Child Physical Abuse

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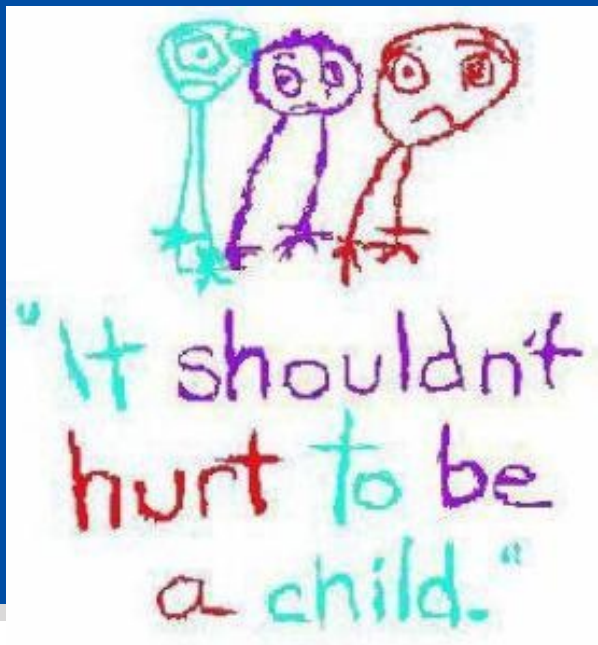


Yale SCHOOL OF MEDICINE

Little about myself

Case Presentation: Visit 1

- 4 months ex-34 week twin with a head injury
  - History:
    - Mom holding both twins, tried to readjust and one of the babies slipped, falling face down on hard wood floor
    - No loss of consciousness
  - Exam: small ecchymosis on L cheek, R upper lip abrasion, torn upper frenulum, dried blood in nares
  - CT: left sided subdural hemorrhage
  - Labs: alt 80, AST 245, hb 9.7
  - Social: lives with 16 yo mom, maternal aunt, mgm and twin and 17 yo Father involved in care

Case Presentation

- Transferred to Yale
- Admitted to PICU
- Trauma and neurosurgery consults
- Baby remained neurologically stable
- Discharged to home

Case Presentation: Visit 2

- 4 days later, re-presented with vomiting/sleepiness
- CT unchanged
  - Admitted and child abuse consult placed given previous history and findings
  - Optho: multiple and extensive retinal hemorrhages
  - Skeletal survey negative
  - **Diagnosis: abusive head trauma**
- Reported to DCF, twin evaluated (no injuries found)

Case Presentation: What actually happened

- Father alone with twins on day of initial presentation and when mom returned home, twins were alone
- Boy was sleeping in bouncy chair and girl was face down in crib with just a diaper on
- Mom noted her face was bruised and there was blood on the sheet
- On way to hospital, mom and mgm saw father driving and crying saying he was sorry and that he had dropped baby

Objectives

- To define the concept of the sentinel injury
- To review epidemiology of physical abuse
- To review key questions to be answered when evaluating children with injuries

What is a sentinel injury?

- Minor injuries
  - Typically heal quickly and on their own
- Pre-cruising infant
  - Unable to sustain under their own power
- Visible or detectable to caregiver
- Poorly explained or unexpected

Development Review

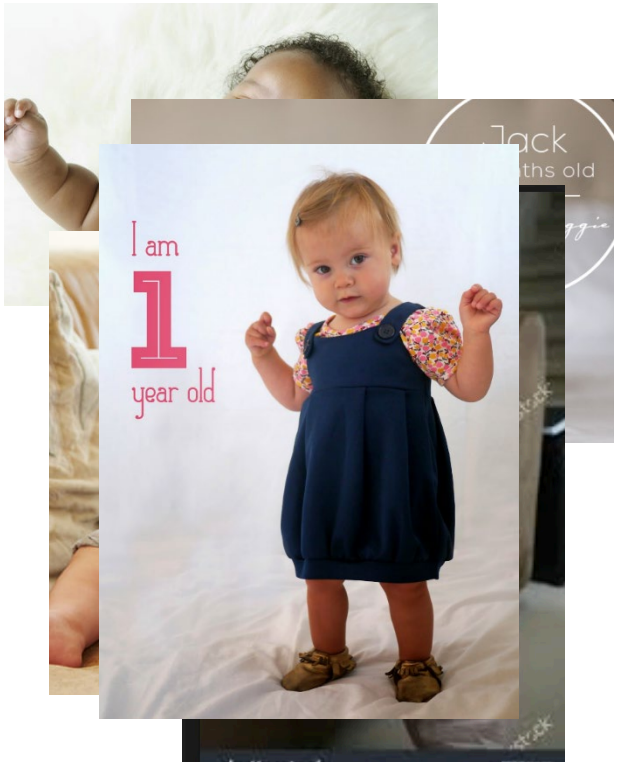
2 Months: Head up 45°

4-5 Months: Roll over and sit with support

6 Months: Sit—no support

8-11 Months: **CRUISE**

12 Months: Walk



What is a sentinel injury?

