Review Criteria
Georgia Region

KAISER PERMANENTE®

Title:	CT Enterography (CTE)		
Department:	QUALITY RESOURCE MANAGEMENT	Page:	1 of 4
Section:	UTILIZATION MANAGEMENT	Policy Number:	04-13
Type:	( ) New	Effective Date:	10/01/2008
	(X) Reviewed / Revised	Date:	3/20/2017 2/14/2018 2/1/2019 1/2/2020 1/21/2021 1/5/2022 1/30/2023

Purpose
This policy provides the indications and contraindications necessary for the Quality Resource Management staff to make the most appropriate decision related to the medical necessity of the procedure listed.

DIAGNOSIS/CONDITION: Small Bowel Disease and Small Bowel Tumors
DIAGNOSIS ICD-10 and DESCRIPTION: ICD-10- C26.9, D13.2, D13.3, D13.39, K50.00

Please note these services can also be done internally.

CPT-4/ HCPCS CODE AND DESCRIPTION: **74160, 72193, 74177**

1.0 INDICATIONS for CTE

- The detection and evaluation of suspected small bowel disease including Crohn's disease
- If Crohn's is suspected, then CTE would be preferable over capsule endoscopy because of the significant amount of inflammation that could lead to obstruction.
- Imaging changes between CT enterography examinations have excellent potential for reliably monitoring Crohn's disease progression or regression.
- Suspected or known small bowel tumors
- Anemia and GI bleeding with negative upper GI and colon work up
- Suspected small bowel abnormalities, malabsorption

Note:
- **CT enterography is performed internally and should not be sent out.**
- **MR enterography is also performed internally.**
- **CT enterography is not the same as CT Colonography**

2.0 CONTRAINDICATIONS

- Ischemia of the bowel, known or suspected
- Question of perforation and/or free air on a plain abdominal film

3.0 VIEWS OF THE SOUTHEAST PERMANENTE MEDICAL GROUP

CT enterography is an acceptable modality for visualizing the small bowel in suspected cases of Crohns, inflammatory bowel diseases or small bowel tumors. It is also indicated to evaluate obscure cases of GI bleeding when workup including EGD, and colonoscopy fail to reveal a source of bleeding.

4.0 CLINICAL SUMMARY:

Computed tomographic (CT) enterography combines the improved spatial and temporal resolution of multi–detector row CT with large volumes of ingested neutral enteric contrast material to permit visualization of the small bowel wall and lumen. Adequate luminal distention can usually be achieved with oral hyperhydration, thereby obviating nasoenteric intubation and making CT enterography a useful, well-tolerated study for the evaluation of diseases affecting the mucosa and bowel wall. Unlike routine CT, which has been used to detect the extraenteric complications of Crohn's disease such as fistula and abscess, CT enterography clearly depicts the small bowel inflammation associated with Crohn's disease by displaying mural hyperenhancement, stratification, and thickening; engorged vasa recta; and perienteric inflammatory changes. As a result, CT enterography is the first-line modality for the evaluation of suspected inflammatory bowel disease. CT Enterography should supplant traditional fluoroscopy in the assessment of other small bowel disorders such as celiac sprue and small bowel neoplasms.

Capsule endoscopy (Pill endoscopy or video capsule endoscopy) is one alternative for the evaluation of the small intestine. It yields excellent endoscopic images of a variety of pathologies of the small bowel lumen. However, limitations in the field of view and frame rate mean that capsule endoscopy can miss a lesion if it does not capture an image as it passes through an area of disease. Crohn's disease, for example, typically does not involve the entire intestine, and GI bleeding may be isolated to only certain sites. In addition, capsule endoscopy is not easy to interpret. The capsule may take thousands of pictures of the small intestine, which necessitates tedious review. Small bowel follow-through is time-consuming, especially in the case of poor peristalsis or partial obstruction. It achieves poor distention of the bowel because the pylorus restricts gastric emptying. There are frequent blind spots caused by overlying segments of the small bowel as it twists and turns along its >20-foot length. In addition, small bowel follow-through offers no information beyond the mucosal surface of the bowel itself. Enteroclysis is uncomfortable for patients. It can be time-consuming to intubate the patient and achieve bowel distension. It is associated with a moderate level of radiation exposure. Enteroclysis is, however, unequivocally the best test for detecting partial obstruction and

subtle fold abnormalities or masses within the lumen. CT Enterography was found to be complimentary to endoscopy, whether direct or capsule, and was useful for detecting strictures of the bowel that might preclude capsule endoscopy

