CHILD ABUSE: NAT Recognition and Evaluation CAFP Symposium 2022

Karen Santucci, MD FAAP
Professor of Pediatrics/Emergency Medicine
Yale School of Medicine
SVP, Chief Medical Officer
Yale New Haven Health
Greenwich Hospital

Learning Objectives

By the completion of the session, you the learner will be better able to:

1. Recognize **high risk physical exam findings** as markers for possible non-accidental trauma (NAT)
2. Gain awareness of the **higher risk populations** for NAT
3. Utilize the tools provided in the session to increase your ability to **suspect**, **diagnose**, **treat** and **document** appropriately when **caring** for a child who is the victim of NAT

Santucci Files

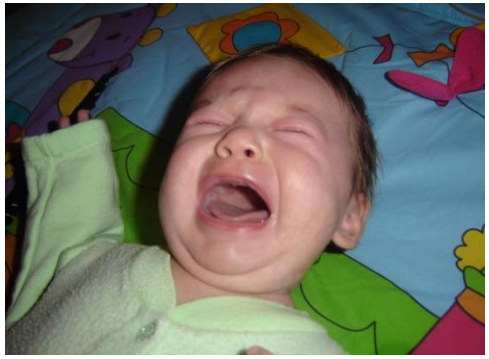
Child Abuse: Non-Accidental Trauma

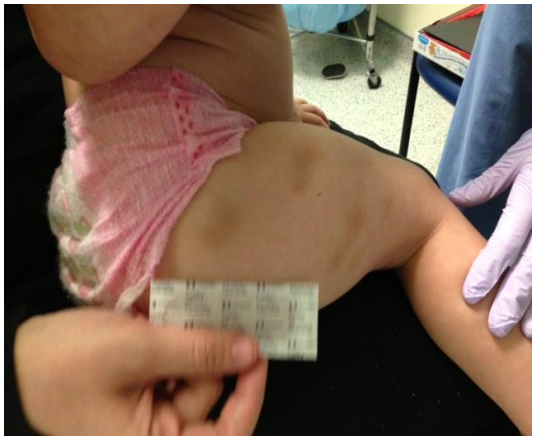
- Concern

-Historical inconsistencies

-Delay in seeking care

-Suspicious physical exam findings



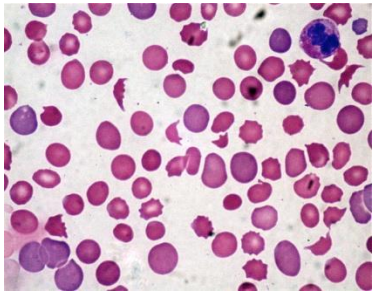


Medical Evaluation

- Complete history (open-ended questions)
- Thorough physical exam (bruises, rashes, lesions, too compliant? pseudomature?)
- Observe interactions (undue roughness, delay in seeking care, partial confessions)

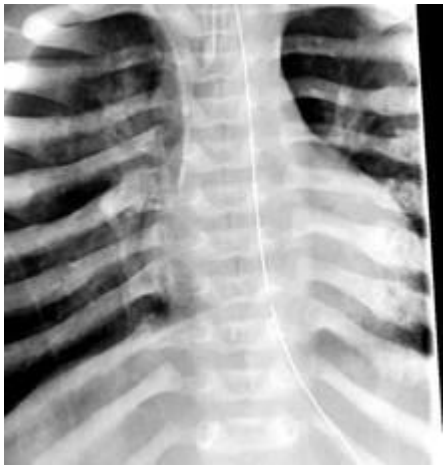
Laboratory Evaluation

- Complete blood count, platelets, differential
- Peripheral smear
- PT/PTT
- ALT/AST (children under 5 yrs)
- Hematuria?
- Toxicology screen
- Dextrose, change in mental status



Radiologic Evaluation

- Depends upon age and presentation
- Skeletal survey (age < 2 years and suspicious fractures)
- Neuroimaging (when nonaccidental head injury is suspected) CT imaging or noncontrast brain MRI



