AMSER Case of the Month: August 2019

51 y/o M with abdominal pain in the setting of prior Roux-en-Y gastric bypass and recurring ulcers

Mollie Getzfread, OMS-I

Philadelphia College of Osteopathic Medicine

Pauline Germaine, DO

Cooper University Hospital

Cooper Medical School of Rowan University

Patient Presentation

- HPI: 51 y/o M presents with abdominal pain, weight loss, and iron-deficiency anemia
- PMHx: Roux-en-Y gastric bypass (6 years prior), anastomotic ulcers, ischemic ulcers, DM, chronic systolic CHF (EF: 35%), hyperlipidemia, obesity, class II diabetic neuropathy
- Social Hx: Former smoker, 22 pack-years

What Imaging Should We Order?

ACR Appropriateness Criteria

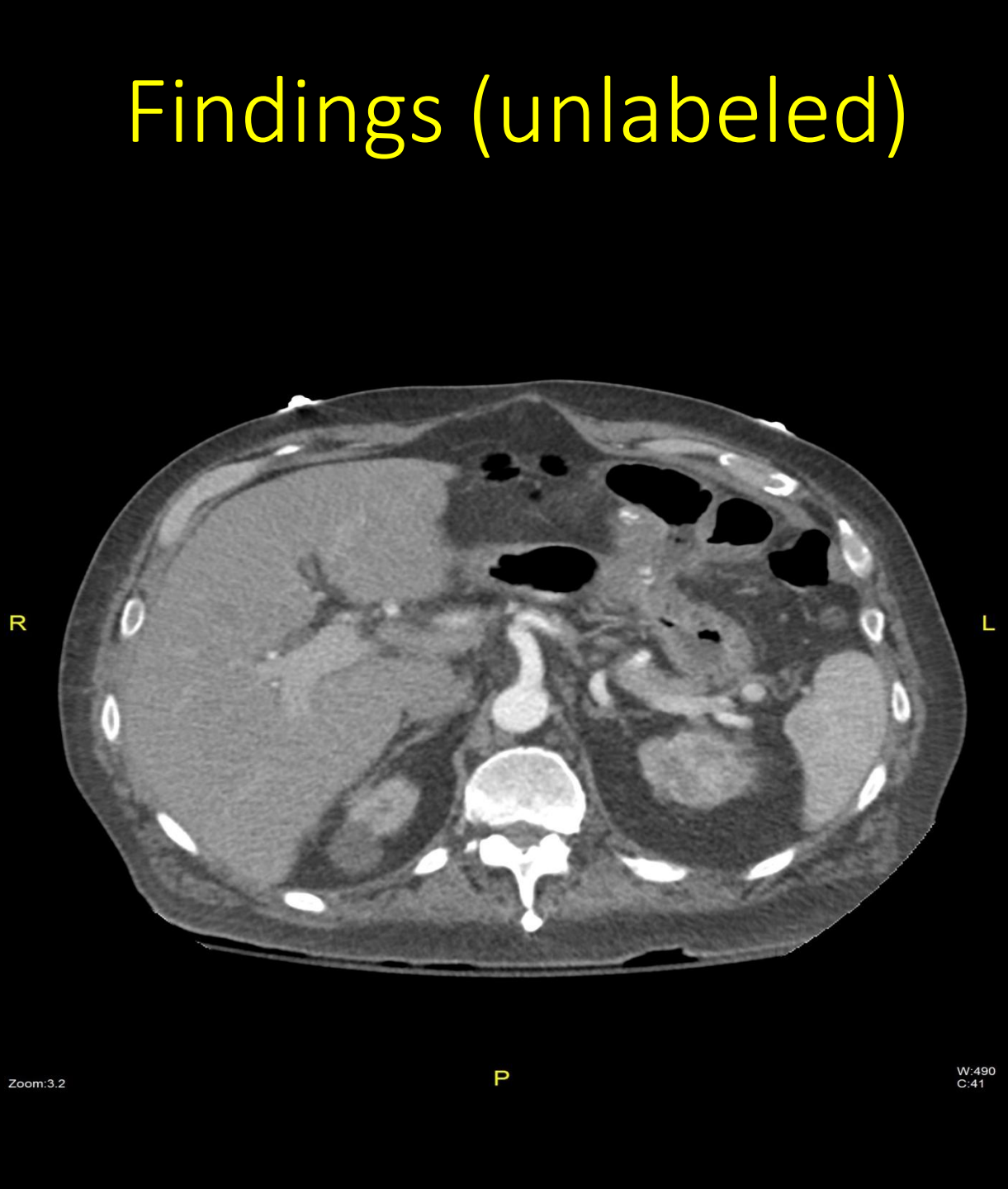
Variant 2: **Acute nonlocalized abdominal pain and fever. Postoperative patient. Initial imaging.**