Bruises: epidemiology

- Prospective, cross sectional survey of 973 children 0-36 months seen in primary care settings
  - Bruises were noted in only 11 (2.2%) of 511 children who were not yet walking with support (cruising)
- **Those who don't cruise, don't bruise.**

Sugar et al. 1999

Bruises: epidemiology

- Prospective cross sectional survey of 177 babies aged 6–12 months seen in primary care settings
  - 22 (12%)babies had bruises.
  - All bruises were found on the front of the body and were located over bony prominences. (12%)
  - There was a highly significant increase in bruises with increase in mobility.

Carpenter 1998

Prospective study examining bruising in children < 4years of age

Torso

Neck

Ear

Any bruise ≤ 4 months (upto 5 mos)

TEN 4

FACES Patterned

F: Frenulum tears

A: Angle of Jaw

C: Cheek

E: Eyelid

S: Subconj hemorrhage

P: Patterned

FACES P

Sens 97% and Spec of 87% to predict abuse Pierce, MC

Oral Injuries

- Retrospective studies examining abused children reveal about 10-11% have oral injuries
  - Torn frenum “pathognomonic” for physical abuse

Oral injuries in the ED

- Prospective study of 1303 children ≤ 2 y.o. presenting to pediatric ED
  - 36 (2.76%) had oral injuries
  - 26 (72%) associated with traumatic CC (most in mobile children)
  - 6 (1.4%) in children ≤ 5 mos
    - 5/6 had medical chief complaints and 4/6 underwent child abuse consultation

Woolf S et al, Child Abuse & Neglect

Sentinel Injuries

- Of 200 abused infants, **27.5**% had a previous sentinel injury compared with 8% of the 100 infants with intermediate concern for abuse.

- **None** of the 101 non-abused infants (controls) had a previous sentinel injury.

- The type of sentinel injury in the abused cohort was **bruising** (80%), intraoral injury (11%), and other injury (7%).

Child Abuse Epidemiology

Differences by types of abuse

- In 2017, 9/1000 children were victims of substantiated child abuse
  - 7/1000 reported victims of neglect,
  - **2/1000 reported victims of physical abuse**
  - 1/1000 reported victims of sexual abuse
  - 1/1000 reported victims for psychological or emotional abuse

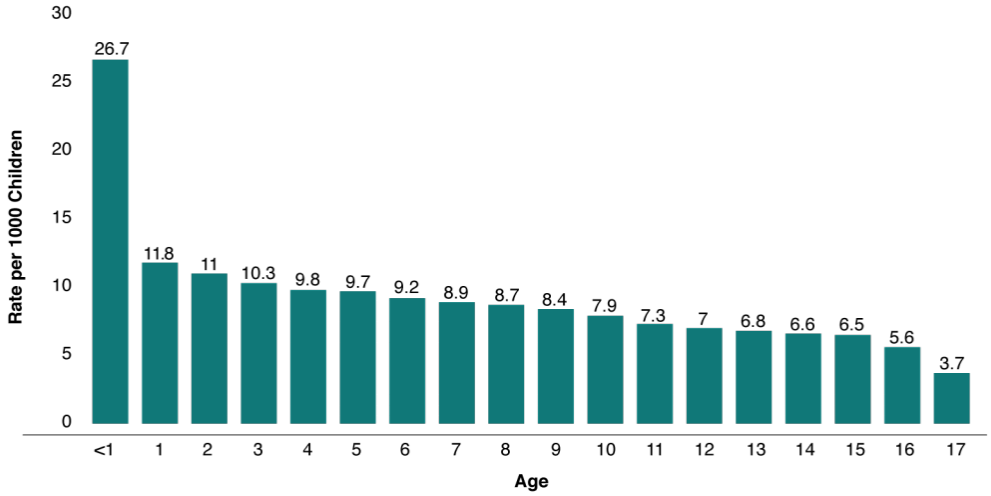
Framing the risk: babies and toddlers

2018 CPS data:

- Of all child abuse fatalities, **46.6%** were infants younger than 1 year old.
- **70.6%** of all child abuse fatalities were children less than 3 years old.

Exhibit 3–D Victims by Age, 2018

The youngest children were the most vulnerable to maltreatment



Based on data from 52 states. See table 3–5. Percentages do not sum to 100.0 due to rounding.

Challenges in the detection and evaluation of sentinel injuries

- Injuries not recognized for what they are.
  - Medical problem (bleeding diathesis)
  - Self-inflicted
  - Not seen as important
- Caregiver qualities or behavior undermine successful recognition
  - Caregiver continually presents an injured child for care
  - Provider bias

What about Race and Abuse

- Race and socioeconomic factors impact evaluation of abuse
  - Skeletal Surveys
  - Reports to Child Protective Services

Why is it challenging to diagnose abuse

- Witnesses are uncommon
- Perpetrators don't typically admit to their actions
- Child victims are often preverbal, too severely injured or too frightened
- Injuries can be nonspecific
- In these cases, we cant rely on parents for accurate information

Other challenges

- Physicians and other providers miss opportunities to diagnose abuse!
- Difficulty distinguishing abuse from accident
- Not wanting to believe abuse is occurring (BIAS)
- False reassurance if no other injuries are found
- Not wanting to involve CPS
- CPS may fail to put in adequate protection for children

