TCAR'S WILD RIDE

- Visual Diagnosis and Evaluation of Child Maltreatment: A Trauma-Informed Approach

TCAR'S WILD RIDE

Michael Baxter, DO
Christine Beeson, DO
Lauren Conway, DO
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Disclosures

- Under Accreditation Council for Continuing Medical Education (ACCME) guidelines, disclosure must be made regarding financial relationships with ineligible companies within the last 24 months
- No Disclosures
  - Michael Baxter, DO
  - Christine Beeson, DO
  - Lauren Conway, DO

Trauma Disclosure

- Cases discussed in this presentation may be traumatic for learners. Please feel free to turn off your camera or take a break if needed.
- I am available for debriefing after the event if needed.
- Please check with your agency for additional resources if needed

Learning Objectives

- Articulating a broad differential diagnosis of child maltreatment
- Recognizing medical mimics versus diagnostic injury
- Summarizing a traumatic work up for child physical abuse
- Understanding injuries associated with various forms of child physical abuse

Professional Practice Gap

- Given the legal ramifications of diagnostic child maltreatment, healthcare providers need to understand, implement, and defend a child maltreatment workup and diagnosis.

"The Man (Boy) Who Can't Be Moved"

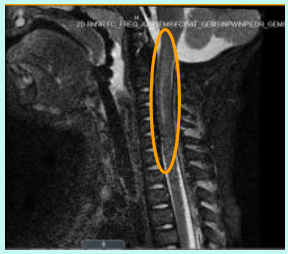
Lauren Conway, DO

"The Man (Boy) Who Can't Be Moved"

- 11-month-old male presents decreased movement of his upper extremities and head after a nap
  - Unable to hold his bottle and can't hold his head up
  - Limited History:
    - In the care of mom's paramour while she works
- PMHx:
  - Previously healthy but was diagnosed with shingles on his chin a few weeks prior
- Social History:
  - Resides with mother, mother's paramour, and older siblings (3, 4, and 7 years old); 3-year-old brother who is "violent" with the patient

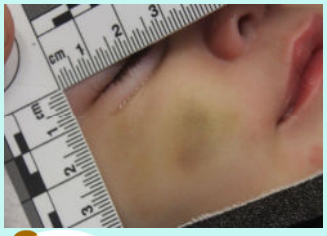
Diagnostic Work Up

- Diagnostic Imaging
  - CT Head/Neck/Chest/Abdomen /Pelvis: Normal
  - Skeletal Survey: Normal
  - MRI C-Spine Without Contrast
    - Potential cord contusion/hemorrhage from the medulla to C7; cord swelling from C2-C6
  - MRI Brain Without Contrast
    - Cord Contusion
  - Neurosurgery:
    - No Evidence of AHT
    - No history or evidence of flexion/extension injury for a cord injury
    - Consider tumor or ADEM



Physical Exam

- Gen: Alert; fussy; high pitched cry
- HEENT: No retinal heme in pharmacologically dilated eyes; superior labial frenulum laceration without active bleeding; apex of the tongue with granulation tissue in a furrowing pattern and widespread granulation tissue on the body of the tongue; visualization limited secondary to C-collar use
- Neck: C-collar in place; Abrasions noted to inferior to the chin and abrasion vs contusion noted to the left lateral neck, but visualization is markedly limited.
- Neuro: No spontaneous movement noted with bilateral arms. No withdraw to pain. Spontaneous movement of right lower extremity with more limited movement of the left leg.
- Skin: See pictures



Additional History To Consider

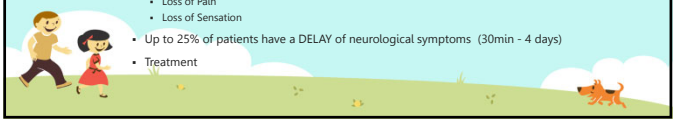
- Law Enforcement Interview with Mom's Paramour
  - "Accidently" kicked the child in the chin which caused him to "chip his tongue."
    - He had facial bleeding afterward
  - Grabbed the child's legs and "flung" him repeatedly
  - He turned red from the nipples to the neck and stopped using his arms
  - Dropped a speaker on his face

MRI C-Spine with Contrast

- Interspinous ligamentous enhancement most evident at C5-6 but extends inferiorly through the field.

