**September 2011 Radiology Case Study: Osteomyelitis/Discitis L4-L5**

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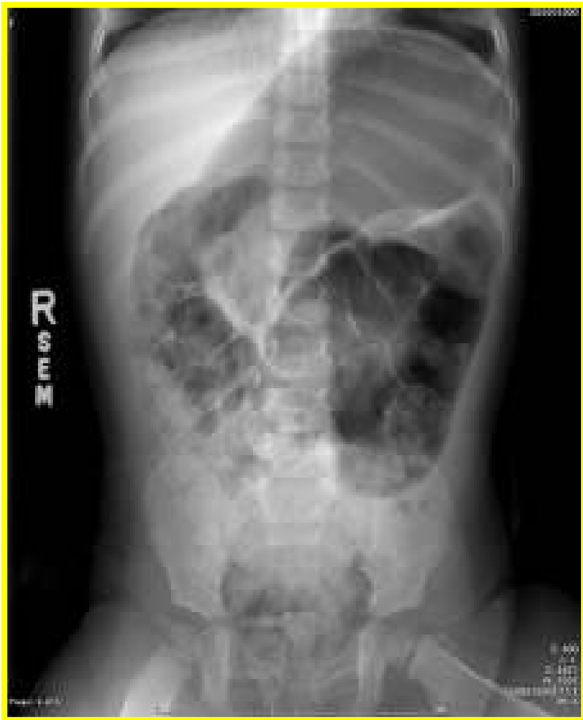
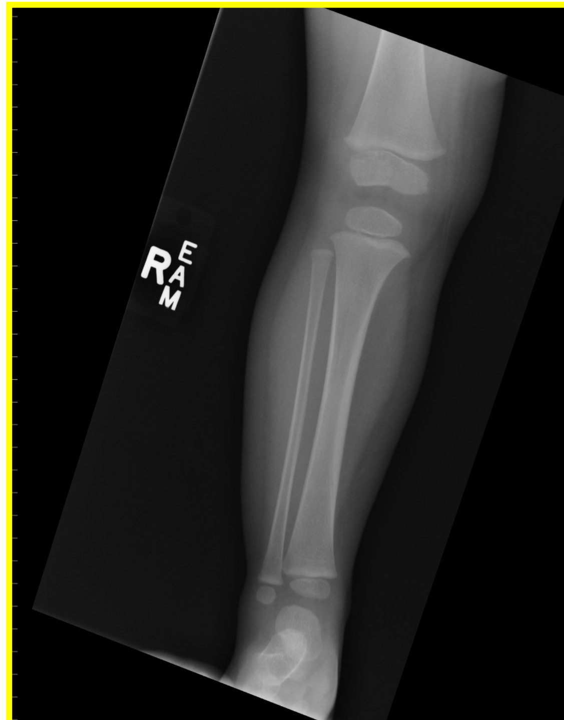
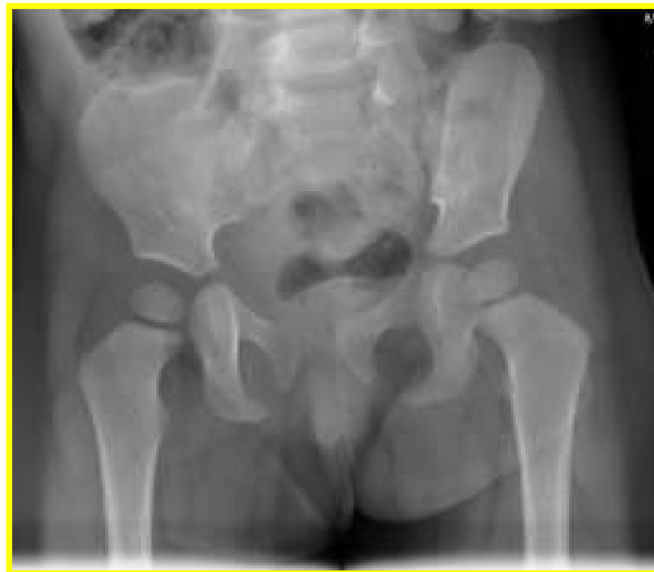
**History of Present Illness:** The patient is an 18-month-old female who is here today for a follow-up visit. She was seen 2 weeks ago for evaluation of possible gait abnormality. The history is somewhat vague; however, she did have an unwitnessed fall that occurred approximately 5 weeks ago at daycare. She subsequently has had episodes of crying and pain that occur intermittently. It initially appeared to be her right thigh and lower extremity. She would occasionally refuse to put weight on the right lower extremity. She was seen by her pediatrician and a local emergency room. She had x-rays taken, a KUB of the abdomen as well as x-rays of the right lower extremity including an AP x-ray of the pelvis both of which were normal. She was diagnosed with possible constipation versus possible transient synovitis of the hip. She subsequently has continued to have intermittent gait issues. She was seen in clinic 2 weeks ago at which time her gait appeared to be normal on physical examination. She had blood work done that was completely normal with the exception of very slightly elevated sedimentation rate (ESR) of 24. The patient's gait has continued to decline according to her mother and grandmother both here with her today, and Motrin is no longer effective at relieving her symptoms or improving her gait. She has had no recent fevers or illnesses. She did have a vague history of a rash occurring on her right hip several weeks ago that has completely resolved. She does not wake up at night with fevers; however, she has recently started to wake up at night with pain. She walked on her own at 12 months of age and has been reaching all developmental milestones normally.




