Recognition of the Physically Abused Infant in the Primary Care Office
AAP Teleconference November 2012

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This talk will cover:

- Red flags for physical abuse in infancy
  - Bruises
  - Oral injuries
  - Signs of abusive head trauma

- Case examples (cases not included in handout)
- Review of relevant literature
- How to document
- How to talk with families and investigators
Case illustrates:

- Difficulty of making diagnosis in absence of trauma history
- Infants at highest risk of physical abuse
- Infants often suffer repetitive injury with multiple medical presentations before diagnosis reached
- Head, face and mouth are common sites of inflicted injury
Figure 4–1 Child Fatalities by Age, 2010 (unique count)

Based on data from table 4–4.

Figure 5–3 Perpetrators by Relationship to Victims, 2010

Based on data from table 5–5.
Bruising: When to worry

• Those who don’t cruise rarely bruise
  – 0-36 mos at well care visits, n=973
  – 2.2% of pre-cruising infants had bruise
  – 0.6% of those under 6 mo had bruise

Maguire et al. Are there patterns of bruising in childhood which are diagnostic or suggestive of abuse? A systematic review. *Arch Dis Child* 2005; 90:182-186
Bruises: When to worry

- Case control study of children 0-48 mo in PICU with trauma, defined abuse cases and controls, documented bruises, n=95.
- Developed a decision rule with sens 97%, spec 84% for abuse: **TEN-4**
  - Torso, ears, neck injuries on a less than 4 year old child
  - **Any bruise** on a less than 4 month old child

Pierce et al. Bruising Characteristics Discriminating Physical Child Abuse From Accidental Trauma. *Pediatrics* 2010;125;67-74
Conditions that may be confused with Abusive Bruises in Infancy

- **Traumatic:**
  - accidental injury
  - cupping/coining
- **Vascular:**
  - Hemangiomas
  - prominent veins
- **Dermatologic:**
  - slate grey nevi
  - congenital melanocytic nevi
  - urticaria pigmentosa
  - erythema nodosum
  - hyperpigmentation following inflammation
  - phytophotodermatitis
- **Oncologic:**
  - Neuroblastoma with raccoon eyes
  - thrombocytopenia secondary to leukemia
- **Hematologic:**
  - Vit K deficiency/HDN
  - Hemophilia
  - ITP
  - other inherited and acquired bleeding disorders
- **Other:**
  - Henoch Schonlein Purpura
  - other vasculitis such as infectious and drug related
  - Ehlers Danlos disease
  - Artefactual (from ink or dye)
Oral Injuries in Infants

- Inspect frena (labial and lingual) and all mucosal surfaces
- Lips are most common site of abusive oral injury in published series
- Frena tears alone are not pathognomonic for abuse and are less worrisome in ambulating children with plausible history of trauma

Case illustrates

- Presentation with sentinel injuries (bruises, mouth injury) leading up to diagnosis
- Bruises uncommon with rib and extremity fractures (in one large series, only 8.1% of rib/extremity fractures had associated bruising)
- Symptoms of abusive head trauma (vomiting, fussiness, poor feeding) may be non-specific

Signs and Symptoms of AHT

- Vomiting
- Poor feeding
- Lethargy
- Irritability
- Decreased tone
- Decreased responsiveness
- Seizures
- Hypothermia
- Bradycardia
- Hypoventilation or apnea

May have no external sign of injury!
Missed Abusive Head Trauma

• Signs/symptoms are often non-specific
• Jenny et al reviewed 173 cases of AHT
  – 54 (31%) had been seen with symptoms of AHT and misdiagnosed (mean time to dx 7 d)
  – Factors increasing missed diagnosis: Very young infant, white, intact family, no seizures or resp compromise
  – 15 (28%) reinjured before diagnosis, 4 of 5 deaths might have been prevented by early recognition
Think about AHT with:

- Infants and toddlers with lethargy, poor feeding, vomiting, change in level of consciousness, seizure, increased or decreased tone
- ALTEs
- Bloody LP
- Signs of head trauma, especially with vague or inconsistent history
- Another sign of inflicted trauma in infants, even if normal neuro exam (e.g. bruise in pre-cruiser)
When AHT suspected

