11-year-old girl with hip pain

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(Originally for: Metro ED Case Conference October 11, 2011)

In the beginning

- 11-year-old female
- Previously healthy, full term, immunizations UTD

- Left hip pain started after a fall onto the left side while playing soccer at school
- No apparent injury at that time

The plot thickens...

- The hip pain worsened over the night
- She developed nausea, vomiting, fevers, chills and sweats

- Seen the next morning at primary physician's office
- She described left hip and thigh pain
- Hip x-ray negative for fracture
- Diagnosed with psoas strain, and acute otitis media
- Sent home with
  - Vicodin for pain
  - Azithromycin 5-day course for AOM

Audience participation

What do you think about the care that was provided?

What is on your differential?

What lab/imaging studies are you thinking might help?

Any other thoughts?

In the ED

- Has had daily fevers up to 104°F at home, despite the course of azithromycin
- The hip and thigh pain have persisted, and she has back pain, all of which she rates 7/10
- Requiring frequent Vicodin
- Has lost 7 lbs this week due to decreased appetite

In the ED

T 39.2°C (oral), HR 86, BP 98/53, RR 20 Sat 98% RA

Gen: Calm Caucasian female laying with legs straight out on the bed, NAD
HEENT: TMs clear, without purulence. OP without erythema or ulceration
CV: RRR no m/r/g
Pulm: CTAB no w/r/r
Abd: Soft, mild TTP diffusely, no HSM, no masses
Back: No midline tenderness, some CVA tenderness on the left
Ext: Tenderness to palpation of left thigh, greatest at posterior aspect. Negative log roll to hips. Normal pROM to flex/ext left hip. No point tenderness over trochanter.
Skin: No concerning lesions noted
Neuro: Alert. Strength in LE 5/5 bilat. Sensation intact to light touch.

Audience participation

Does the additional history change your differential?

Does the physical exam change your differential?

Any other thoughts?

In the ED

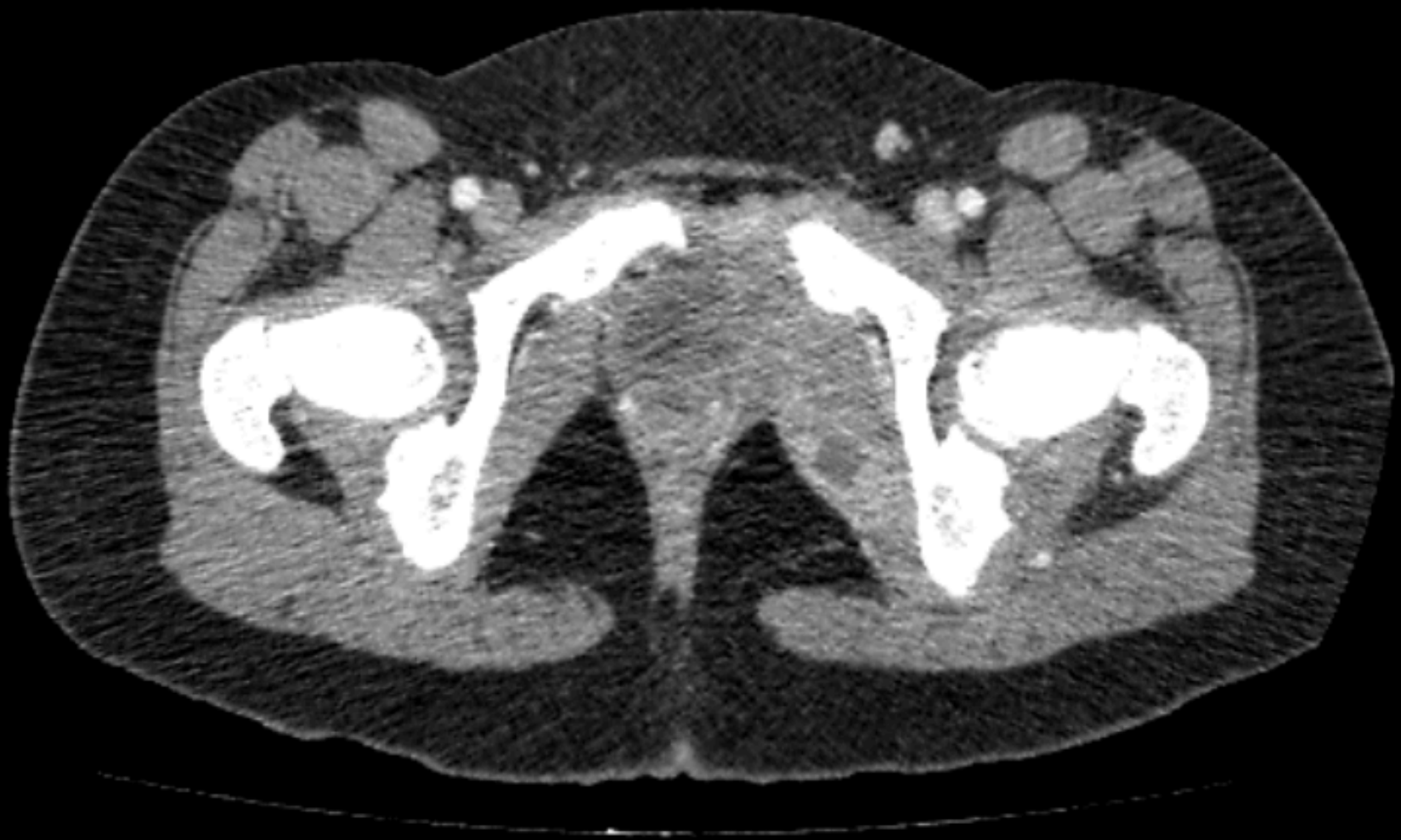
- Our differential included:
  - post-infectious septic arthritis of the hip
  - other hip anatomical injury (e.g. SCFE)
  - psoas abscess
  - quadriceps muscle sprain/strain
  - UTI, with or without pyelonephritis

