Eight- year old boy with hip pain

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CLINICAL STATEMENT

- Eight-year-old boy
- Left hip pain from 8 days ago
- No trauma, no fever
- Sports at school
- Normal XR
- As pain persists, orthopaedist prescribes a bone scintigraphy
BONE SCINTIGRAPHY

- Blood pool phase:
  - 60 sec static images of both hips
  - Just after tracer injection (< 5 min)
- Bone images:
  - 90 minutes after tracer injection
  - Whole body
  - Planar hip anterior and posterior
  - Pinhole views of both hips
• Blood pool phase:
  – Increased uptake in left hip

• Bone images:
  – Whole body normal except left hip
  – Planar and Pinhole views of both hips:
    increased uptake in the medial acetabulum, probably corresponding to the ischium
BONE SCAN

1. Left hip arthritis
2. Left femoral head osteonecrosis
3. Iliac fracture
4. Osteomyelitis: femoral head and ischium
BONE SCAN

1. Left hip arthritis
   No, bone involvement
2. Left femoral head osteonechrosis
   No, iliac / ischium involved
3. Iliac fracture
4. Osteomyelitis: femoral head and ischeum
   No fever
   No systemic symptoms
Bone fracture is the more probable diagnosis, but… no trauma and XR normal. What to do?

1. Repeat XR
2. CT
3. MRI
4. Repeat bone scan in 10 days because XR is normal
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CT is more useful than MR to value cortical bone.
Bone cyst fracture in the left ischium
CASE DISCUSSION

- Bone scan is more sensitive than XR, CT and MRI in detecting fractures

- Orthopaedists and traumatologists often indicate bone scans in case of persistent bone pain with initial US and / or XR normal
TEACHING POINTS

• Bone cysts usually have normal uptake (sometimes diminished if great size)
• Bone cysts are hyperactive only in case of:
  – Fracture
  – Infection