Improving Recognition of Red Flags for Child Abuse

James Waymack MD MBA FACEP
Associate Professor of Emergency Medicine
Southern Illinois University School of Medicine

Objectives

- Understand the various types of child abuse
- Identify the red flags and indicators of child abuse
- Improve recognition of child abuse in the Emergency Department
- Know the immediate steps for intervention and reporting

Prevalence

- Leading cause of death and disability in young children
- More than 120,000 child victims and 550 preventable deaths in the U.S. annually
- 9.2 per 1,000 children – nonfatal incidents of abuse or neglect
- 30% of abusive head trauma and 20% of abusive fractures missed
- Illinois DCFS FY 2024
  - 96,254 investigations
  - 22.4% found to be indicated

Barriers to Recognition in the ED

- High patient volume
- Shorter patient interactions
- Single encounter
- Inconsistent histories provided by caregivers
- Younger patients - often preverbal / nonverbal communication
- Potential for missing subtle signs
- Fear of mislabeling
- Fear of retaliation
- Recently, COVID-19 pandemic (many reports were from school personnel)

What is Child Abuse or Maltreatment?

- Physical Abuse
  - Hitting, shaking, burning
- Emotional or Psychological Abuse
  - Threats, humiliation, constant criticism, isolation
- Sexual Abuse
  - Inappropriate touching, exploitation, exposure to sexual content
- Neglect
  - Physical – lack of food, shelter, clothing or proper medical care
  - Emotional – lack of affection or attention

Risk Factors

- Child Specific
  - Young children, special needs, disabilities or children with fewer support systems
- Family Factors
  - Domestic violence, substance abuse, mental health issues, poverty, social isolation or intergenerational cycles of abuse
  - Unrelated (boyfriend) or new caregiver
  - * Not specific – abuse and neglect occur in every socioeconomic setting
- Environmental / Social
  - Overcrowded housing, limited social services, community violence, cultural norms that might mask or excuse certain behaviors

Prehospital / EMS

- Often first interaction
- Unique view:
  - Child's environment
  - Caregiver interactions
- Mandatory reporters

Prehospital / EMS: Red Flags

- Discrepancies between call and arrival
- Delay in calling 911
- Different caregivers giving different versions of events
- Child fearful to speak or looks to caregiver before answering
- Excessive crying or flinching to questions or touch

Prehospital / EMS: Recognition

- Observe the environment
  - Condition of the home (hazards, extreme filth, lack of necessities)
  - Presence of alcohol / drug paraphernalia
  - Signs of domestic violence
- Caregiver's behavior
  - Aggression, hostility, or unusual nervousness
- Child's behavior
  - Fearful of a caregiver, overly compliant or withdrawn
  - Extreme anxiety or hypervigilance

Prehospital / EMS: Strategies

- Mandatory reporting – protocols
- Coordinate with receiving facility
- Clear, concise handoff
    - Share observations from the scene
    - Statements of caregivers (mechanism)
    - Any injuries found / documented

Universal Screening

- Primary nurse documents concerns for abuse in every child seen
  - Historical and / or physical findings
- Several large, population-based samples
  - Shown to be feasible
  - Identify children with higher risk of abuse
  - Increase reporting
  - NOT been shown to decrease rates of missed abuse

ED Triage Screening - ESCAPE

- Is the history consistent?
- Was seeking medical help unnecessarily delayed?
- Does the onset of injury fit with the developmental level?
- Is the behavior of the child or caregivers and their interaction appropriate?
- Are findings of the head-to-toe exam in accordance with history?
- Are there signals that make you doubt the safety of the child or other family members?

Physical Abuse: Historical Red Flags

- Atypical or vague histories provided by caregiver
  - Unwitnessed or ”alone”
  - Injury attributed to younger children or pets
- Delay in seeking care
- Prior ED visit
- Premature infant (<37 weeks)
- Low birth weight / IUGR
- Chronic medical conditions

- Referred for suspected child abuse

Physical Abuse: Recognition

- Full exposure
- Head to toe examination
- Follow-up findings with questions

Physical Abuse: Physical Red Flags

- Unexplained bruises or injuries
  - Bruises in a non-ambulating child
  - Different stages of healing
  - Suspicious fractures
- Patterned injuries
  - Marks consistent with a hand, belt or other objects
- Abusive head trauma
  - Inconsolable crying, subdural hematoma, retinal hemorrhages
- Perineal bruising or injuries

TEN-4-FACESp

Bruising Clinical Decision Rule for Children < 4 Years of Age

When is bruising concerning for abuse in children <4 years of age?
If bruising in any of the three components (Regions, Infants, Patterns) is present without a reasonable explanation, strongly consider evaluating for child abuse and/or consulting with an expert in child abuse.

