GI Imaging

Abdominal XR

Description	• Radiography • Positions: PA upright most common • **Left lateral decubitus** can be used for closer evaluation of peritoneal free air or to look for air trapping
Used to Evaluate	• Abdominal pain • Constipation • Abdominal distension • **Vomiting** • Concern for **mass** • Concern for **ingestion**
Potential Pathology Visualized (finding)	• Ileus, bowel obstruction (dilated loops of bowel) • Foreign body • Constipation (stool burden) • Necrotizing enterocolitis, bowel ischemia (pneumatosis, pneumoperitoneum, air in the biliary tree) • Bowel perforation (free air under diaphragm)
Patient Prep	None

Modified Barium Swallow

Description	• Videofluorography to evaluate the function of the **phases of swallowing** • Barium impregnated foods of **different consistency** are given to the patient and swallowing function assessed indications
Used to Evaluate	• **Dysphagia** • Coughing, choking, drooling with swallowing • **Aspiration PNA**, known or suspected • Neurologic or anatomic disease that may affect swallowing function
Potential Pathology Visualized (finding)	• Swallowing dysfunction, e.g. aspiration or laryngeal penetrationo • Anatomic anomalies (esophogram, UGI series or endoscopy may be better depending on the structural anomaly)
Patient Prep	• NPO for several hours (check BMC or BCH policies) • Patient needs to be able to cooperate with exam (needs to be able to attempt swallowing when fed)

Upper GI Series (with small bowel follow through)

Description	• Single (oral) contrast study with still or fluoroscopic images • Double contrast (oral + gas) can help evaluate mucosal integrity • Esophagus (esophogram) → doodenal-jejunal junction (upper GI series)
Used to Evaluate	• Abdominal pain, epigastric pain/discomfort • Congenital syndromes associated with intestinal **malrotation** • Weight loss or failure to thrive • Vomiting • Upper GI bleed • Bowel dilation in short bowel syndrome patients • Anastomotic stricture or abnormality in post-surgical short bowel syndrome patients
Potential Pathology Visualized (finding)	• Malrotation • Hiatal hernia • Gastritis, duodenitis, peptic ulcer disease • Duodenal laceration or intramural hematoma • Pyloric stenosis (though ultrasound is preferred) • Bowel dilatation post-surgery • Anastomotic abnormality
Patient Prep	• NPO for at least two hours • Must be able to swallow contrast • Contrast may be placed through an enteral tube if small bowel follow through is desired

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Abdominal Ultrasound (with doppler)		
Description	U/S evaluation of liver, gallbladder, spleen, pancreas, kidneys, and IVC/aorta	
Used to Evaluate	• Abdominal trauma --> FAST exam evaluates for abdominal fluid/blood • Abdominal pain • Splenomegaly or reversal of portal flow in patients on chronic parenteral nutrition as a surrogate marker or portal hypertension	
Potential Pathology Visualized (finding)	• **Intussuscep.** • **Pyloric stenosis** • **Appendicitis** • Suspicion for abdominal mass	• Liver/gall bladder pathology • Pancreatitis • Nephrolithiasis • Ovarian cyst, torsion, ectopic pregnancy
Patient Prep	• None • NPO for 6 hours (if looking for gallstones)	
Abdominal CT		
Description	• Cross sectional imaging of abdominal structures • Both IV and oral contrast can be used	
Used to Evaluate	• Colicky pain • Abd trauma (once stable) • c/f cancer, liver dz • Features of SI Crohn's disease (fistula, stricture, abscess)	
Potential Pathology Visualized (finding)	• Nephrolithiasis, **urinary tract calculi (non-con)** • Pelvic or abdominal masses (contrast) • Inflammatory bowel disease • SBO/LBO	• Diffuse liver disease (steatosis, iron deposition disease, cirrhosis) • Appendicitis • Abdominal trauma
Patient Prep	Oral or IV contrast as indicated	
Contrast Enema		
Description	• Contrast agent per rectum • **Water-soluble** (gastrograffin) if **bowel perforation** suspected • **Air** if **intussusception** suspected	
Used to Evaluate	• Inflammatory bowel disease • c/f obstruction • Anastomotic stricture or abnormality in post-surgical short bowel syndrome patients	
Potential Pathology Visualized (finding)	• Lower abdominal obstruction in the neonate (Hirshprung's disease, meconium ileus, ileal atresia) • Intussusception (diagnostic and therapeutic) • Anastomotic abnormality	
Patient Prep	None	