

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

By Lauren Raney

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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?

# HPI

- ◆ *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*

# HPI

- ◆ MD: Who was with the patient with 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*

# HPI

- ◆ “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 care givers 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 Xray. 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

# Imaging

- ◆ Since a fracture was found, order skeletal survey now and 2weeks 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

Adapted from: No authors listed. Diagnostic imaging of child abuse. *Pediatrics* 2000 Jun;105(6):1345-1348.

# 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 the evaluation patient focused