REGIONS

TEN

Torso | **E**ars | **N**eck

FACES

Frenulum
Angle of Jaw
Cheeks *(fleshy part)*
Eyelids
Subconjunctivae

INFANTS

4 months and younger

Any bruise, anywhere

PATTERNS

Patterned bruising

Bruises in specific patterns like slap, grab or loop marks

See the signs

Unexplained bruises in these areas most often result from physical assault.
TEN-4-FACESp is not to diagnose abuse but to function as a screening tool to improve the recognition of potentially abused children with bruising who require further evaluation.

Ann & Robert H. Lurie Children's Hospital of Chicago

TEN-4-FACESp was developed and validated by Dr. Mary Clyde Pierce and colleagues. It is published and available for FREE download at **luriechildrens.org/ten-4-facesp**.

Medical Photography

- Ensure legal and ethical compliance
  - Parental consent may be required, unless:
    - Caregiver is suspected of abuse
    - Child is in protective custody
    - Deemed a medicolegal necessity (mandatory reporting)
- Follow institutional and legal guidelines
  - HIPPA / EHR
- Use proper equipment and adjuncts (ruler)
- Chain of custody / medical record release protocols

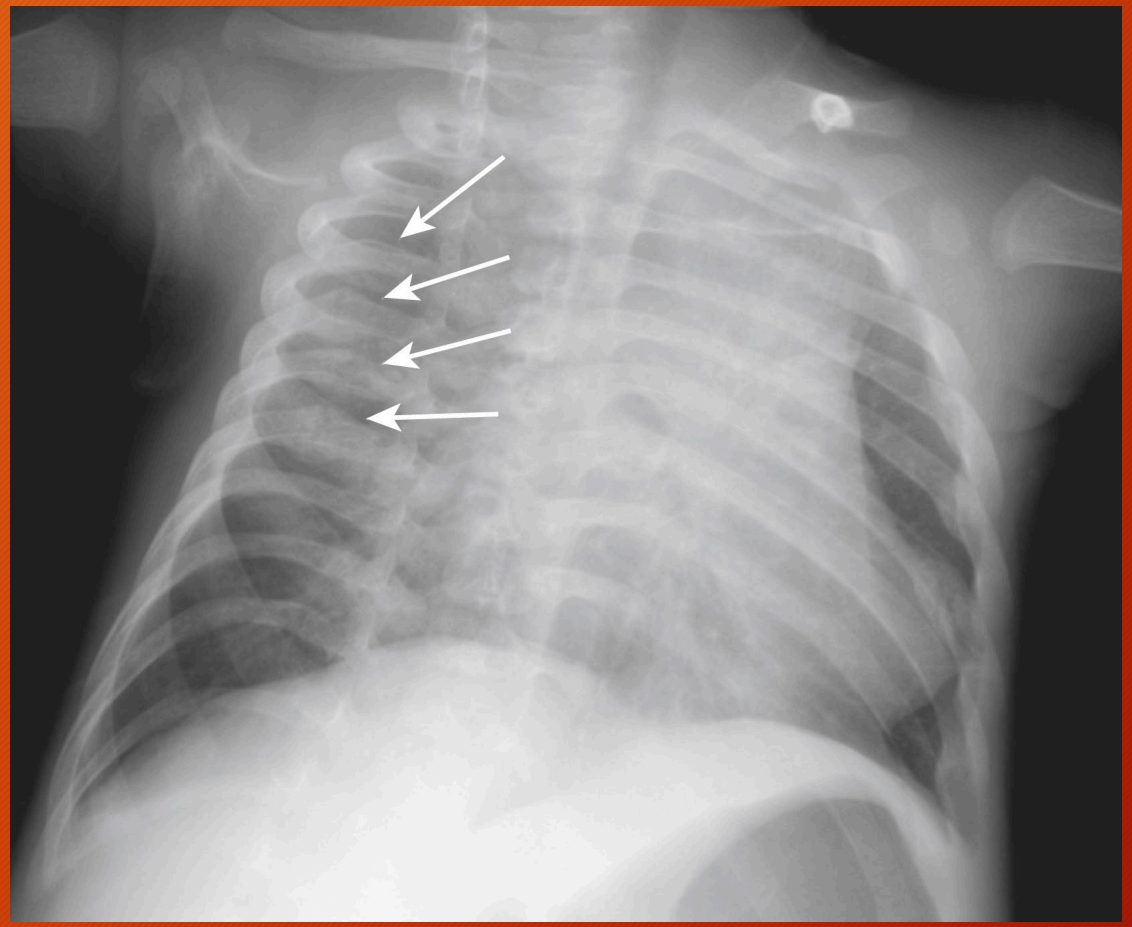
Sentinel Injuries

- Serious TBI in child less than 3 years of age
  - Abuse is the source in 1/3 to 1/2, excluding MVCs
- Long bone fracture (radius, ulna, humerus, tibia, fibula, femur)
  - Abuse in 30% to 60% of cases
- Rib fractures
  - Abuse in 25% of children up to 36 months, and 67% of infants
- Classic metaphyseal lesions (femur, humerus, tibia)
  - Chips or bucket handles around the growth plate

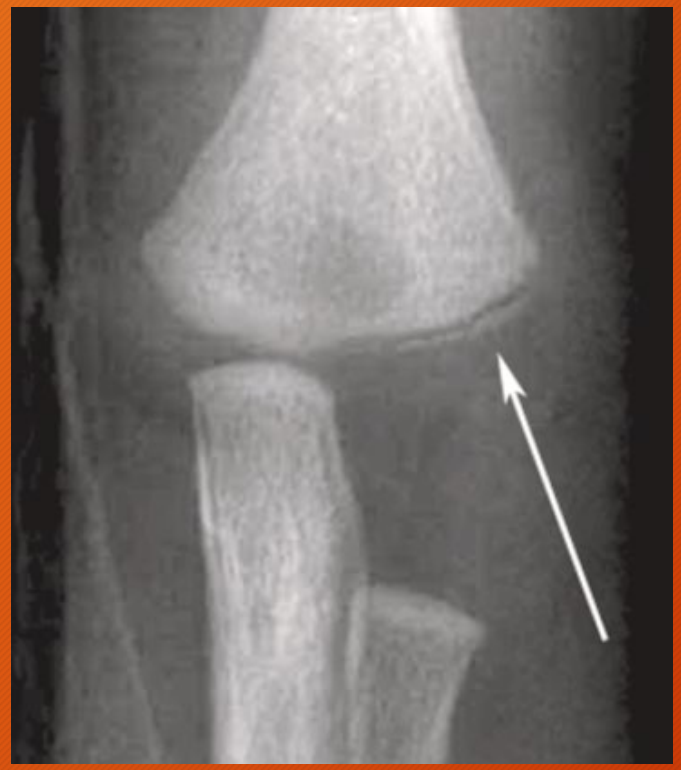
Radiographic Red Flags

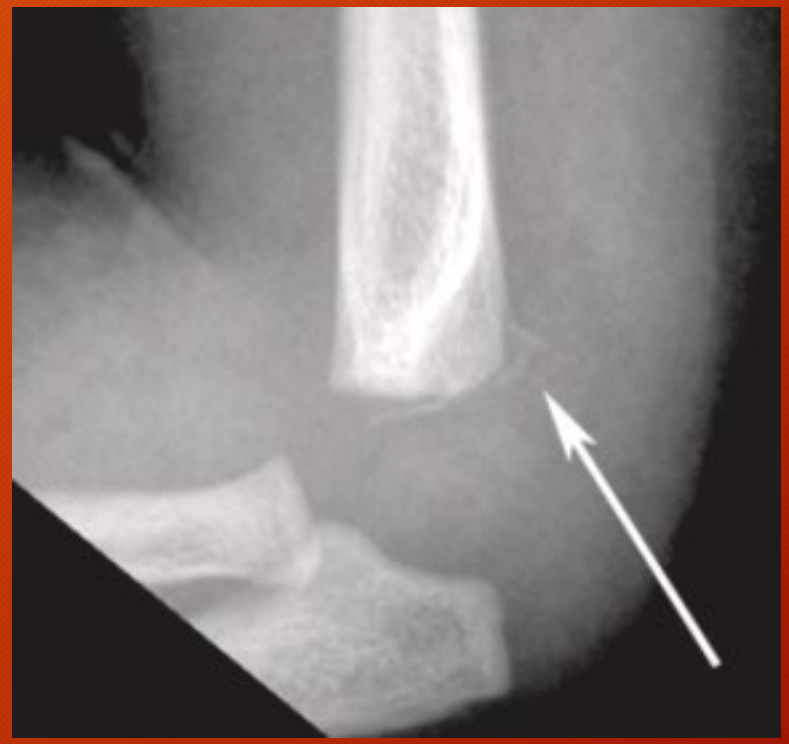
- Any fracture in a non-ambulating child
- An undiagnosed healing fracture
- Metaphyseal – corner fractures
- Rib fractures (especially posterior in infants)
- SDH or SAH in young children, particularly in the absence of skull fracture < 1 yr

