

CHILD PHYSICAL ABUSE RECOGNITION AND EVALUATION

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Ashley A. Anderson, MD

Mark S. Mannenbach, MD

- I. Purpose: To identify children with findings which raise concern for child physical abuse and to outline an appropriate evaluation of those findings.
- II. Definitions:
 - a. Child Physical Abuse - any injury that is purposefully inflicted upon a child.
 - b. Sentinel injury - an injury identified by physical examination, laboratory testing, or radiographic imaging that may signal child physical abuse, the need to evaluate for other injuries present, and to hopefully avoid future injuries which may be more severe.
 - c. Mandated reporter - any medical provider directly involved in the care of a child with concern for suspicion of child abuse or neglect.
 - d. Child Protective Services - an agency responsible for the evaluation of suspicion of child abuse. These agencies may include County Social Services and Law Enforcement agencies.
- III. Procedure Statements:
 - A. Obtaining a careful history
 - i. Any identified injury requires an understanding of potential mechanisms within the context of the developmental capability of the specific child being evaluated.
 - ii. Providers are encouraged to communicate with each other regarding their understanding of the events leading up to the identified injury and to have heightened awareness whenever changing or conflicting explanations have been offered by the patient and/or caregivers.
 - B. Completing a full physical exam

- i. All children deserve a full exam to identify any potential physical injuries regardless of their presenting complaint.
- ii. Placing each child in a hospital gown is often the easiest way to ensure that a complete exam has taken place.
- iii. Infants in particular warrant special attention during their physical examination with a deliberate approach to identify injuries with greater concern for physical child abuse.
- iv. Injury types with greater concern for child physical abuse include the following:

- a. Bruises

- i. Use of the “**TEN-4-FACES**” mnemonic is encouraged during the physical examination of any child < 5 years of age. Any bruise found in any of the following locations should trigger the possibility of pediatric physical abuse:

- Torso
- Ears
- Neck
- A bruise in any location on a child ≤ 4 months
- Frenulum
- Angle of Jaw
- Cheek
- Eyelid
- Subconjunctival hemorrhages

- ii. Bruising noted in children who do not yet have the ability to cruise or walk is more concerning for child physical abuse.
- iii. A pattern of bruising may be identified due to the use of a specific object
- iv. Avoid any attempt to provide information regarding the age or date of a particular bruising injury as this often cannot be accurately determined by any provider with a high degree of certainty.

- b. Burns

- i. The location and pattern of burns are very helpful in the determination of the likelihood of an accidental or inflicted injury.
 - ii. The history provided in the context of the developmental capability of the specific child is the key to potentially raise concern for suspicion of an inflicted burn injury.
- c. Fractures
 - i. Fractures can in and of themselves raise concern for child physical abuse. These may be found as part of the evaluation of the presenting complaint or may be found as incidental findings on radiographic studies.
 - ii. Providers are encouraged to complete a deliberate examination of the extremities, joints, neck, and back for all injured children. This examination may identify additional injuries and provide context for interpretation of radiographic studies.
 - iii. However, it is important to note that a normal physical exam does not rule out the presence of underlying fractures in young children. Children under age 3 may have multiple fractures without significant swelling, bruising, deformity or tenderness.
 - iv. The history provided in the context of the developmental capability of the specific child is the key to potentially raise concern for suspicion of a non-accidental fracture.
- d. Abdominal injuries
 - i. Non-specific symptoms including isolated vomiting may be the only indication of abdominal injury.
 - ii. Children with inflicted abdominal injuries may present for care in a delayed fashion.
 - iii. Bruising of the abdominal wall may be an indication of child physical abuse. Many children with inflicted abdominal injuries, however, have no evidence of external injury.

