

## PROTOCOL OVERVIEW

This Clinical Protocol advises on indications and guidelines for Knee MRI.

## INDICATIONS

- Indicated for ANY ONE of the following:
  - Acute traumatic injury
  - Bone abnormality on x-ray or CT
  - Bone scan with well-localized increased uptake
  - Chronic knee pain and ALL of the following are present:
    - Normal x-ray
    - Normal physical exam
    - No other explanation, such as patellofemoral syndrome, degenerative joint disease, stress fracture, reflex sympathetic dystrophy, or inflammatory arthritis is present
  - Baker's cyst or other cystic lesion
  - Regional sympathetic dystrophy
  - Suspected osteonecrosis due to presence of ANY ONE of the following:
    - Focal radiolucency on plain x-ray
    - Bone scan demonstrates well-localized, increased uptake
    - Knee pain and history suggestive of increased risk for osteonecrosis due to the presence of ANY ONE of the following:
      - Previous trauma
      - Hemoglobinopathy, particularly sickle cell anemia
      - Chronic corticosteroid usage
  - Suspected stress fracture due to the presence of ALL of the following:
    - Concerns regarding infection or inflammatory process make bone scan suboptimal
    - History of overuse or excessive activity
    - Localized pain
    - Symptoms persist or recur despite rest
    - Two normal plain films at least 3 weeks apart
  - Loose body in joint space
  - Synovial pathology

## INDICATIONS FOR TYPES OF INJURIES AND CONDITIONS

### MENISCAL INJURY

- Indicated when ALL of the following are present:
  - Skilled orthopedic clinical exam cannot yield diagnosis of a torn meniscus.
  - Presence of ANY ONE of the following symptoms or physical findings:
    - Restricted range of motion, buckling, or locking

- Gradual onset of effusion over several hours, reaching maximum on the day after injury
- Symptoms worse with ANY ONE of the following:
  - Twisting or rotating motions of knee
  - Going up and down stairs
  - Standing up from a sitting position
- Effusion with acute injury or with subsequent episodes of minor injury or vigorous activity
- Sensitivity to palpation along the medial or lateral joint line
- Positive McMurray test or Apley test
- Fracture with high association of meniscal tear

### **CRUCIATE LIGAMENT TEAR**

- Indicated for ANY ONE of the following:
  - Positive anterior or posterior drawer sign
  - Positive Lachman's test
  - Posttraumatic effusion, usually bloody
  - Inability to bear weight after injury
  - History of tearing or popping after acute injury
  - Symptoms of instability with chronic injury

### **COLLATERAL LIGAMENT INJURY**

- Indicated for ANY ONE of the following:
  - Laxity with valgus or varus stresses to the knee at 30° of flexion
  - Posttraumatic effusion without ligamentous instability
  - Symptoms of instability with chronic injury

### **OSTEOMYELITIS**

- Indicated for ANY ONE of the following:
  - Patient with diabetes or severe peripheral vascular disease and ANY ONE of the following:
    - Abscess or cellulitis
    - Persistent leg pain, even without ulcers present
    - Persistent or worsening ulcer without obvious bone exposure
  - Suspected osteomyelitis due to presence of ANY ONE of the following:
    - Pain associated with chills or fever, particularly after trauma or orthopedic surgery
    - Overlying cellulitis that responds poorly to antibiotics
    - Chronic skin ulcer or sinus tract
  - Focal lesion seen on bone scan

### **SUSPECTED BONE TUMOR**

- Indicated for ANY ONE of the following:
  - Abnormal finding on x-ray or bone scan
  - Palpable bony abnormality with normal x-ray
  - Known diagnosis of cancer elsewhere and ANY ONE of the following:
    - Unexplained pain
    - Abnormal x-ray or bone scan
  - Persistent pain or unclear etiology
  - Follow-up after treatment for either primary or metastatic cancer of the bone.
  - Suspected or known soft tissue neoplasm
  - Known chondrosarcoma, Ewing sarcoma or osteosarcoma

## CITATION

Milliman Care Guidelines, "Ambulatory Care", 23rd Edition, "Knee MRI"; 2/26/2019