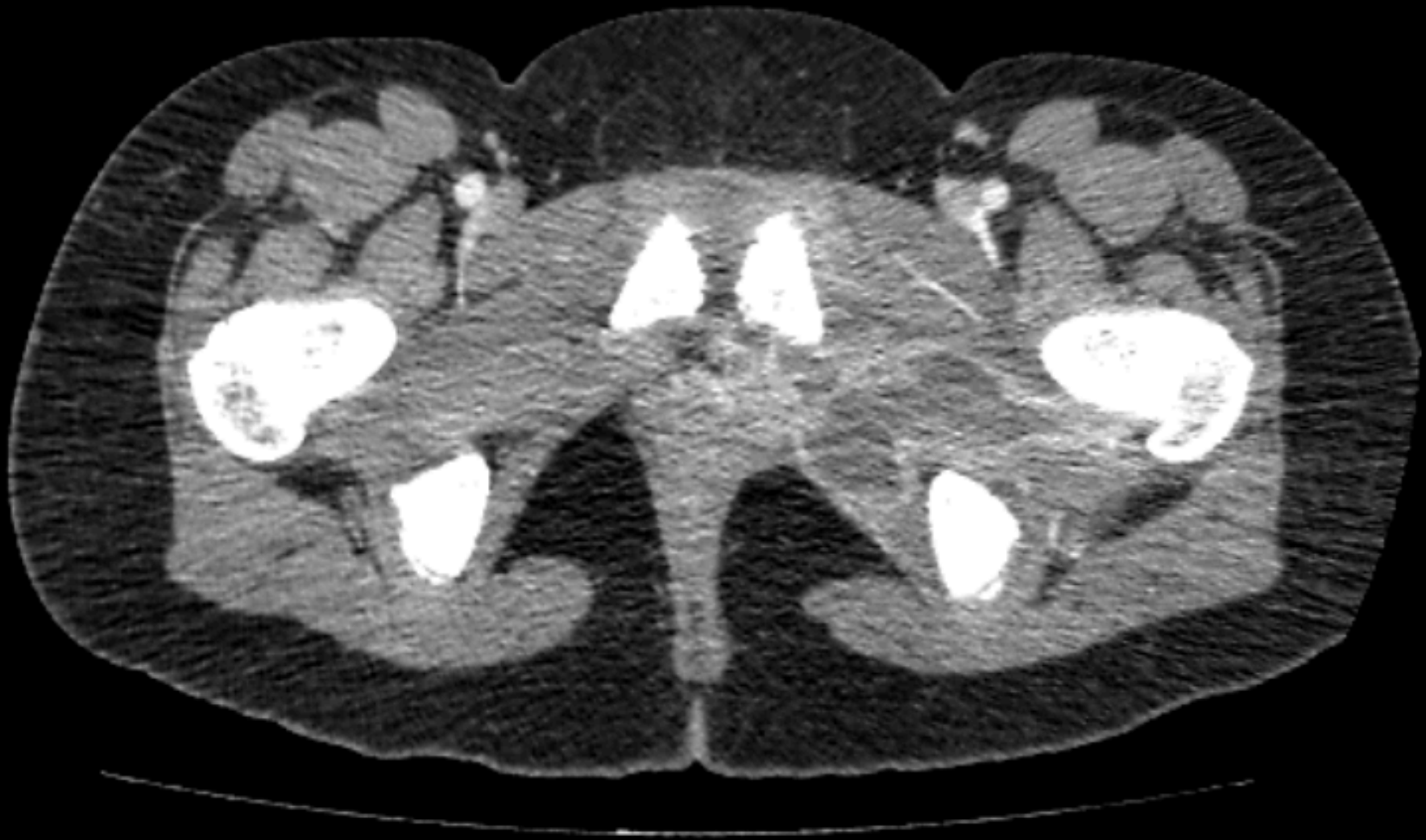
- We debated getting ultrasound of the hip vs CT pelvis
- We felt our exam was less consistent with hip joint pathology

