Accident or Abuse?

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History

1 month-old healthy infant girl born at term was found to have left leg swelling and tenderness and was brought by her parents to the pediatrician.

While at the doctor’s office her father said he knew what happened and that he had not previously told his wife. He said the baby fell to the floor 2 days earlier after he wrapped her in a blanket, placed her on a kitchen chair and turned his back to take her bottle out of the microwave.

She was sent to the ED where an x-ray confirmed an oblique fracture of the mid-shaft of the left femur.

Is there is an explanation is it plausible?

Is the fracture morphology explained?
Is the history consistent and detailed?
Is the injury compatible with the child’s development?
Was there a delay in seeking medical care?
Are other injuries noted?
Are there concerning social factors?

What would you want to know?

When was the baby last normal?
Did the baby exhibit symptoms (pain on passive or active movement) or signs (leg swelling) earlier than today?
  o How did the leg look during diaper changes, bathing, dressing
What are the other behavioral issues?
  o Colic, fussy eater, lethargic
What are the medical issues?
  o Congenital disorders if any, vomiting or spitting, infections
Who are caregivers? When was the last time each of them was with the child?
Other Questions

- Was this a planned pregnancy?
- How did family life change once the baby was born?
- How was the delivery?
- How were the mother and the baby after delivery?
- Is the baby a "good" (not cranky or irritable) baby?

Other Questions

- How does the family deal with the tasks needed to care for the baby and the household?
- What do caregivers do to relax?
- Are the usual household chores accomplished?
- Does primary caregiver have support from family?

In this case....

- Family friend helping mother with baby was flexing her legs to help relieve colonic gas.
- In an interview friend denied applying enough pressure to cause the fracture.
- The explanation of a fall made no sense because the baby had no signs or symptoms until the day she was seen by the pediatrician.
Workup

- Physical examination: weight, head circumference, bruises, scratches, scars, swelling, signs of congenital problems, neglect (hygiene)
- Skeletal survey
- Head CT and ophtho exam
- Alkaline phosphatase, Vit D and 25(OH) Vit D
- Urine analysis

Oblique vs Spiral Fracture

- Oblique - a fracture which goes at an angle to the axis
- Spiral - a fracture which runs around the axis of the bone

Does fracture type help decide between accident and abuse?

<table>
<thead>
<tr>
<th>Fx type</th>
<th>Overall</th>
<th>Investigated for abuse</th>
<th>Abuse found</th>
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</thead>
<tbody>
<tr>
<td>Transverse</td>
<td>38%</td>
<td>27%</td>
<td>36%</td>
</tr>
<tr>
<td>Spiral</td>
<td>27%</td>
<td>39%</td>
<td>36%</td>
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<tr>
<td>Oblique</td>
<td>17%</td>
<td>15%</td>
<td>7%</td>
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<tr>
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<td>14%</td>
<td>15%</td>
<td>21%</td>
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<td>Greenstick</td>
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