Rib Fractures



Classic Metaphyseal Lesions





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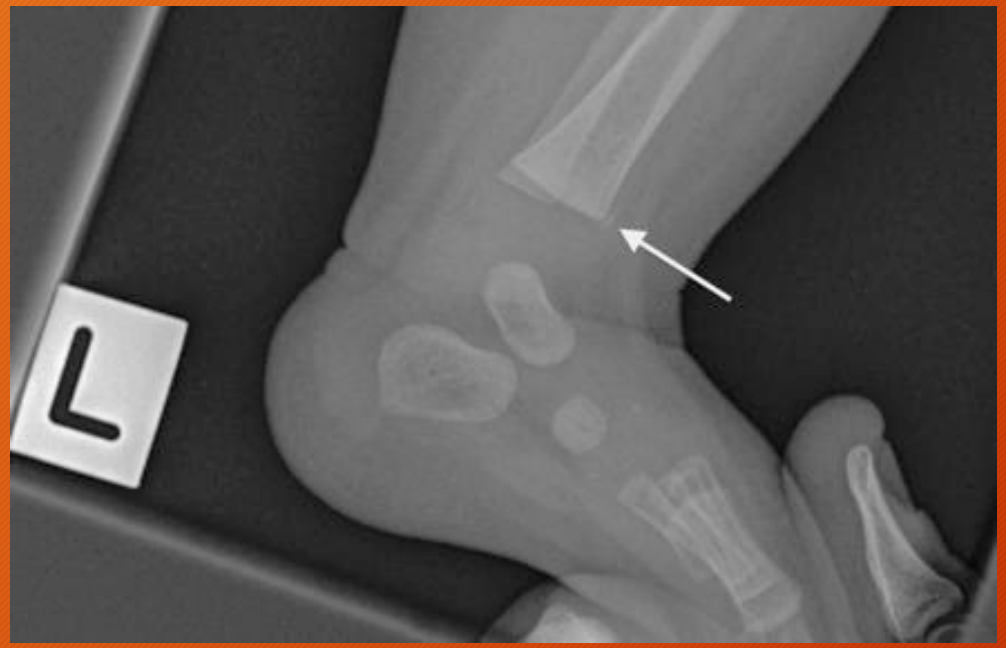
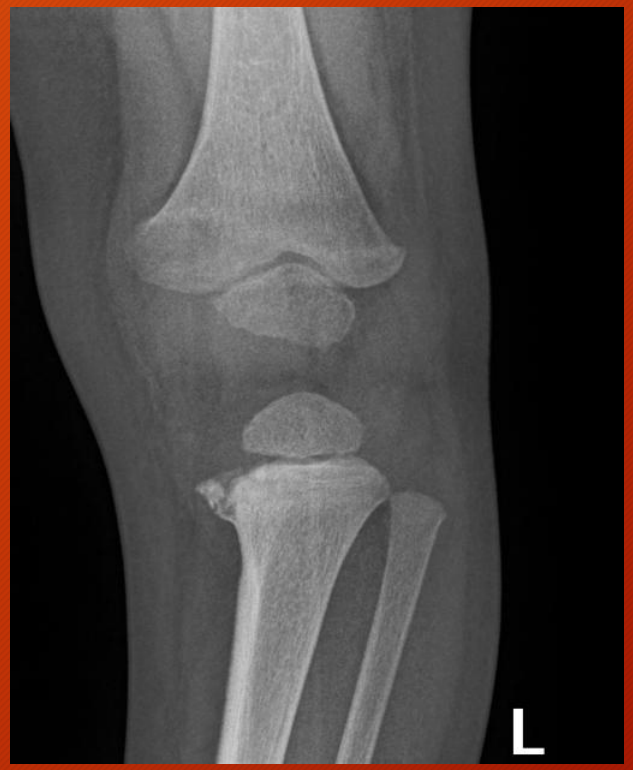




