Morning Report: An Interactive Case Presentation

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Clinical Presentation

14 y/o male presents with 3 day history of progressive low back pain, now limiting his ability to walk.
HPI details

- Right sided
- Progressively worsening
- No preceding injury, remembered, but child plays multiple contact sports
- Some knee pain initially, but now resolved
- No fevers at home, though mom has checked repeatedly because she was concerned about him
- Denies numbness, tingling, weakness, or incontinence
- ROS: negative other than per above.

More History

- PMHx:
  - Vaccines UTD
  - No chronic medical problems/No medications
- PSH:
  - Freshman
  - Participant in contact sports
  - Denies sex/drugs/rock’n roll
- FHx:
  - Hashimoto’s thyroiditis in parent
  - No hx of other rheumatologic disease
Differential Diagnosis

1. MSK 25%
2. Inflammatory 25%
3. Infectious 25%
4. Neoplastic 25%
• Adolescent Athletes
  – Skeletal Immaturity
  – High Rates of Growth
  – Organized Sports
    • Fewer activities
    • Intensive training
  – Identifiable Causes

MSK Continued

• Strains, Sprains and Contusions
  – Should be a diagnosis of exclusion
  – Most common
  – Management:
    • Icing
    • NSAIDs
    • Activity modification
    • Rehabilitation
Disks

- Approximately 11% of lumbar pain
- Epiphyseal Ring Fractures
- Indications for surgery
  - Progressive neurological defects
  - Cauda equina syndrome
  - Persistent pain with severe limitation of activity
- Treatment generally conservative
  - Activity modification
  - NSAIDS
  - Progressive rehab including core strengthening

Spondylo-lysis/listhesis

- Peaks in adolescence
- Up to 47% of back pain in athletes
- Only 40% will report specific trauma
- Mechanism: (hyper)extension
  - Gymnasts
  - Dancers
  - Divers
  - Weight lifters
  - Football linemen
Spondylo-lysis/listhesis

- Screening
  - AP/Lateral/Oblique
- MRI/SPECT
- Treatment
  - Activity modification
  - Pain control
  - Rehabilitation
  - Bracing is controversial
- 10-15% will become bilateral
- Few will go on to have neurological impairment
Anatomic- Skeletal

- Scheuermann’s disease
  - 13-17 year old
  - Male predominance
  - 80% are painless
  - Compensatory lordosis
    - Increased pain
    - Increased listhesis
- Scoliosis

Inflammatory- Axial Skeleton

- Reactive Arthritis (Reiter’s syndrome)
- IBD Associated
- Psoriatic Arthritis
- Ankylosing Spondylitis
Commonalities

- Insidious
- Enthesitis
- Gelling phenomenon
- Family Hx
- HLA-B27 association

Infectious

- Discitis <-> Vertebral Osteomyelitis
- Osteomyelitis
- Pyomyositis
- Septic Arthritis
- Sacroiliitis
Neoplastic

- Ewing Sarcoma
- Osteosarcoma
- Leukemia
- Metastatic disease

Physical Exam

VS T: 36.8  P:81  R:16  BP:88/44  SpO2:97% RA
Gen: Uncomfortable, still
Skin: Warm, dry, no rashes or other eruption
CV: S1 S2, no murmur
Resp: CTAB
GI: SNTND normally active BS
MSK: No joint effusion, ROM full except some tenderness on external rotation of right hip. Focally TTP near right SI joint. Some paraspinal muscle spasm present R > L.
Neuro: downgoing toes bilaterally, normal ankle and patellar reflexes, sensation grossly intact
Differential Diagnosis

1. MSK
2. Inflammatory
3. Infectious
4. Neoplastic

Workup?

CBC with diff
BMP
ESR
CRP
LDH
Uric Acid
PA/Lateral Spine
CT Chest/Abdomen/Pelvis
MRI L-spine and Sacrum
Bone Scan
Other
Data

CRP: 8.7  ESR: 85  
LDH: 111  Uric Acid: 4.5

MRI L-spine/Sacrum: **Right paraspinal muscle strain. No spine infection seen.**

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MRI L-spine/Sacrum: Right paraspinal muscle strain. No spine infection seen.
MRI L-spine/Sacrum: **Right paraspinal muscle strain. No spine infection seen.**
Missing Something?

- Referred pain?
  - Missed Appendicitis
  - Pancreatitis
  - Biliary Disease
  - Renal Disease

Repeat Imaging

CT Neck/Chest/Abdomen/Pelvis with contrast:

Subarticular erosions in the SI joints, suspicious for early changes of sacroiliitis. No evidence of narrowing of the joint space. Questionable osteolytic areas in the S3 segment as discussed.
Diagnosis

• CT guided Aspiration – *S. aureus*
  – Started on vanc, transitioned to kefzol
• Rehabilitation and home with PICC for IV Abx

Infective Sacroillitis

• 1-2% of osteomyelitis/septic arthritis cases
• Treated like osteomyelitis with 4-8 weeks of antibiotic therapy
• Most common the result of hematogenous spread
• *S. aureus* most common organism identified
Questions?