Spinal Cord Injury Without Radiograph Abnormality (SCIWORA)

- Trauma in the absence of findings on plain radiographs, flexion-extension radiographs, and cervical CT
  - MRI TYPICALLY identifies damage to the cord or to the ligaments (2/3)
  - MUST presumptively treat for presumed SCI
- Mechanism of Injury: Hyperextension, Hyperflexion, Distraction, Infarction
- Physical Exam
  - Abnormal vital signs
  - Neck/Back Pain
  - Paresthesia
  - Paralysis
  - Loss of Pain
  - Loss of Sensation
- Up to 25% of patients have a DELAY of neurological symptoms (30min - 4 days)
- Treatment



“Bleeding Out”

Christine Beeson, DO

“Now we got Bad Blood”

5-month-old male presents with bruising after mom picks him up from daycare. No history provided for bruising.

- Birth history: 39 weeks, vaginal, received vit K, no NICU
- Past medical history: plagiocephaly, eczema, at 2 months old, mom found a lump with an overlying bruise on his lower back. saw PCP & US was negative
- Past surgical history: circumcision, no excess bleeding
- Family history: no known history on maternal side, paternal side: dad is adopted; brother does not have any issues
- Developmental history: on track, starting to roll
- Social history: lives with mom and 17mo brother
- ROS: plagiocephaly, bruising, eczema rash, rhinorrhea, cough

Physical Exam & Labs

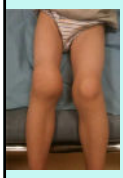
Physical exam findings:
- bruising with hematoma inferior to left nipple
- bruising with hematoma on left arm
- bruising with central clearing hematoma over sacrum
- eczema on scalp and antecubital and popliteal fossae, truncal dryness, forehead excoriations

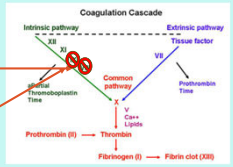
- Skeletal survey & head CT: negative
- CBC: Platelets elevated (421)
- CMP normal (ALT slightly elevated: 53)
- PT/INR normal
- Rhinovirus/enterovirus positive
- Low factor 8 level (1) and 9 (47)
- Elevated PTT (112.9, 161.9)

Diagnosis

- Diagnosed with severe hemophilia A with undetectable factor 8 levels (1%)
- Excessive bruising and hematoma formation spontaneously and with minimal provocation
- At risk for significant bleeding events including soft tissue hematomas, hemarthrosis, and possibly CNS bleeds
- Prophylactic treatment with Hemlibra (antibody that functions like Factor 8)
  - has Nuwiq (factor 8) at home for breakthrough bleeding events

Hemophilia





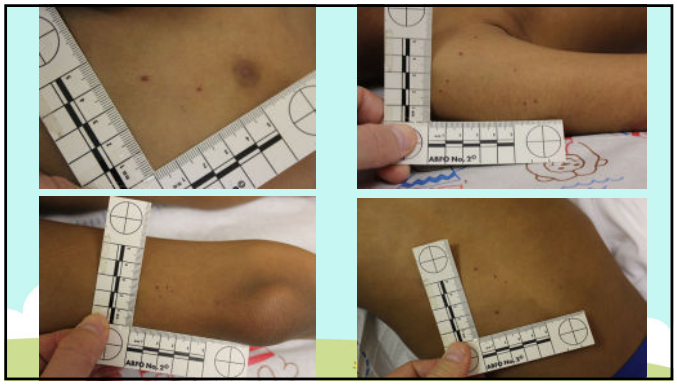
- Type A: factor VIII deficiency
  - Most common inherited factor deficiency
  - PT normal, PTT prolonged
  - X-Linked recessive (affects males)
  - Severe if factor level is <1%
- Type B: factor IX deficiency
  - PT normal, PTT prolonged
- Newborn s/s: excess bleeding with routine procedures (ex: circumcision. venipuncture), ICH with traumatic delivery
- Toddler & older children s/s: hemarthrosis (as mobility increases), oral mucosal bleeding, head trauma (traumatic or unprovoked), organ bleeds

