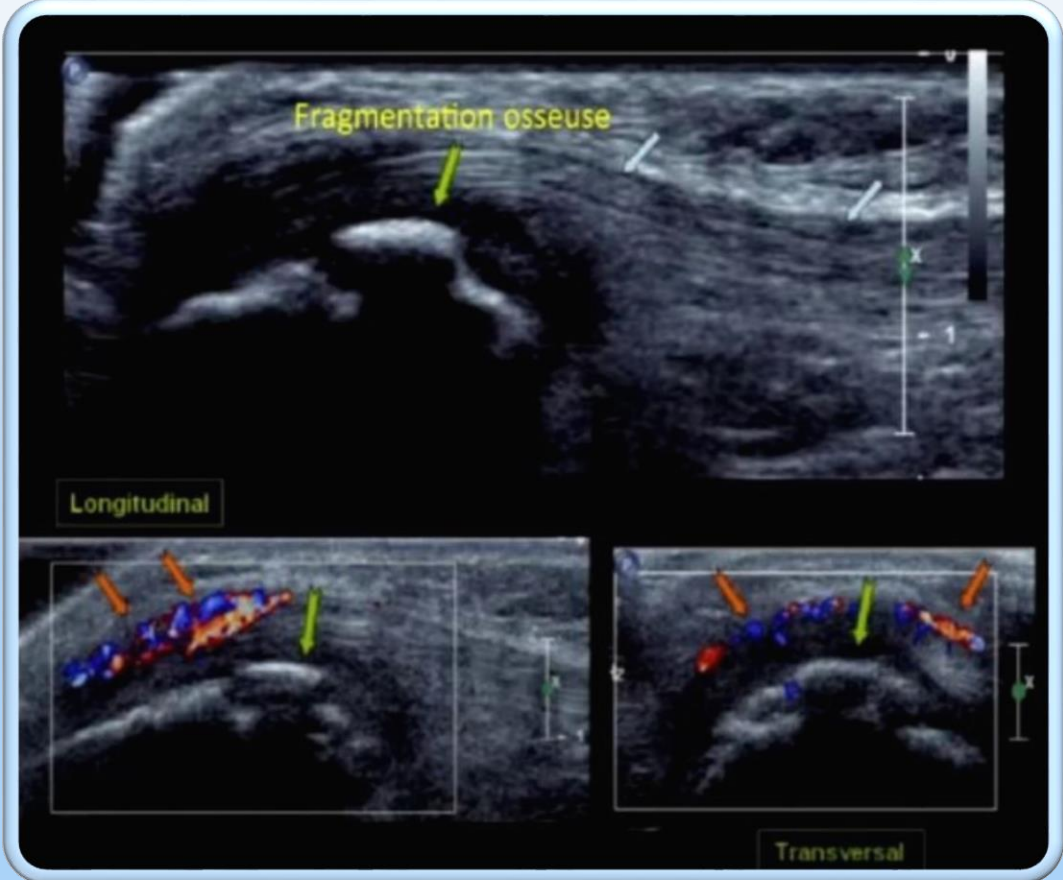
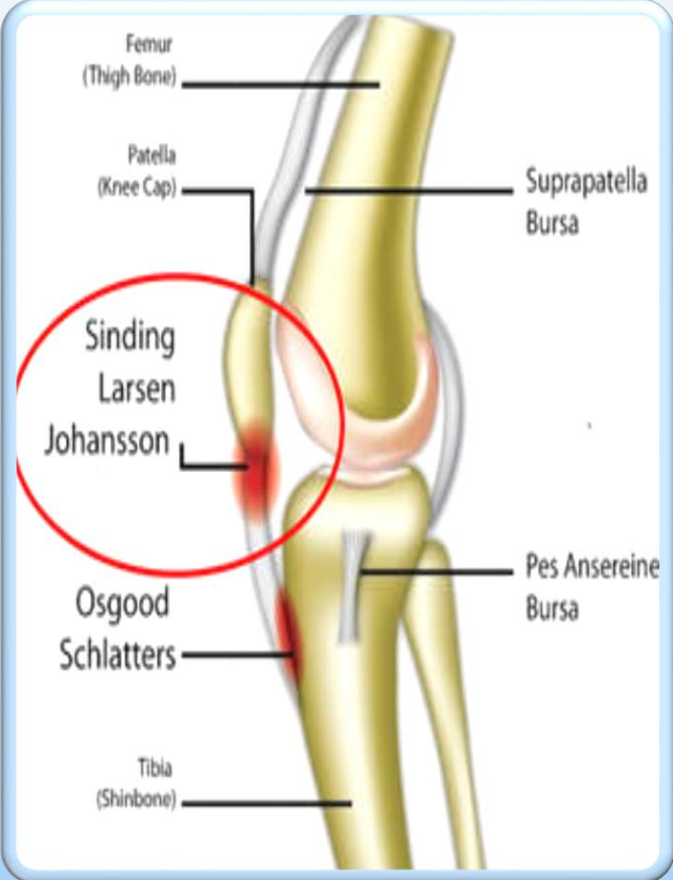
Rupture en plein corps du ligament patellaire



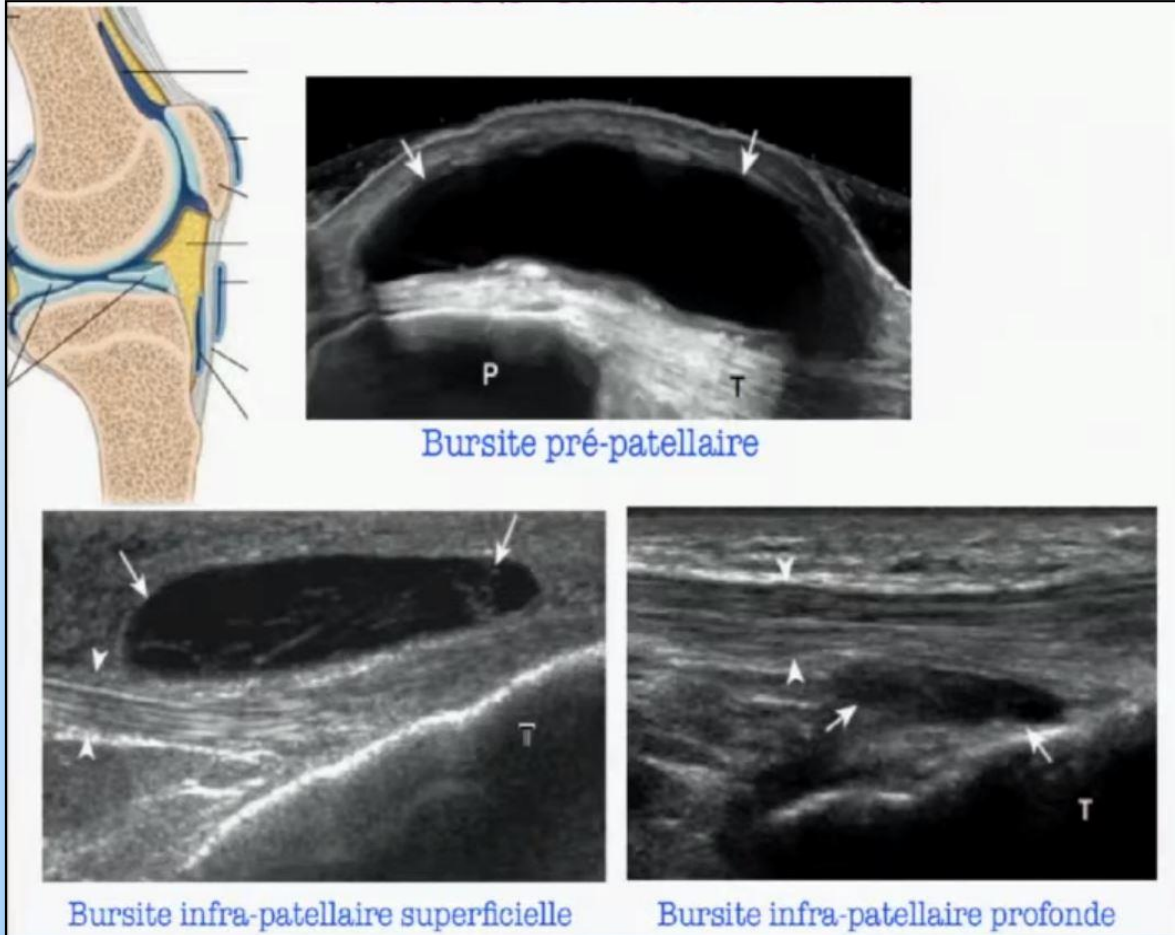
Ostéochondrose (Osgood Schlatter)



Sinding Larsen Johansson

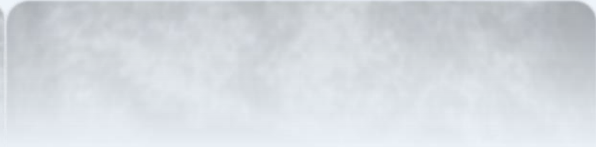
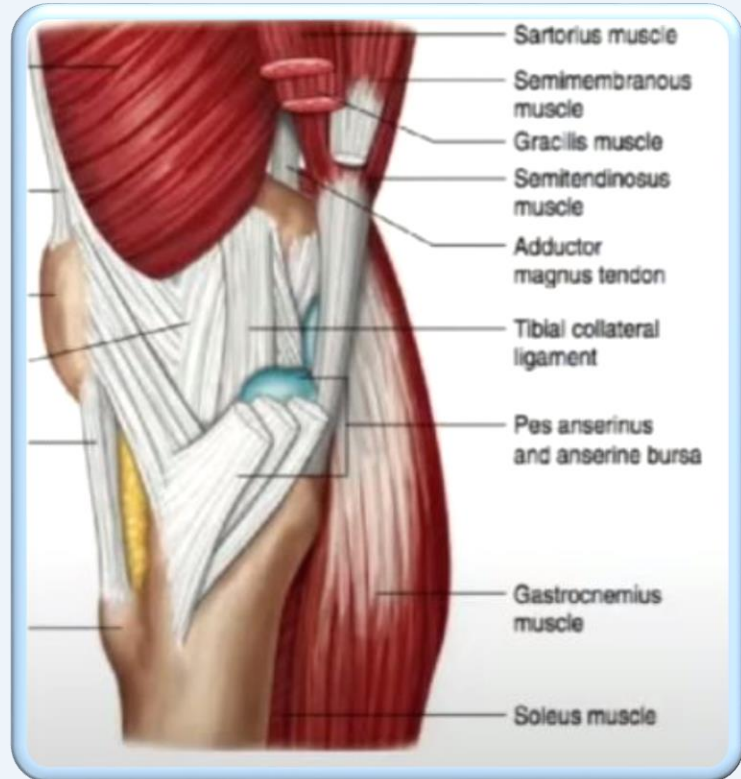
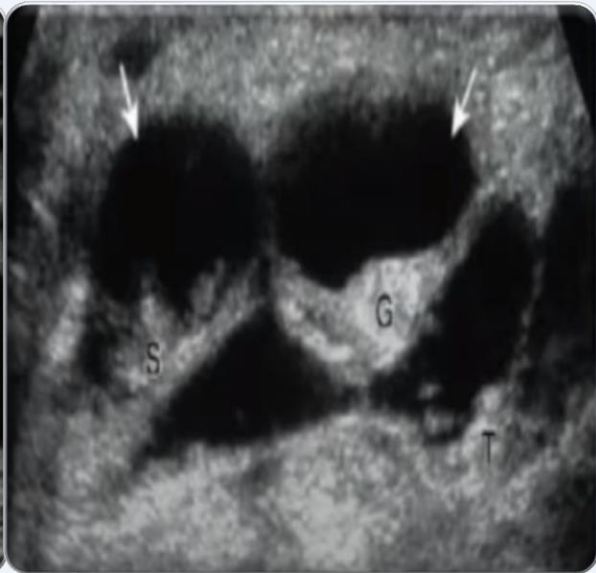
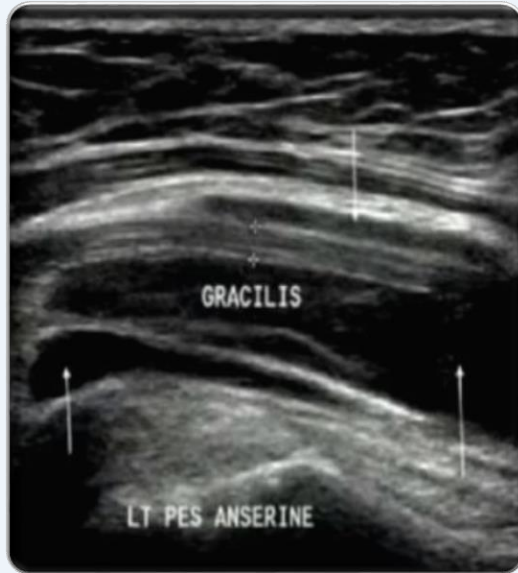


