

# Accident or Abuse?

## Using Radiologic Science to Look Within and Find the Answers

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### Child Protective Cases Broken Down:

- **Proven Child Abuse Cases (as of February 2024):** 1,722 cases in the state of Louisiana.
- **Ongoing Child Protection Investigations:** 3,491 ongoing investigations in the following parishes:
  - Livingston
  - St. Helena
  - St. Tammany
  - Tangipahoa
  - Washington

|                                       |       |
|---------------------------------------|-------|
| Reports of Suspected Abuse/Negligence | 7,042 |
| Child Protection Investigations       | 3,491 |
| Children Reunited with Family         | 278   |
| Children Adopted                      | 142   |

### Understanding Child Abuse and Neglect:

#### Federal Definition (CAPTA):

- Any recent action or inaction by a parent or caregiver that results in a child's death, serious physical or emotional harm, sexual abuse, or exploitation.
- Any act or inaction that places a child at immediate risk of severe harm.

#### Identifying Potential Signs:

- **Warning Indicators:** Understanding these signs is crucial for helping children.
- **A Single Symptom:** One sign alone does not confirm abuse.
- **Frequent or Combined Signs:** If multiple signs are present, it warrants further investigation.

#### The Role of Medical Imaging:

- **Crucial for Diagnosis:** Imaging tests are often vital for diagnosing physical injuries in young children and infants.
- **Early Detection:** They can be the first indicator of abuse, even when a child is being treated for a seemingly legitimate injury.

### Imaging Used in Diagnosing:

#### Osseous Injuries & Child Abuse:

- **Radiographic Imaging:** A critical tool for diagnosing osseous injuries, which are a major sign of child abuse.
- **Rib Fractures:**
  - **High Suspicion:** Rib fractures in children under three years old are highly predictive (95%) of abuse.
  - **Specific to Abuse:** Posteromedial rib fractures are caused by compression of the chest from front to back, often from an adult tightly squeezing an infant's torso. This type of fracture is highly specific to abuse.

#### Skeletal Imaging in Suspected Child Abuse

- **Radiographic Skeletal Survey:** The preferred method for imaging a child's skeleton when abuse is suspected.

#### Age-Specific Guidelines for Skeletal Surveys:

- **Under 2 years old:** Essential for all cases of suspected physical abuse.
- **2 to 5 years old:** Performed only when specific clinical indicators of abuse are present.
- **Over 5 years old:** Limited use in detecting injuries

### References:

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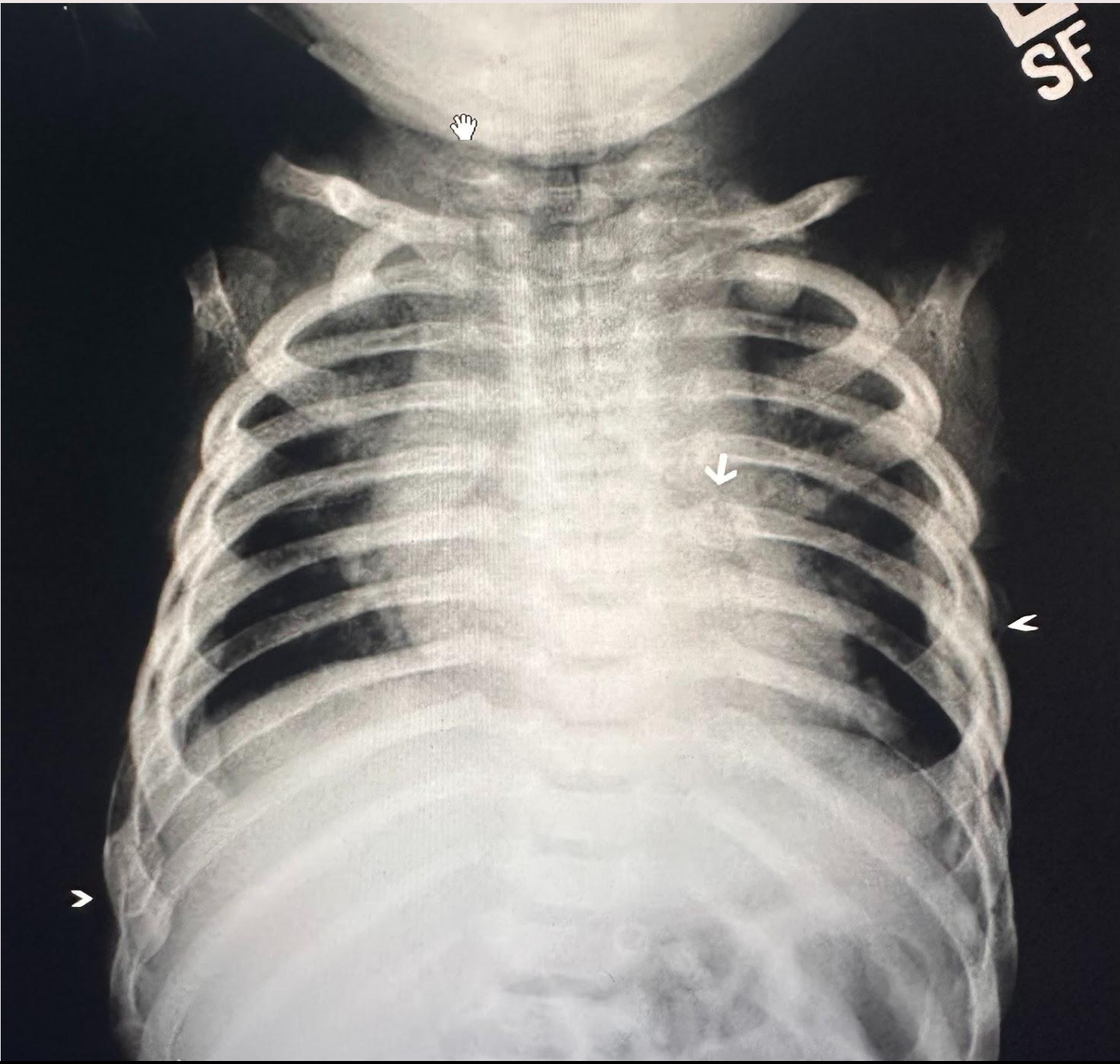