Diagnostic Workup

- CBC & platelets
  - PT/PTT/INR if low or falling Hb
- CMP – AST / ALT
  - Significant injury < 5 yrs age
  - Brain injury, abdominal / torso injury, long bone fracture
- Lipase
- Urinalysis
- If fractures present: Phos, PTH, Vit D

Diagnostic Workup

Diagnostic Test	Indications (With Concern for Abuse)
Skeletal survey	All patients < 24 months Consider in 24-60 months
Neuroimaging (CT or MRI)	Signs / symptoms of TBI History of assault to head or violent shaking <6 months old PIBIS score >1
Retinal examination	Patients with TBI
Forensic testing	Bite injuries Sexual abuse
Abdominal CT	History of assault to the abdomen Signs / symptoms of abdominal injury AST or ALT >80 IU/L
Siblings and contacts	Skeletal survey for < 24 months old contact of injured, abused Interview verbal children capable of participating
Toxicology testing	Altered mental status Evidence of substance use in the environment Abusive burns

PIBIS not PECARN

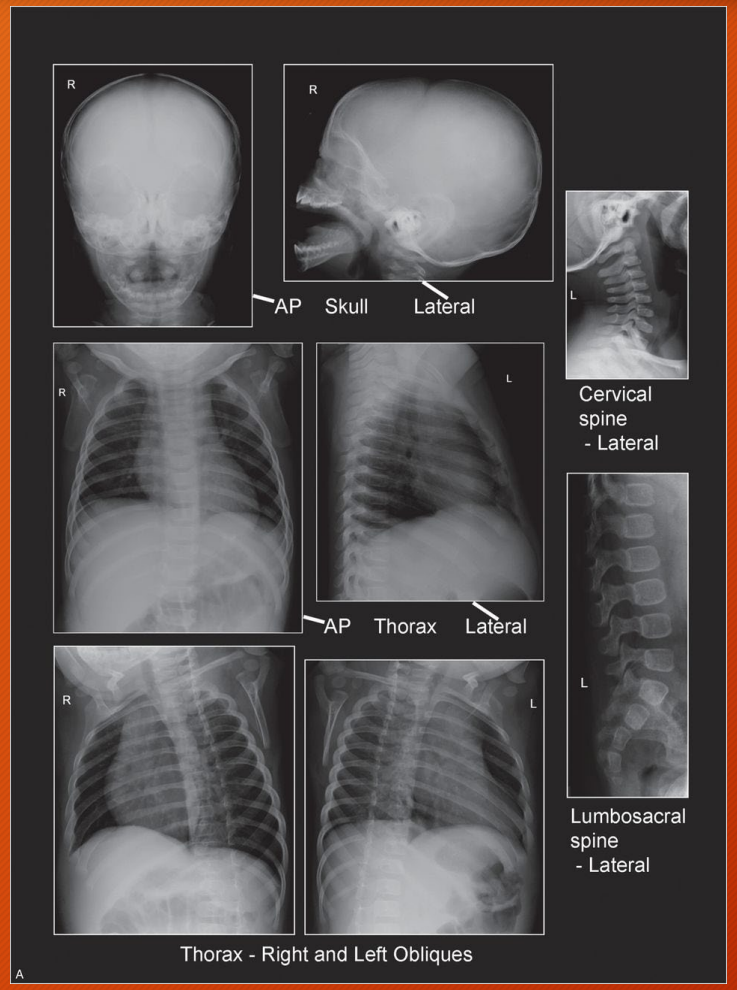
- PECARN should not be utilized in cases of suspected abuse