Bursites antérieures



B- En médial

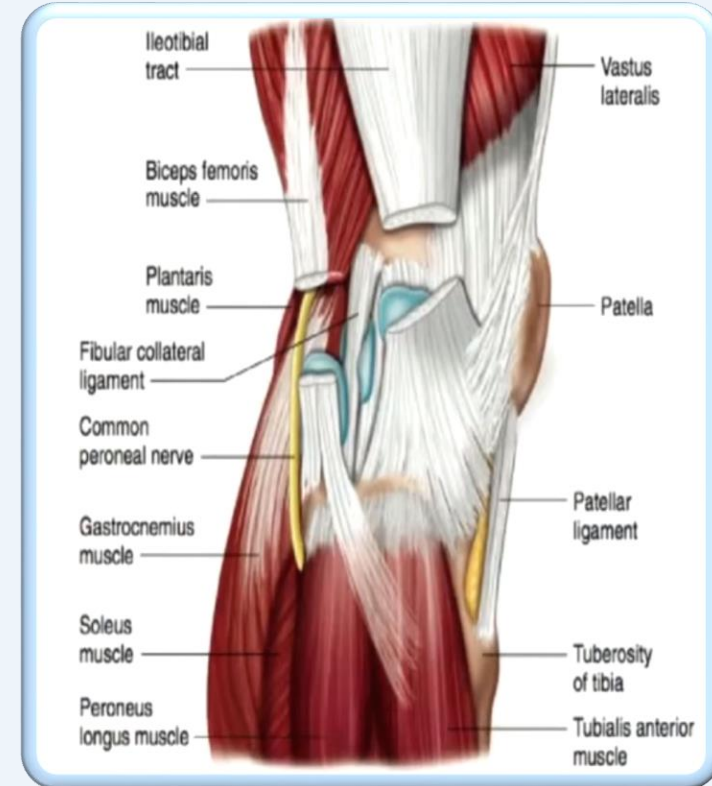
Patte D'oie



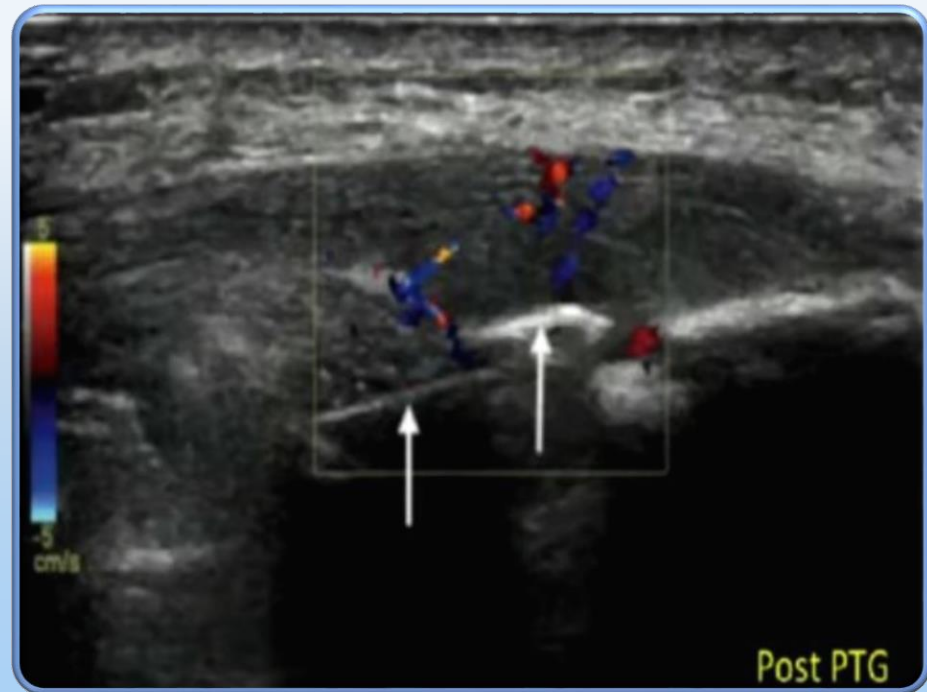
C-

En latéral

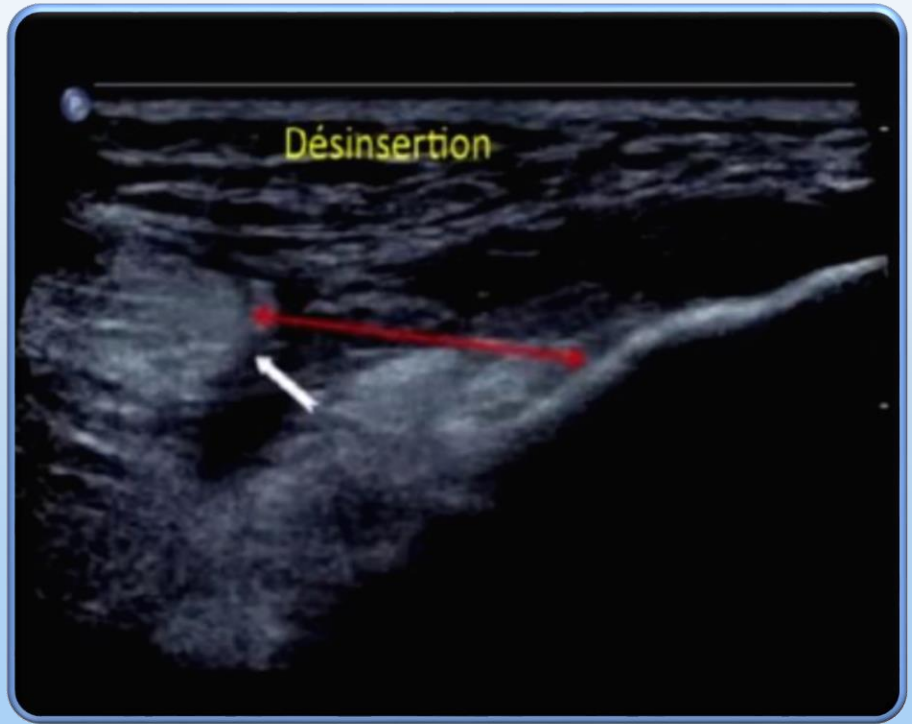
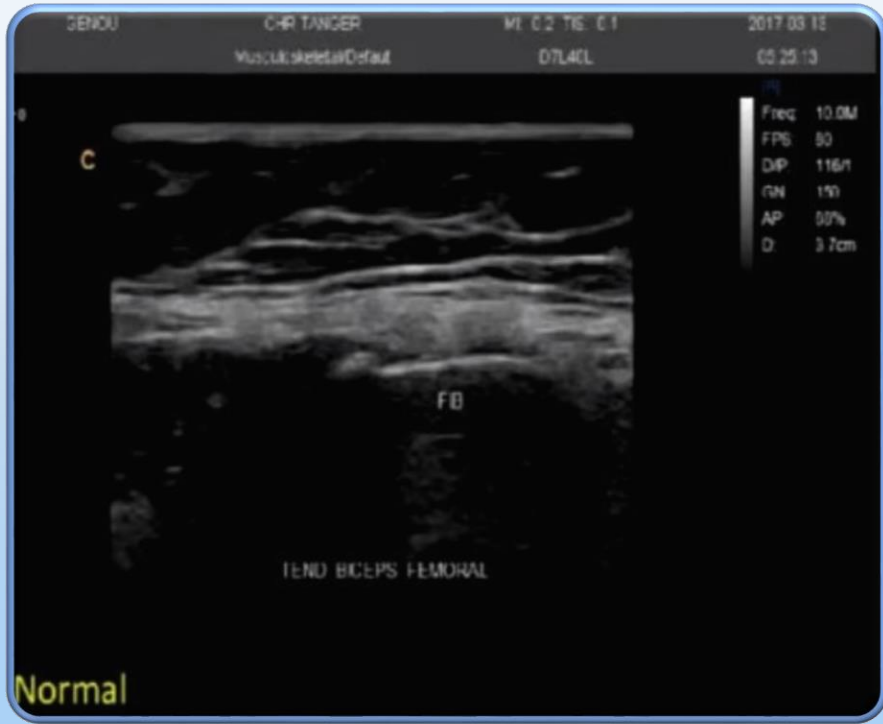
- Tractus ilio tibial
- Biceps fémoral



Tractus ilio tibial

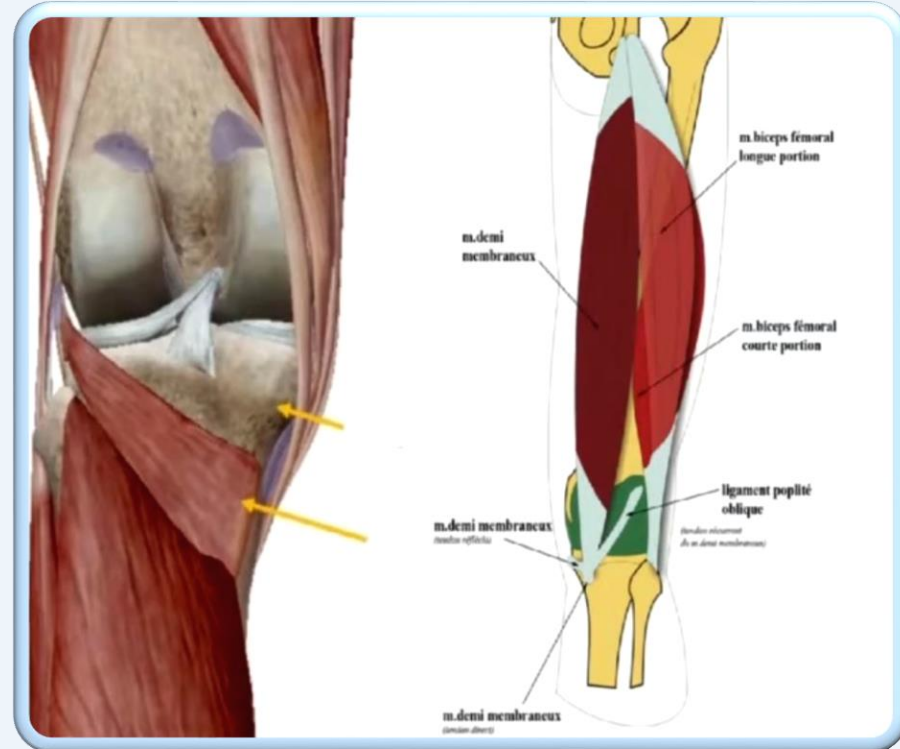


Biceps fémoral

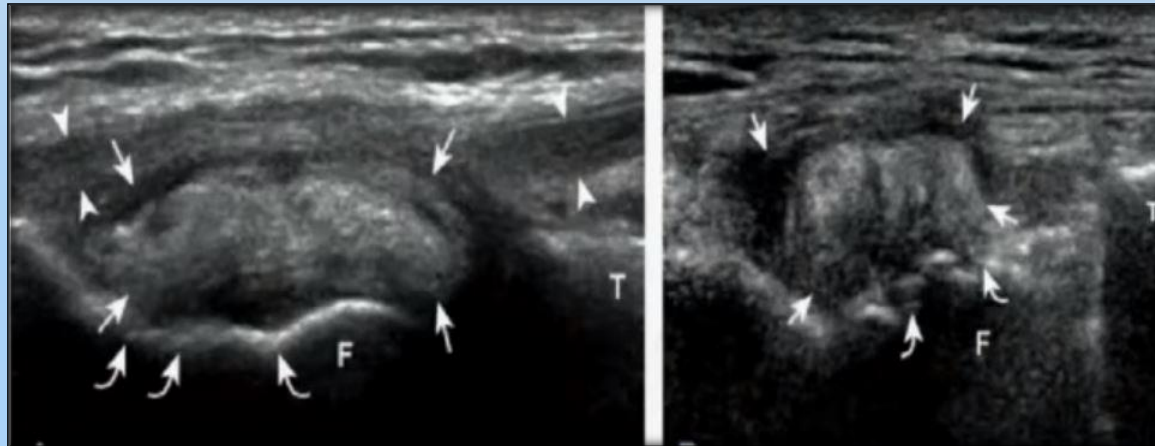
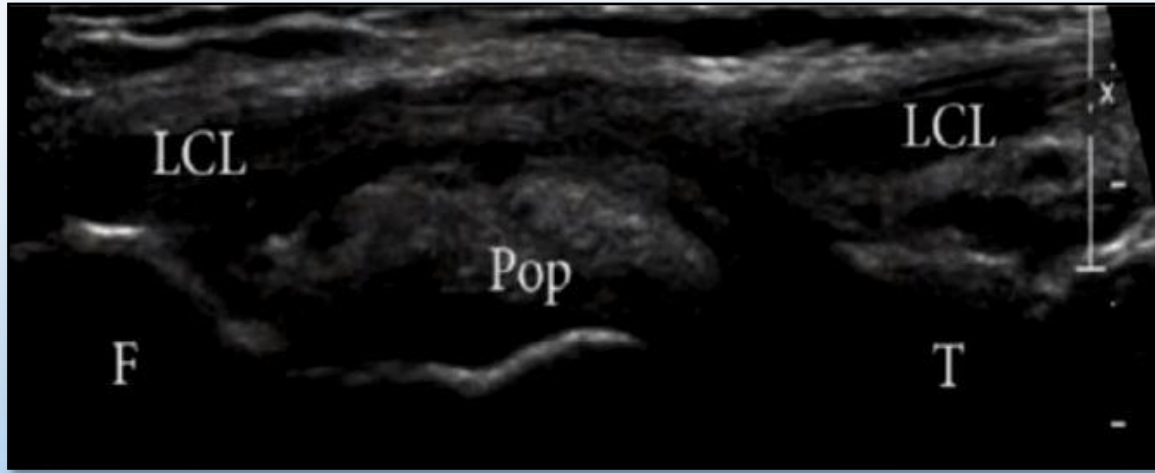


D- En postérieur

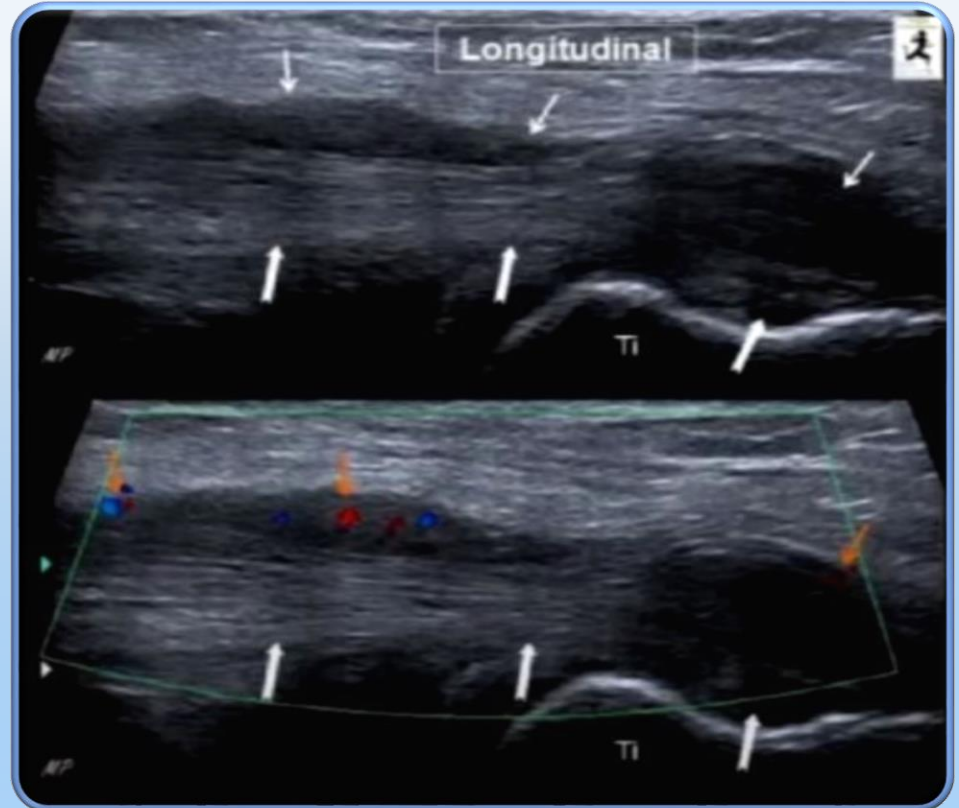
- Tendinopathie poplitée
- Tendon direct du semi membraneux
- Kyste poplitée Baker



