

Evidence Discussion

(AB 13.3)

EviCore
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Radiologic imaging is necessitated by such endoscopic findings as narrowing, external impressions against the gut wall, therapeutic need to understand extent of visualized disease and/or of the origin of an endoscopically-apparent malignancy. Choosing the optimal imaging modality requires consideration of factors such as age, gender, fertility, co-morbidities, medications, and allergies.

- Ultrasound can provide high resolution imaging of the liver, gallbladder, bile ducts, pancreas, spleen, kidneys, and abdominal vasculature. It can also provide information regarding phase and direction of blood flow in arteries and veins via Duplex scanning. Ultrasound requires no ionizing radiation, is readily available being mobile, cost effective, and easier to schedule for same day testing. However, image quality may be limited due to bowel gas (a particular disadvantage in assessment of endoscopically-identified gut lesions), poor acoustic window acquisition, obesity, and sonographer experience level.
- Computed tomography (CT) of the abdomen offers excellent 3-dimensional resolution of the gut and its surrounding structures, especially when performed with use of oral and/or intravenous (IV) contrast agents. CT scan requires a significant dose of ionizing radiation, but is ideally suited to characterizing lesions within the gut because the quick speed of image acquisition reduces the potential for motion artifact.
- Magnetic resonance imaging (MRI) uses a magnetic field to capture excellent 3-dimensional soft tissue resolution. As with CT scans, the technique is often performed with IV contrast agents, and can with specialized techniques be directed either at whole or parts of the abdomen or at specific abdominal structures (examples: MR elastography of liver, MR enterography of small bowel, MR cholangiopancreatography [MRCP] of the biliary and pancreatic system). MRI yields better soft contrast resolution than CT and does not expose individuals to ionizing radiation, but due to longer image time is motion artifact-prone and thus less suited to resolving gastrointestinal detail. MRI has disadvantages in that it may require sedation in those with claustrophobia and in young patients who may be unable to hold still and follow directions. MRI also cannot be performed in those with ferrous magnetic implants or non-removable foreign bodies

References:

1. ACG Appropriateness Criteria, as found at: [acr.org/Clinical-Resources/ACR-Appropriateness-Criteria](https://www.acr.org/Clinical-Resources/ACR-Appropriateness-Criteria)
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