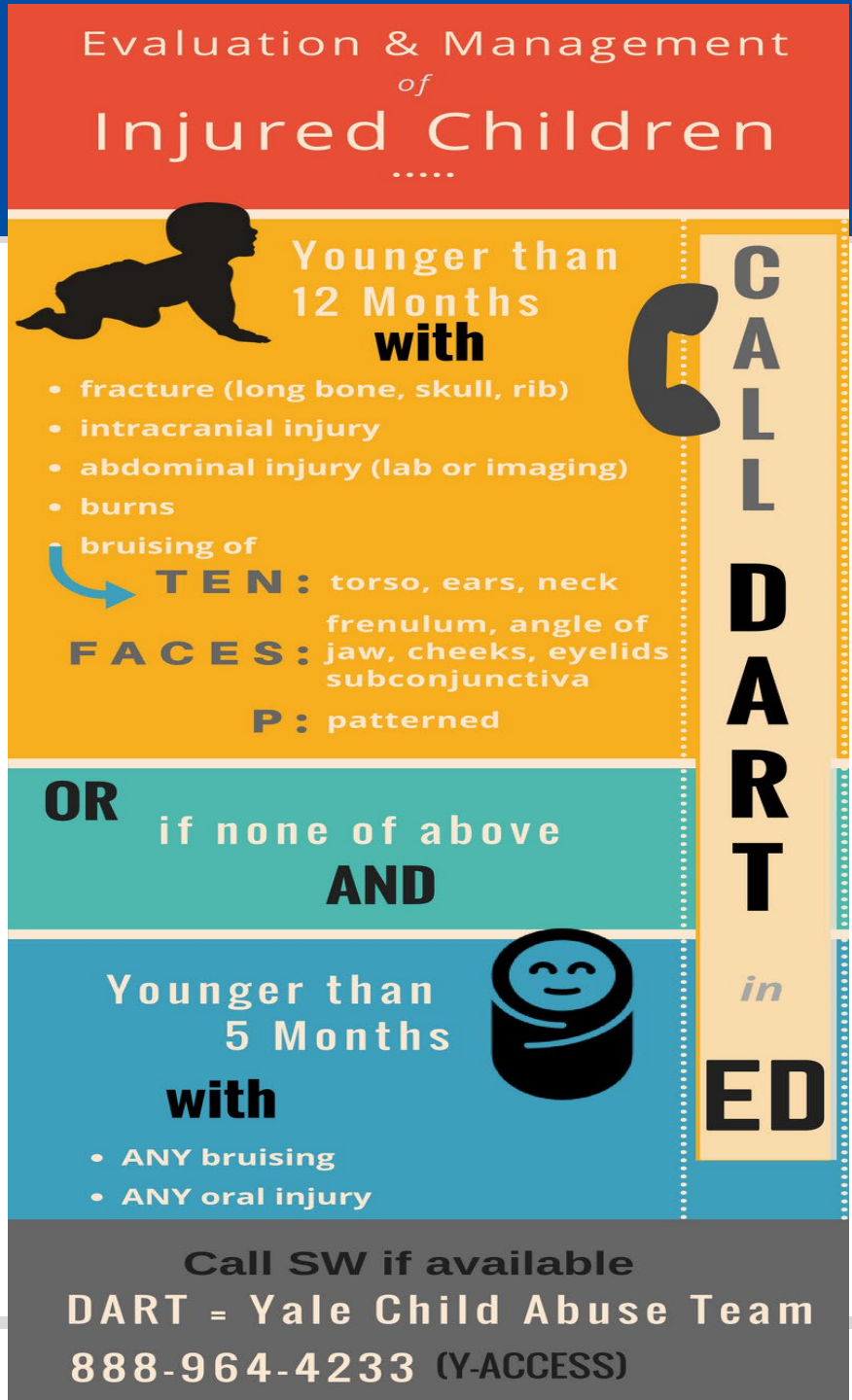
Factors we should not consider

- Child and family's ethnicity/race
- Does the mother have tattoos
- Does the family "present" well
- Is the family "nice"

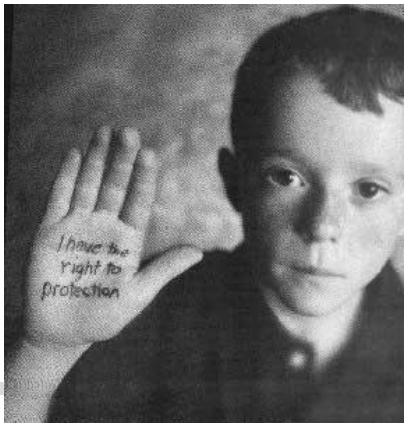
Repeated behavior offers an opportunity for prevention.

- Recognition and evaluation of sentinel injuries may lead to diagnosis and prevention of other, more serious occult injuries

YNHH Pathway



Stand out experiences from the group

Take Home Points

- Get a detailed history
- When evaluating, think age and developmental skills
- Babies and young children at highest risk
- Any injury in a pre mobile infant should be evaluated
- Report to DCF and use available resources when suspicious
- Consider your own biases