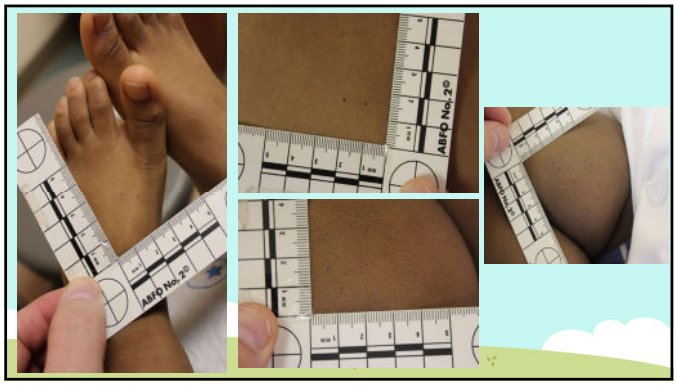
Shock and Ahhhhhhhh

Michael Baxter, DO

Case History

- HPI
  - 5 year old male with arm and shoulder bruises
- PMH
  - healthy overall
- FHX
  - negative
- SHX
  - Lives with bio-mom
  - Bio-dad not involved
  - In Kindergarten at public school
  - Watched by mom's ex-boyfriend after school






TASER M26c/M18L
https://www.stun-gun-defense-products.com/buy-stun-gun/images/taser_m26c_m18l_deployed.png

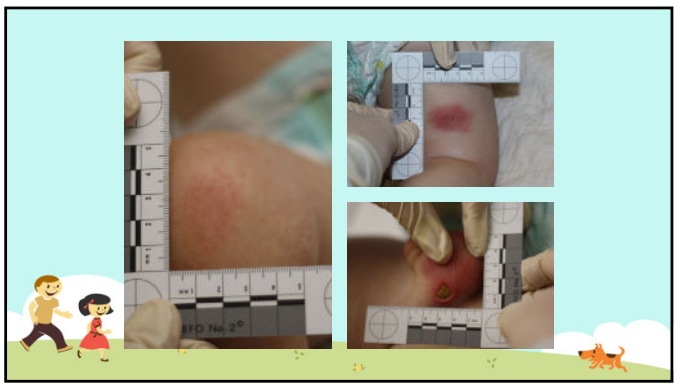
Photos provided by Tulsa Police Department

Take Home Points

- Head to toe exam is vital
- Symmetry, pattern, and distribution of injury matters
- Listen to the child's history
- Stun guns are different than tasers
- Do not use a stun gun or taser on any child
- Do not volunteer for law enforcement to use a stun gun or taser on you

Case Presentation

- 13 month old with concern for burns and sexual abuse
  - 12 days of runny nose lasting 2 days
  - 10 days of diarrhea/fussiness lasting until admission
  - 6 days of decreased intake and fever up to 104 F
  - 4 days of decreased urination
  - Reports no lesions after returning from grandparents



Ecthyma Gangrenosum

- Rare manifestation of Pseudomonas aeruginosa infection
- Vast majority of patients are immunocompromised
- Case reports of “Healthy” infants presenting with EG due to pseudomonal infection

Lessons

- Had lesions at different stages of development with new lesion formation during hospitalization
- Diagnosed with immune deficiency - X-linked agammaglobulinemia
- During stay social situation concerns continued
- Seen 1 year later for neglect due to failure to continue medical care