GHAPP
Gastroenterology & Hepatology
Advanced Practice Providers

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Jointly provided by the Annenberg Center for Health Sciences at Eisenhower and Gastroenterology and Hepatology Advanced Practice Providers.
GI Imaging: Large Intestine & More

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### Susan T Wolgamott, DNP, FNP-C, CTN-B

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Sub-Investigator: Clinical Research Institute of Michigan,

Clinical Area – IBD, IBS-D, IBS-C, CIC, chronic pancreatitis, gastroparesis, GERD, EoE, colonoscopy prep, NASH, cirrhosis, HE, Celiac disease, genetic studies, primary care studies, alopecia areata
Several different types of imaging are used as the standard of care in the diagnosis & management of several conditions including:

- Crohn’s/Ulcerative Colitis
- IBS/Constipation/Diarrhea
- Incontinence/Anorectal dysfunction
- Abdominal & rectal pain
- CRC screening/Malignancy
- Bleeding
X-Ray

- Rapid results
- Inexpensive
- Use with caution in pregnancy
- Used to assess
  - Air fluid levels
  - Perforation
  - Stool burden
  - Fecal Impaction
  - Foreign body
  - Obstruction

A key, 10 AA batteries, underwire bra
Barium Enema

- Used when full colonoscopy is not possible
- To augment CT colonography
- Pre-Op in malignancy
CT Scan Standard

- Abdomen & Pelvis
- With and/or without contrast
- May be done with oral only in renally impaired
- Appendicitis
- Diverticulitis
- Mass
- IBD
- Abscess
- Perforation
- Obstruction
CT Scan Dedicated

- Pancreas
  - Pseudocysts, IPMN
  - Malignancy
  - Chronic pancreatitis
- Liver (Dynamic/Multi-phase)
  - Malignancy
  - Cirrhosis
- Intestines (CTE)
  - IBD
CT Colonography

- Virtual colonoscopy
  - Similar prep as traditional
  - No anesthesia
  - Requires contrast
  - Sensitive to movement
  - Unable to remove/sample polyps
  - Option for high-risk patients

Figure 2. 3D-type reconstruction of endoscopic images (2A and 2B) showing multiple polypoid nodulations in the right colon wall and injuries superimposable to those visible on optical colonoscopy (2C and 2D). Imaging: Large Intestine & More.
Capsule Colonoscopy

- Studies ongoing
- Requires prep
- Real time tracking
- Real time images
- Drug or dye delivery
CT Angiography

- Bleeding
- Mesenteric Ischemia
- Mesenteric Infarct
- MALS
- Complex tumors
Nuclear Medicine Tagged RBC Scan

- Bleeding
  - AVMs
  - Colitis
  - Neoplasms
  - Diverticulosis
  - Hemorrhoids
  - Polyps/polypectomy
- Active bleeding
- Lengthy
- Unreliable
- Stable patient
- Subtle or intermittent

Imaging: Large Intestine & More.
Magnetic Resonance – Abdomen

- **MRCP**
  - Pancreatic disease/malignancy
  - Bile duct dysfunction/obstruction
- **Liver tumors**
- **Crohn’s Disease**
  - Fistulas
  - Abscess
  - Stricture/Obstruction
Magnetic Resonance – Pelvis

- Complicated diverticular disease
- Tumors
  - Malignant or Benign
- Crohn’s Disease
  - Fistulas
  - Abscess
  - Stricture/Obstruction

Imaging: Large Intestine & More.
Magnetic Resonance – Defecography

- Dyssynergistic Defecation
  - Constipation
  - Colonic Inertia
  - Rectocele, prolapse, obstructive syndrome
  - Surgery, Radiation or other trauma
  - Fluoroscopic
Anorectal Manometry (ARM)

- Minor prep
- Patient cooperation
- Often done w/ BET
- Identify cause for:
  - Constipation
  - Diarrhea
  - Incontinence

Imaging: Large Intestine & More.
Anorectal Manometry (ARM)

- Minor prep
- Patient cooperation
- Often done w/ BET
- Identify cause for:
  - Constipation
  - Diarrhea
  - Incontinence
Colon Transit Study (Sitz Marker)

- No prep
- Hold motility drugs
- Done over 5 days
- Constipation
- Colonic inertia

Imaging: Large Intestine & More.
Upper Endoscopic Ultrasound

- Most commonly used to assess upper GI anatomy
  - Pancreatic disease/malignancy
  - Biliary obstruction
- Most often requires general anesthesia
- Able to do biopsies
- Diagnostic standard
Lower Endoscopic Ultrasound

- Less often for Lower GI/pelvic anatomy
  - Pelvic mass
  - Rectal malignancy
  - Fistula
- Most often requires general anesthesia
- Able to do biopsies
- Valuable Pre op evaluation

Imaging: Large Intestine & More.
Endoscopic Retrograde Cholangiopancreatography

- Allows for several interventions
  - Stone removal
  - Stenting
  - Biopsies
- High risk for injury
  - Perforation or bile leak
- General anesthesia

Imaging: Large Intestine & More.
Ultrasound – Guided Procedures

- Paracentesis
- Biopsy
- Drainage/Culture of abscesses
- Minimal prep
- Safe in pregnancy
- Safe in renal impairment

Imaging: Large Intestine & More.