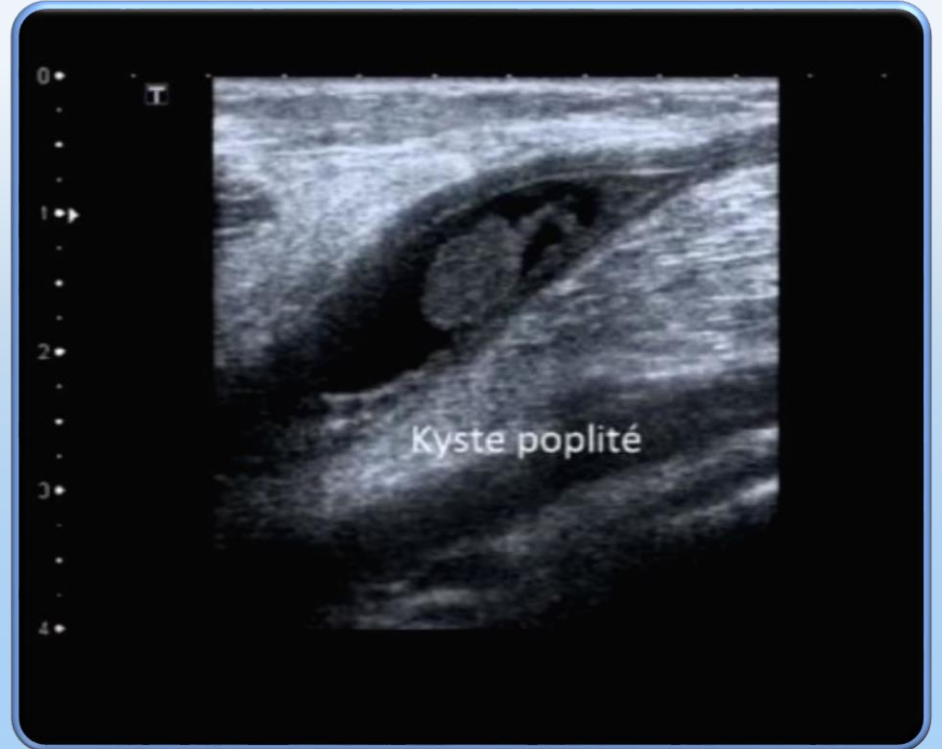
Tendinopathie poplitée



Tendon direct du semi membraneux



Kyste poplitée



CREUX POPLITE GCH
TRANS

1+

Apport de l'Echographie

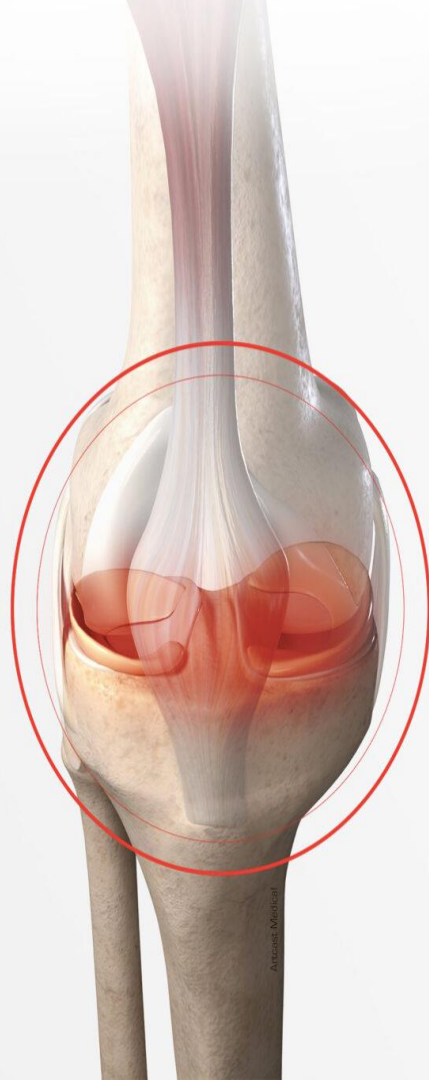
1. Pathologies articulaires ✓
2. Pathologies abarticulaires ✓
3. Lésions **méniscales**
4. Lésions **ligamentaires**
5. **Ressaut** du genou « Snapping knee »
6. Pathologies **osseuses**

04

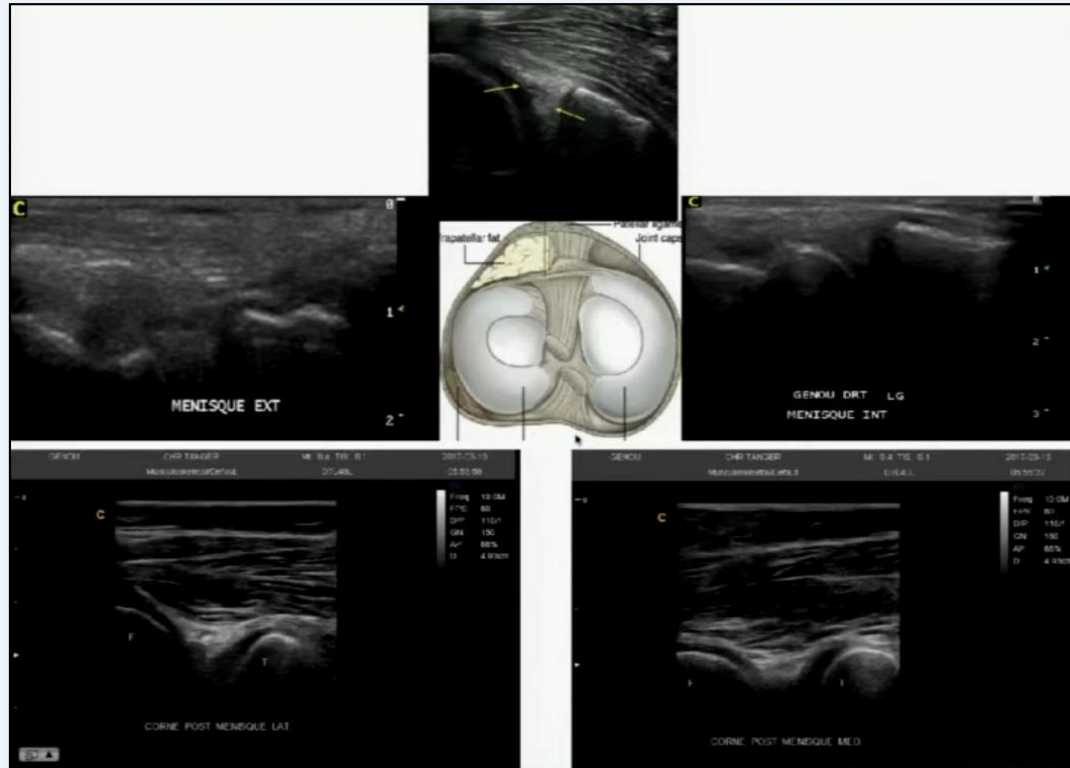
.

Lésions méniscales

- Fissures méniscales
- Kyste para méniscale
- Extrusion méniscale dégénérative



La **corne antérieure** du **ménisque** est très **visible** a l'échographie, permettant d'avoir des **coupes postérieures** parfaitement **claire** en **balayant** la totalité du ménisque



A- Fissure méniscales

Sensibilité : 85%

Spécificité : 86%

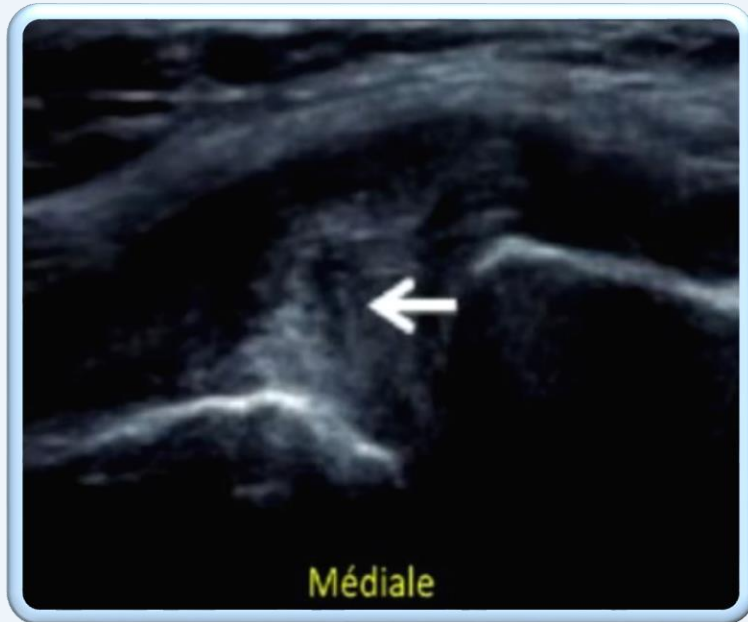


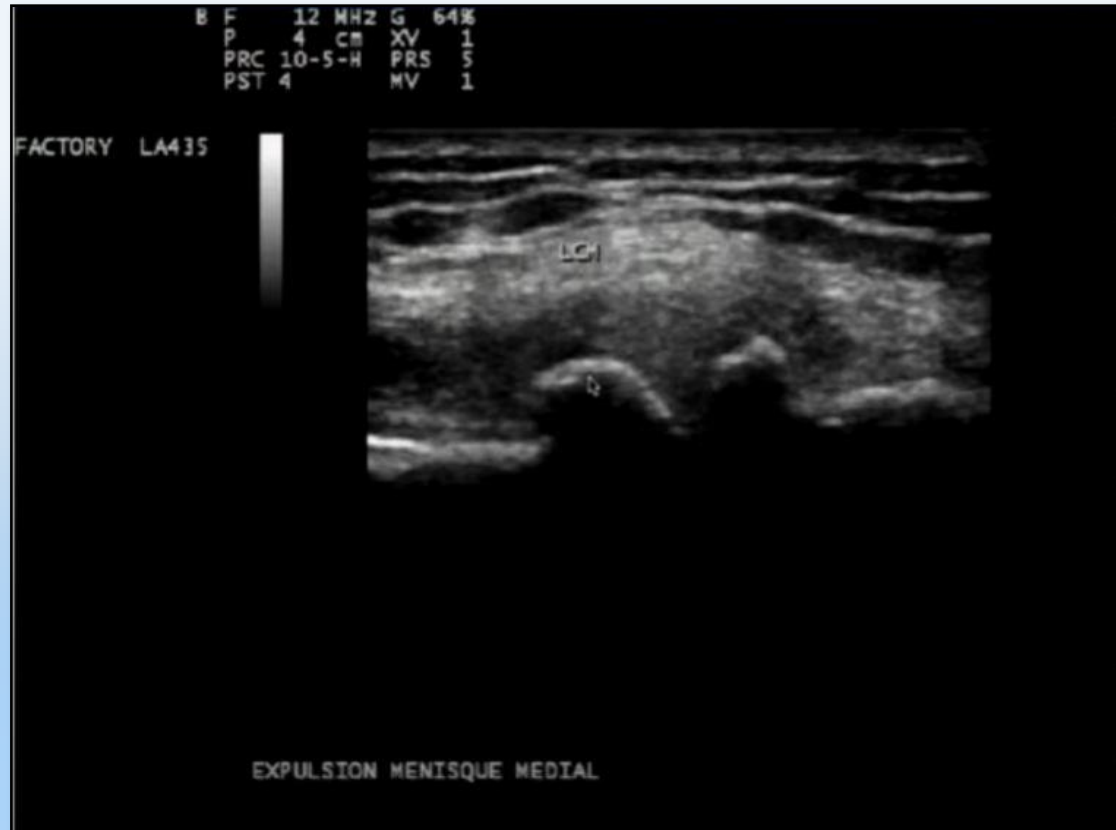
Image linéaire hyperéchogène ou anéchogène traversant l'épaisseur méniscale

B- Kyste para-méniscal

- ❖ Masse **anéchoïque** a proximité du ménisque, souvent siège de **fissure**
- ❖ **Echographie très fiable (88 %)**



C- Extrusion méniscale dégénérative



Apport de l'Echographie

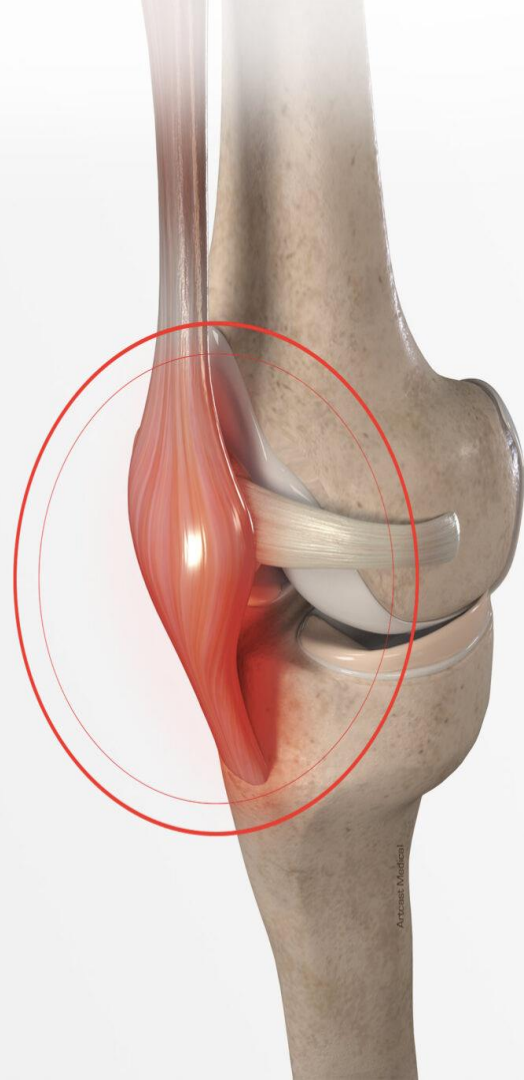
1. Pathologies articulaires ✓
2. Pathologies abarticulaires ✓
3. Lésions méniscales ✓
4. Lésions ligamentaires
5. **Ressaut** du genou « Snapping knee »
6. Pathologies osseuses

05

.

