Acute Abdomen in Pediatrics

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Case 1

• History
  – 5-week-old male brought into ED by his parents.
  – The parents report a several day history of projectile vomiting, despite changing his formula and beginning reflux medicine. The mother states he is always hungry and vomits after nearly every bottle. He has had no fever, diarrhea or constipation. She denies bilious or bloody emesis.
  – Born at term, weighing 7 lbs, 5 oz. Weight in the ED was 8 lbs, 3 oz.
  – Until the recent onset of projectile vomiting, he had been healthy and achieving good weight gain.
Case 1

• Physical exam
  – WNWD male infant in no distress. He is sleeping but arouses easily.
  – VS are normal.
  – AF is soft and flat, not sunken.
  – Mucus membranes are tacky but not dry.
  – Heart sounds and lung sounds are normal.
  – The abdomen is soft, not distended, nontender. There is no palpable abdominal mass.
Case 1

• Labs
  – CBC normal
  – BMP - Sodium and potassium were normal at 137 and 5.4
    • Chloride was low at 93 and CO2 elevated at 30.8.
Case 1

• Radiology
  – Pyloric ultrasound was ordered. The ultrasound showed the pyloric muscle to be abnormally thickened and the pyloric channel elongated to 18 mm.

• Pediatric surgery was consulted and Miles was admitted to the hospital for rehydration and surgery.
Case 2

• History
  – 8 month old male presents to the emergency department with six hours of stomach pain. He awoke at 0400 crying. His mother carried him and he settled down after a few minutes and then fell back asleep. Over the next few hours, he woke up intermittently crying.
  – His appetite has been poor since the onset of these symptoms.
  – He is less playful than usual. He would sometimes draw his legs up crying. There is no fever, cough, or runny nose. There is no history of abdominal trauma.
  – Patient had 11 episodes of emesis. It appears to be formula, nonbilious. She had 3-4 stools, which had dark red blood.
Case 2

• Physical Exam:
  – VS normal. He is awake, alert, and being carried by mom. His skin is pink with good perfusion and brisk capillary refill.
  – HEENT, Lung and cardiac exams are normal
  – Abdomen is soft and not distended, with normoactive bowel sounds, and no masses noted. It is difficult to determine if any abdominal tenderness is present.
  – Exam is otherwise normal
Case 2

• Radiology
  – An abdominal series reveals a soft tissue density in the right lower quadrant. The bowel gas pattern is abnormal. There is a focally dilated loop of centrally located small bowel in midabdomen. In the right midabdomen laterally is an unusual small focal air collection of uncertain significance. There is little in the way of colonic gas present. Intussusception is suspected.
  – US: Sonographic assessment of the four abdominal quadrants and chemical abdomen does confirm presence of intussusception showing typical bull's-eye sign within the periumbilical abdomen. This abnormality persists into the left upper quadrant.
  – Contrast enema: A water-soluble contrast enema is performed. An intussusception is identified at the hepatic flexure. The ileocolic intussusception is successfully reduced. There was reflux of the contrast into the ileum.
Case 3

• History

– Previously healthy 2 year WF female who what in her usual state of health until about 2 days prior to presentation. Had emesis x2, 1 hard stool with blood.

– On the evening of presentation to the ED she had increased abdominal pain. Mother gave her a warm bath and she had emesis x2. Emesis described as food, chocolate milk and grapes. She had a regular bowel movement, nonbloody/ nonmelenotic. Her abdominal pain worsened therefore mother brought her to ER for evaluation. She left her house around 11:30pm for the ER.
Case 3

• Physical Exam
  – On initial evaluation she was awake, alert, age appropriate, pale in appearance, clammy, hot with dry skin but MMM. Tachycardic and ill appearing.
  – Cardio-respiratory exams were normal.
  – Abdomen was distended but soft, No HSM mass. ED record dose not describe tenderness. Consultation describes abdominal tenderness.