Management

- **Multidisciplinary Team Approach**

-Nurses/Physicians and ***Primary Care Doctor***

-Social Work/*Security*/Sitter

-Child Protective Services

-Orthopedics

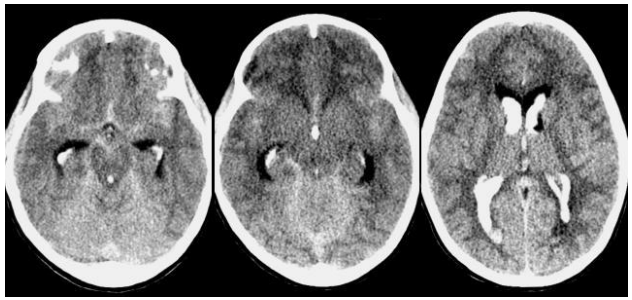
-Local Police Department

-Ophthalmology

-Pediatric Surgery

Need for Hospitalization:

- Is the child medically ill?
- Is the child unsafe?
- Delay in child protective services' response?
- Need for observation (Munchausen?)
- If you are uncomfortable with a discharge to home?

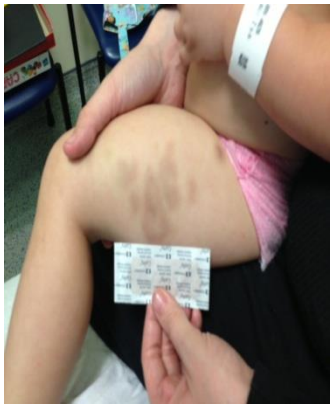


Population at Increased Risk of Non-Accidental Trauma

- Multiples
- Pre-Term
- Medically or Behaviorally Complex
- Extended Period in Nursery/NICU
- Difficulty with Feeding

5 month old with a “RASH”

Five month old with a rash

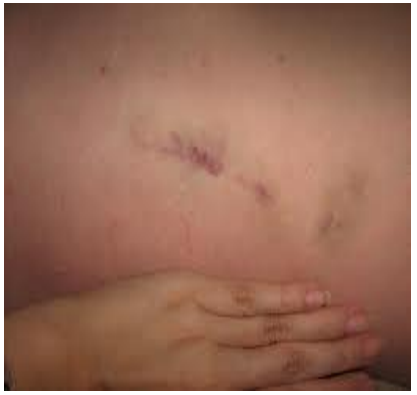


- Seen at a neighboring ED ‘last night’ 2/10/11 for rash and fussiness for 1 week
- CBC, PT/PTT, LFTs and CXR and discharged home
- Came to our PED on 2/11/11

-the rash was bruising on anterior and posterior chest and arms

-CXR at OSH…2 posterior healing rib fractures

-ALT 800, AST 900, PLT ct 637K



History

First Interview:

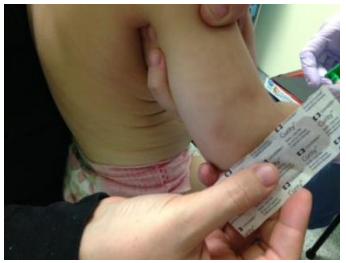
- Q: Who watches Nylah?
- A: Only her father or me (mother)
- Q: Anyone else babysit?
- A: No never!

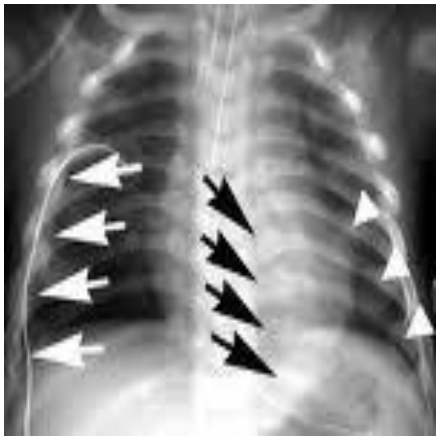
Second Interview:

- Q: Who watches Nylah?
- A: Her father or me.
- Q: Anyone else babysit? Anyone else at home?
- A: Eleven people, help out babysitting

Rash Progression

- Wood's Lamp Analysis
- Skeletal Survey: 22 rib fractures in various stages of healing
- New left mid-shaft radius-ulna fracture without callus formation
- CT of head, chest, abdomen, pelvis: free fluid in abdomen c/w blood
- Dad confessed in the pediatric ED!
- **PEARL: Don't Cruise, Shouldn't Bruise!**





More Pearls(Risk Management)

- You order a test , you own it!
- Chest radiograph..posterior rib fractures
- LFT's: How do we explain the exceptionally high transaminases?

