How to approach a fracture in the ER setting while considering child abuse

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Objectives

- Discuss the important parts of an HPI in regards to possible child abuse
- Learn how to bring up the discussion of possible child abuse to the family
- Review the diagnostic workup for possible child abuse
Our Case

- 18 mo F who presents to the ER with fussiness and concerns for not walking normally
- How do we proceed with our evaluation?
Mom: Ever since patient woke up this morning, she has been fussier than normal and not walking like her normal self

MD: “When was the last time she was walking normally for her?”

Mom: Last night around 6pm before I left for work

MD: “Can you describe how she is currently walking – compared to normally?”

Mom: Normally she can walk but now she has a limp on the right
MD: Who was with the patient while you were at work? When did you return and how was she when you got home?

Mom: Dad was home with her. She was fussy when I got home at 7am

MD: Dad, how was she walking for you?

Dad: She seemed like herself until this morning when she woke up
“Did anything happen yesterday or today that you can think of that would cause her to be walking funny?” *Nothing out of the ordinary – she trips occasionally*

“When was the last time either of you saw her trip?” *Two days ago*

“Has she had any fevers recently?” *No*

“Any recent URI symptoms?” *No*

“Any redness, swelling, or marks on her body?” *a small bruise on her left shin*

“Any night sweats, or weight loss?” *No*

“How many wet and dirty diapers did she have yesterday?” *5 and 1*

“Is she eating normally?” *Yes*
Additional History

- **PMH:** no hospitalizations, surgeries, or fractures, growing appropriately for height and weight, and meeting developmental milestones

- **FHx:** no family hx of fractures

- **Social:** lives with mother and father, not married, mom works the night shift so patient was alone with father last night, no other siblings
Differential Diagnosis

- Infectious – septic joint, osteomyelitis
- Post infectious – transient synovitis
- Malignancy – leukemia, ewing’s sarcoma, osteosarcoma
- Trauma – accidental vs non-accidental ***/
Physical Exam

- VSS
- Awake alert, playful until the RLE exam
- R hip: non erythematous, no TTP, decreased ROM due to pain in leg
- R thigh: mid shaft thigh TTP with mild edema compared to LLE
- R knee: normal exam
- Skin: only a small nonspecific bruise on the lower left shin
Other Subtle Clues

- Who is present? Mother and father
- How does the patient interact with the caregivers present? Pt clings to parents
- How do the caregivers interact with each other? Mother provides all the answers
- Do caregivers appear concerned? Mother appears worried about child – father appears more distant
Work up

- Labs: will determine labs based on the Xray results
- Start with plain films: Xrays to evaluate the femur along with the hip and knee
What do we have?

- We have a patient <2yo with a femur fracture, and no supporting mechanism of injury
How would you present these results to the family and open the discussion of possible abuse?
How to approach the family

- Tell them what you know – state the facts only

- MD: “Her hip and knee are perfectly normal and healthy. However, we found a fracture of her right femur on X-ray. Since our patient is less than 2yo and has a fracture, it is our policy to make a report to Department of Child and Family Services. We do this whenever a child this age has a broken bone. We just want to make sure she is ok.”
Making the Report

- Warn the family that several people including a social worker will be coming to talk with them more to help make sure their daughter is ok
- Consult social work and Care Team….and obviously Ortho
- Order the child abuse work up labs and further imaging
What Additional Labs and imaging do we need?
Labs

- CBC to r/o infection and leukemia
- CMP with amylase and lipase to evaluate liver and internal injury
- Calcium and Phosphorous to evaluate for metabolic bone disease
- Vitamin D levels to r/o ricketts
- Bag Urinalysis to rule out internal kidney injury
- Coagulation studies to rule out bleeding diathesis
Since a fracture was found, order skeletal survey now and 2 weeks later.

If concerns for head injury, non-contrast head CT.

If labs or physical exam show signs of internal injury, then chest/abdominal/pelvic non contrast CT.
Skeletal Survey

Table 11. Skeletal Survey.

The standard skeletal survey includes radiographs of the following:

- Humerus, bilateral (AP view)*
- Forearm, bilateral (AP view)
- Hand, bilateral (AP view)
- Femur, bilateral (AP view)
- Lower legs, bilateral (AP view)
- Foot, bilateral (AP view)
- Thorax (AP and lateral views)
- Pelvis to include lower lumbar spine (AP view)
- Lumbar spine (lateral view)
- Cervical spine (lateral view)
- Skull (frontal and lateral views)

* Anterior-posterior view

Special Tips

- Pay attention to social interactions during the exam
- Determine who was with the child, were other children around (also at risk), when they were last normal
- Do not lead the family with possible explanations for injuries
- Say facts that you know
- Don’t accuse – keep the family calm
- Stress the importance of keeping the evaluation patient focused