**KUB Abdomen (mild constipation) and AP x-ray of Right Tib/Fib (normal)**

**Physical Examination:** On exam today, the patient appears well; however, was somewhat irritable and uncooperative for physical examination. Height: 34 inches, Weight: 26 pounds, Temp: 98.3 axillary, She is in no acute distress. HEENT: Atraumatic, normocephalic. Neck: Supple with FROM, no lymphadenopthy. Examination of the patient's spine: On forward bend, she appears to have a good range of motion. Occasionally she would demonstrate some vague tenderness to palpation in the lumbar spine. There is no palpable mass or soft tissue swelling. There are no cutaneous abnormalities. There is no rash. Hips continue to demonstrate equal symmetric range of motion, internal rotation is to 80 degrees, internal rotation to 30 or 35 degrees consistent with femoral anteversion. Thigh foot angle is neutral. She refused to put weight on her legs today for examination and would not demonstrate walking. At her last visit she was able to demonstrate a normal non-antalgic gait pattern. Neurologic assessment appeared to be normal for age. Moves all extremities, no spasticity, normal muscle tone. She has ligamentous laxity with femoral anteversion and bialteral pes planus normal for age. She had normal 2-3+ reflexes in the lower extremity and appeared to have normal superficial abdominal reflexes.



Normal AP x-ray of pelvis

The patient was sent for an MRI scan of the spine and pelvis due to the gait abnormality that appeared to be progressive or worsening over the last 2 weeks. The MRI scan was done with contrast and under conscious sedation. Labwork was also repeated which was normal other than a slightly elevated sedimentation rate (ESR). C-reactive protein was normal at 0.7. CBC was normal with WBC 13.4 thousand.

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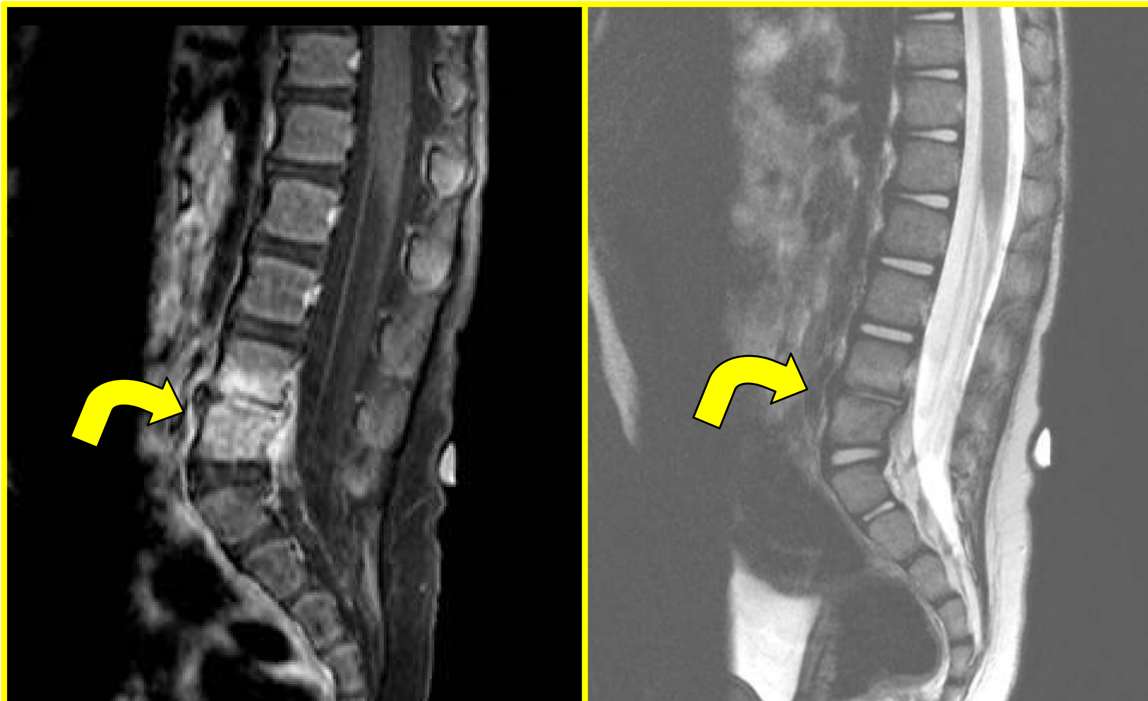
|---|---|---|---|---|---|
| WBC | 13.4 | | (6.0-17.5) | th/cmm | |
| HCT | 33.8 | | (33.0-39.0) | % | |
| HGB | 11.6 | | (10.5-13.5) | gm/dl | |
| RBC | 4.41 | | (3.70-5.30) | mil/cmm | |
| PLT | 527 | H | (150-450) | th/cumm | |
| MCV | 77 | | (70-86) | fl | |
| MCH | 26.4 | | (23.0-31.0) | pg/rbc | |
| MCHC | 34.5 | | (30.0-36.0) | g/dl | |
| RDW | 12.6 | | (11.5-16.0) | % | |
| **ESR** | **29** | **H** | **(0-17)** | **mm/hr** | **C-reactive protein 0.7** |



**Diagnosis:** MRI scan shows L4-5 diskitis and osteomyelitis. There are large areas of abnormal T1 hypointense and T2 hyperintense signal in the neighboring endplate marrow at L4-L5, with partial L4-5 intervertebral disk destruction and height loss. No drainable fluid collection or abscess.

**Impression/Plan:** 18 month-old female with L4-L5 discitis/osteomyelitis. She was admitted to the hospital and started on IV antibiotics—Nafcillin and Ceftriaxone. She had rapid clinical improvement within 48 hours and was changed to oral Keflex and Cefixime. She remained afebrile and was able to walk and run when she was discharged home.