Procedure Name: **Knee (Joint Effusion)**

Updated: 11/28/07

Indications:
May include but not limited to leg pain of questionable etiology, tightness, tenderness, swelling, or any other valid medical reason/indicators determined by referring physician.

General Description:
This is a limited survey to localize and characterize joint effusion of the lower extremities unilateral or bilateral. Upon completion of exam show study to radiologist before patient is allow to exit room.

Patient Preparation:
There is no preparation for this exam.

Imaging Sequence:

ANTERIOR KNEE

- **Sagital and transverse views (include color Doppler)**
  1. Patient is placed in a supine position
  2. Imaging is performed superiorly, inferiorly, medially and laterally to the patella. Both sagital and transverse views are obtained with knee positioned in a flexion and extension orientation.
  3. **Knee in a flexion position, perform sagital and transverse imaging**. (Increased joint fluid in the knee is visualized as an anechoic or hypoechoic distention of the suprapatellar recess. Joint recess distention may occur deep to the quadriceps tendon (superiorly from between the patella and the femur)).
  4. Pad posterior to knee is helpful for maintaining slight flexion of the knee
  5. **With the knee in extension, perform sagital and transverse imaging**. (Fluid distention may be seen only medial and lateral to the patella in the transverse plane).

POSTERIOR KNEE

- **Sagital and transverse views (include color Doppler)**
  1. Patient is placed in a prone position
  2. Evaluation for Baker's cyst is the pathology most often of concern for posterior knee imaging. (Joint fluid may collect in the popliteus tendon sheath or in a Baker's cyst when there is a communication with the posterior knee joint).
  3. **Obtain sagital and transverse images of the posterior knee with implementation of color/power Doppler to distinguish fluid verses vasculature.**

IMAGING INFORMATION

- On both anterior and posterior imaging key landmarks include the related fossa and hyperechoic fat pads
- Fluid collections can be anechoic (simple fluid) to complex fluid varying from hypoechoic to hyperechoic. Heterogeneous joint fluid may be due to hemorrhage or infection.
- If fluid collections are present, obtain images to show the scope of the fluid collection and if the interface between the fluid and surrounding soft tissues are irregular image this as well.
- Findings of joint recess compressibility, motion of contents (within joint recess) with transducer pressure, and lack of increased blood flow with color/power Doppler suggest complex fluid as opposed to synovitis.
- Furthermore, if joint recess distention is not anechoic but rather hypoechoic, isoechoic, or hyperechoic to muscle, then considerations include complex fluid versus synovitis
- Deep to the quadriceps tendons, the suprapatellar recess is evaluated for anechoic or hypoechoic joint fluid which would separate the more anterior quadriceps fat pad from the posterior located prefemoral fat pad