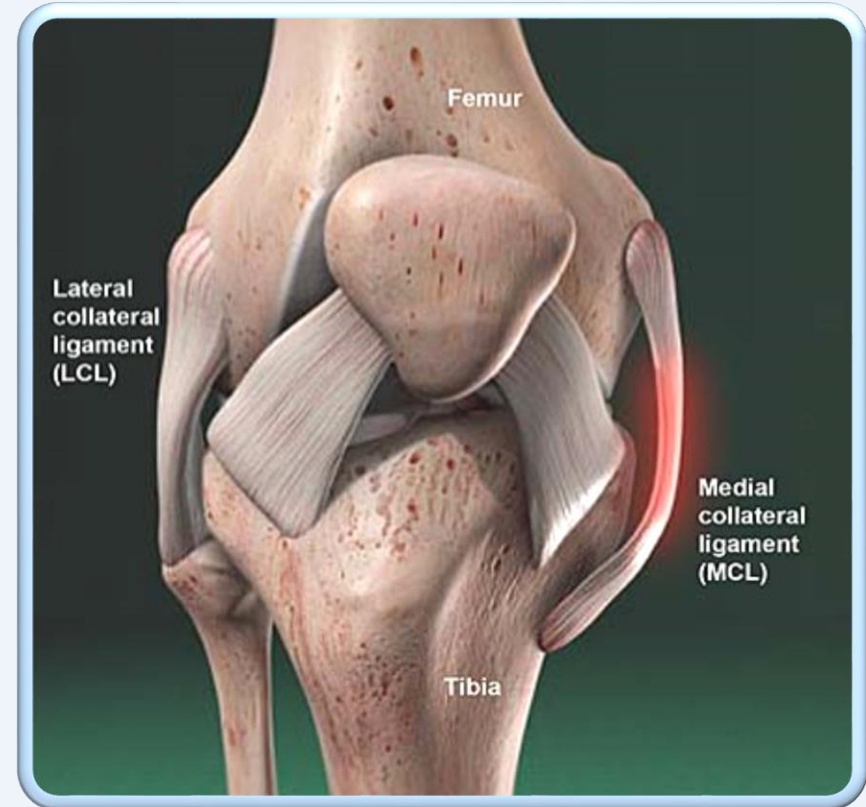
Lésions ligamentaire e

- Ligaments collatéraux
- Ligaments croisés
- Ligaments antéro-latéral



A- Ligament collatéral médial

- **Fiabilité** Echographique **94%**
- Insertion **proximale** +++
- Rupture **partielle** +++
- Lésion souvent **associée** du **Rétinaculum médial**



lésions élémentaires LCM

Perte de l'aspect fibrillaire avec Hypoéchogenicité Hétérogène

Attache fémorale > 6 mm

Épaisseur du LCM

attache tibiale

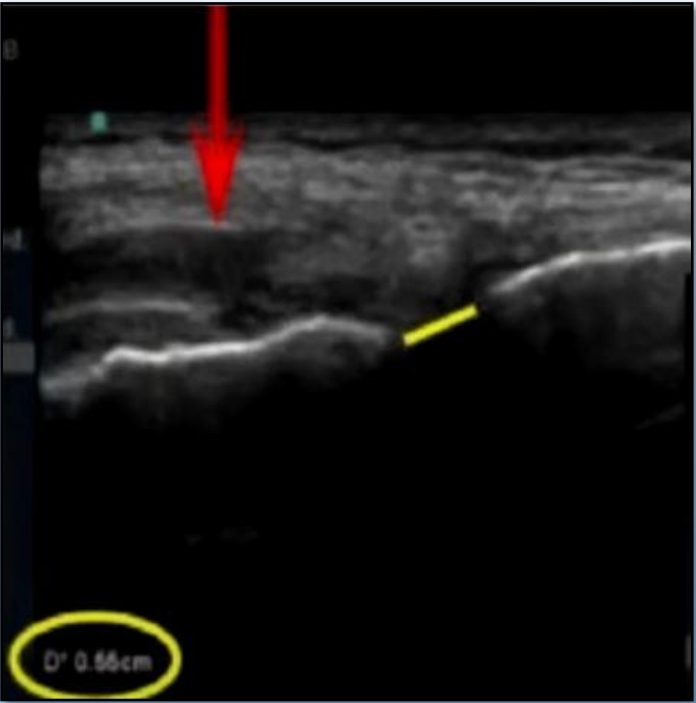


Examen dynamique :

Valgus → Elargissement espace articulaire :

- * < 5 mm : Lésion grade 1
- * entre 5 mm et 10 mm : Lésion grade 2
- * > 10 mm : lésion grade 3

Dynamique : Valgus



Entorse

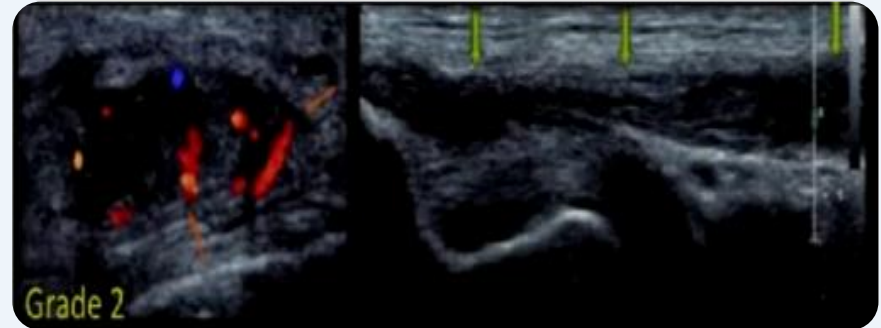
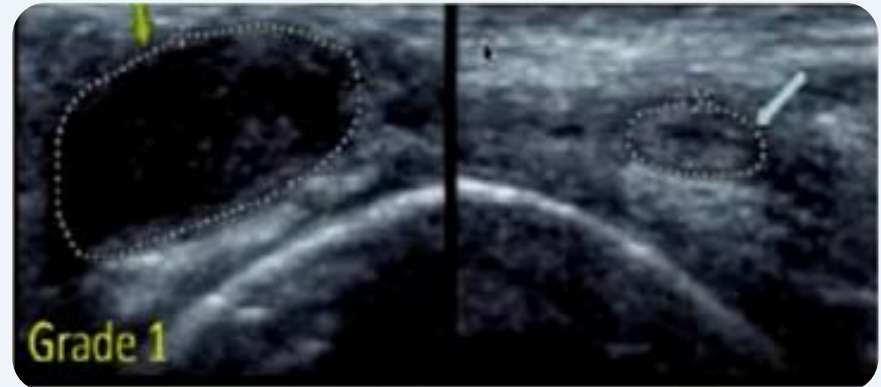


Lésion chronique : Syndrome de Pellegrini Stieda



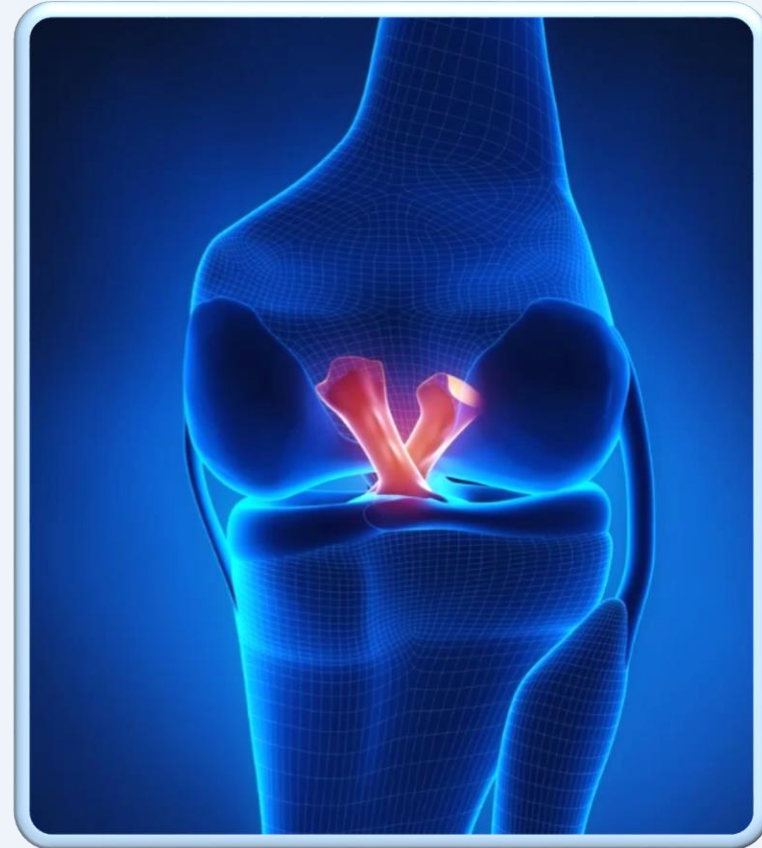
B- Ligament collatéral latéral

Même sémiologie que LCM



C- Ligaments croisés

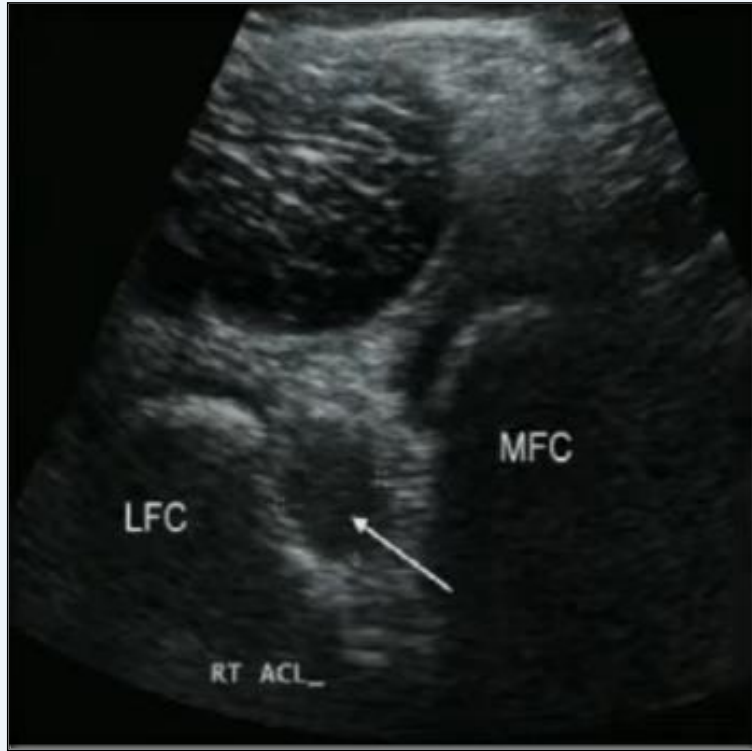
- **IRM** = examen de choix
- **Echographie** : **Partiellement** visible
- Anomalies Echographie → **Inciter a demander une IRM** :
 - Epaissement
 - Hypoéchogénicité
 - Fissure
 - Hématome (échancrure intercondylienne)



Ligament Croisé Antérieur (LCA)



Anomalies LCA

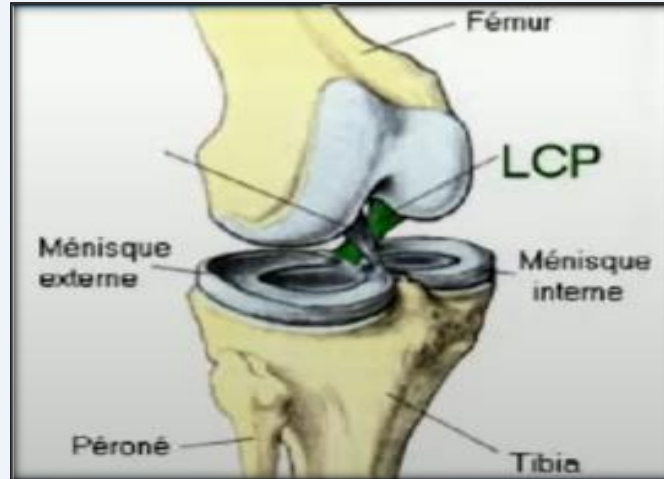


Hématome de l'échancrure
intercondylienne

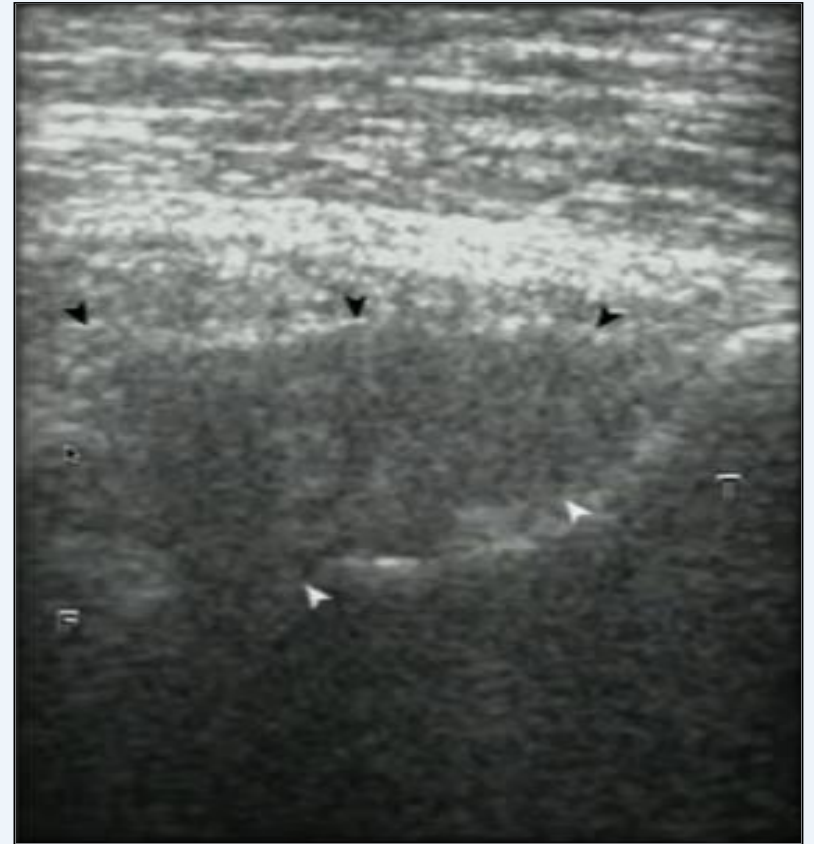


LCA épaissie Hypoéchogène

Ligament Croisé Postérieur (LCP)



