

Child Physical Abuse

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Types of physical abuse

Bruises

Burns

Fractures

Abdominal
trauma

Abusive
head trauma

Diagnosing (suspecting) abuse

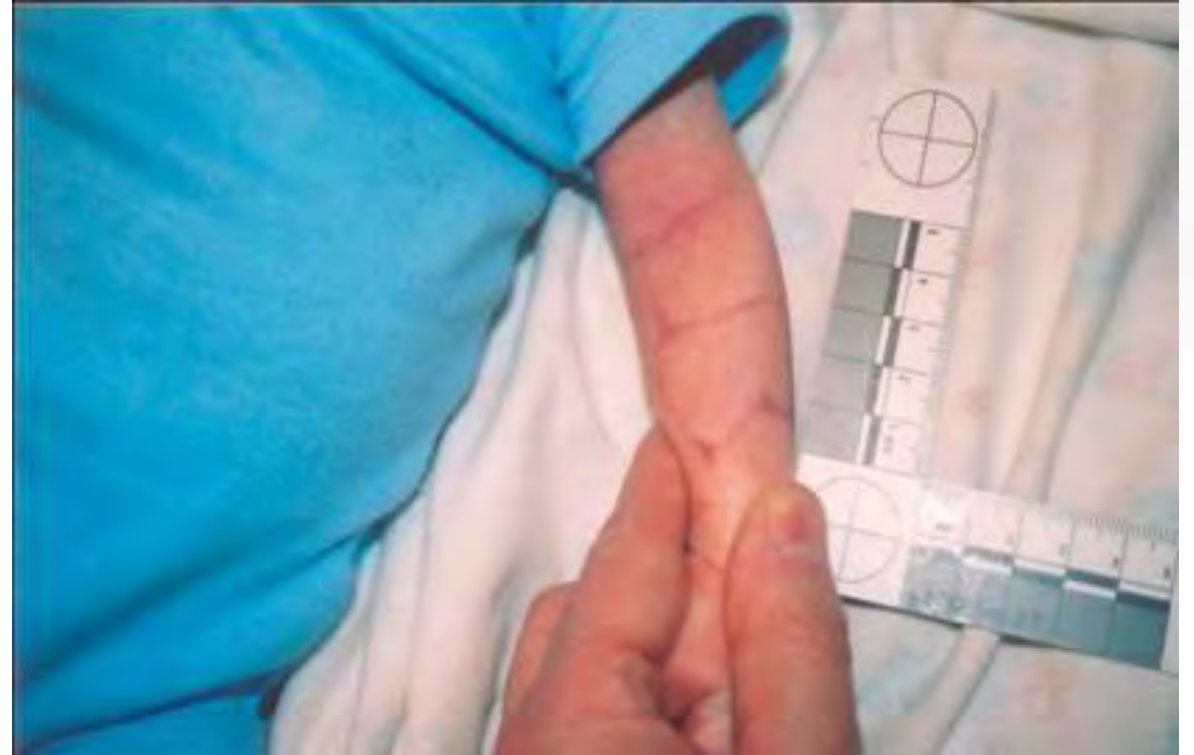
- Does the history match the injury?
 - Does it make sense?
 - Can the child do what is reported?

Beware of the “nice” family

- “They appear to be good parents”
- “Why would they hurt a child then bring them in?”
- “I know them (their family, parents...), they couldn’t have hurt their child”
- Document facts and observations, not opinions

Bruises

- Most common abusive and accidental injury
- So how do you tell the difference?
- And...you can't date bruises!



TEN-4-FACESp

Bruising Clinical Decision Rule for Children < 4 Years of Age

When is bruising concerning for abuse in children < 4 years of age?

If bruising in any of the three components (Regions, Infants, Patterns) is present without a reasonable explanation, strongly consider evaluating for child abuse and/or consulting with an expert in child abuse.

TEN

Torso | Ears | Neck



FACES

Frenulum
Angle of Jaw
Cheeks (*fleshy part*)
Eyelids
Subconjunctivae

REGIONS

4 months
and younger



Any bruise, anywhere

INFANTS

Patterned
bruising



Bruises in specific
patterns like slap, grab
or loop marks

PATTERNS

Burns

- Commonly the result of an accident/unintentional injury
- Can the child do what was described?
- Lack of splash marks
- Clear object marks (iron holes)
- Supervision neglect?



