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SUSPECTING CHILD SEXUAL ABUSE WHEN THERE IS SEVERE PHYSICAL ABUSE

I have nothing to disclose

Objectives

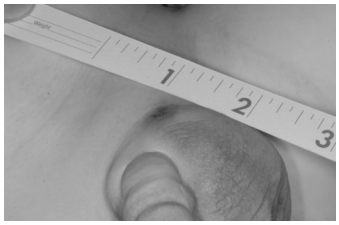
- Analyze a case of severe physical abuse and describe how to take the history, do the physical exam, determine appropriate testing and document the case.
- Explain why sexual abuse should be suspected when there is severe physical abuse.

Background

- Our last webcast reviewed child sexual abuse and how to do the evaluation.
- There are similarities with respect to what needs to be done for cases of suspected child physical abuse.
- Research is limited regarding assessment of multiple forms of abuse.
- There are no limits to the abuse of children and the classifications are our own.

When to consider sexual abuse?

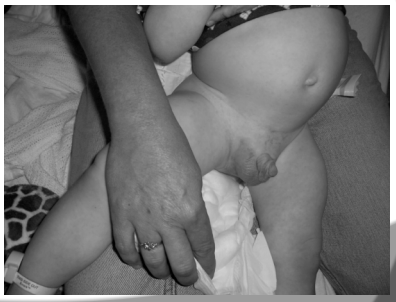
- Signs of injury to the genitalia
- Signs of injury to the rectal area
- Severe physical abuse
- Esophageal perforations
- Burns
- Suicide or suicide attempts, self inflicted trauma
- Situations where sedative drugs were used or potentially used
- Disclosures, behaviors, etc. the usual



Was this physical or sexual abuse?

7 month old with genital injury

At what point is a workup needed for sexual abuse?



Genital Injuries in Boys

- Hobbs CJ, Osman J. Genital injuries in boys and abuse. Arch Dis Child. 2007 Apr;92(4):328-31. Erratum in: Arch Dis Child. 2007 Jul;92(7):657
- 63/86 boys with inflicted injuries
- 19 were sexually abused

Genital Injuries in Boys

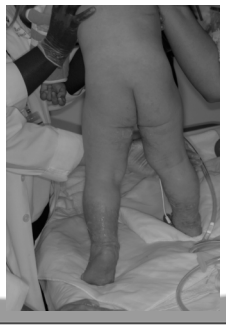
Table 2 Total number of children with various injuries and sites of injury (n = 86)

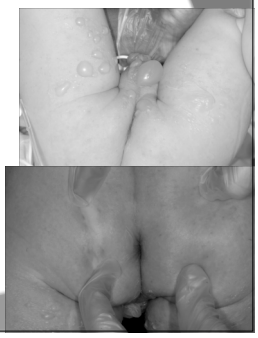
	Glans	Prepuce	Meatus	Shaft	Base	Scrotum	Total number of children
Burn or burn scar	1	2		3		3	7
Bruise/petechiae	9	4		14	6	4	27
Laceration or tear/incised wound or scar		16	1	7	10	2	39
Other (scratches, abrasions with or without non-infective reddening and/or swelling)	5	14	1	7	1	4	27
Total number of children	14	37	2	29	17	12	86

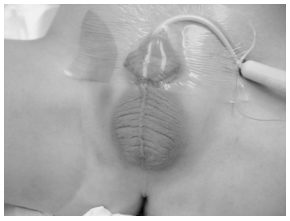
Numbers do not add up because a child may have more than one type of injury and injuries to more than one site.

Does the explanation match the findings?
Was the child wearing diapers (protection) when the injury occurred?

Burns and Sexual Abuse



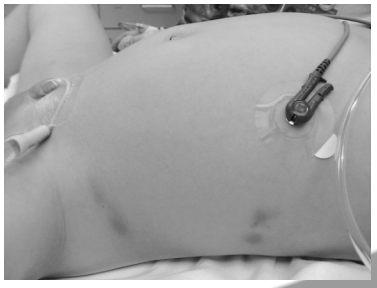




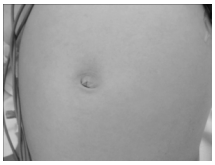
Was there sexual abuse?