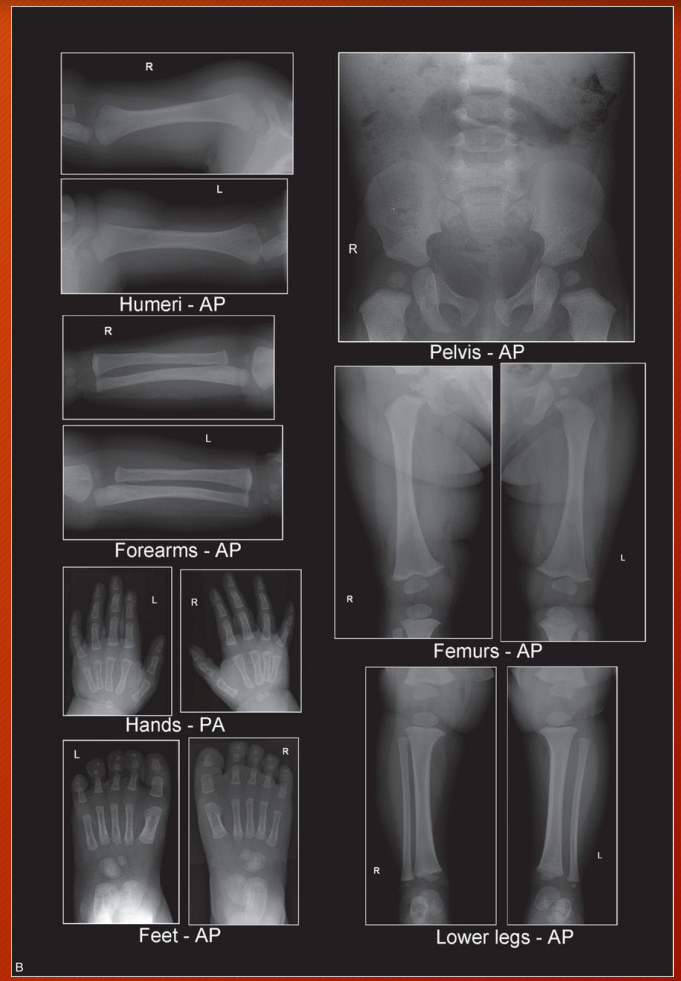
- Pittsburgh Infant Brain Injury Score
  - Identify infants most likely to benefit from neuroimaging
- Infants with non-specific signs and symptoms (age 30-364 days)
  - ALTE / BRUE
  - Lethargy
  - Seizure like activity
  - Vomiting w/o fever or diarrhea
  - Scalp swelling
  - Bruising

- Abnormal skin exam (2 pts)
- Age >/= 3 months (1 pt)
- Head circ > 85th % (1 pt)
- Serum hemoglobin < 11.2 g/dL (1 pt)

