

Presenter

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Topic

Abdominal trauma

Why this case is of interest

The case brings up the question of whether a rectal tear can be from abdominal trauma.

Case summary

A 24-month-old female presents with a two-month history of suspicious bruising and a suspicion of sexual abuse due to sexual gestures. On the day of admission, she has multiple bruises to the face, chest, abdomen, hip and perineal area. She is noted to have an abrasion on the anus at the 9 o'clock position while lying supine.

Further evaluation, including laboratory tests, reveals elevated LFTs and free air in the abdomen. A CT scan shows pneumoperitoneum and a perforated duodenum that is repaired in the operating room.

Key learning points

1. Abdominal trauma may be insidious.
2. Inflicted injury is the most common cause of perforated bowel in this age group.
3. Rectal or anal tears suspicious for penetrating anal trauma may be due to intra-abdominal pressure due to abdominal trauma.

Summary of literature

Gaines BA, Shultz BS, Morrison K, Ford HR. Duodenal injuries in children: Beware of child abuse. *J of Pediatric Surgery*. 2004;39:600-602.

An 8-year retrospective review of a pediatric level 1 trauma center database revealed 30 children admitted for injury to the duodenum (20 hematomas, 10 perforations). Most (80%) were boys. The injuries were caused by a variety of mechanisms (collisions with motor vehicles, bicycles and ATVs). All children less than 4 years old were victims of non-accidental trauma. Three of these 8 suffered perforations of the duodenum.

Gaines BA. Intra-abdominal solid organ injury in children: Diagnosis and treatment. *J Trauma*. 2009 Aug;67(2 Suppl):S135-9.

The PubMed Database was used to identify literature on abdominal trauma. Non-operative management is the standard of care. Identification of injury requires a high index of suspicion.

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.

Four children who were run over by a slow-moving motor vehicle are reported to have anogenital findings. Two had hymenal lacerations; two had perianal lacerations.

Trout AT, Strouse PJ, Mohr BA, Khalatbari S, Myles JD. Abdominal and pelvic CT in cases of suspected abuse: Can clinical and laboratory findings guide its use? *Pediatr Radiol*. 2011 Jan;41(1):92-8. Epub 2010 Oct 9.

The charts of 68 children older than 36 months who underwent abdominal/pelvic CT due to suspicions of abuse were reviewed. CT findings were present in 16% of the children. Hypo-active bowel sounds and LFTs greater than twice normal were significantly associated with CT findings. Multiple abnormal physical exam or laboratory findings were also significantly associated with positive CTs.

For more information, see the answer to Test Your Knowledge Case 19

<http://champprogram.com/question/19a.shtml#answer> .