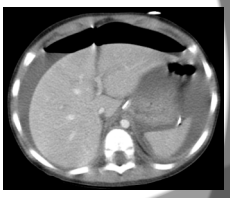
2 year old with a two day history of abdominal pain and bruising

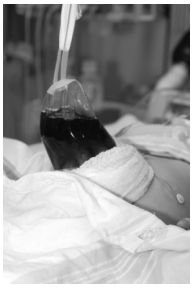
Abdominal injury…



Although little external injury…







- Bowel hematoma, perforation and swelling.
- Treatment included externalization of bowel.

And don't forget sexual abuse!

- Gaines BA, Shultz BS, Morrison K, Ford HR. Duodenal injuries in children: beware of child abuse. J Pediatr Surg. 2004 Apr;39(4):600-2. Review.
- 30 children with abdominal trauma
- All that were less than 4 years old (8) suffered from NAT

Abdominal Trauma

- Abused children are more likely to have hollow viscus injuries or solid organ and hollow viscus injuries than children with accidental injuries.
- Presentation of abdominal trauma is often delayed.

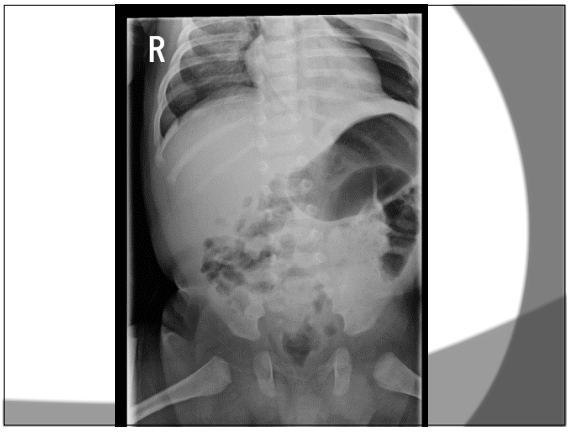
Canty TG Sr, Canty TG Jr, Brown C. Injuries of the gastrointestinal tract from blunt trauma in children: a 12-year experience at a designated pediatric trauma center. J Trauma. 1999; 46:234 -240

What happened between the beatings?

- Consider use of sedatives
  - Pragst F, Herr S, Bakdash A. Poisonings with diphenydramine--A survey of 68 clinical and 55 death cases. Forens Sci Int 2006: 161:189-197.
- Consider (inhaled) street drugs
  - Lewis D. Moore C. Morrissey P. Leikin J. Determination of drug exposure using hair: application to child protective cases. Forensic Science International. 84(1-3):123-8, 1997 Jan 17
- *Consider sexual abuse*

Esophageal Perforations

- Morzaria S, Walton JM, MacMillan A. Inflicted esophageal perforation. J Pediatr Surg. 1998 Jun;33(6):871-3. Review.
- "Since 1984, 21 case studies have described inflicted esophageal perforation. Common mechanisms of injury include foreign body ingestion and blunt or penetrating external trauma."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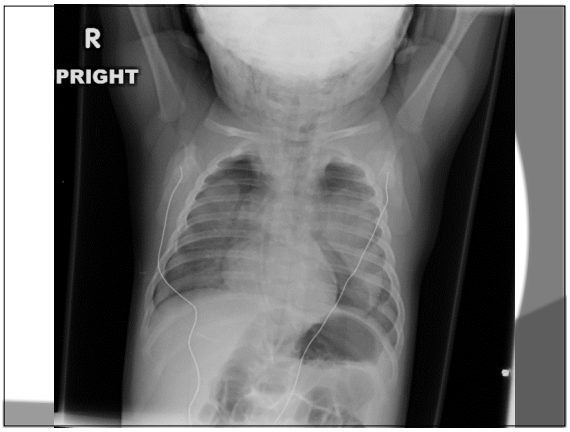
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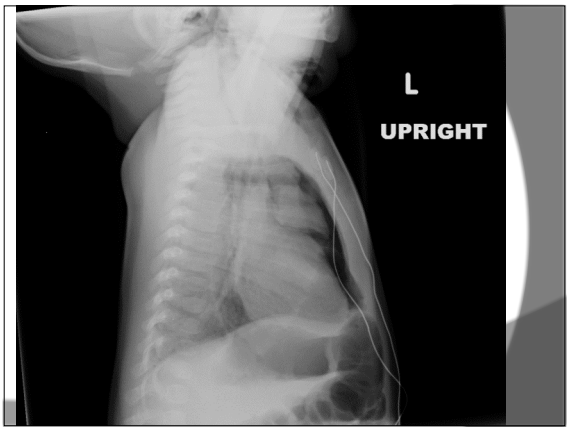
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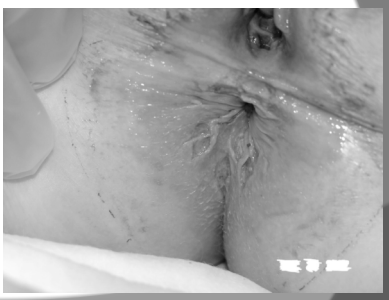
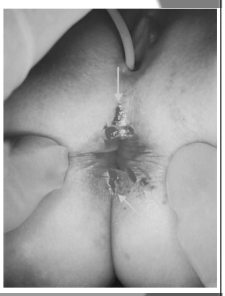
Four year old fatally drowned

