

Child Abuse-Non-accidental Trauma (NAT)

Recognition is a key element of helping children who are subjected to non-accidental trauma. Suspicious cases MUST be reported.

Overview

- Child abuse is maltreatment of a child by either parents or caretakers and includes physical, sexual, and emotional abuse, in addition to emotional and physical neglect * IMPORTANT *
- Mandatory reporting of suspected abuse/neglect in all states
- May need to admit and maintain in hospital if concern for safety of child
- Significant problem
 - >1 million children are victims of abuse in the US annually
 - NAT is the second most common cause of death in children (after accidents)
 - Half of fractures in children less than 1 year old due to abuse
 - Children who return home after an unrecognized episode of abuse have a 25 % risk of serious reinjury and a 5 % risk of death
- History is critical in detecting child abuse
- A quiet area for the interview is important; ask questions in a nonjudgmental way; must sort out how the child lives, which caretakers have access to the child; interview siblings as well; may be helpful to speak with child and all involved parties independently
- Careful detailed documentation is critical

History

- Is the history of trauma adequate to explain the severity of the injury?
- Does the given history fit the patient's developmental abilities?
- Does the story make sense? Who witnessed the event?
- Who discovered the injury?
- How soon the child received medical care?
- Look for prior ER visits; ask about prior injuries and prior ER visits to other hospitals

Physical Exam

- Initial musculoskeletal evaluation for the acute fracture is performed
- Thorough examination is essential including evaluation of the skin for bruising, burns, abrasions, any other soft tissue injuries or scars, the abdomen, the central nervous system, and the genitalia (in a chaperoned setting)
- Complete neurological evaluation
- Multidisciplinary evaluation—may include collaboration with Neurosurgery, Ophthalmology, General Surgery, Gynecology, Pediatrics

Imaging

- Appropriate radiographs of the acute fracture or injury
- Skeletal survey is crucial
- Additional imaging will depend on injuries noted

Common Types of NAT

Note: This chapter is not meant to be an exhaustive list of such injuries but rather to help raise awareness of those seeing injured children in emergency room settings

- Head injury is the most common cause of death in physical abuse
- Soft tissue injuries as noted above, bruises, and burns (skin lesions most common sign of NAT)
- Abdominal trauma is the second most common reason for death from child abuse
- Genital injuries as noted above
- Multiple fractures in different stages of healing
- Femoral fractures in non-ambulatory children
- Fractures of lateral clavicle and scapula

- Torus fractures of the metacarpals or phalanges of the hand or feet
- Rib fractures; sternal fractures
- Metaphyseal and diaphyseal fractures of long bones
- Corner or bucket-handle fracture of the metaphysis
- Distal humeral physeal separation
- Rib fractures including posterior rib fractures and disruption of the anterior costochondral junction
- Remember the differential diagnosis including systemic diseases such as scurvy, osteogenesis imperfecta, tumors, rickets, obstetric trauma, etc—the presence of metabolic disease or pathologic fracture does not, however, exclude the possibility of child abuse * IMPORTANT *

Treatment

- Admission places the child in a safe, monitored environment and allows further work-up and involvement of social services
- Appropriate musculoskeletal care must be provided for the injuries
- All suspected child abuse is required to be reported to the appropriate child protective services or legal authorities

References

- Campbell Jr RM, Schrader T. Child abuse. In: Beaty JH, Kasser JR, editors. Rockwood and Wilkins' fractures in children. 6th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2006.
- Jayakumar P, Barry M, Ramachandran M. Orthopaedic aspects of paediatric non-accidental injury. *J Bone Joint Surg Br.* 2010;92(2):189–95.
- Kocher MS, Kasser JR. Orthopaedic aspects of child abuse. *J Am Acad Orthop Surg.* 2000;8(1):10–20.