• Labs
  – CBC remarkable for WBC = 31.1, Hb = 14.5, Platelet = 515k
  – CMP remarkable only for hyperglycemia.
Case 3

• Radiology
  – KUB read as probable bowel obstruction. Dilated small bowel and what appears to be the cecum projecting over the upper abdomen. Concern for cecal volvulus/malrotation.
  – US No identifiable intussusception. Nonvisualization of the appendix. Dilated bowel with prominent wall seen in the right lower quadrant, indeterminate whether this reflects colon or small bowel.
  – UGI: Contrast was placed into the stomach through a nasogastric tube. The stomach appeared normal. Contrast flowed through the pylorus and duodenal bulb into the descending duodenum. There was abrupt cessation of flow of contrast in the third portion of the duodenum where a slight corkscrew appearance was noted.
Case 4

• History
  – 8 year old male with 3 day history of worsening abdominal pain. Gradually worsening.
  – The pain was initially felt in the periumbilical area but migrated to the RLQ. Non-radiating. Aggravated by motion. The symptoms are relieved by lying still.
  – Associated symptoms have included: anorexia and nausea.
Case 4

• Physical Exam
  – VS normal, afebrile
  – WNWD, NAD
  – HEENT, lung and cardiac exams normal
  – Abdomen - flat and non-distended. TTP without R/G rigidity
Case 4

• Radiology
  – CT ABDOMEN/Pelvis:
    • Lung bases/liver/GB and biliary system normal
  – Pancreas/adrenals/kidneys normal
  – Bowel: Appendicolith. Distended appendix consistent with acute
  – IMPRESSION: Somewhat limited by motion. Findings consistent with acute appendicitis, with appendicolith.
Case 5

• History
  – 12-1/2 year, 5 month old female presented to ED with 1-2 day history of suprapubic abdominal pain.
  – No nausea/vomiting/diarrhea.
  – The pain started approximately 1-2 days ago and has been persistent.
  – She has not started menstruating.
  – PMH (-), ROS otherwise (-)
Case 5

- Physical Exam
  - VS normal, afebrile
  - WNWD, NAD
  - HEENT, lung and cardiac exams normal
  - Abdominal exam: Flat, ND, TTP with palpable mass in the left suprapubic region
Case 5

• Radiology
  – KUB - There is a normal bowel gas pattern. There is no evidence of obstruction. No abnormal densities seen within the abdomen.
  – US
    • Uterus: 6.4 x 4.2 x 2.1 cm. No mass. Endometrium: 8 mm. Cervix: Unremarkable. No mass.
    • Right ovary: 9.2 x 7.3 x 5.8 cm structure demonstrating solid and cystic components. This could represent enlarged right ovary. Doppler flow is present.
    • Left ovary: 3.8 x 2.5 x 2.4 cm. Left ovary is unremarkable in appearance. Doppler flow is present.
    • Free fluid: Small amount of free fluid is present in the right adnexal region as well as in the cul-de-sac.
    • IMPRESSION: Solid and cystic appearing structure in the pelvis could represent an abnormal, enlarged right ovary or mass arising from the right ovary. It measures approximately 9.2 x 7.3 x 5.8 cm. Other pelvic mass not fully excluded. Intermittent ovarian torsion is a possibility although at time of examination Doppler flow is present. Small amount of free fluid is present.
Case 5

• Radiology
  – CT pelvis

• Large pelvic mass is once again identified measuring approximate 7.5 x 6.1 x 8.4 cm by CT. Mass lies mostly posterior to the uterus with anterior displacement of the uterus. It is difficult to determine whether this arises from the right or left ovary. By ultrasound appearance suggested in the right ovarian origin but CT actually favors left. There is what probably represents right ovary on image 68 of series 3 measuring 4.0 x 2.7 cm.

• IMPRESSION: Large pelvic mass once again identified as detailed above. By CT the mass/abnormal ovary actually appears to arise from and/or represent the left ovary. No additional information is obtained from the CT examination.
Case 6

• History
  – 12-year-old s/p bike accident. The child crashed while riding while on a bicycle, resulting in trauma to the lower abdomen with the handlebars.
  – He had immediate vomiting and was taken to the ED
  – He had a low grade fever and received IV antibiotics.
Case 6

• Physical Exam
  – VS: normal BP, mild tachycardia, T=100.7
  – WNWD, alert, uncomfortable
  – HEENT, Lungs cardiac exams normal
  – Abdomen: Distended, diffuse tenderness and guarding with rigidity,
  – Otherwise normal
Case 6

- Labs:
  - Na: 137 Cl: 102 BUN:18 K: 4.4 BUN: 27 Cr: 0.94 Glucose: 211
  - WBC: 17.8 H/H 13.3/40.8 Plt: 285
  - Lipase: 121
- Radiology
  - CT ABD/PELVIS: Abnormally dilated appendix with mild periappendiceal free fluid and fat stranding. Small amount of extraperitoneal free fluid along superior bladder. Minimal contrast enhancement within the lumen of the bladder on the right.