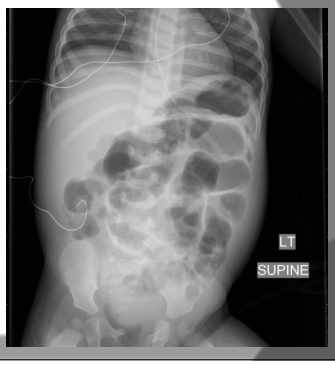


Ano-rectal Injuries: Not all abuse

- Boos SC, Rosas AJ, Boyle C, McCann J. Anogenital injuries in child pedestrians run over by low-speed motor vehicles: four cases with findings that mimic child sexual abuse. Pediatrics. 2003 Jul;112(1 Pt 1):e77-84



1 year old with abdominal distension



First Steps

- Stabilization of the patient
- Recognition of injuries and abuse
- History: “Using quotes whenever possible, the pediatrician should document descriptions of the mechanisms of injury or injuries, onset and progression of symptoms, and the child’s developmental capabilities.”
- Separate histories if possible

Guidelines for Physical Abuse

Physical Abuse Evaluations

What To Do Before You Call the CARE Program
when physical abuse is suspected in a child under 2 years old

- Kellogg ND and the Committee on Child Abuse and Neglect. Evaluation of suspected child physical abuse. Pediatrics.2001; 119 (6): 1232-1241. http://aappolicy.aappublications.org/cgi/content/full/pediatrics;119/6/1232

History

- PMH, FH, pregnancy history
- Discipline issues
- Child temperament, behaviors, development
- History of past abuse
- Substance abuse
- Social history
- History of DV

History

- No explanation or vague explanation for a significant injury;
- An important detail of the explanation changes dramatically;
- An explanation that is inconsistent with the pattern, age, or severity of the injury or injuries;
- An explanation that is inconsistent with the child's physical and/or developmental capabilities;
- Different witnesses provide markedly different explanations for the injury or injuries.

History

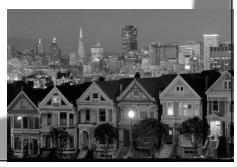
Complete history, including:

- Review of available prior medical records (PMD, ED, Inpatient and CPS) Including growth charts…
- Review prior radiologic examinations that were performed at referring hospitals
- Review prior photographs

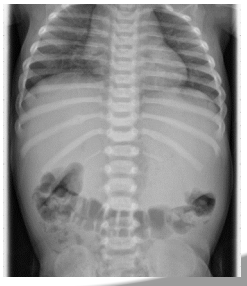
Determine if forensic evidence will be collected prior to bathing and removal of clothing.