• Careful PE (check scalp closely) and history
• Treat as trauma!
• ED eval should include:
  – Image brain (CT acutely, MRI non-acutely)
  – CBC, LFTs, amy, lipase, U/A
  – If intracranial bleeding, do plt, PT/PTT, check vit K history
  – Skeletal survey
  – Retinal exam by ophthalmology
  – Child abuse consult as needed
  – Report to DCF
CT Sentinel Injury Project

• Collaboration between DCF Careline and child abuse programs at CT Children’s and Yale, began April 2012

• All CT DCF reports on infants <12 mos with a physical injury faxed to child abuse pediatrician in their region

• CT child abuse pediatricians regularly consulting at DCF Careline
  – Reviewing reports
  – Providing education
Case illustrates:

- Finding of even minor unexplained or poorly explained injuries in infants should trigger:
  1. Reframing as a trauma pt
  2. Urgent thorough evaluation for possible child abuse, transfer or admit if needed to allow complete evaluation
  3. Mandated report to DCF
Documentation—Diagram!
Documentation: History

• Write down presenting history from caregivers, in exact words/quotes when possible

• Ask about any history of trauma since birth
  – If present, document in detail
  – If absent, note that caregivers deny any history of trauma
We are Mandated Reporters

REPORT OF SUSPECTED CHILD ABUSE/NEGLECT

Within forty-eight hours of making an oral report, a mandated reporter shall submit a written report (DOF-106) to the hotline.

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<th>AGE OR BIRTH DATE</th>
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<th>NAME OF PARENTS OR OTHER PERSON RESPONSIBLE FOR CHILD’S CARE</th>
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<th>DATE AND TIME OF SUSPECTED ABUSE/NEGLECT</th>
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<th>RELATIONSHIP TO CHILD</th>
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NATURE AND EXTENT OF THE CHILD’S INJURY(IES), MALTREATMENT OR NEGLECT:

INFORMATION CONCERNING ANY PREVIOUS INJURY(IES), MALTREATMENT OR NEGLECT OF THE CHILD OR HIGHER SIBLINGS:

LIST NAMES AND AGES OF SIBLINGS, IF KNOWN:

DESCRIBE THE CIRCUMSTANCES IN WHICH THE INJURY(IES), MALTREATMENT OR NEGLECT CAME TO BE KNOWN TO THE REPORTER:

WHAT ACTION, IF ANY, HAS BEEN TAKEN TO TREAT, PROVIDE SHELTER OR OTHERWISE ASSIST THE CHILD?

REPORTER’S NAME AND AGENCY | ADDRESS | PHONE NUMBER |
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REPORTER’S SIGNATURE | POSITION | DATE |
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WHITE COPY: TO DCF HOTLINE, 300 Hudson Street, Hartford, CT 06106
YELLOW COPY: REPORTER'S COPY
Working with investigators

• Get releases when possible
• Choose your words carefully; don’t speculate
• Unanswerable questions:
  – How much force was involved?
  – Is this a serious injury?
  – Was this an intentional injury?
• Examples of what we can say:
  – Injury is inconsistent with the history provided
  – Presentation is suspicious for abuse
  – Normal handling of an infant/child does not cause injury
Talking with families

- Get social work assessment/support
- Keep language neutral
- Focus on medical evaluation and treatment
- Remember that you may be talking with a non-offending caregiver who does not know how injuries occurred
- Remember that the ultimate diagnosis may not be abuse
Conclusions

• Infants at highest risk for physical abuse
• Often no history of trauma provided
• “Minor” injuries may portend major morbidity
• Keep inflicted injury on your differential
  • Bruises
    – Those who don’t cruise rarely bruise
    – TEN-4
  • Oral injuries
  • Symptoms that could be AHT
Conclusions

• For those with suspected physical abuse:
  • Immediate further evaluation for trauma and/or underlying disease
  • Document well
  • Understand that negative screening tests such as labs/skeletal survey do not exclude abuse
  • Report all suspected cases to DCF
Contact information

nlivingston@ccmckids.org
(Email for non-clinical communication only)

SCAN Program
CT Children’s Medical Center
(860) 837.5890—physical abuse/neglect concerns

DART Program
Yale New Haven Hospital
(203) 688.2468

Sexual abuse consults done regionally, contact sexual abuse examiner in your region