

Case study #11 Rt. knee

The patient is a 55 year old female who presents with bilateral knee pain. Patient is a collegiate softball coach and has a very active lifestyle and career that is hampered by her chronic knee pain. She reports a history of bilateral meniscal tears with surgical repair. Current symptomatology includes: "pop and snap" with ambulation, knee instability, swelling and stiffness, pain that is often sudden and severe.

Patient scheduled a diagnostic ultrasound for her right knee to evaluate for possible treatment with placental tissue matrix (**PTM**). A full protocol was presented for review, the following are the findings of the comprehensive examination.

It should be noted patient was advised to have bilateral knee replacement by her orthopedic surgeon due to the severity of her knee degeneration.

DOB: 1/24/61

DOE: 8/11/16 Right Knee

A comprehensive scanning protocol of the right knee is presented. Supra-patellar effusion with minimal soft tissue/fatty proliferation is noted in the bursa. Multiple images of the femoral trochlea suggest well-maintained sulcus angle/scalloping contour of the distal femur. Increased echo-density of the cartilage lining is noted; however the hyaline cartilage is not absent. The osteochondral line is not crisp, but no significant osteophyte formation.

Infra patellar tendon is unremarkable. Mixed echoes of Hoffa's fat pad indicate edema and increased echo-density as with depletion.

The lateral collateral ligament is thickened as with strain/sprain, there is also fiber failure as with partial thickness tear proximal to the fibular attachment.

The lateral meniscus demonstrates loss of normal homogeneity and extrusion beyond the joint line. Chronic degenerative changes of the meniscus with minimal sonographic evidence of tears.

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The iliotibial band at Gerdy's tubercle is unremarkable. However; hyper-echoic foci on the image are suggestive of tibial osteophytes.

The medial meniscus also demonstrates mixed echoes of degeneration, but also demonstrates multiple defects as with fibrocartilage tears. It is extruded beyond the joint line.

The deep portion of the proximal medial collateral ligament demonstrates loss of fiber uniformity as with a tear. There is also significant bony/cortical irregularity making this compatible with ancient MCL injury. There is also a prominent defect in the medial collateral ligament on the distal side of the joint.

No sonographic evidence of Bakers cyst. The biceps femoris tendon at the fibular insertion is unremarkable.

Findings:

Supra-patellar effusion with soft tissue proliferation. Increased echodensity of the hyaline lining the femoral trochlea. Ancient LCL and MCL strain/sprain. LM and MM degenerative changes with MM tear.

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Treatment Sites:

Supra-patellar:

Infra-patellar fat pad:

Medial and lateral retro-patellar spaces: Out of plane approach. No debridement.

LCL: Out of plane

MCL: Proximal (In-plane, distal to proximal, debridement of femoral margin)

MCL: Distal: Out of plane

LM: Out of plane, advancing into meniscus then retract and deposit.

MM: Out of plane, advancing into meniscus then retract and deposit.

After consultation to discuss findings the patient opted to undergo placement of placental tissue product at the pre-determined sites. The

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decision was made to utilize one DX100 with 5.5 CC's saline added for appropriate distribution of **PTM**.

The procedure went very well and the patient was able to leave our clinic with no off loading, bracing or support.

Patient returned approximately 120 days status post product placement for follow-up ultrasound evaluation to determine objective findings. Patient reported great results. She states that she is now able to attend yoga class and even get down on her knees which she has been unable to do for an extended period of time, excellent pain reduction with greatly improved range of motion. She does report some minor continued discomfort in the infra patellar region while performing jumping maneuvers i.e. jumping rope etc.

DOB: 1/24/61

DOE: 12/19/16

Right Knee Exam

Follow up images of the right knee are presented for comparison to imaging performed on 8/11/16. There is increased echogenicity and uniform echogenicity of the infra-patellar fat pad. This is suggestive of decreased fat pad edema/inflammation. Images of the proximal lateral collateral ligament demonstrate notable increase visibility of the fibrous echo-texture.

Increased homogeneity of the lateral meniscus and sonographic evidence of increased substance is noted. The peripheral margin of the lateral meniscus aligns with the joint margin. It does not demonstrate extrusion.

Similarly, the medial meniscus demonstrates increased substance. However; it remains extruded beyond the joint margin. Internal defects compatible with tears are not as visible as in the initial imaging, but are visible.

Proximal medial collateral ligament fibrous echo-texture is compatible with remodeling by comparison to the initial imaging is noted, Distal MCL defect is suggestive of similar remodeling echo-texture, but fibrous interruption persists.