Anomalies LCP

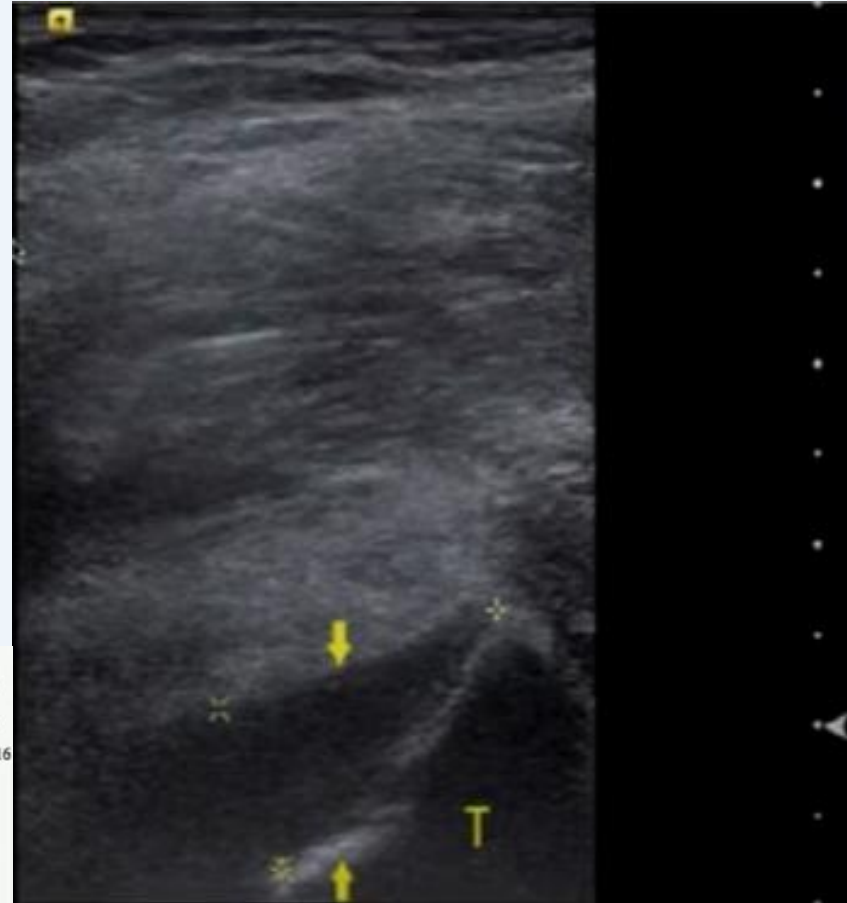


épaississement Hypoéchogène

Anomalies LCP

- Épaisseur **2cm** au niveau de son insertion tibiale
- Epaisseur \geq **6.5mm**
- Sensibilité : **90.6%**
- Spécificité : **86.7%**

(selon une dernière étude de 2015)



Anomalies LCP

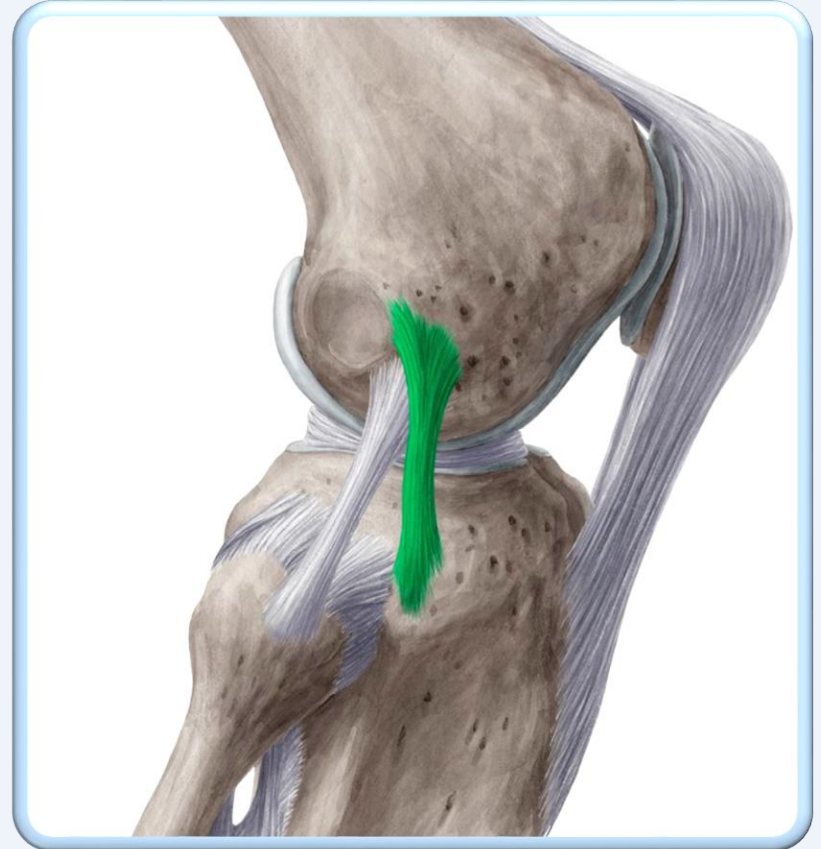


Kystes Hypoéchogène

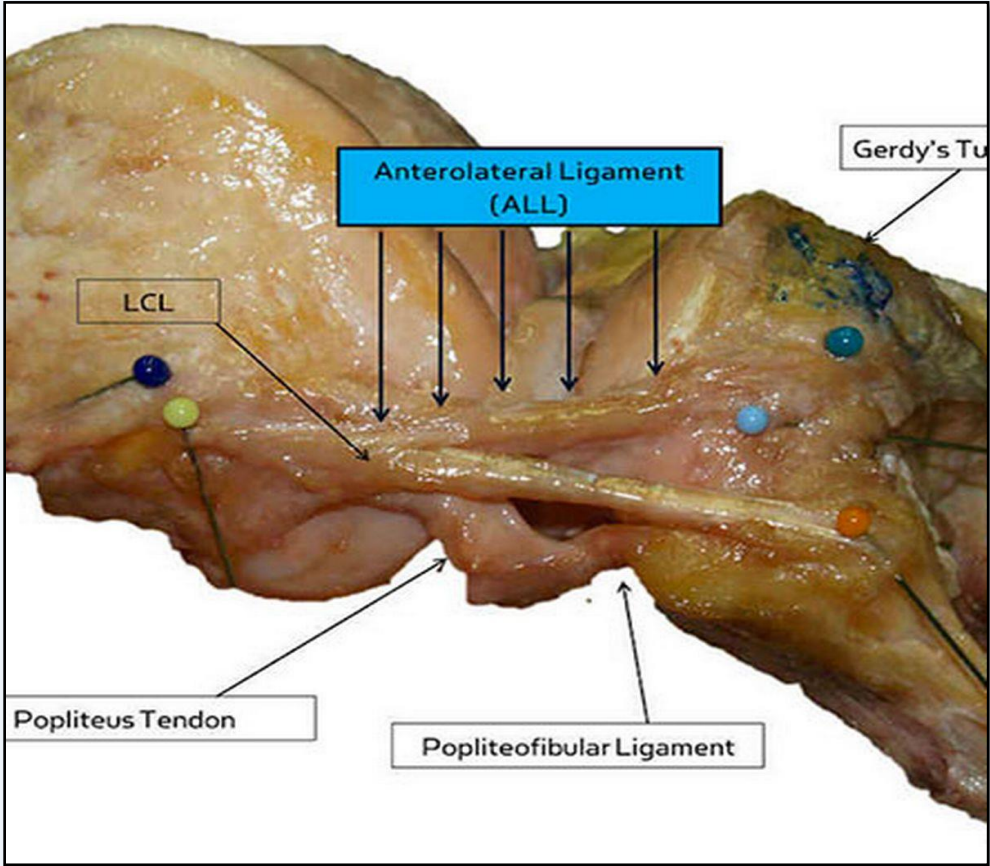
D-

Ligament antéro latéral

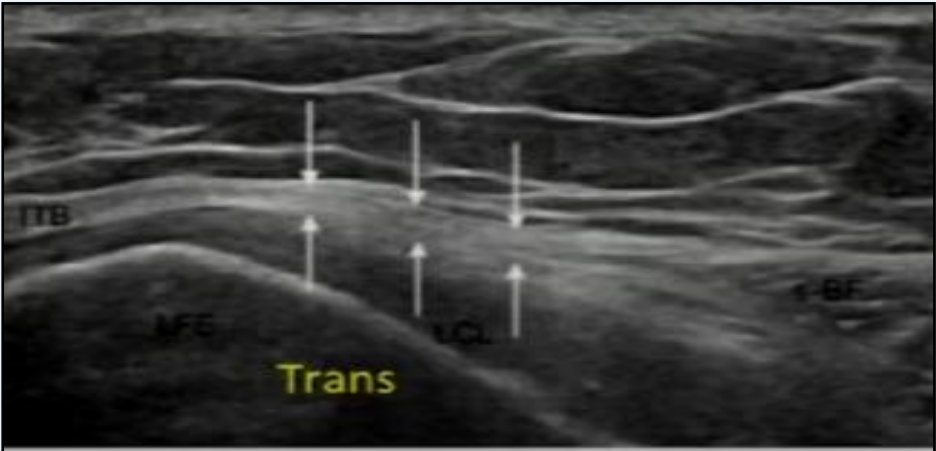
- En arrière du tubercule de Gerdy
(Tractus ilio Tibial)
- En avant du chef court Biceps Fémoral
- Superficiel par rapport au LCL



Ligament AnteroLatéral



Ligament AnteroLatéral





The anterolateral complex in anterior cruciate ligament deficient knees demonstrate sonographic abnormalities on high-resolution sonography

Knee Surg Sports Traumatol Arthrosc
DOI 10.1007/s00167-017-4512-z



KNEE

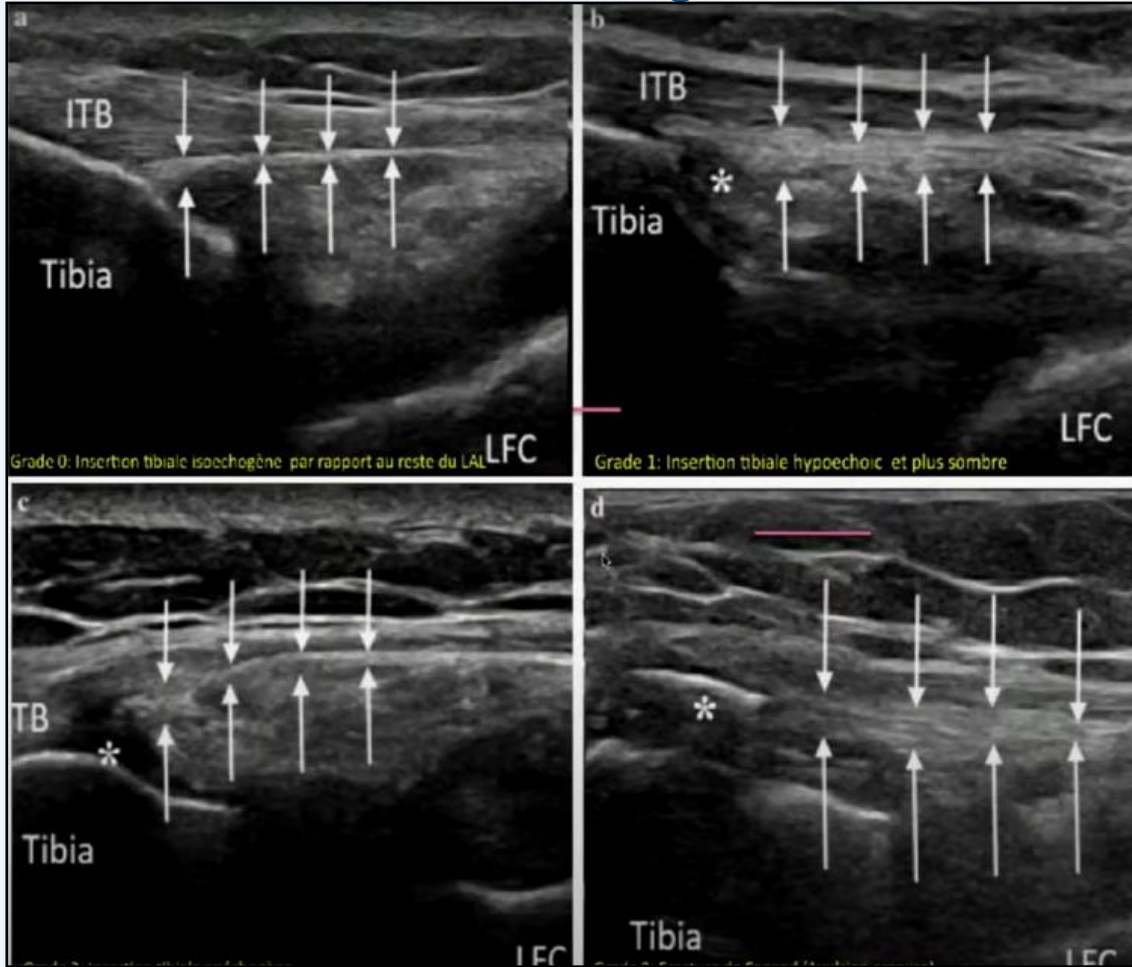
The anterolateral complex in anterior cruciate ligament deficient knees demonstrate sonographic abnormalities on high-resolution sonography

Masahito Yoshida^{1,2} · Elmar Herbst^{1,3} · Macio Albers¹ · Volker Musahl¹ ·
Freddie H. Fu¹ · Kentaro Onishi^{1,4}

Received: 6 January 2017 / Accepted: 6 March 2017
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Objectif: décrire et classer les lésions échographiques de l'insertion tibiale du LAL chez 28 patients avec lésion LCA

Ligament AnteroLatéral



Conclusion :

Dans **33%** des évaluations échographiques de patients atteints de **lésions du LCA**, on trouve une **lésion du LAL**



Arthroscopy: The Journal of Arthroscopic and Related Surgery, Vol -, No - (Month), 2017: pp 1-7

Ultrasonographic Evaluation of Anterolateral Ligament Injuries: Correlation With Magnetic Resonance Imaging and Pivot-Shift Testing

Etienne Cavaignac, M.D., Marie Faruch, M.D., Ph.D., Karine Wytrykowski, M.D.,
Olivia Constant, M.D., Jérôme Murgier, M.D., Emilie Berard, M.D., and
Philippe Chiron, M.D., Ph.D.

