Foundations Frameworks

Approach to Pediatric Abdominal Pain

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Abdominal pain in kids is even more challenging of a chief complaint than with adults. The differential is very broad and varies based on age, and a complaint of abdominal pain may actually represent disease outside the abdomen (e.g. lower lobe pneumonia). Additionally, the history may be limited and a good physical exam can be difficult. Some strategies to approach this include:

1. *Observe activity:* Is the child lying still (suggests peritonitis), writhing around (suggests colicky pain), or playful (suggests non-emergent or intermittent etiology)?
2. *Observe consolability:* The consolable child likely has a non-emergent cause, while the inconsolable child is more concerning. If the child is withdrawn or stays away from their parent, this suggests possible abuse.
3. *Ask about frequency:* The differential changes if the pain is intermittent or constant.
4. *Recruit caregivers:* If the child is too upset by the provider, have caregivers perform exam maneuvers (e.g. MD observes while mom palpates the patient's abdomen).

Imaging

Abdominal XR: Commonly used due to ease and low radiation exposure but is limited by low specificity and sensitivity for most etiologies of pain. Look for:

Bones: fractures/child abuse, scoliosis, osseous tumors, etc.
Stones: appendicolith, kidney stones, calcified gallstones, etc.
Masses: soft tissue tumors, intussusception, radiopaque foreign bodies, etc.
Gases: constipation, dilated bowel loops, Hirschsprung, volvulus, etc.

Ultrasound: Useful in (thin) kids and no radiation exposure, but user-dependent and focused; you need to know what you're looking for, and these may be best at high-volume centers.

CT: Used rarely in kids due to radiation exposure but has similar sensitivity and specificity to CT in adults. Some centers may defer imaging in kids if CT is the only option.

MR: No radiation exposure, but decreased bowel definition compared to CT, and kids may require sedation to tolerate it.

Age-based Considerations

Infant (< 2 yo)	Preschool (2-5 yo)	School age (> 5 yo)	Adolescent
Congenital (malrotation, volvulus, Hirschsprung, atresias, malabsorption syndromes, etc.) *Tumors* (Wilms) *Infectious* (appy [rare], NEC) *Masses* (pyloric stenosis, hernias) *Child abuse*	*Infectious* (gastro, UTI, appendicitis, lower lobe pneumonia, strep, etc.) *Anatomic* (constipation, intussusception, Meckel, etc.) *Inflammatory* (HSP, IBD, nephrotic syndrome) *Tox* (meds, toxins, lead, latrodectism, etc.)	*Infectious* (similar) *Anatomic* (similar) *Metabolic* (DKA, HHS) *Inflammatory* (IBD, PUD)	*Infectious* (similar, also consider STI/PID) *Tumors* (ovarian, testicular) *Gynecologic* (torsion, mittelschmerz, STIs, pregnancy/ectopic, dysmenorrhea, imperforate hymen) *Testicular* (torsion, epididymitis/orchitis)

References:

- Baren J et al. *Pediatric Emergency Medicine*. Chapter 182 “Abdominal Pain” p. 1266. Saunders 2008.
- Gala P. and Posner J. *Pediatric Emergency Medicine Secrets*, 3e. Chapter 5 “Abdominal Pain,” pp. 47-53. Saunders 2015.