- iv. Repeat abdominal examinations especially for pre-verbal or non-verbal children may be needed to determine if abdominal tenderness is present.
- C. Clear documentation of any and all injuries (such as bruises and burns) found at the time of the examination is important in communication with others. Photos should include more than simply the involved areas. Documentation of absence of bruising is also helpful to provide a complete picture of the skin findings at the time of the evaluation. (e.g., face/neck petechiae noted but no petechiae/bruising elsewhere). The photos should include a picture of the child's face for identification purposes. Both a wider angle view of the injured area as well as more focused views including a measurement scale should be included for accuracy and clarity. Use of black and white photos may allow for more clear depiction of any bruising identified.
- D. Treatment of any acute medical problem
 - i. Priority must be given to appropriate medical care for all children with physical injury.
 - ii. Paying close attention to pain management strategies as for any injured child cannot be lost in the process of each child's evaluation. Splinting techniques, analgesic medications, and distraction measures should be prioritized for these patients regardless of the concerns for child physical abuse.
 - iii. Subspecialty care and patient transfer to a higher level of care should be considered depending upon the available resources at the time of the child's evaluation.
- E. Evaluate for other medical conditions that may mimic child physical abuse
 - i. Underlying medical conditions need to be considered for all children with concerning findings. For example, unusual bruising may be caused by underlying thrombocytopenia, serious infection, or vasculitis. Congenital skin findings such as dermal melanosis may be incorrectly diagnosed as abnormal bruising.
 - ii. A complete physical exam is important to identify other findings that may support an underlying medical condition. For example, enlargement of the liver and spleen or lymphadenopathy along with unusual bruising may raise concern for underlying malignancy.
- F. Emphasis on the need for mandated reporting of suspicion for child abuse

- i. All medical personnel are obligated to report any reasonable suspicion for child physical abuse.
- ii. Medical personnel are protected from any repercussions as long as the report is completed in good faith with the welfare of the child as the focus of the reporting.
- iii. Reports should be made to the social services agency or designated law enforcement agency of the county in which the child resides.
- iv. Reports should include both a verbal report within 24 hours and a written report within 72 hours of the encounter with the child.
- v. Reports should include the details of the physical findings, lab testing, and radiographic imaging obtained. A clear outline of the reasons for the suspicion of child physical abuse and identified or potential risks of harm to the child should be included in the report.
- vi. Each institution is encouraged to develop and refine a system which allows for clear and timely reporting from any member of the healthcare team.
- vii. The duty to report cannot be delegated to another provider or institution. Duplicate reporting may result but is not discouraged as this may highlight concerns from a variety of providers.

G. Safety during the evaluation

- i. Deliberate attention to the need for safety of the patient throughout the course of their evaluation must be made.
- ii. The child should never be left alone with a family member or caregiver to ensure ongoing monitoring in regard to patient safety.
- iii. A member of the healthcare team should be in constant attendance with the child throughout their stay in the primary care clinic, urgent care clinic, emergency department, or during transport either internally or if transferred outside of the facility.

H. Imaging studies

- i. Each institution should ensure that any imaging tests should be of the highest possible quality with clear attention to minimization of radiation exposure as much as reasonably possible.
- ii. Standard imaging criteria should be established with all involved radiology personnel trained to allow for a consistent approach to any imaging study ordered.
- iii. Attention to safety including the potential need for sedation must be made for each child taking into account their severity of injury and developmental capability.

- iv. A clear effort to avoid duplication of radiographic imaging should be made whenever possible. Deliberate decision-making regarding additional imaging should especially be made for children being transferred to another facility for care. Imaging studies can be deferred for completion by an accepting facility if:
- Transfer of the patient is planned based upon a patient's presenting findings
 - Transfer of the patient is planned based upon initial radiographic studies
 - Completion of imaging studies would delay transfer planning.
- v. Neuro imaging
- a. Infants with abusive head trauma in particular may present with vague or non-specific signs or symptoms. Providers are encouraged to have a low threshold to obtain neuroimaging in infants under 12 months of age who present with isolated vomiting, mental status changes, or concern for seizure-like activity. Clinical scoring tools used for decision-making regarding the need for imaging for all children after an identified head injury do not specifically address situations in which child physical abuse may be of concern.
 - b. Providers are encouraged to consider the use of other scoring tools developed to specifically identify children with abusive head trauma. A combination of physical findings (skin findings and increased head circumference), age (<3 months), and lab results (lower hemoglobin) may be helpful in the decision-making process regarding the need for head imaging.
 - c. Initial imaging studies should focus on CT scanning to identify acute injury and the potential need for acute intervention including the potential for consultation with a neurosurgeon or transfer to a pediatric trauma center.
 - d. The ability to complete CT 3D reconstruction imaging to more clearly depict skull fractures

should be considered for all CT scans completed for children less than 12 months of age.