Objectif :

- 1-** Comparer l'échographie et l'IRM dans la detection de lésions du LAL chez 30 patients avec lesion LCA
- 2-** Evaluer la corrélation entre les lésions du LAL et la gravité de l'atteinte du LCA

Ligament AnteroLatéral

	MRI (N = 30)		US (N = 30)	
	n (%)	Interobserver Agreement (κ)	n (%)	Interobserver Agreement (κ)
Entire ALL identified	29 (96)	0.91	30 (100)	1
ALL injured	16 (53)	0.93	19 (63)	0.93
Segond fracture	4 (13)	0.76	15 (50)	1

Siège = Insertion tibiale (100% cas)

Une seule fracture de Segond vue à la Rx



Conclusions

US is a reproducible examination for the diagnosis of ALL injury. An ALL injury is most often associated with a high pivot-shift grade.

Conclusion :
l'échographie est un examen **reproductible** et **utile** surtout du a sa **maniabilité** autour du ligament

Apport de l'Echographie

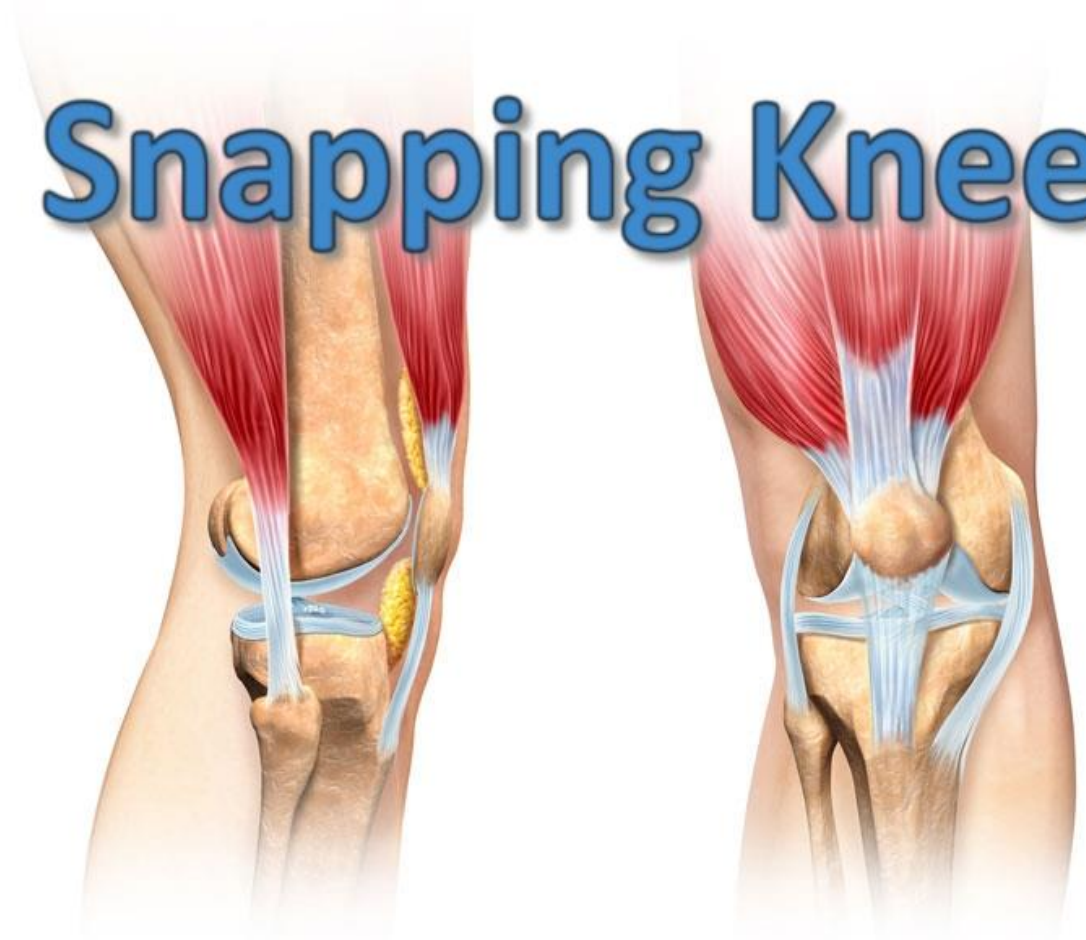
1. Pathologies articulaires ✓
2. Pathologies abarticulaires ✓
3. Lésions méniscales ✓
4. Lésions ligamentaires ✓
5. **Ressaut** du genou « Snapping knee »
6. Pathologies **osseuses**

03

•

Ressaut
du genou

Snapping Knee



Ressaut du genou < Snapping knee



Antérieur :

Syndrome de Friction fémoro-patellaire



Médial :

Patte d'oie



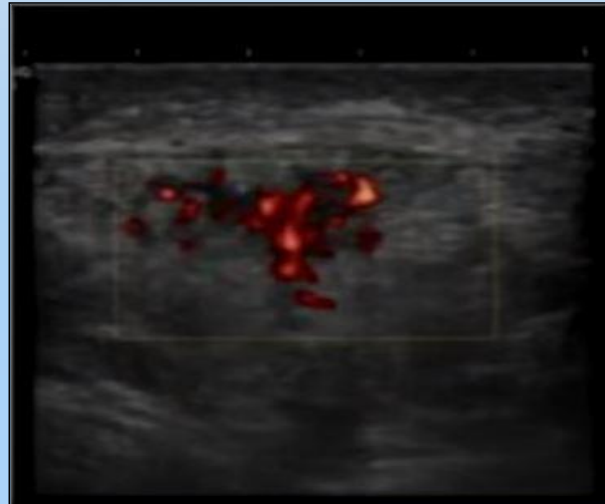
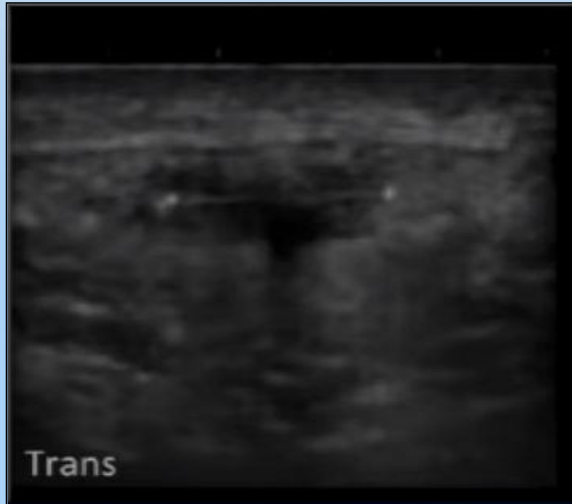
Latéral :

- Syndrome de l'essui glace
- Biceps fémoral
- Tendon poplitè



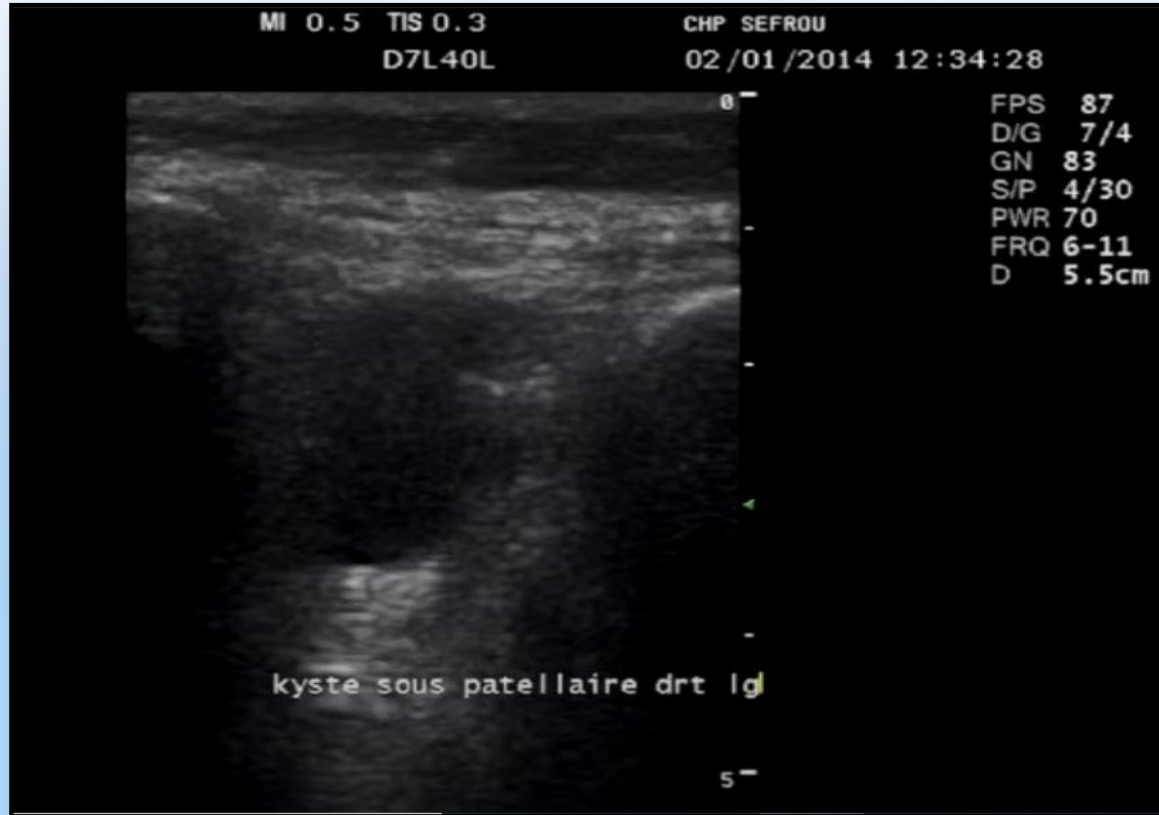
**Ressaut sur Prothese
Total du Genou (PTG)**

Syndrome de Friction fémoro-patellaire



Lorsque cette lésion évolue vers la chronicité on peut avoir un

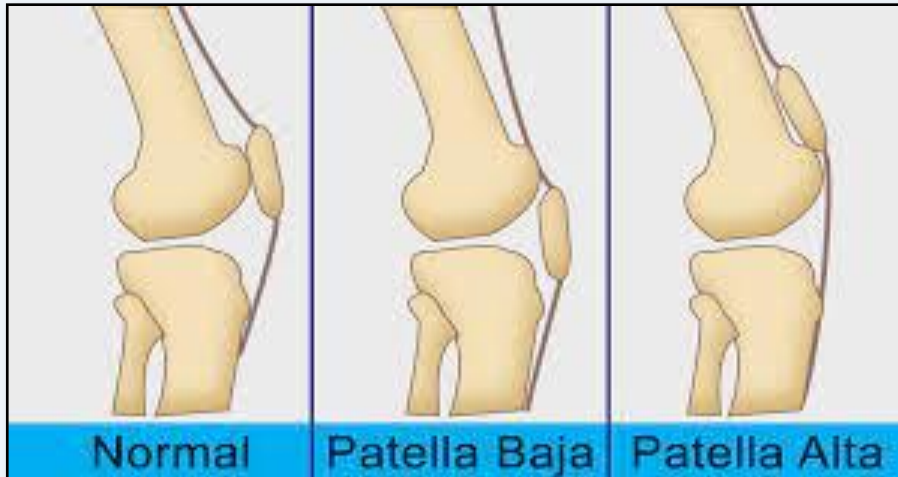
Kyste sous patellaire droit





Note :