Fractures

- Again, rare in infants unless the history can account for the forces involved
 - Linear parietal skull fracture
 - MVC
- Some fractures are more specific for abuse
 - Ribs, CMLs, Sternum, Scapulae, Spinous processes
 - (Spiral fractures are not diagnostic of abuse)

CMLs

- Common metaphyseal lesions (fractures)
- Bucket handle, chip, corner
- Pulling/twisting mechanism



Abdominal Trauma

- Rare, but easily missed
- Blunt force trauma leading to intestinal, liver, spleen injuries
 - Duodenal injury/hematoma
- Importance of tertiary survey; low threshold for abdominal imaging especially with bruising

Abusive Head Trauma

- “Shaken Baby Syndrome”
- “A well-recognized constellation of brain injuries caused by the directed application of force to an infant or young child, resulting in physical injury to the head and/or its contents.”
(Cheisa, 2009)
- “Cranial or nervous system injuries resulting from the deliberate application of force to a child” (Duhaime & Christian, 2019)
- Easily missed in mild cases
 - Rule-out sepsis, BRUE, VGE
 - Low threshold for imaging in outliers

Workup of suspected abuse

- Medical care takes priority over the abuse evaluation
- Head imaging
 - Up to 6 months (1 year) CT/MRI
- Skeletal survey
 - Up to 2 years (consider to 5 years)
 - Consider deferring in transfers
- Eye exam
 - Only if intracranial injury/altered mental status

Reporting Abuse

- Everyone is a mandatory reporter in Nebraska
- Needs to be done by everyone who is concerned
 - First responders
 - Referring hospital
 - Trauma center
- Report is based on reasonable suspicion NOT proof

Case example

- 2 1/2 month old male
- Brought to OSH in at midnight after being found limp and unresponsive at home
- Cyanotic and minimally responsive
- Intubated in ED, started on vancomycin and ceftriaxone
- Head CT showed cerebral edema and bilateral subdural hemorrhages
- Transferred to CN for specialized care

Past history

- Born at 39 weeks via c-section after failed induction for hypertension
- No significant medical concerns reported by parents or review of medical records
- Seen the day prior, reported to have been limp at home
 - COVID +
 - Found to have facial bruising which father reported was possibly from the car seat buckle
 - Child returned to baseline and was discharged home to parents

Physical exam

- Unresponsive to exam
- Intubated and sedated
- Bruising noted to chin and upper chest