  (Nice screen for NAI)
- Platelet count: acute phase reaction..stressed host!

Bruising Clinical Decision Rule: derivation

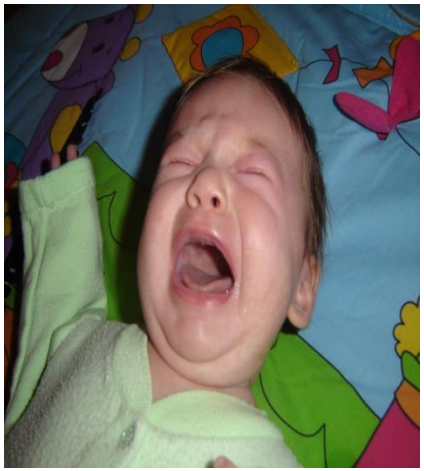
- Bruising Characteristics Discriminating Physical Child Abuse from Accidental Trauma
- Mary Clyde Pierce, MD et al

2010 Derivation Model: TEN-4

- 1. Is there bruising in the Torso-Ear-Neck aggregate region of a child < 4 years of age?
- 2. Is there ANY bruising ANYWHERE on an infant < 4 months of age?
- 3. Is there a confirmed accident in a public setting that accounts for the bruising in the "TEN" region or on the infant?

Six Week Old with Reflux? Abdominal Pain

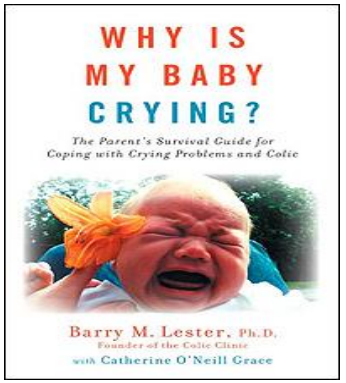
- Midnight Shift
- Sign out: 6 week old twin with GERD, colicky, pre-term
- Question of appendicitis?
- CXR and ultrasound ordered
- Parents



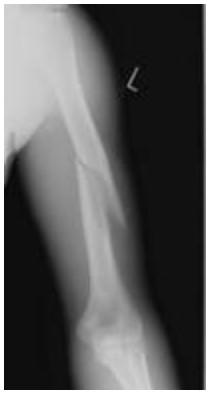
Reflux Progression: 7 rib fractures

- Parents say the Community Pediatrician is very rough with him!
- Parents say the 4 year old brother is very rough with him!
- Parents call you a quack and ask where you got your medical license from?! "Cracker Jack Box?"

Reflux Progression

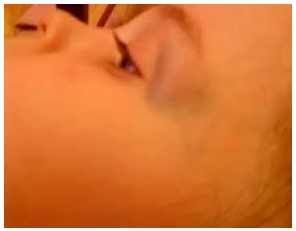


- This baby, **his twin** and the 4 year old are taken away and placed into foster care
- Fancy lawyer gets them home
- Two weeks later the twin has a spiral humerus fracture!
- Taken from parents again and placed with relatives
- Supervised visitation
- **Pearls:** Twins, Colicky, Pre-term, 'Spitter-Uppers'..more at risk!



Two Year Old with Dehydration

- Previously well 2 year old African American male
- Brought in DOA!! (0630)
- Physical Exam: Severely dehydrated, sunken eyes and temporal wasting, lips exposing the teeth, ? Bruises on forehead (supine)
- I call police, other children? Discuss concerns with the Medical Examiner!