- e. Timely interpretation of neuroimaging studies by a qualified radiologist should be sought to allow for accurate interpretation as the results may impact safety planning including patient disposition.
- f. MRI imaging of a child's head and/or neck should be completed by those with the necessary personnel and resources to ensure safe and quality imaging including the anticipation of the need for sedation to the level of general anesthesia.

vi. Skeletal surveys

- a. Should be strongly considered for:
 - i. All children <2 years of age with concerns for physical abuse due to bruises, burns, head trauma, or fractures.
 - ii. Children >2 years of age if complete exam cannot be completed due to severity of injury, multiple traumatic injuries, or child developmental delays
- b. A skeletal survey is a specific set of radiographic images using technique that allows for detailed imaging to identify both acute and healing fractures.
- c. The images of an initial skeletal survey should include the following views:
 - Skull (AP & lateral)
 - Cervical, thoracic, and lumbosacral spine (AP & lateral)
 - Ribs with oblique views
 - Pelvis (AP)
 - Humeri (AP)
 - Femora (AP)
 - Tibias (AP)
 - Hands (Frontal)
 - Feet (AP)

- d. If possible, a skeletal survey should be completed prior to the application of splinting or casting materials to provide as much detail as possible.
- e. A skeletal survey can be a very helpful tool in the evaluation of children who have been abused. However, an initial skeletal survey may not identify all fractures present at the time of the initial evaluation.
- f. A normal skeletal survey does not rule out child physical abuse.
- g. Timely interpretation of skeletal surveys by a qualified radiologist should be sought to allow for accurate interpretation as the results may impact safety planning including immediate patient disposition.
- h. A follow up skeletal survey in 2-3 weeks after the initial evaluation is necessary to identify any healing fractures not identified on the initial survey.

vii. Abdominal imaging

- a. Should be considered for any child with abdominal bruising, abdominal tenderness, or elevated liver or pancreas enzyme testing.
- b. CT imaging with IV contrast is the modality of choice to clearly identify the presence and extent of abdominal injury due to physical abuse.
- c. Contrast imaging studies or endoscopy may be necessary to identify hollow viscous injuries.
- d. Ultrasound imaging is not recommended for the evaluation of inflicted abdominal injuries.

I. Laboratory testing

- i. Should be completed as indicated by established guidelines for the care of injured children.
- ii. Should include screening bleeding diathesis labs for children with significant head injury or significant bruising.
- iii. Should include liver and pancreas enzyme testing for all children <2 years of age with any concern for child physical abuse including bruising, burns, fractures, or head trauma.

- iv. May include studies to evaluate for underlying bone abnormalities such as rickets or vitamin D deficiency.
 - v. May be indicated to identify medical explanations for the child's physical findings including testing to identify underlying metabolic or genetic disorders.
- J. Subspecialty consultation - providers experienced in the care of children with injuries and specifically those related to suspected child physical abuse are available for consultation. These providers can be reached through the Admission and Transfer Center (ATC) at 507-255-2910.
 - i. Mayo Child and Family Advocacy Program (MCFAP) – a member of the MCFAP staff is always available to discuss immediate care, decisions for patient transfer, and potential need for follow-up.
 - ii. Pediatric surgery
 - iii. Pediatric orthopedics
 - iv. Neurosurgery
- K. Patient Transfer
 - i. Consideration for transfer to a Pediatric Trauma Center should be made at any time over the course of the child's evaluation.
 - ii. Clear communication regarding the specific concerns for child physical abuse is expected to ensure appropriate safety of the child throughout the transfer process.
 - iii. All imaging studies and laboratory test results are to be made available to providers at the receiving facility.
 - iv. Deliberate planning for the appropriate mode of transport should be discussed between the referring and transferring providers involved in the care of the child.
- L. Disposition
 - i. The child's medical needs are the primary focus in regard to both initial evaluation and planning for disposition.
 - ii. A clear plan for safety must be established for each child with concerns for physical abuse. The final authority for patient disposition rests with the specific county social services or law enforcement agency to which the report for suspicion has been made.
 - iii. The safety of other children (e.g., siblings) in the patient's home environment should also be considered when establishing plans with the responsible agencies involved.
 - iv. A clear plan for follow up with all appropriate medical providers should be made as indicated by the patient's injuries. Attention to the need for

follow up skeletal surveys and repeat examinations should be made as indicated.

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