

Knee Injuries: Indications For Radiography

See also Ottawa Rules

Background

1. Ottawa & Pittsburgh Knee Rules
 - Only 6% of pts w/knee trauma have an actual fracture
 - These rules are designed to reduce the use of unnecessary radiography
 - Thus reducing health care costs
 - X-ray views should include:
 - Axial sunrise or merchant
 - Flexed knee to 45°
 - Posteroanterior wt bearing
 - 90° lateral views
 - Possible findings include:
 - Fx sites
 - Patella
 - Femoral condyles
 - Tibial plateau
 - Significant fx
 - Bone fragment >5 mm OR
 - Avulsion fx associated w/disruption of tendons or ligaments
 - Osteoarthritis, degenerative joint space
 - Calcified meniscus or loose body
2. Comparison of Ottawa and Pittsburgh Rules
 - Pittsburgh Rules are more specific for finding a fracture, w/no loss of sensitivity

Ottawa Knee Rules

1. Plain x-ray should be obtained after acute injury if pt meets ONE of following
 - Age = 55 yrs
 - Isolated tenderness of patella (no other bony tenderness)
 - Tenderness at head of fibula
 - Inability to flex knee to 90°
 - Inability to bear wt for 4 steps both immediately and in ER/office
2. Sensitivity 97%, specificity 27%
3. See Ottawa Knee Rules

Pittsburgh Decision Rule

1. Plain x-ray should be obtained after acute injury if pt meets ONE of following
 - Blunt trauma or fall mechanism
 - <12 years old or >50 years old
 - Inability to bear wt for 4 steps immediately and in office/ER
2. Sensitivity 99%, specificity 60%

Other Recommendations

1. In pts w/hemarthrosis, consider stress radiographs
 - This may be inhibited by pain from traumatic injury

- Joint aspiration w/inj of local anesthetic may be necessary to perform stress radiography
2. Pts w/significant and/or displaced fractures should be referred immediately to orthopedics

References

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