Dehydration Progression

- M.E. finds evidence of bruising!
- Vitreous humor: Sodium 179!!!!
- Babysitter was toilet training him, he was wetting the bed so she restricted access to free water by putting hot sauce on the rims of drinking glasses!!!!
- CNN
- **Pearls**: Index of suspicion! Physical exam! Could walk….access to free water…

Three Year Old Fell from a Wall

- Previously well toddler was out taking a walk with Mom's BF at 6am in 32 degree weather
- "He was walking on a stone wall and tumbled off it"
- Brought to OSH, barely alive
- Intra-abdominal bleed, transported to us by chopper
- Dies in O.R.
- Mom and BF arrive 2 hrs later

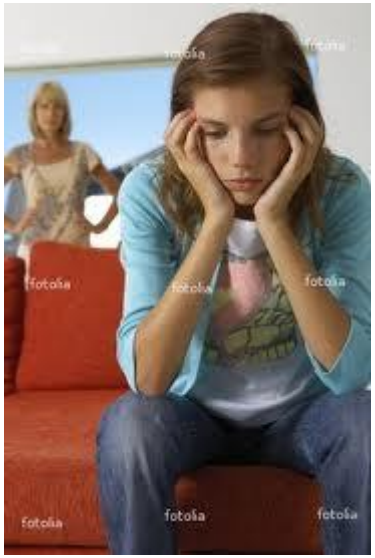
“Fall” Progression

- I had spoken with grandfather
- Every time Andrew visited BF’s house had a new bruise “slipped on boat” “fell down stairs”
- I called local detectives, detained BF till police could arrive
- White, middle class soccer coach “nice guy”, pizza parties at his home for kids, known “well” by some of our staff

“Fall” Progression

- Mom’s BF confessed
- Murder charges
- **Pearls**: The perpetrator may be someone you know, someone who positions himself or herself in contact with children (coach, teacher, playground worker). Usually builds a trusting relationship upon a child’s vulnerabilities!

14 year old girl, missing school



- “Abdominal pain”
- School truancy
- 10% risk of mental illness
- 9% risk of suicidality in the past year
- Ask to speak with her alone
- Only time in 20 years my request was denied
- Left with no alternative I ask my security office to “validate his car license plate number”
- Three minute alone with her!

Progression

- She has been sexually abused by her father for 2 years and was told that if she told anyone he would kill her little sister!
- **Pearl**: Change in behavior, somatic complaint, failing grades, school truancy, change in appetite, loss of interest in extra-curricular activities, consider DEPRESSION….ABUSE

Case 7

- A 3 month old baby boy is referred by his pediatrician for spitting up
- He began spitting up 3 days ago and was vomiting and seen by your colleague who said he was active, well-hydrated and tolerated PO during that ED visit
- PMHx: born 6 weeks early, moved to your state 1 month earlier, seen by PMD twice this month, referred for an ultrasound