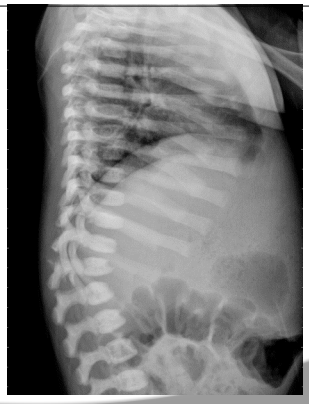
History from our patient

- Lives with mom and dad
- Dad not working outside of home
- Sudden onset of fever and irritability
- Poor oral intake



XRAY at 6 months of age





Physical

- “The physical examination should include detailed documentation, either by body diagrams and/or photographs, of any concerning cutaneous findings and should include a thorough search for other signs that may suggest a nontraumatic cause.”

Physical

Complete physical examination, especially:

- Palpation of legs, arms, hands, feet and ribs to feel for crepitus or deformities
- Inspection of all body parts and thorough skin exam
- Complete neurologic examination
- Oral examination (lip, tongue, buccal) to look for frenula tears or dental injuries
- Auricle exam
- Inspection of the scalp and hair
- Genitalia examination

Don't forget growth parameters or other evidence of neglect!

PE

- Baby is small for age (HC=50th %, Wt=<5th%, Ht= 75%)
- Slight dehydration, irritable
- Distended abdomen with decreased bowel sounds
- Marks on ear and toe
- Rest of PE is normal

Consults

- Hospital Social Work
- Pediatric ophthalmologist; ask for photographs of the retina
- Medical photography when available (even if photos also taken by CPS)
- Request an official radiology reading and upload images
- SANE (Sexual Assault Nurse Examiner) if concern of concurrent sexual abuse ≤96 hrs

Diagnostic tests

Routine tests:

- CBC with platelets, LFTs, amylase/lipase, PT/PTT, UA and stool guaiac
- UDS/Toxicology
- Skeletal Survey

Diagnostic tests

Consider:

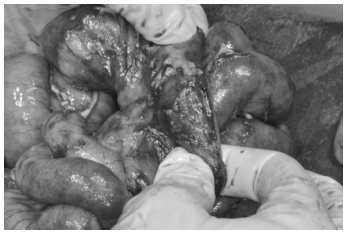
- Brain imaging (CT acutely; MRI for follow-up)
- Forensic Evidence Kit per SANE consult

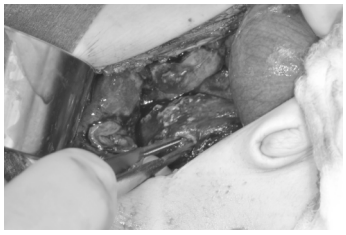
Suspicion of small bowel obstruction

- Confirmed by CT scan but no free air
- Coags and LFTs were normal
- Skeletal survey was negative except for healed ribs and lateral spine
- Retinal exam normal
- CT of brain, normal

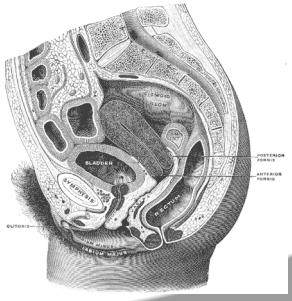
Differential Diagnosis

- Pyelonephritis (positive e coli in urine)
- Abdominal trauma with Small Bowel Obstruction
- Ileus
- Other causes of small bowel obstruction
  - Intraluminal (eg, foreign bodies, bezoars, food bolus)
  - Obstruction resulting from lesions in the bowel wall (eg, tumors, Crohn disease)
  - Extrinsic (eg, adhesions, hernias, volvulus)





Anatomy



Rectal Penetration: Sexual or Physical Abuse?

- Since you cannot tell, the work-up has to be for both.
- Missed opportunity for collection of forensic evidence if sexual abuse is not in the differential

Documentation

- History obtained, from whom and to whom
- Physical findings with drawings and measurements
- Tests ordered and performed and results
- Impression: suspected physical abuse *(and/or suspected sexual abuse)*

Do not attempt to further interpret findings if there will be a child abuse consultation.

- Impact statement to be faxed to CPS or police

Reporting

Call Child Protective Services Hotline
1-800-635-1522 to make a report.

- Ask them to check if there are other children in the home. They must be evaluated by either their PMD or the child abuse expert.
- Ask for a scene investigation, if necessary.

As a licensed professional, you are required to report suspected abuse. A referral to the child abuse expert is not the same as a Hotline report to Child Protective Services.

