

## Case study #12 Left 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 left 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 Left Knee

A comprehensive scanning protocol of the left knee is presented. Supra-patellar effusion with soft tissue proliferation in the bursa is noted. This appears to be more significant than the right knee. Sunrise views demonstrate lateral facet osteophyte/spur. The medial facet demonstrates less echo-density and degenerative changes than lateral, but still considered a suitable site for treatment.

The osteo-chondral line is thickened and not pristine as with the right knee, however the hyaline cartilage interface is maintained.

The patellar tendon is unremarkable. The infra-patellar fat pad is distended from edema.

The lateral collateral ligament at the fibular attachment is unremarkable.

The lateral meniscus demonstrates notable homogeneity as with normal fibrocartilage, but surrounded by simple fluid. Doppler signal is negative. Fibrocartilage degeneration is suspected, however.

The ilio-tibial band at Gerdy's tubercle is unremarkable.

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Medial meniscus images demonstrate a narrowed joint margin, with extruded fibrocartilage. There are multiple defects as with tears.

Proximal/deep medial collateral ligament irregularity with intra – ligamentous calcification is noted. Compatible with ancient MCL injury.

No sonographic evidence of pes-anserine bursitis.  
Popliteal fossa images are positive for a Baker's cyst formation.

### **Findings:**

Supra-patellar effusion with soft tissue proliferation, greater than the right knee.

Trochlear cartilage increased echo-density, but maintained interface.

Ancient MCL injury.

Medial and lateral meniscus degeneration/tears.

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Treatment Sites:

Supra-patellar:

Infra-patellar fat pad:

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

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

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 decision was made to utilize one DX100 with 5.0 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

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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

### Left Knee Exam

Follow up images of the left knee are presented for comparison to imaging performed on 8/11/16. Images do not reflect sonographic evidence for diminishment or improvement of supra-patellar effusion.

Medial and lateral retro-patellar views demonstrate essentially orthogonal views of soft tissue migration from within the joint as in the supra patellar region.

Sonographic evidence of diminished fat pad edema, and more uniform echo-texture is demonstrated by the infra patellar fat pad.

Lateral meniscus homogeneity is well displayed. Minimal sonographic signs of defects/tear. Medial meniscus image #81 displays increased joint space width/margin. The meniscus remains extruded beyond the joint line.

Initial imaging demonstrated cortical defect and calcific foci in the medial collateral ligament. This is not demonstrable on follow up images #88,86.

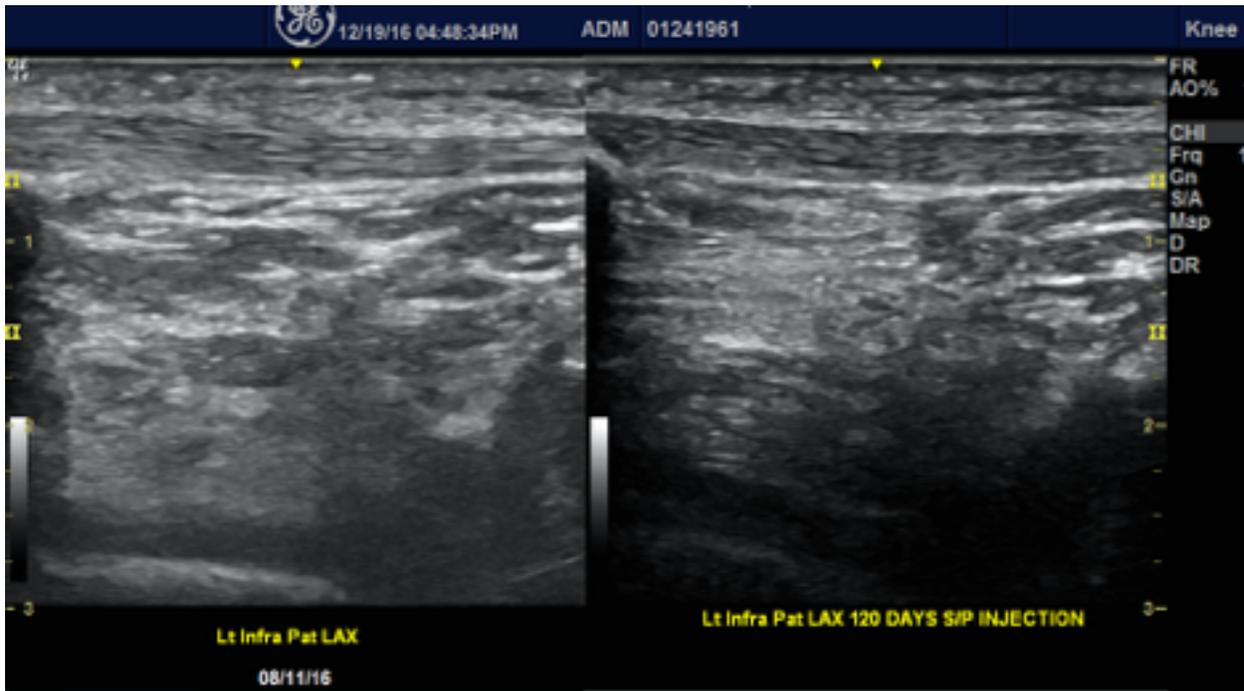
### Findings:

No change in supra-patellar effusion. Sonographic evidence of decreased fat pad edema/inflammation. Sonographic findings compatible with remodeling of the medial and lateral menisci. Further sonographic evidence of remodeling of calcific deposits within the medial collateral ligament.

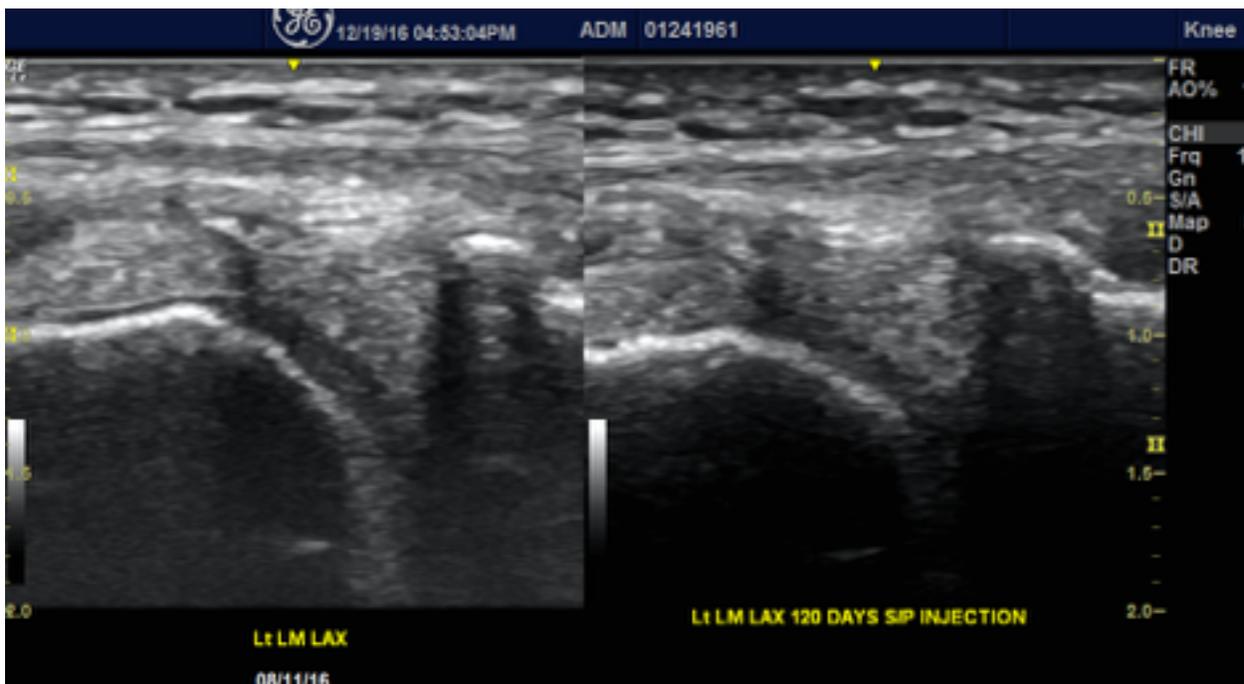
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Below is a before and after demonstrating sonographic evidence of diminished fat pad edema, and more uniform echo-texture.