3 Month Old

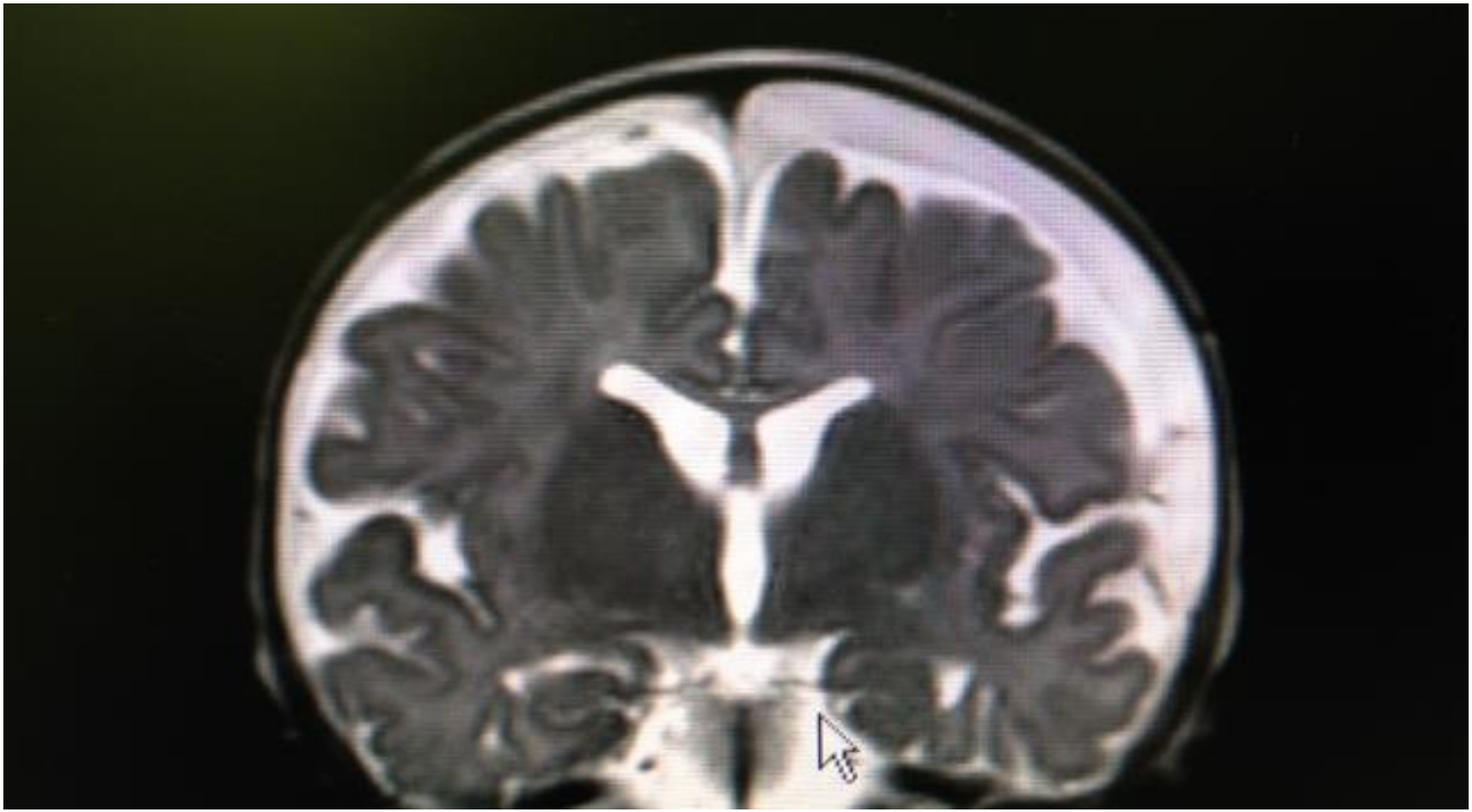
- The resident orders an ultrasound for Pyloric Stenosis
- You enter the room and find a well appearing, interactive, smiling baby boy being held by mom who has multiple tattoos and appears quite fit!

- Transferred because of the National Guard, works 6a-5p and dad watches the children

You Notice

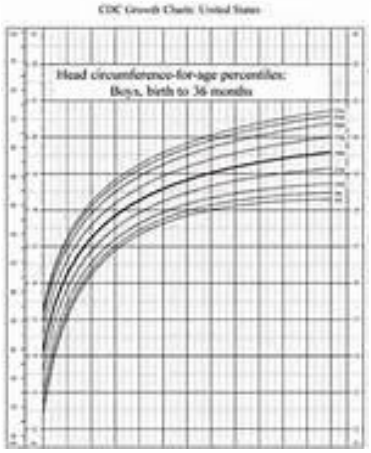
- Baby's head is a little big
- Scalp veins are a little dilated
- Sutures are a little split
- Anterior fontanel is a little full
- HC> 95%
- WT 10%
- LT 10%
- Order an MRI (quick brain)

Actual MRI

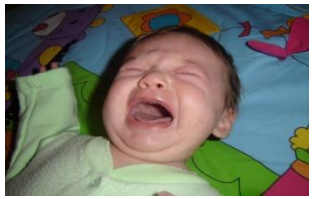


Progression

- Admitted to PICU
- Subdurals drained
- Seizures
- Child protective Services
- Police
- Dad



- Pearl: vomiting….head circumference



Summary

- Infant frenulum tear is not an accident
- Don’t cruise, shouldn’t bruise (Wood’s Lamp)
- High risk babies: pre-term , colicky, reflux, multiples, special needs
- Dehydration in someone who can walk
- The perpetrator/abuser is usually someone the child knows (you may too!)
- Change in behavior ask about depression and possibility of abuse!
- Vomiting…….

Thank you!