FIGURE 1.2 Looking Within the Image (Dwek, June 2011)

### Skeletal Injuries Categorized:

#### Classifying Skeletal Injuries:

- Skeletal injuries are classified into three categories based on their specificity for child abuse.
- This framework aids in assessing the likelihood of abuse.

#### High-Specificity Injuries:

- Rib fractures (especially posteromedial)
- Clavicular midshaft lesions (CMLs)
- Fractures of the sternum, scapula, and spinous processes

#### Moderate-Specificity Injuries:

- Multiple fractures of varying ages
- Epiphyseal separations
- Vertebral body fractures and subluxations
- Complex skull fractures (extending in multiple directions)
- Finger fractures

#### Low-Specificity Injuries:

- Common fractures that do not align with the caregiver's explanation.

#### The Role of CT Scans in Diagnosis:

- **Assessing Additional Injuries:** CT scans are essential for identifying injuries to the brain or solid organs.
- **Legal Applications:** 3D reconstructions from CT scans are valuable in legal settings because they are easier for jurors to understand.
- **Confirming Fractures:** Highly effective for confirming fractures that are not visible on standard x-rays, particularly with multidetector scanners.

### Determining Accident or Abuse:

#### Recognizing and Reporting Child Physical Abuse

**Types of Injuries:** Physical abuse can cause a wide range of injuries, including:

- **Cutaneous injuries:** Bruises, burns
- **Skeletal injuries:** Fractures
- **Internal injuries:** Abdominal and central nervous system damage

**Initial Assessment:** To determine if an injury is due to abuse, healthcare providers must:

- Evaluate the full nature of the injury and check for hidden injuries.
- Consider the child's developmental stage and physical abilities.

**X-Ray Interpretation:** When using an X-ray to investigate potential abuse, a physician looks for:

- Specific fracture patterns and locations.
- The child's age and the number of fractures in different stages of healing.
- This information, combined with a comprehensive medical history, helps to accurately interpret the results.

#### The Mandate to Report:

- **Mandated Reporters:** All healthcare professionals are legally required to report suspected child abuse or neglect to child welfare services.
- **Reasonable Suspicion:** Certainty is not required to file a report; a reasonable suspicion is sufficient.
- **Legal and Ethical Duty:** Healthcare professionals have a moral, legal, and medical duty to report suspected abuse to Child Protective Services (CPS) immediately.
- **Consequences of Not Reporting:** Failure to report suspected abuse can lead to legal consequences for the clinician.
- **The Role of Healthcare Professionals:** Emergency room nurses and doctors are often the first to identify child abuse. Recognizing it is critical, as returning a child to an abusive environment often leads to increased violence or even death.