At discharge from the hospital

- Document head circumference and other growth parameters.
- Make an appointment for follow up with the child abuse expert if available.
- Make appointments with other sub-specialists (possibly orthopedics, neurosurgery and ophthalmology) and PMD.
- Fax script for follow-up skeletal survey to be performed 2 weeks from date of incident.

Further information

- Kellogg ND and the Committee on Child Abuse and Neglect. Evaluation of suspected child physical abuse. Pediatrics.2001; 119 (6): 1232-1241. http://aappolicy.aappublications.org/cgi/content/full/pediatrics;119/6/1232
- Botash AS. Child Abuse Evaluation and Treatment for Medical Providers. 2010 http://www.ChildAbuseMD.com

TABLE 1 Diagnostic Tests That May Be Used in the Medical Assessment of Suspected Physical Abuse and Differential Diagnoses

Type of Injury or Condition	Diagnostic Tests	Comments
Fractures	Skeletal survey: humeri, forearms, femurs, lower legs, hands, feet, skull, cervical spine, thorax (including oblique views[a]) and lumbar spine, pelvis[42]	1. Recommended for all children with fractures and children with any suspicious injuries under age 2 2. Repeat skeletal survey in 2 wk for high-risk cases[42] 3. Single whole-body films are unacceptable
Bruises	Tests for hematologic disorders: CBC count, platelets, prothrombin time, partial thromboplastin time, INR, bleeding time; additional testing (eg, factor levels) may be indicated after initial screening tests	1. Recommended when bleeding disorder is a concern because of clinical presentation or family history 2. A DIC screen should be performed for patients with intracranial injury, because intraparenchymal damage can alter coagulation[43] 3. PFa-100; platelet function activity is preferable to bleeding time for establishing platelet function but is not widely available
Liver injury	Liver enzyme tests: aspartate aminotransferase and alanine aminotransferase	1. May be helpful in diagnosing occult hepatic injury[43]
Pancreatic injury, pseudocyst	Pancreatic enzymes: amylase and lipase	
Urinary system/renal injury	Urinalysis	
Intracranial and extracranial injury	MRI: head/neck	1. Diffusion-weighted scan may surpass CT in characterizing extent of intercerebral edema[44] 2. May provide better dating of intracranial injuries than CT 3. More sensitive than CT for subtle intracranial injuries in patients with normal CT results and abnormal neurologic exams[45] 4. More sensitive than plain radiographs and CT for detecting cervical spine fractures/injury[46]
Intracranial and extracranial injury	CT scan: head[a]	1. When used in conjunction with radiographs, may enhance detection of skull fractures
Intracranial injury	Urine: organic acids	1. Screen for glutaric aciduria type 1
Intra-abdominal injuries	CT scan: abdomen	1. IV contrast should be used and is preferable to PO[42]
Cardiac injury	Cardiac enzymes: troponin and creatine kinase with muscle and brain subunits (CK-MB)	
Skeletal	Radionuclide bone scan	1. Better for acute rib fractures and subtle, nondisplaced long-bone fractures[42]
Osteogenesis imperfecta	Skin biopsy for fibroblast culture and/or venous blood for DNA analysis	
Bone-mineralization disorders: rickets	Calcium, alkaline phosphatase, phosphorus, vitamin D, and parathyroid hormone	

Tests should be ordered judiciously and in consultation with the appropriate genetics, hematology, radiology, and child abuse specialists. Careful consideration of the patient's history, age, and clinical findings should guide selection of the appropriate tests. CBC indicates complete blood cell; INR, international normalized ratio; DIC, disseminated intravascular coagulation; CT, computed tomography; IV, intravenous; PO, oral; CK-MB, creatine kinase MB band.

[a] CT scanning may provide clinically relevant information more expeditiously than MRI in some facilities.

When is it sexual abuse?

- Genital trauma
- Burns
- Esophageal perforation
- Rectal perforation
- Abdominal trauma
- Self inflicted or suicide
- Head injury?
- Other

Keep an open mind; there are no limits to abusive trauma.

For the Child Abuse Medical Provider Program

www.CHAMPprogram.com

December 2010