

Physical Abuse Concerns in Infants Birth to 2 years of Age: Taking a Closer Look

Sentinel Injuries:

- What are they? Visible, poorly explained small injuries such as a bruise or mouth injury in pre-cruising infants are often from abuse and can precede more serious abuse. Cruising means the baby is able to pull to a stand and take a few steps holding onto something which babies learn to do between 7 and 12 months of age.
- What do they mean? Babies who are not yet cruising should not be bruising! Any bruise or mouth injury in a pre-cruising infant should raise concerns for abuse or a bleeding disorder (Sugar, N et al., Arch Pediatr Adolesc Med. 1999;153:399-403 and Sheets, LK et al., *Pediatrics*. 2013; 131:701–707).
- A baby with a small bruise from abuse may have severe internal injuries, so additional medical screening is necessary. Medical screening is performed to detect additional injuries and to rule out conditions that can cause easy bruising such as a bleeding disorder. In a recent study, 50% of babies with just a bruise who were evaluated for abuse had other serious injuries (Harper NS et al. *J Pediatr* 2014;165(2):383-388)
- Who should evaluate an infant with a sentinel injury? Ideally the infant should be evaluated by the most experienced medical provider available. If unsure about where to seek care or another opinion, consult with your Child Advocacy Center for further guidance.
- What if the further injury surveillance (see Medical Evaluation below) is negative? Even if no other injuries are present, the sentinel injury should be carefully considered as suspicious for abuse. Remember that a bruise or mouth injury may be the first injury from abuse! Injury surveillance is not complete until both parts of the skeletal survey are performed (initial and repeat in 2-3 weeks).

Other considerations:

- Fractures can be the first sign of physical abuse and 55% to 70% of abusive fractures occur in children under 1 year of age. Consider child physical abuse in any child with a fracture that is unexplained, poorly explained or in an infant < 12 months old.
- Sibling or household contacts of abused children should be evaluated for abuse. Researchers found that siblings or household contacts under 2 years of age had abusive fractures in almost 12% of cases! (Lindberg, DM et al., *Pediatrics*. 2012;130:1-9)

Guidelines (depends upon clinical judgment) when physical abuse is suspected in a child < 2 years of age:

- Obtain Photographs. Photos, while important, often cannot replace evaluation by a medical provider. Include photos of the face, knees and shins in every suspected case.
- Medical evaluation:
 - Full skeletal survey including oblique ribs and a repeat skeletal survey in 3 weeks. So-called “baby grams” are inadequate.
 - Blood and Urine Laboratory testing
 - ✓ Abdominal labs to screen for abdominal trauma – Urinalysis and blood for AST, ALT, Lipase and Amylase. Obtain an abdominal CT for abused children with GCS less than 10 and/or abnormal abdominal laboratory screen (AST or ALT greater than 80)
 - ✓ Coagulation screen *ONLY* if there is concerning bruising or bleeding – CBC with differential and platelets, PT, PTT, Factor VIII, Factor IX, von Willebrand activity and antigen. Strongly consider adding fibrinogen, d-dimer, and Factor XIII if significant abdominal trauma, AHT or extensive bruising.
 - ✓ Bone labs *ONLY* if there are fractures concerning for abuse – calcium, magnesium, phosphate, alkaline phosphatase, intact parathyroid hormone, and 25-OH-Vitamin D.
 - ✓ Consider comprehensive urine drug investigation testing with lab confirmation of any positive results
 - Head CT routinely < 6 months and if AHT is suspected in a child > 6 months.
 - MRI of head and spine if there is a high suspicion for AHT
 - Dilated ophthalmology exam if there is a high suspicion for abusive head trauma (AHT)
- Consider referring the child to the nearest Child Advocacy Center for follow-up