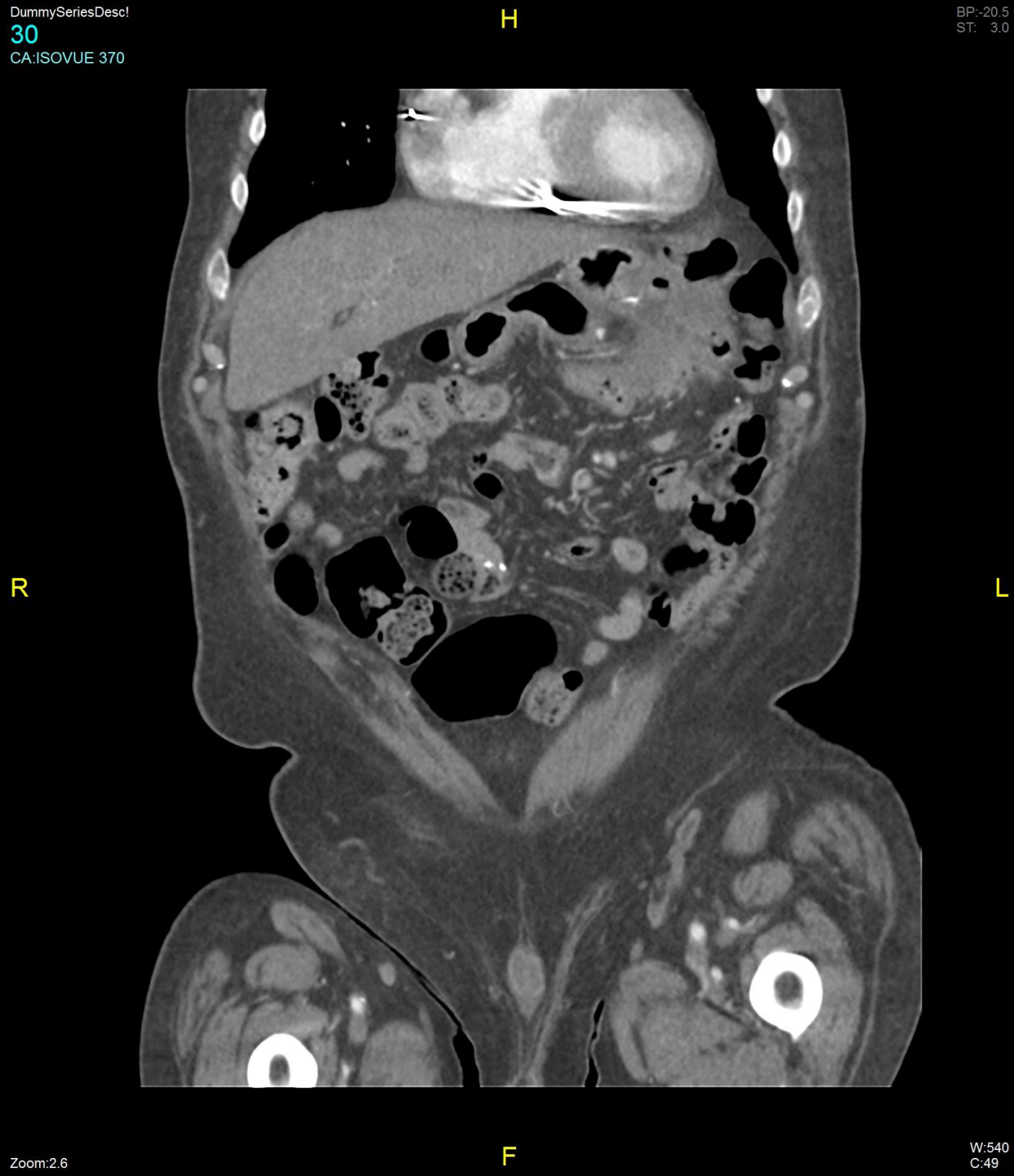
Procedure	Appropriateness Category	Relative Radiation Level
CT abdomen and pelvis with IV contrast	Usually Appropriate	☢☢☢
MRI abdomen and pelvis without and with IV contrast	May Be Appropriate	O
US abdomen	May Be Appropriate	O
CT abdomen and pelvis without IV contrast	May Be Appropriate	☢☢☢
MRI abdomen and pelvis without IV contrast	May Be Appropriate	O
CT abdomen and pelvis without and with IV contrast	May Be Appropriate	☢☢☢☢
Radiography abdomen	May Be Appropriate	☢☢
Fluoroscopy contrast enema	May Be Appropriate	☢☢☢
Fluoroscopy upper GI series with small bowel follow-through	May Be Appropriate	☢☢☢
FDG-PET/CT skull base to mid-thigh	Usually Not Appropriate	☢☢☢☢
In-111 WBC scan abdomen and pelvis	Usually Not Appropriate	☢☢☢☢
Tc-99m cholescintigraphy	Usually Not Appropriate	☢☢
Tc-99m WBC scan abdomen and pelvis	Usually Not Appropriate	☢☢☢☢