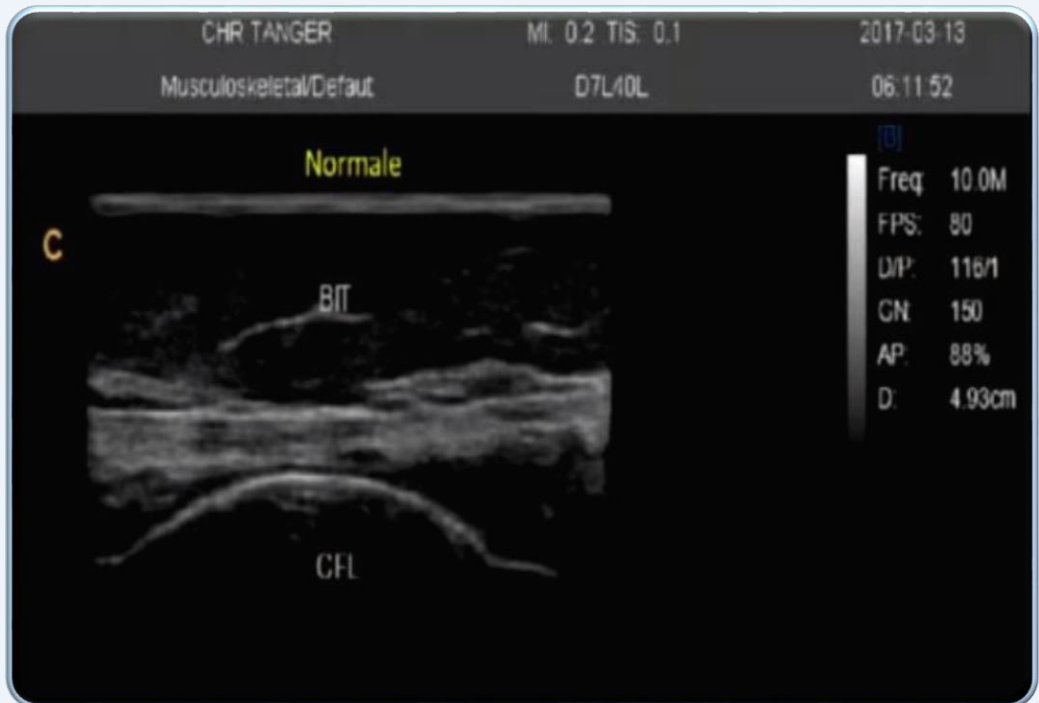
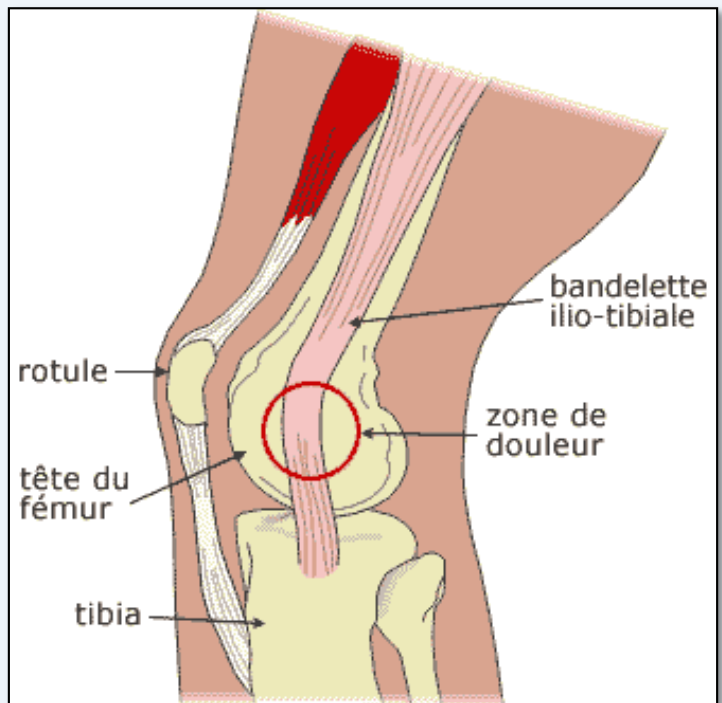
Avec le Syndrome de Friction fémoro-patellaire, il faut penser a chercher une Patella haut-située “**Patella Alta**” car elle favorise ce type de conflit



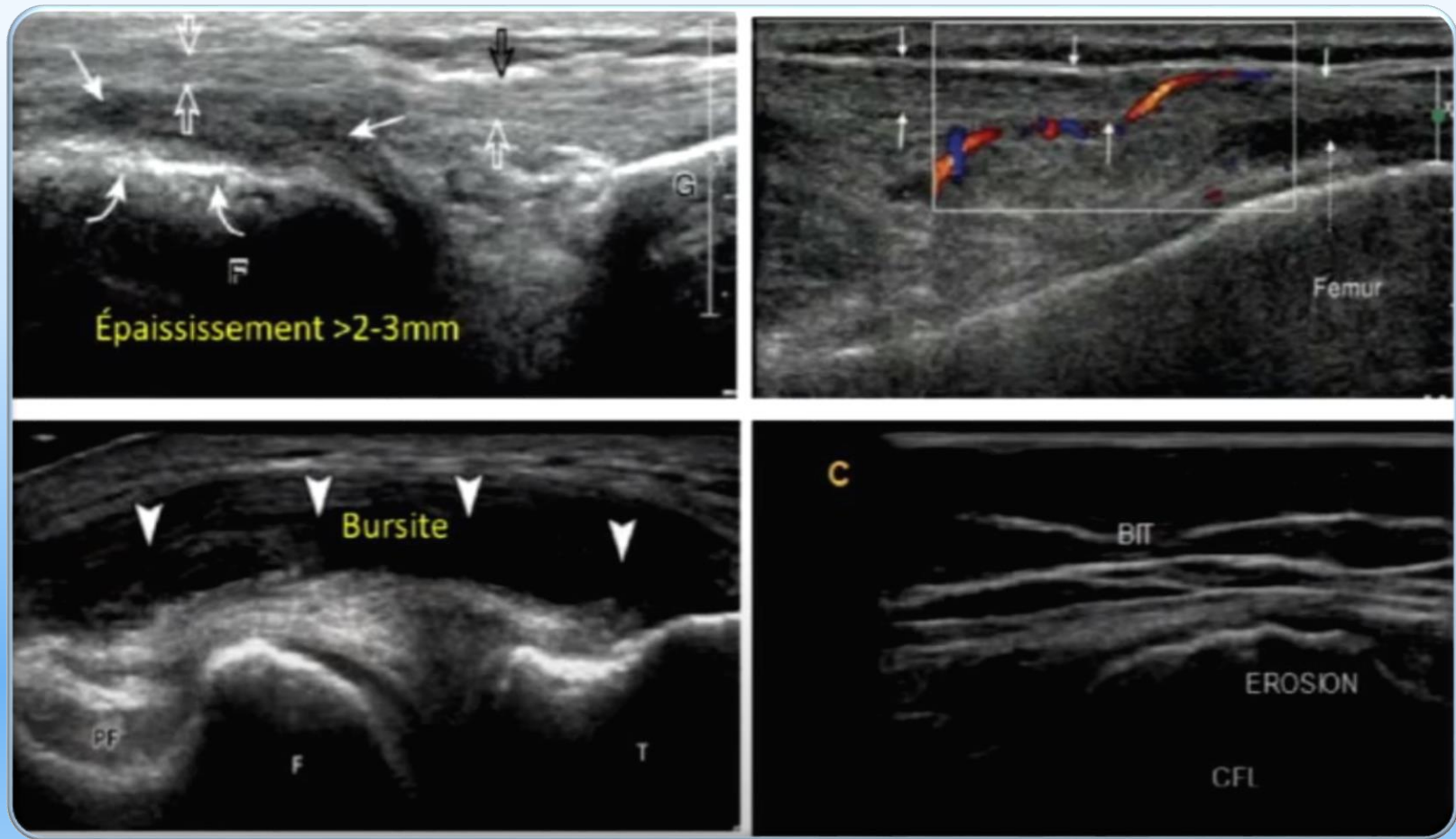
Et aussi une subluxation latérale :