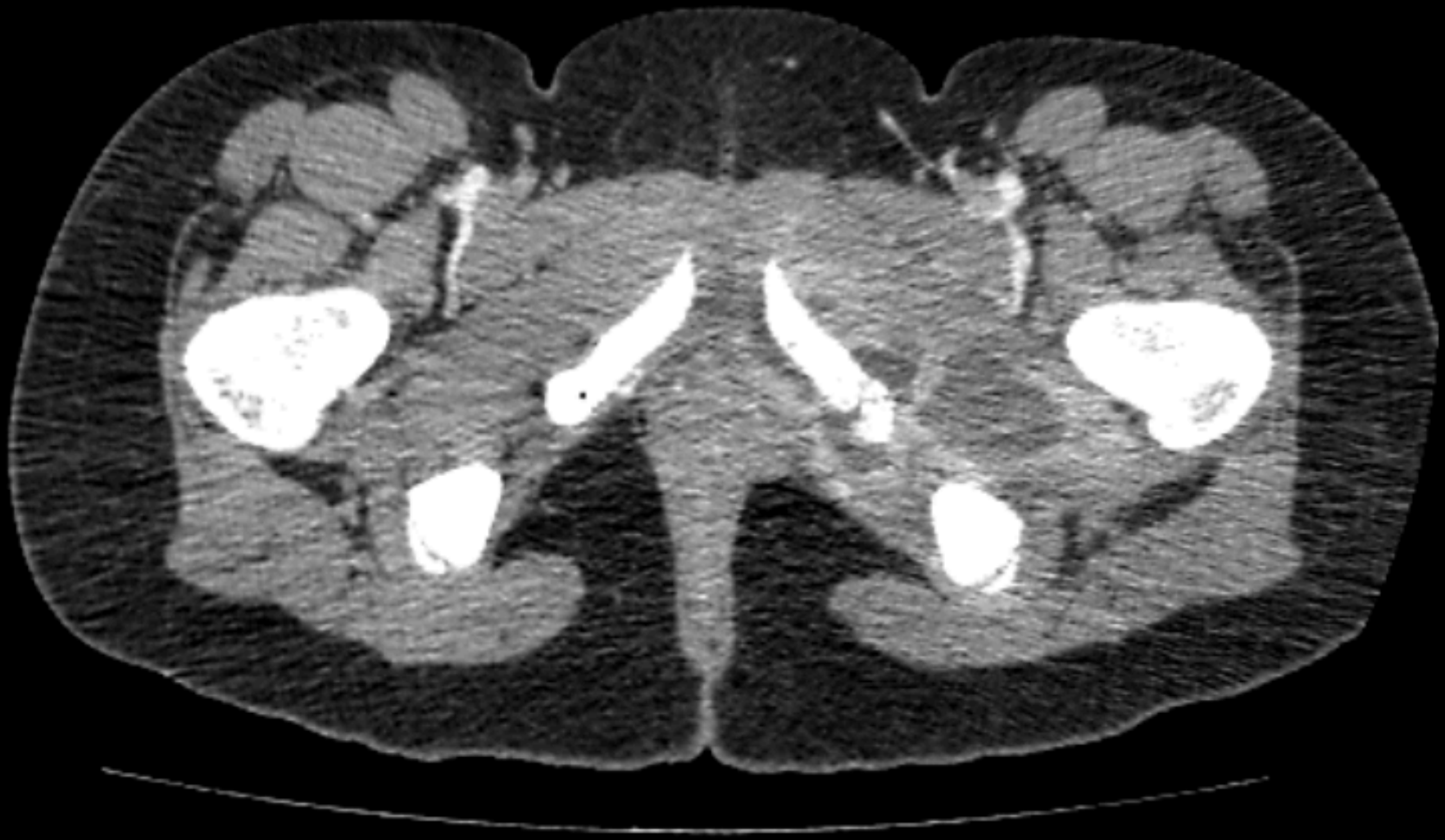
Lab work-up

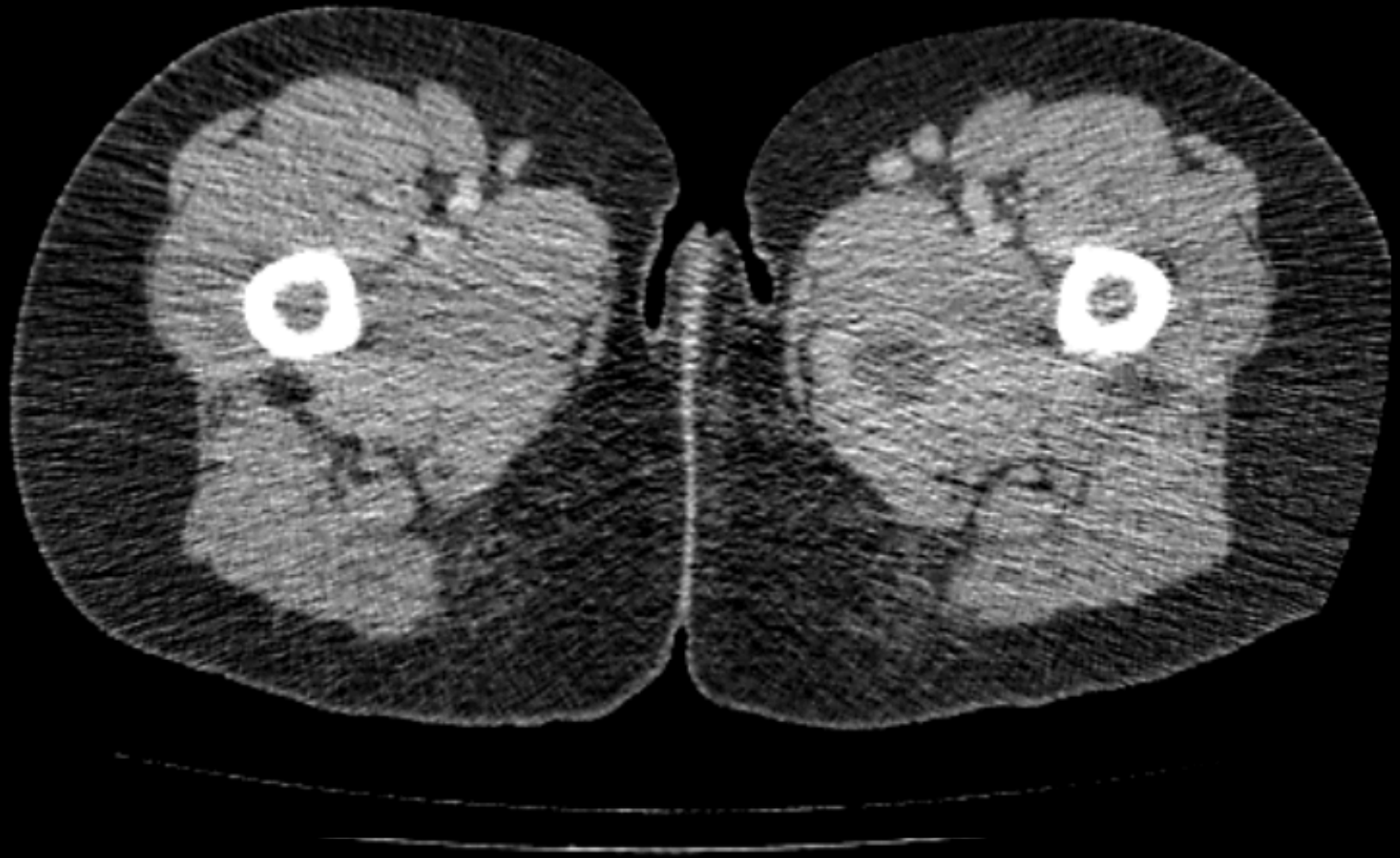
Ua:
SG: 1.015
pH: 7.0
Albumin: neg
Glucose: neg
Ketones: neg
Bilirubin: neg
Nitrite: neg
LE: neg