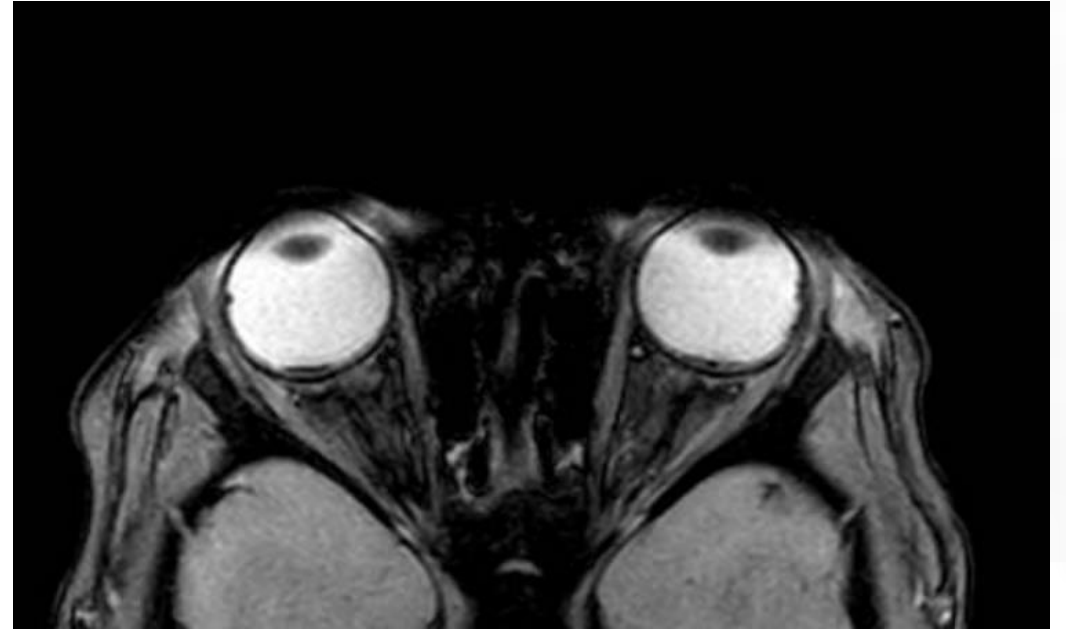


Head CT



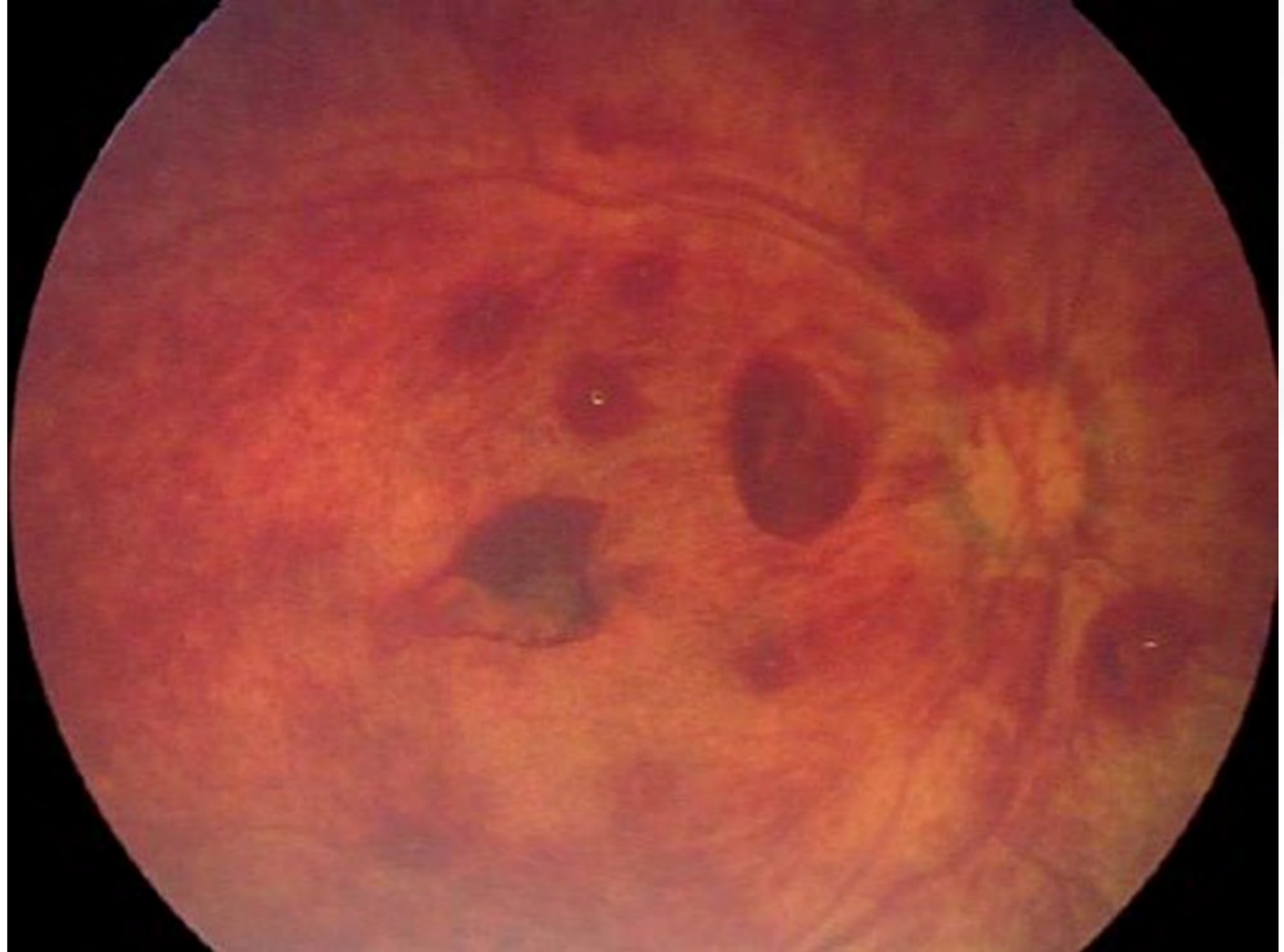
MRI

- Diffuse cerebral edema with infarction and transtentorial herniation
- Subdural hemorrhage along the falx, tentorium and convexities



Eye exam

- Diffuse bilateral retinal hemorrhages in multiple layers



Skeletal Survey



Skeletal survey



Differential Diagnosis

- Accident
 - Short fall?
- Medical condition
 - Bleeding disorder
 - Metabolic condition
 - COVID?!

Outcome

- Diagnosed with Abusive head trauma
- Report was made to local CPS/Law enforcement
- Investigation resulted in father being arrested
- Child was declared brain dead three days later
 - Organ donor through LiveOn Nebraska
- Court case pending

Conclusion

- Don't forget to include abuse in the differential, even if family is nice
- TEN-4-FACES
- Bruises cannot be dated

Questions?