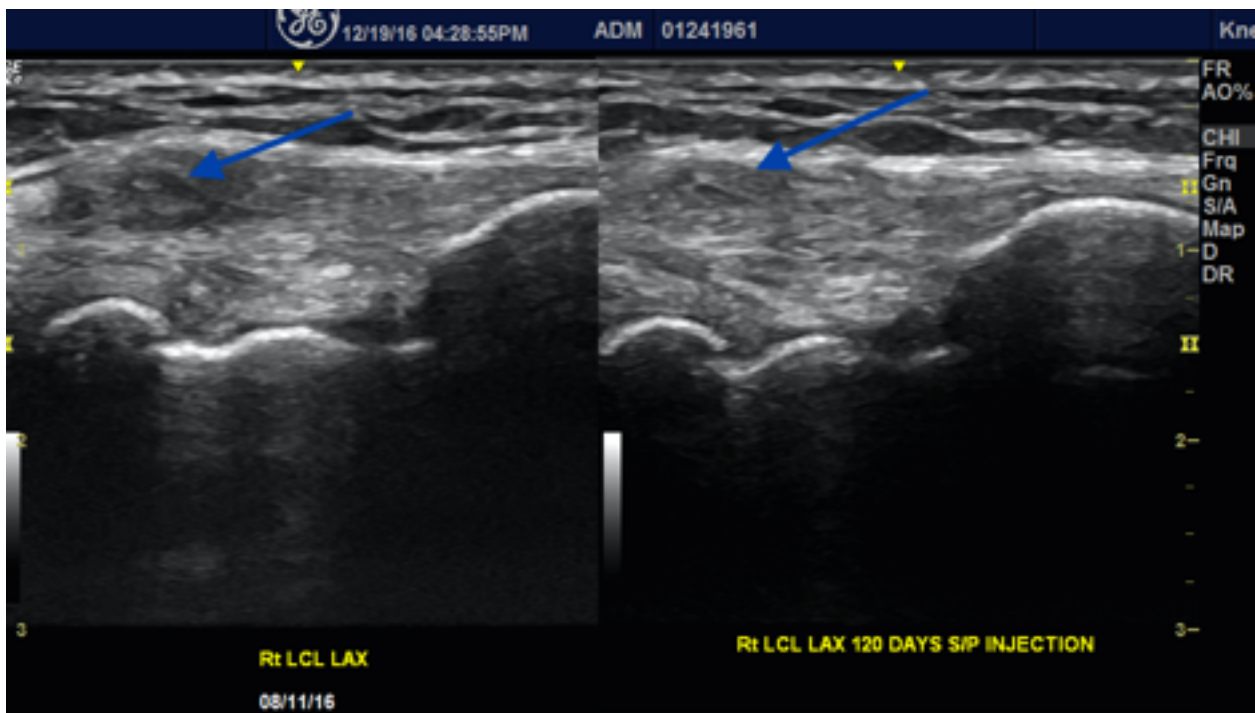
Findings:

Sonographic evidence of decreased infra-patellar fat pad edema. Sonographic findings suggestive of increased echo-texture and substance of the LCL, MCL, LM, and MM.

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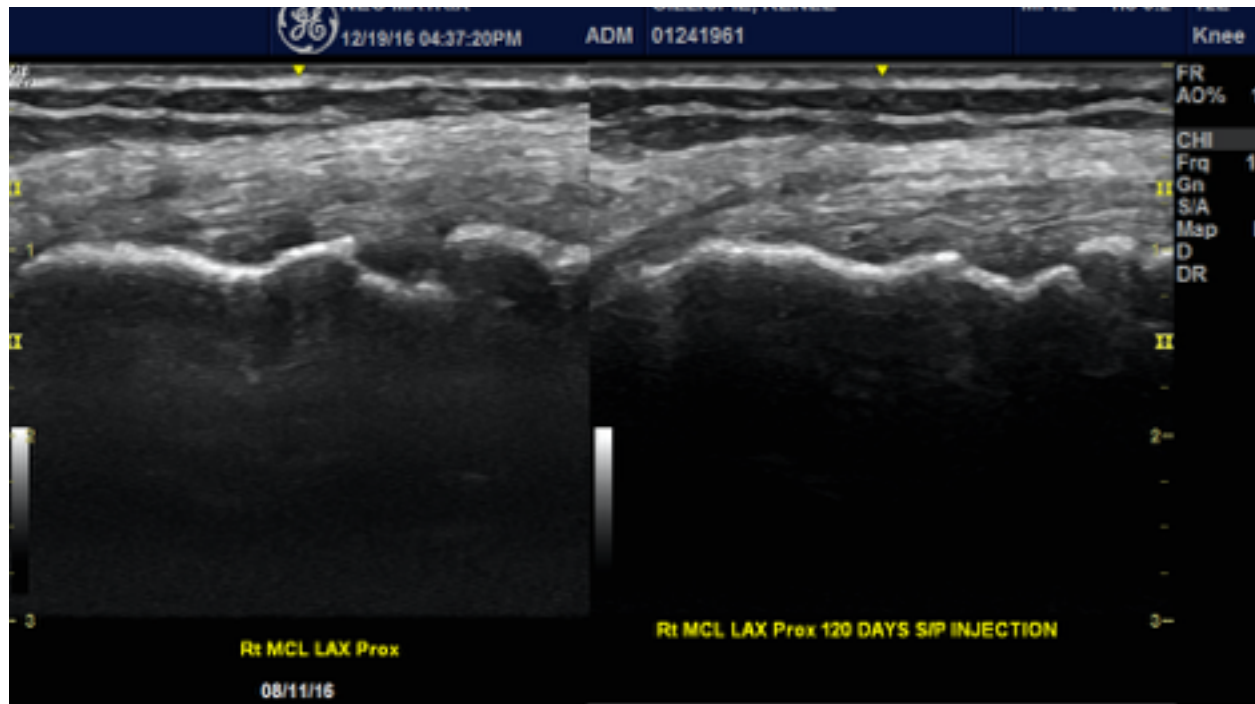
The following are before and after sonographic images demonstrating follow-up findings:

The image below is of the proximal lateral collateral ligament demonstrating notable increase visibility of the fibrous echo-texture.

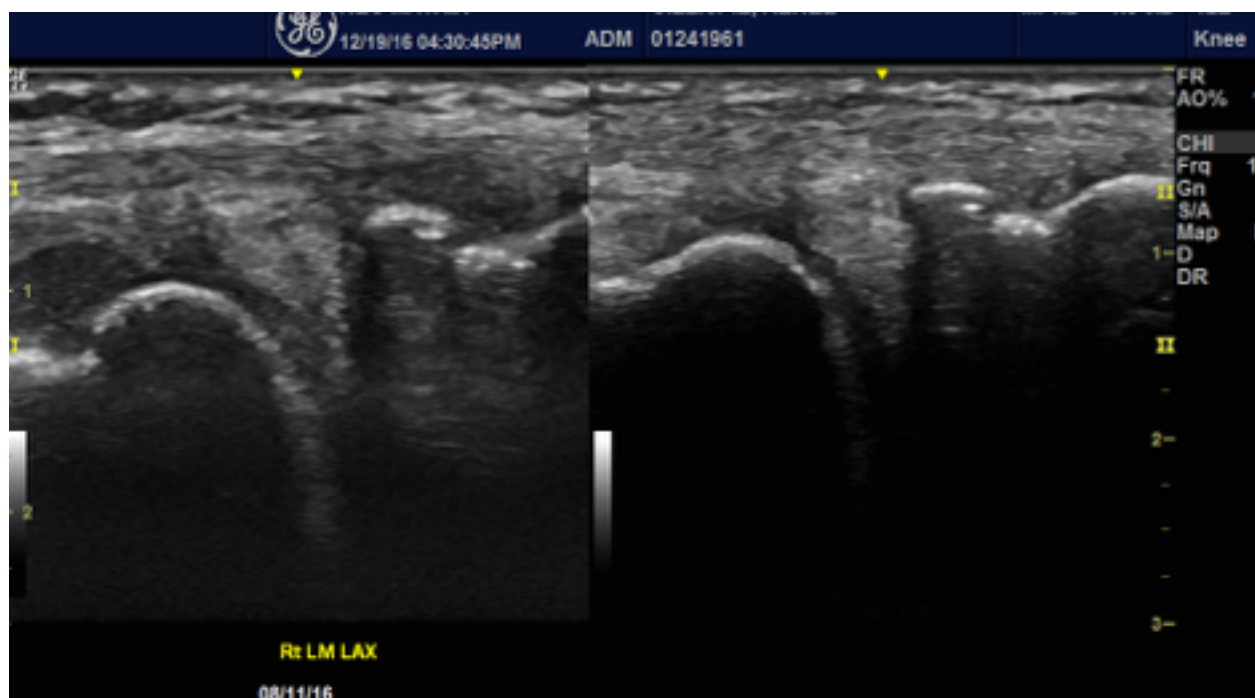


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The image below demonstrates increased echo-texture and substance of proximal medial collateral ligament, fibrous echo-texture being compatible with remodeling.



The image below demonstrates increased homogeneity of the lateral meniscus and sonographic evidence of increased substance.



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The image below of the medial meniscus demonstrates increased substance. However; it remains extruded beyond the joint margin. Internal defects compatible with tears are not as visible as in the initial imaging, but are visible.