UCx pending









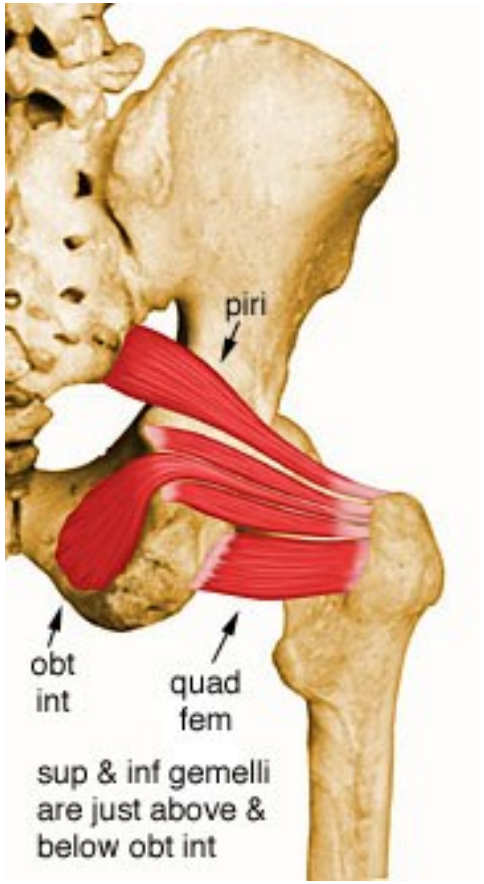
CT Abd/Pelvis with contrast

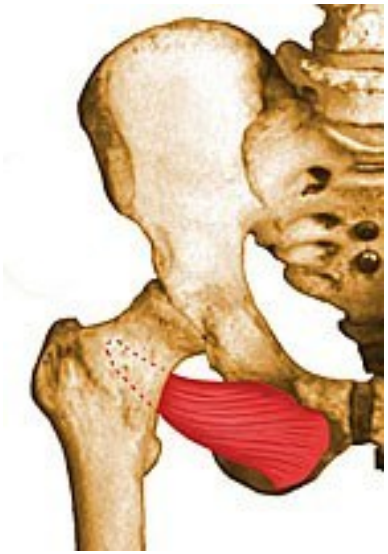
1. Complex, multilocular rim-enhancing fluid collection(s) involving the left obturator interns, obterator externus muscle and extending into the proximal aspect of the left adductor magnus, concerning for abscess formation with surrounding edema and enhancement
2. Fluid partially encases the left ischium and pubis, with demineralization and irregularity at the left ischiopubic synchondrosis, concerning for osteomyelitis at the site
3. Edema and enhancement extends to near the region of the bladder neck and bladder base on the left side
4. Small free fluid in the pelvis
5. Reactive prominence of the left periaortic lymph nodes, and left external iliac and internal iliac lymph nodes

Adductor magnus

Obterator internus

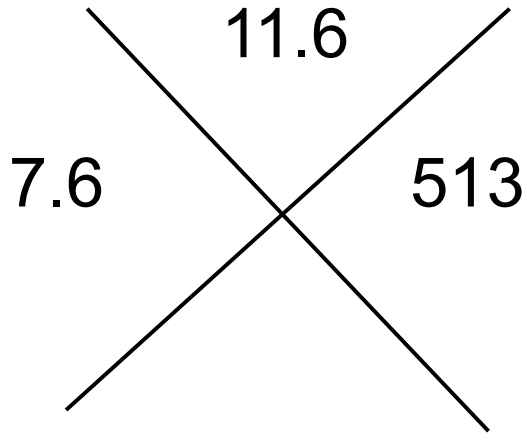
Obterator externus

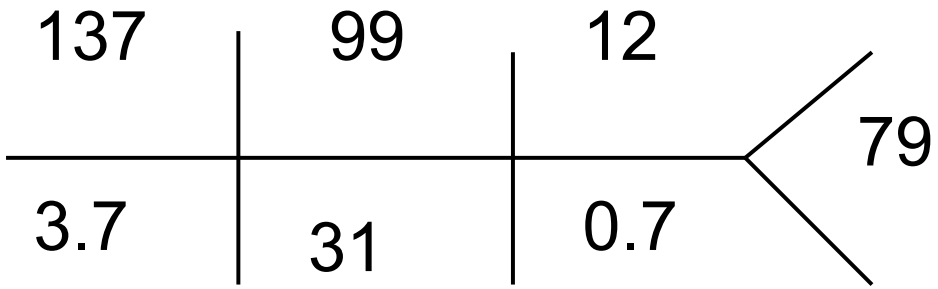




Muscle Atlas. Department of Radiology. University of Washington.
http://www.rad.washington.edu/academics/academic-sections/msk/muscle-atlas/

Further labs





N 55%
L 29%
M 10%
E 5%

CRP 4.58
ESR 69
INR 0.9

Hospital course

- Case was discussed with General Surgery, Orthopedics, ID in ED
- Admitted to Pediatrics
- Started on vancomycin
- Next day discussion between primary team and consultants, decision was to go with CT-guided drainage

CT guided abscess drainage

- Approach via left medial buttock
- Accessed with needle via ischiorectal fossa into the left obterator interns muscle
- Produced 30 mL blood-tinged purulent fluid
- Placed 6.5 French locking pigtail

