31 year old female with hx of IVDA presents with left hip pain, fever.

Ryan Joyce, MD
T2 Fat sat
T1 Fat sat post-contrast
T1 Fat sat post-contrast
Septic sacroiliac arthritis
T2 Fat sat coronal oblique

Subchondral marrow T2 hyperintensity
Subchondral marrow T2 hyperintensity

T2 Fat sat axial
T2 Fat sat coronal oblique

Subchondral marrow T2 hyperintensity

Intra-articular fluid signal
Subchondral marrow T2 hyperintensity
T1 Fat sat post-contrast

Subchondral marrow enhancement

Intra-articular enhancement
T1 Fat sat post-contrast

Enhancing intra-articular fluid

Subchondral marrow enhancement
Septic sacroiliac arthritis

Septic arthritis

- Can occur in any joint.
- Most common in adults = knee. Children = hip.
- Sacroiliac joint and sternoclavicular joint at particular risk in diabetics, HIV/AIDS patients, and IV drug abusers.
- Increased risk also in chronically ill patients on steroids, rheumatoid arthritis, ESRD, joint surgery, prosthesis.
Septic sacroiliac arthritis

Septic arthritis on radiograph and/or CT

- Insensitive early on, often normal. 1st sign will be a joint effusion.
- Progresses to periarticular osteoporosis, cartilage destruction with joint space narrowing, cortical erosion.
- When chronic, sclerosis develops.
Septic sacroiliac arthritis

Septic arthritis on MRI

- Abnormal within 24 hours of onset.
- Extremely sensitive and rather specific.
- Low T1 signal within subchondral bone on both sides of joint.
- Fluid-sensitive sequences demonstrate hyperintense effusion, hyperintense subchondral bone, and perisynovial soft tissue enhancement.
- Post-contrast T1 fat-saturated imaging demonstrates synovial thickening surrounding effusion, subchondral bone enhancement, and sometimes adjacent soft tissue abscess and/or infectious myositis.
- Unilaterality should raise suspicion for infectious etiology.
Septic sacroiliac arthritis

Septic arthritis on US

- Highly sensitive for joint fluid if joint can be seen with probe.
- Method of choice for hip effusion in children, can also be used to guide aspiration.
Septic sacroiliac arthritis

Septic arthritis – additional considerations

- Clinical emergency; failure to diagnose and treat results in rapid joint damage and ultimately destruction.
- Immediate aspiration for definitive diagnosis. Fluoroscopy or US for guidance.
- Method of choice for hip effusion in children, can also be used to guide aspiration.
- Treatment: antibiotics and drainage. Surgery/arthroplasty in select cases. Infected prosthesis and cement must be removed.
- 60% recover completely; remainder have permanent joint damage to joint.
References

1. www.statdx.com


References

Emergency Joint Aspiration: A Guide for Radiologists on Call

Hank M. Lin, MD • Thomas J. Learch, MD • Eric A. White, MD • Chris J. Gottsegen, MD