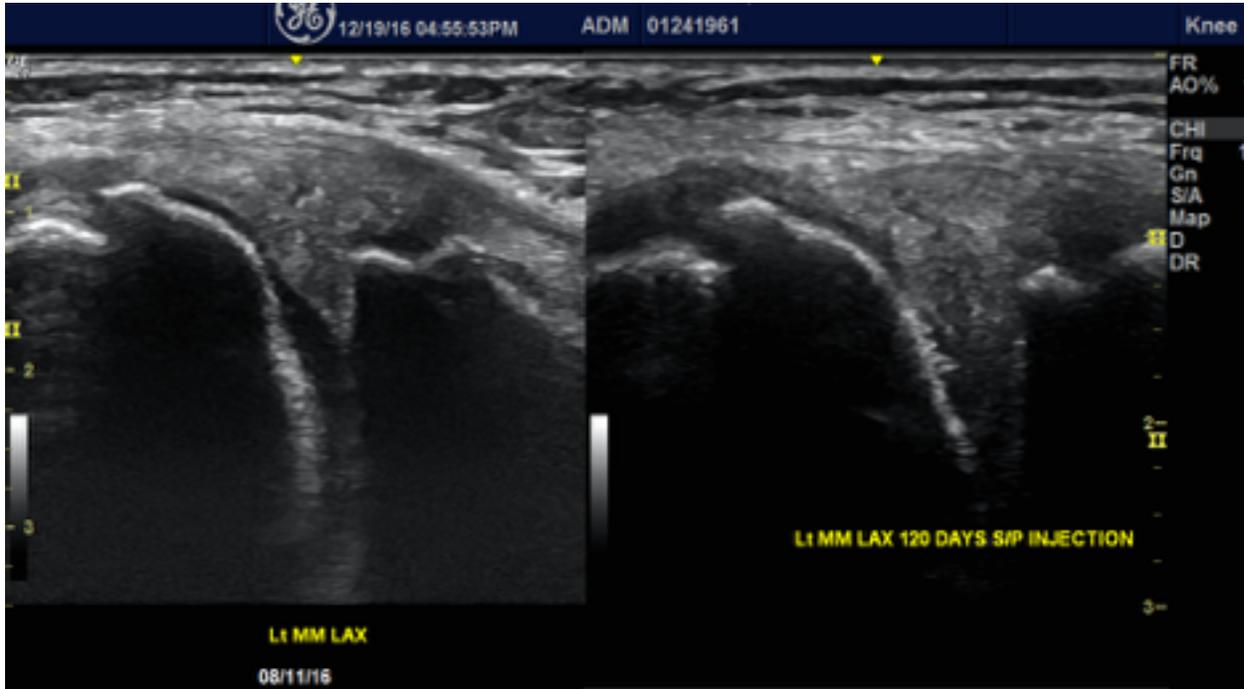


Lateral meniscus homogeneity is well displayed below in the post treatment image demonstrating minimal sonographic signs of defects/tear.



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Below is a before and after image of the medial meniscus image which displays increased joint space width/margin. The meniscus remains extruded beyond the joint line.



Below is a before and after demonstrating sonographic evidence of remodeling of calcific deposits within the medial collateral ligament.