Micro

Urine culture
50,000 col/mL mixed gram positive flora, no further identification

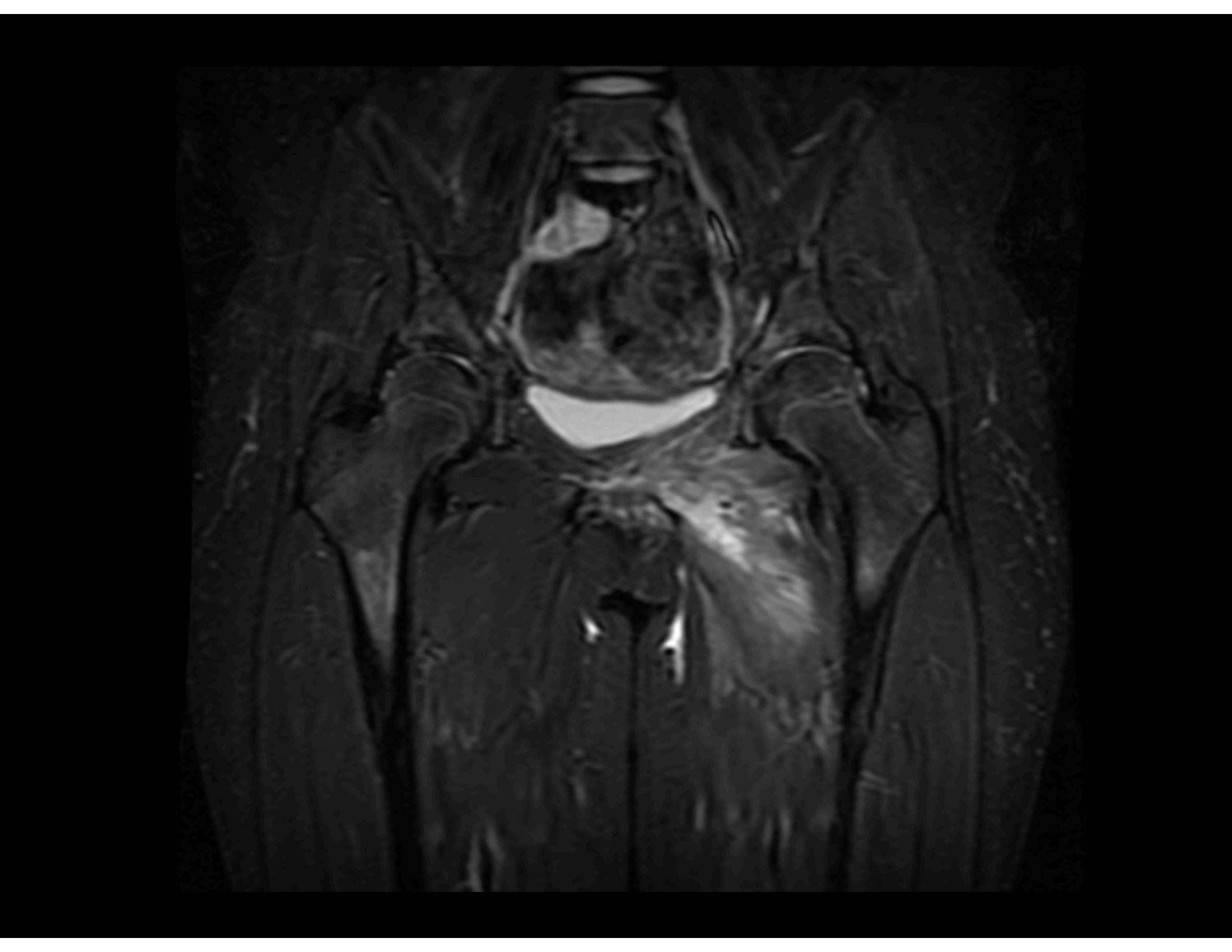
Blood culture
No growth 5 days

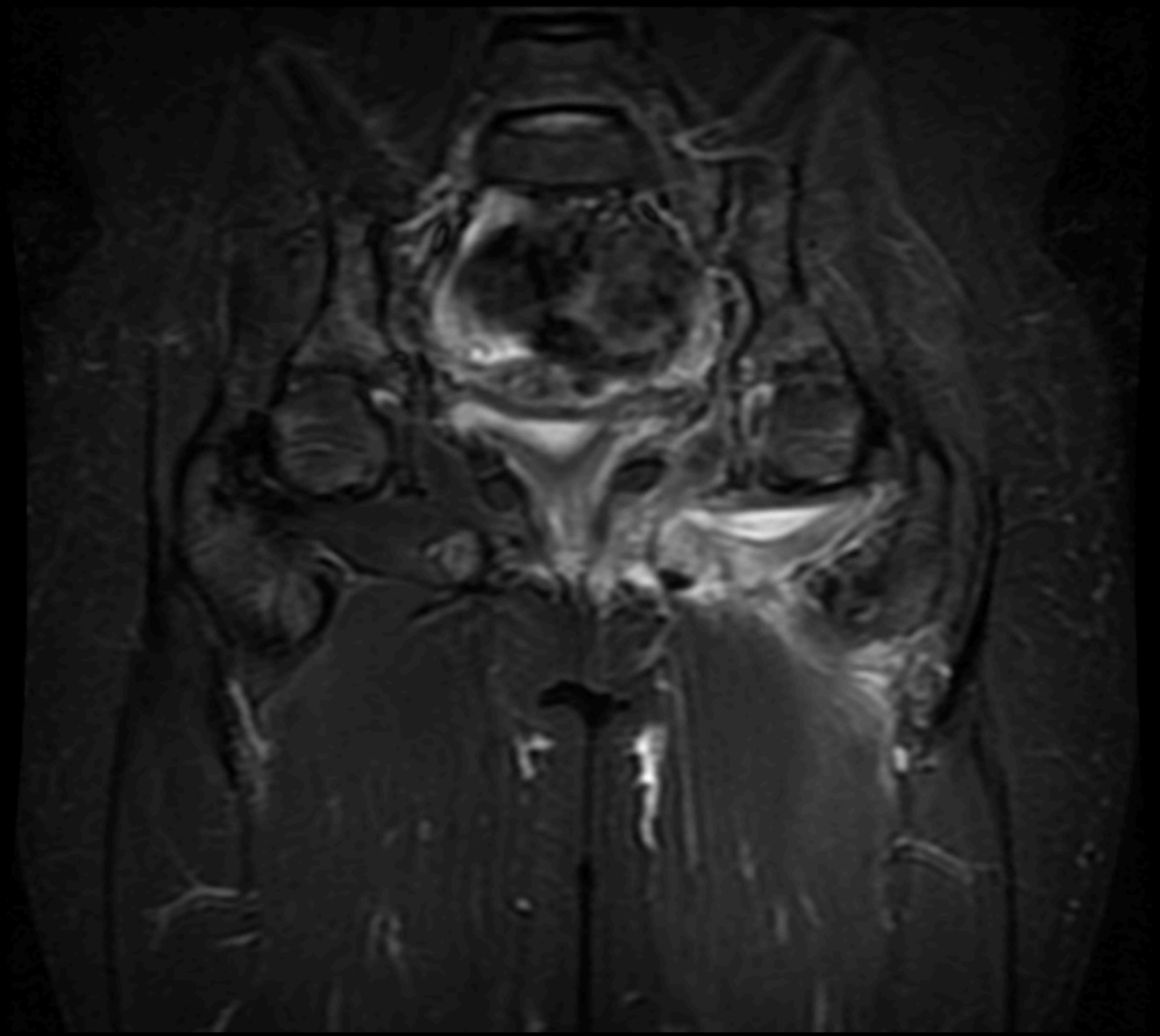
Abscess gram stain
4+ WBCs
2+ Gram positive cocci
Intracellular bacteria present

Abscess culture
4+ Staph aureus, methicillin sensitive

?Osteo

- Now wanting to further characterize bony involvement
- MRI pelvis





MRI Pelvis w/wo contrast

Considerable resolution of previously described low pelvic abscess following percutaneous drainage. Persistent signal abnormality and enhancement in adjacent pelvic bones and mustlature as detailed above. Findings about the left ischiopubic synchondrosis continue to suggest osteomyelitis in this region.

Wrapping it up

- PICC line placed POD#2
- Vancomycin discontinued, and
- Started cefazolin 1.75 grams IV q8h on POD#3
- Pigtail drain removed POD#6
- Follow-up in ID clinic 1 week
- Anticipated 6-week course

Discharge Diagnoses

1. Pelvic osteomyelitis, secondary to methicillin-sensitive Staphylococcus aureus
2. Pyomyositis of left obturator interns, obterator externus and adductor magnus muscles

Thanks!