2023 - Blunt Abdominal Trauma

- ATLS review
    - Primary Survey- Airway, Breathing, Circulation, Disability, Exposure, Adjuncts (FAST exam)
    - Secondary Survey- head-to-toe evaluation of the trauma patient, a complete history, physical examination, and reassessment of all vital signs
        - Adjuncts to secondary survey: Labs, Imaging, Abx for open fractures or abdominal penetration, tdap
- Blunt Abdominal Trauma
    - Injury is the most common cause of mortality for children and adults 1-44 years of age
    - The spleen is the most frequently injured organ in blunt abdominal trauma with involvement in up to 46% of blunt trauma cases. Injuries to other organs include: liver (41.7%), kidneys (16.4%), mesentery (15.1%), small bowel (10.1%), large bowel (6.3%), and pancreas (5%). If the pancreas and omentum are involved, typically the spleen is injured as well.
        - Splenic injuries are the most common solid organ injury associated with blunt abdominal trauma due to its highly vascularized parenchyma and location.
            - Treatment is surgical for unstable patients and embolization can be indicated for grade 4 and 5 injuries
        - Liver injuries
            - Non-operative management for blunt hemodynamically stable injuries
        - Small intestine injury
            - Clinical signs can be minimal initially
            - Usually a deceleration injury (e.g. MVC with lap belt)
                - Handlebar injury- think duodenal injury
            - May involve bowel wall and / or mesenteric avulsion with subsequent intraperitoneal bleeding and devascularization of bowel
            - Coexistent lumbar distraction fracture, Chance Fracture, may be present

        - An abdominal seatbelt sign mandates definitive imaging
        - May be missed on early FAST scan and CT abdomen — DPL or repeat examination may be required
    - Trauma tips
        - If you suspect that a trauma patient will need transfer (worrisome mechanism of injury, open fractures, 2 or more long bone fractures, multiple injuries, significant injury to trunk, unstable or abnormal vital signs..ect), stabilize the patient but don't wait for CT or lab results before calling for transfer.
        - Pediatric Trauma- Wolfson, Burns- UF gainesville
        - FAST exam is a valuable tool that we are underutilizing
        - Trauma patients can have negative CT scans and still have underlying pathology requiring observation admission
        - Fluid in the abdomen after trauma is very worrisome even if not read by radiology as blood.

- Physical Examination Sensitivity for Skull Fracture in Pediatric Patients with Blunt Head Trauma: A Secondary Analysis of the National Emergency X-Radiography Utilization Study II Head Computed Tomography Validation Study - PubMed (nih.gov)
    - Physical exam alone is not sufficient at ruling out pediatric skull fracture
- Sensitivity of modern multislice CT for subarachnoid haemorrhage at incremental timepoints after headache onset: a 10-year analysis | Emergency Medicine Journal (bmj.com)
    - Noncontrast CTs performed within 48h of onset of headache on modern 3rd generation scanners were 99% sensitive for SAH
- Excluding Hollow Viscus Injury for Abdominal Seat Belt Sign Using Computed Tomography - PubMed (nih.gov)
    - The prevalence of hollow viscus injury among patients with an abdominal seat belt sign and negative findings on CT is extremely low, if not zero.
- (1) Hip Reduction Techniques - YouTube
    - 2 minute video- 6 hip reduction techniques

- Mechanism of injury and special considerations as predictive of serious injury: A systematic review - Lupton - 2022 - Academic Emergency Medicine - Wiley Online Library
    - The factors most predictive of serious injury across multiple studies were death in the same vehicle, ejection , extrication, lack of seat belt use, high speed, falls from height, and axial load or diving.
- Impact of Macintosh blade size on endotracheal intubation success in intensive care units: a retrospective multicenter observational MacSize-ICU study | SpringerLink
    - Better first pass success with Mac 3 than Mac 4 blades