5.0 REVIEW OF THE LITERATURE:

- **CT Enterography as a Diagnostic Tool in Evaluating Small Bowel Disorders: Review of Clinical Experience with over 700 Cases**
  Scott R. Paulsen, BS, James E. Huprich, MD, Joel G. Fletcher, MD, Fargol Booya, MD, Brett M. Young, BS, Jeff L. Fidler, MD, C. Daniel Johnson, MD, John M. Barlow, MD and Franklin Earnest, IV, MD Radiographics 2006
- **CT enterography of Crohn's disease.**
  Hara AK, Swartz PG. Diagnostic Radiology, Mayo Clinic, 13400 East Shea Blvd, Scottsdale, AZ, 85259, USA, Hara.amy@mayo.edu.
- **Quantitative measurement and visual assessment of ileal Crohn's disease activity by computed tomography enterography:** correlation with endoscopic severity and C reactive protein. J F Colombel[1], C A Solem[1], W J Sandborn[1], F Booya J. *Gut: Journal Of The British Society Of Gastroenterology* Volume: 55 Issue: 11 (2006-01

  > Quantitative measures of bowel enhancement at CT enterography correlate with endoscopic and histological severity. CRP correlates with radiological findings of perienteric inflammation (increased fat density), but not of inflammation limited to the small bowel wall.

- .AJR Am J Roentgenol. 2008 Jun;190(6):1512-6. Using CT enterography to monitor Crohn's disease activity: a preliminary study.
- MR enterography is rapidly becoming the modality of choice for follow up inflammatory bowel disease since there is no radiation to younger patients who may require multiple surveillance scans over time. (Tolan, D.F., (2010) MR Enterographic Manifestations of small bowel Crohn disease. *Radiographics*. 30:367-384.)
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UpToDate: December 2021 Evaluation Occult GI Bleeding

Wireless capsule endoscopy is generally the test of choice for evaluating suspected small bowel bleeding in patients who have had an adequate upper endoscopy and colonoscopy. Its main advantages are that it is noninvasive and permits examination of the entire length of the small bowel most of the time. Its main disadvantages are that it does not permit tissue sampling or therapeutic intervention and that not all of the small bowel mucosa is visualized. Patients at risk for capsule retention should undergo small bowel imaging (e.g., CT or MR enterography) or a patency capsule study prior to capsule endoscopy. A more detailed discussion of capsule endoscopy can be found elsewhere. (See "Wireless video capsule endoscopy".)

CT enterography involves ingestion of a neutral contrast agent to distend the small bowel, followed by CT imaging of the abdomen. Using neutral contrast allows for better evaluation of the wall of the small bowel, which is difficult to see when standard barium solutions are used.

MR enterography is an alternative to CT enterography. It has the advantage of not using ionizing radiation, which allows for sequential imaging of the small bowel. Like CT enterography, a neutral contrast agent (often polyethylene glycol) is used to distend the small bowel.

Other methods available for evaluating the small bowel include push enteroscopy, deep small bowel enteroscopy, and intraoperative enteroscopy. (See "Evaluation of suspected small bowel bleeding (formerly obscure gastrointestinal bleeding)".)

6.0 REFERENCES: - see above

7.0 Expert Opinion - TSPMG Radiology Todd Cramer MD: Regarding CT enterography, KPGA radiology can perform these exams along with MR enterography -- these are routine exams for us and should not be referred externally.

Reviewed on 1/30/23 by Karen Goodlett MD
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