- 2 points
  - Sensitivity – 93%
  - Specificity – 53%
  - PPV – 39%

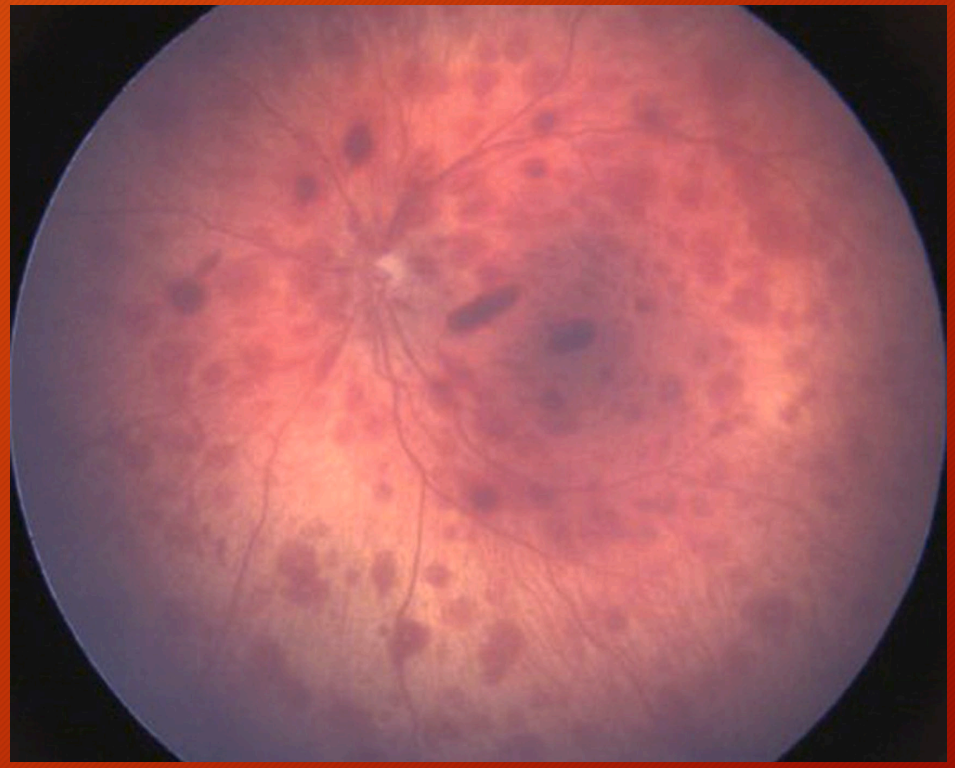
Skeletal Survey





Retinal Hemorrhages

- Strongly associated with abuse
- Wide range of diseases can cause
- Experienced ophthalmologist
- Even in severe cases of AHT, retinal hemorrhages are absent in 15% of cases
  - Less useful as a screening tool for neuroimaging
- Without radiographic evidence of brain injury retinal hemorrhages are rare



Abdominal Injury Testing

- Intra-abdominal injuries present in 3% of children evaluated for physical abuse
- Significant signs - 50% of cases:
  - Abdominal bruising
  - Tenderness
  - Distension
- AST / ALT > 80 IU/dL
  - 20% incidence of identified injury
- US may identify, but insensitive
- CT abdomen / pelvis with contrast

Neglect Red Flags

- Failure to thrive
- Poor hygiene
  - Chronically dirty or unkempt
- Frequent absences from school
- Consistently hungry or tired
- Lack of medical care or untreated health issues
- Inadequate supervision

Neglect: Recognition

- Caregiver - child interaction
  - Excessive aggression, fear or avoidance in child
- Child’s demeanor (not explained by illness)
  - Extreme anxiety
  - Hypervigilance
  - Anhedonia

How to Respond & Report

- Accurate documentation
- Provide a safe environment and reassure the child
- Open ended questions without leading or pressuring
- Mandatory reporting
  - Not about proving abuse, but reporting reasonable suspicions
- Collaborate with multidisciplinary teams
  - Pediatrics, ophthalmology, surgery
  - Social work, child life → child advocacy
  - Law enforcement

Communicating With Caregivers

- Maintain a calm demeanor
- Non-accusatory approach while ensuring the child’s safety
- Documentation of caregiver statement verbatim when necessary
- Seek assistance from social work if needed
- Law enforcement presence if necessary

Helpful Phrases

- “The injuries we’ve identified are more than we would expect from the event you described”
- “Whenever we see injuries like this, we test for other injuries and medical conditions to be sure we’re not missing something that could affect your child’s health”
- “I want to make sure that your child is safe / that no one is hurting your child”
- “Have you ever been concerned that someone might have been rough with or might have injured your child”

Mandatory Reporters

- Medical
- Educational
- Recreation or athletic
- Childcare
- Law enforcement
- Funeral home
- Clergy

- When 2 or more persons who work within the same workplace and are required to report share a reasonable cause, one reporter may be designated to make a single report
- Must provide written documentation to other reporters within 48 hours

Differential Diagnosis

- Birth trauma (clavicle fracture)
- Accidental trauma (Toddler’s fracture)
- Osteogenesis imperfecta
- Congenital coagulopathy
- Phytophotodermatitis or irritant burn
- Atraumatic cutaneous findings (Mongolian spots, birth marks, blue dye)

Disposition

- Injuries have been medically stabilized
- Reasonable concerns for abuse have been reported by statute
- Safe environment has been identified

- Admission / CPS – temporary safety plan until testing can be completed
- Protective custody

Summary

- Vigilance for abuse (NAT)
- Training
- Standardized screening protocols (ESCAPE, TEN-4-FACES)
- Head-to-toe examination
- Utilize imaging and laboratory studies when indicated
- Multidisciplinary collaboration