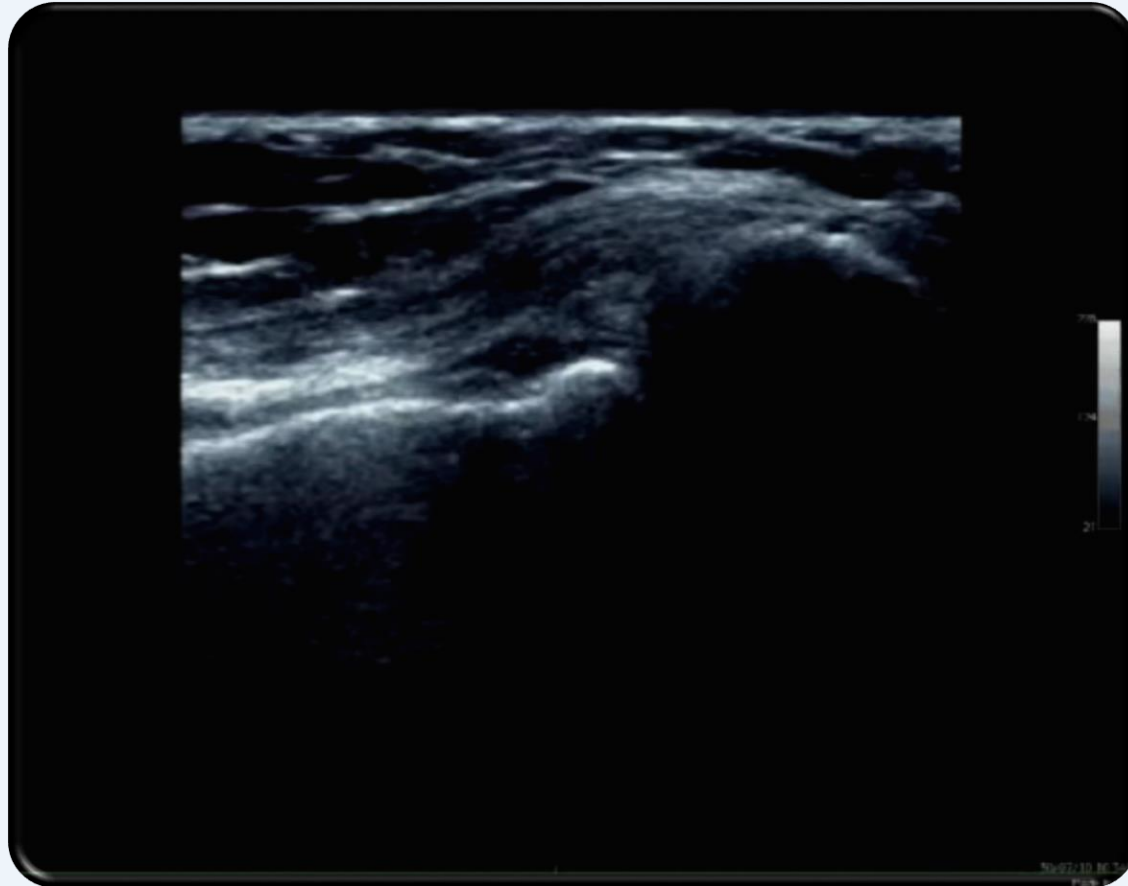
Syndrome de l'essui glace



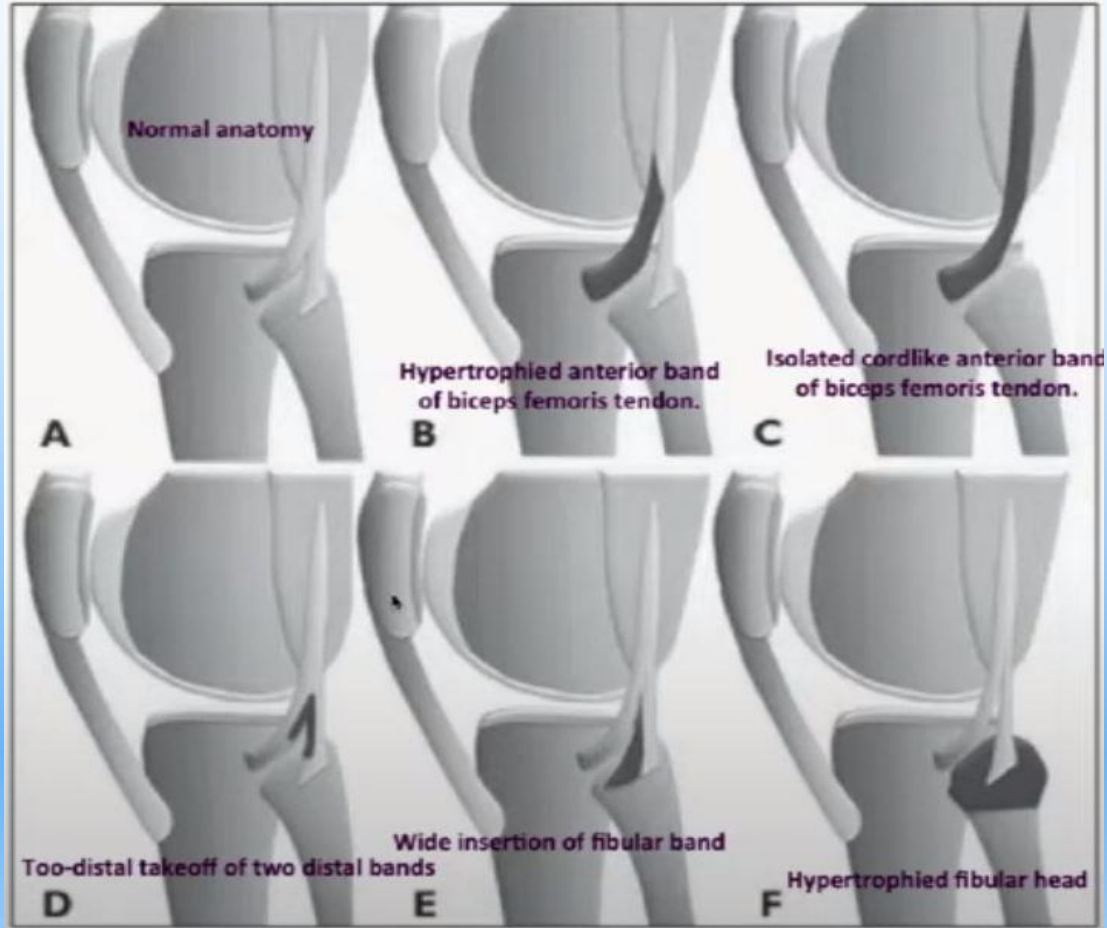
Syndrôme de l'essui glace



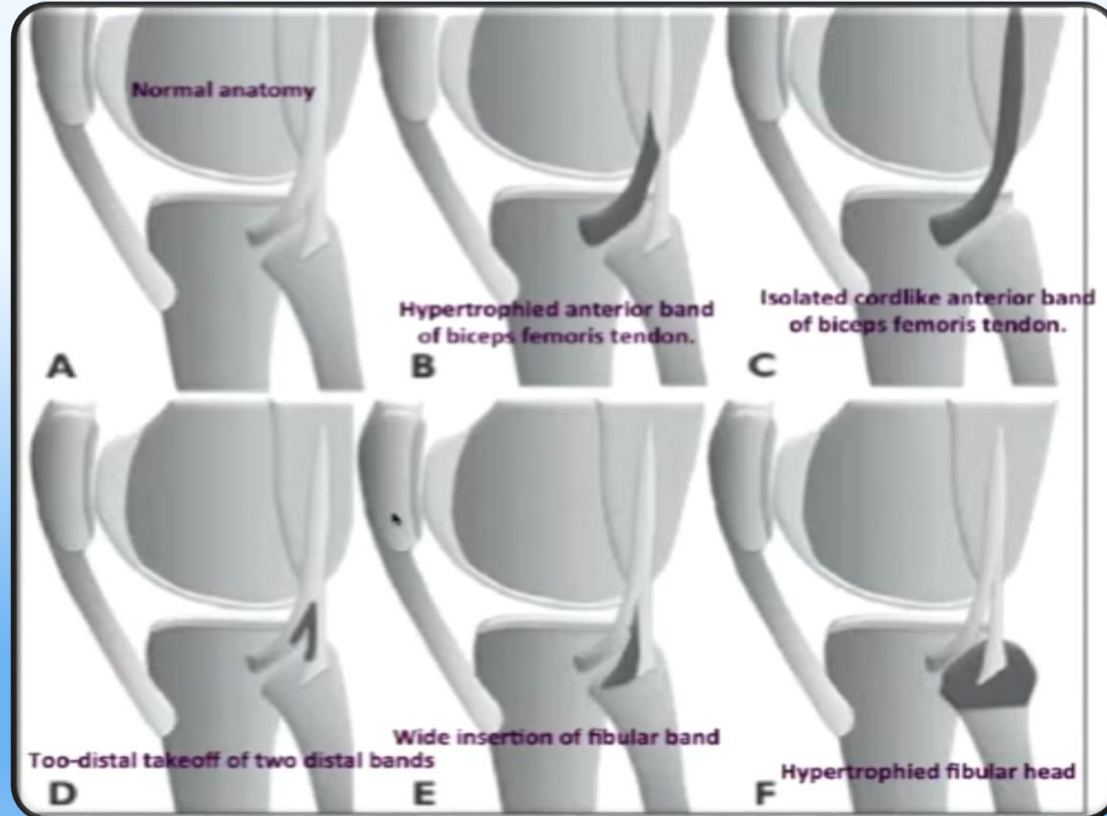
Syndrome de l'essui glace (video)



Biceps fémoral



Biceps fémoral (video)



D

E

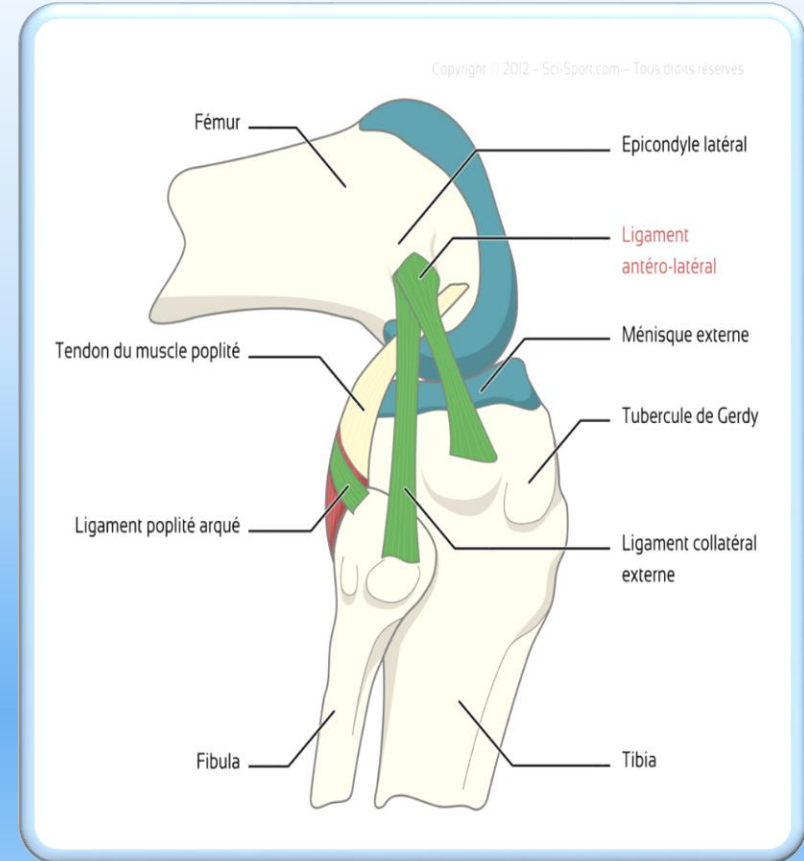
E

bned relidR fo neerrpeni dbrW
 thned latsib owr fo flookst latsib-ooT

bned relidR fo neerrpeni dbrW
 thned latsib owr fo flookst latsib-ooT

Tendon poplité

- Extrusion du tendon poplité
- 0 – 90 de flexion
- Conflits avec ostéophyte ou composants de PTG a été rapporté dans la littérature



Apport de l'Echographie

1. Pathologies articulaires ✓
2. Pathologies abarticulaires ✓
3. Lésions méniscales ✓
4. Lésions ligamentaires ✓
5. **Ressaut** du genou « Snapping knee » ✓
6. Pathologies **osseuses**

06

.

Pathologies osseuses

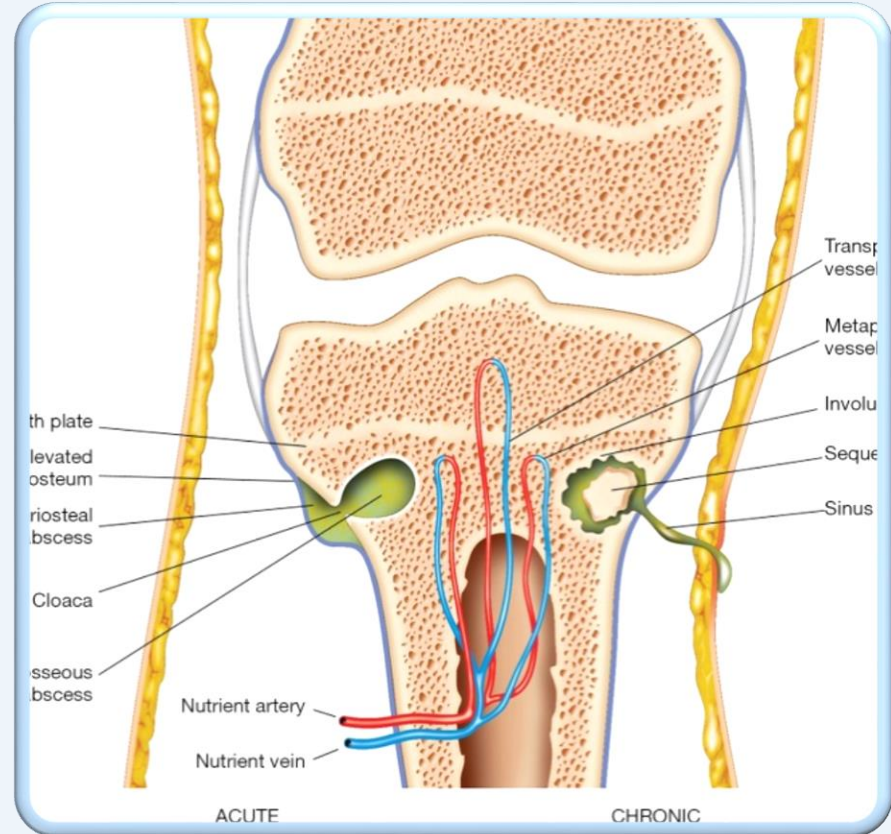
- Ostéomyélite
- Fabella syndrome



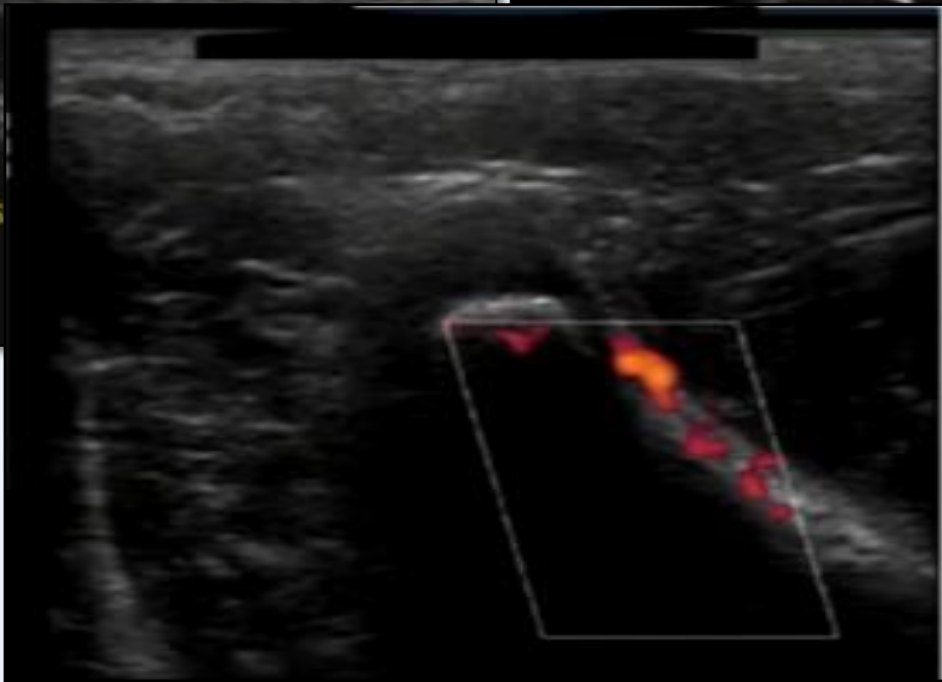
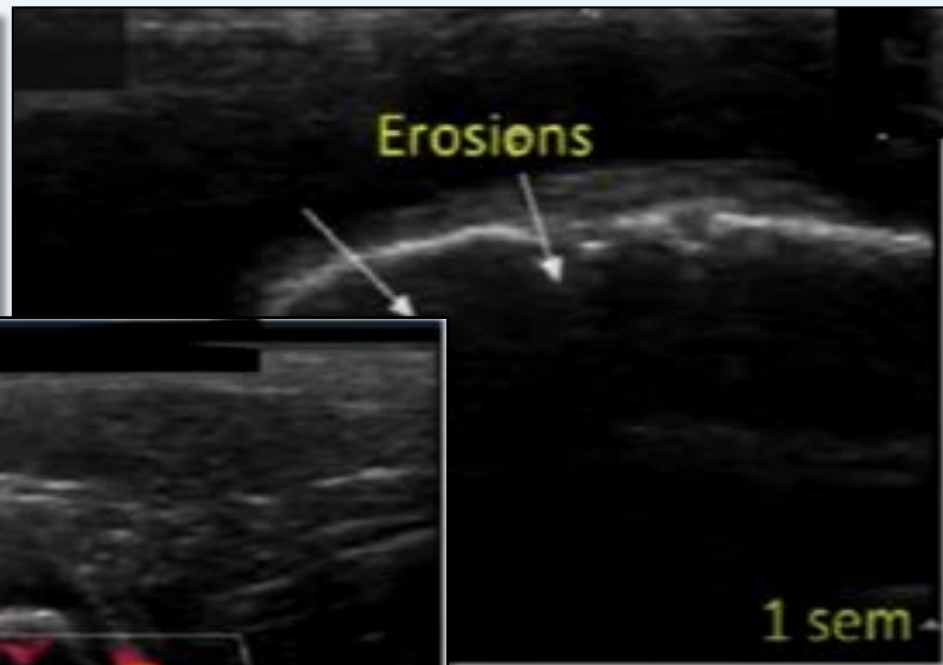
A- Ostéomyélite aiguë

Signes échographiques :

- Epaissement périosté
- Collection liquidienne juxtacortical
- Abscess sous périosté
- Erosions (1 semaines)



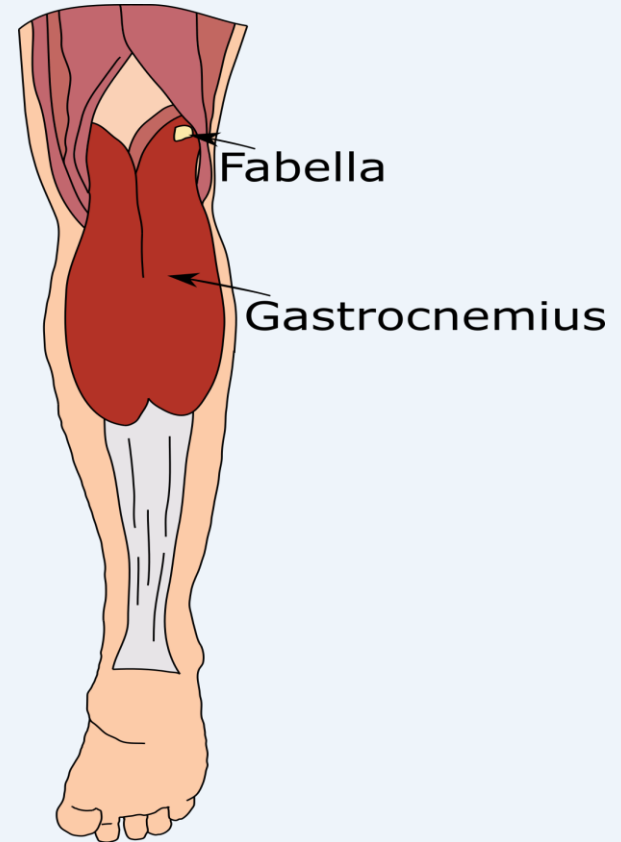
Ostéomyélite aigue



B-

Fabella Syndrome

- Friction Fabella avec la partie postéro-latéral du CFL
- Fracture
- Dislocation
- Compression Nerveuse
- Arthrose



Fabella Syndrome



Apport de l'Echographie

1. Pathologies articulaires ✓
2. Pathologies abarticulaires ✓
3. Lésions méniscales ✓
4. Lésions ligamentaires ✓
5. **Ressaut** du genou « Snapping knee » ✓
6. Pathologies osseuses ✓

Merci

Pour votre attention

Si vous avez des questions
sk_boudiaf@yahoo.fr

Dr.Boudiaf
Rhumatologue privé – ARAP
Cité les remparts - Setif

Stay
Safe