This imaging modality was ordered by the physician

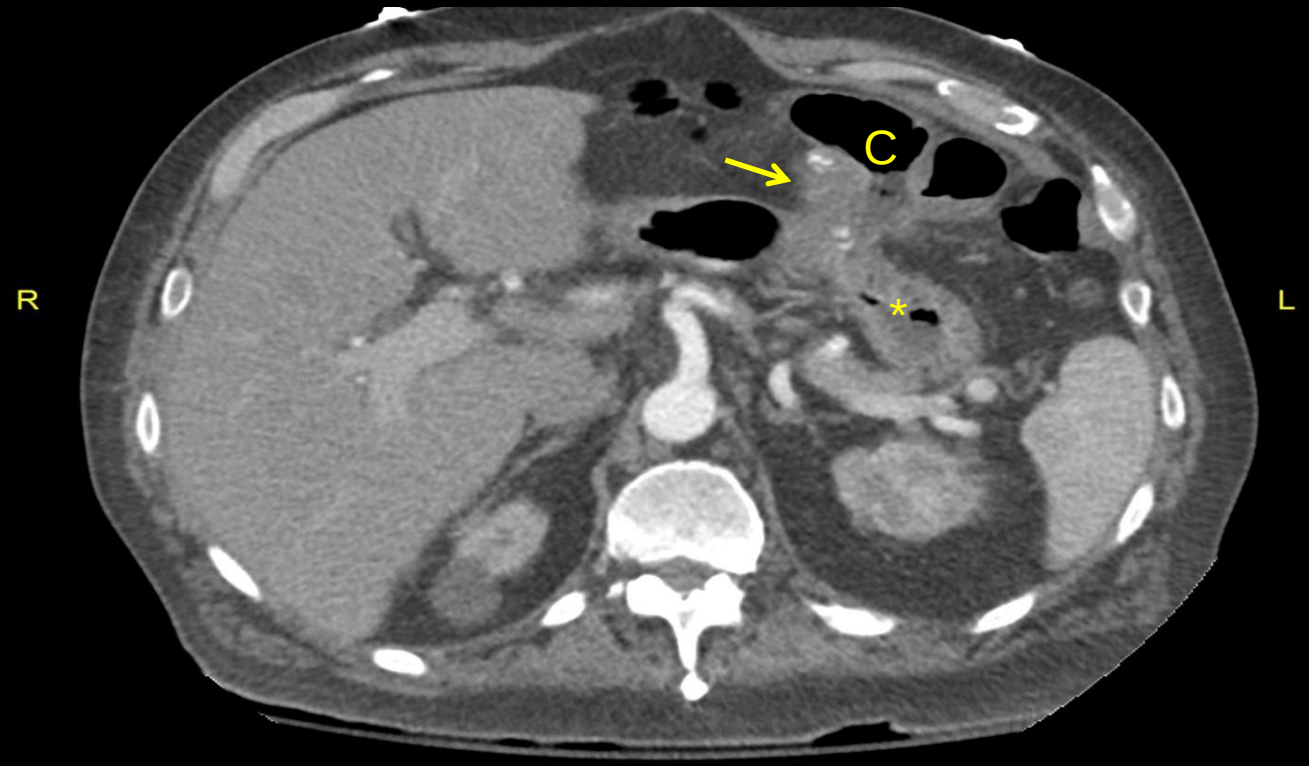
AMSER

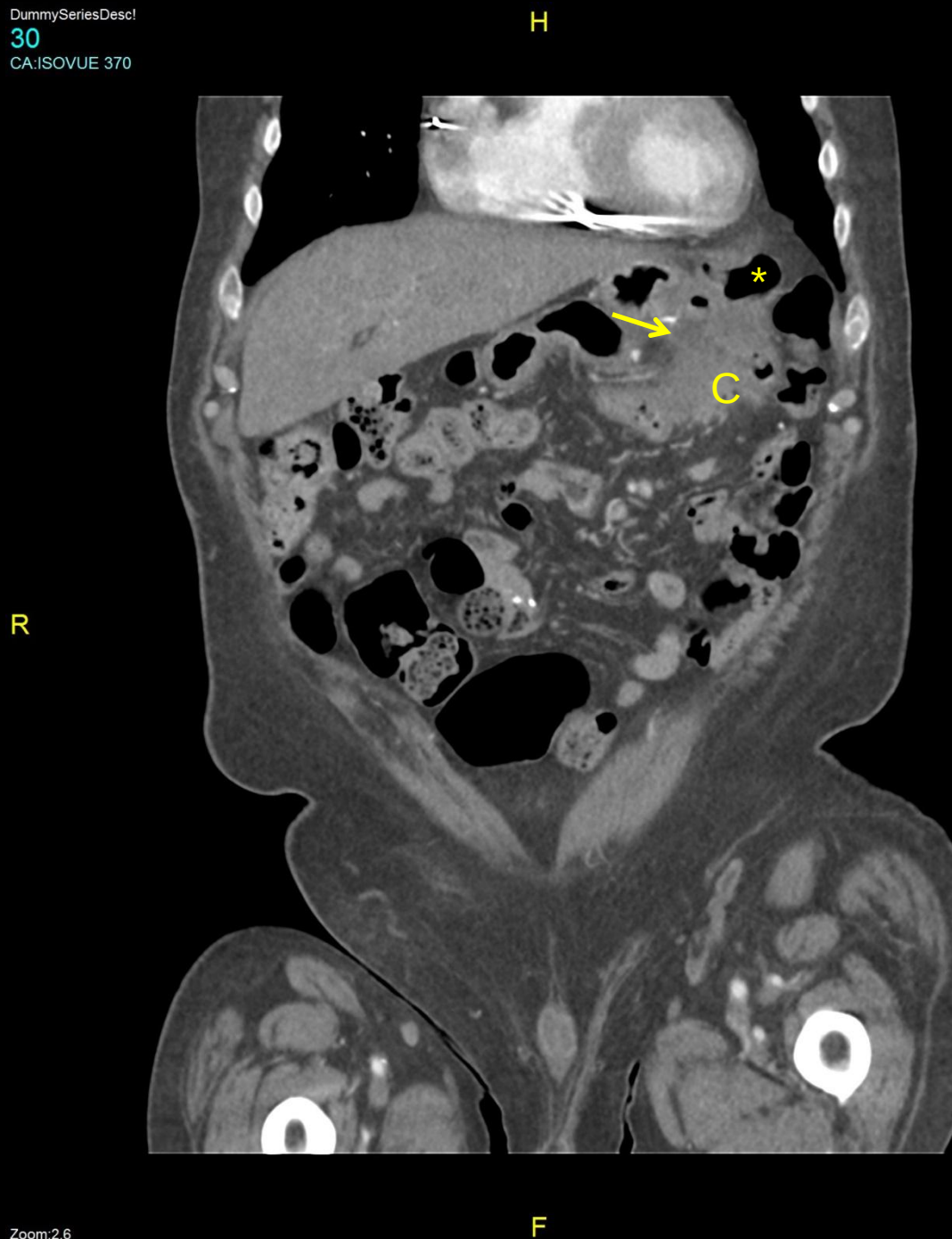
Findings (unlabeled)





Findings (labeled)





The CT showed inflammatory changes (arrow) around the gastric pouch (*) and transverse colon (C). These findings warranted further work-up.

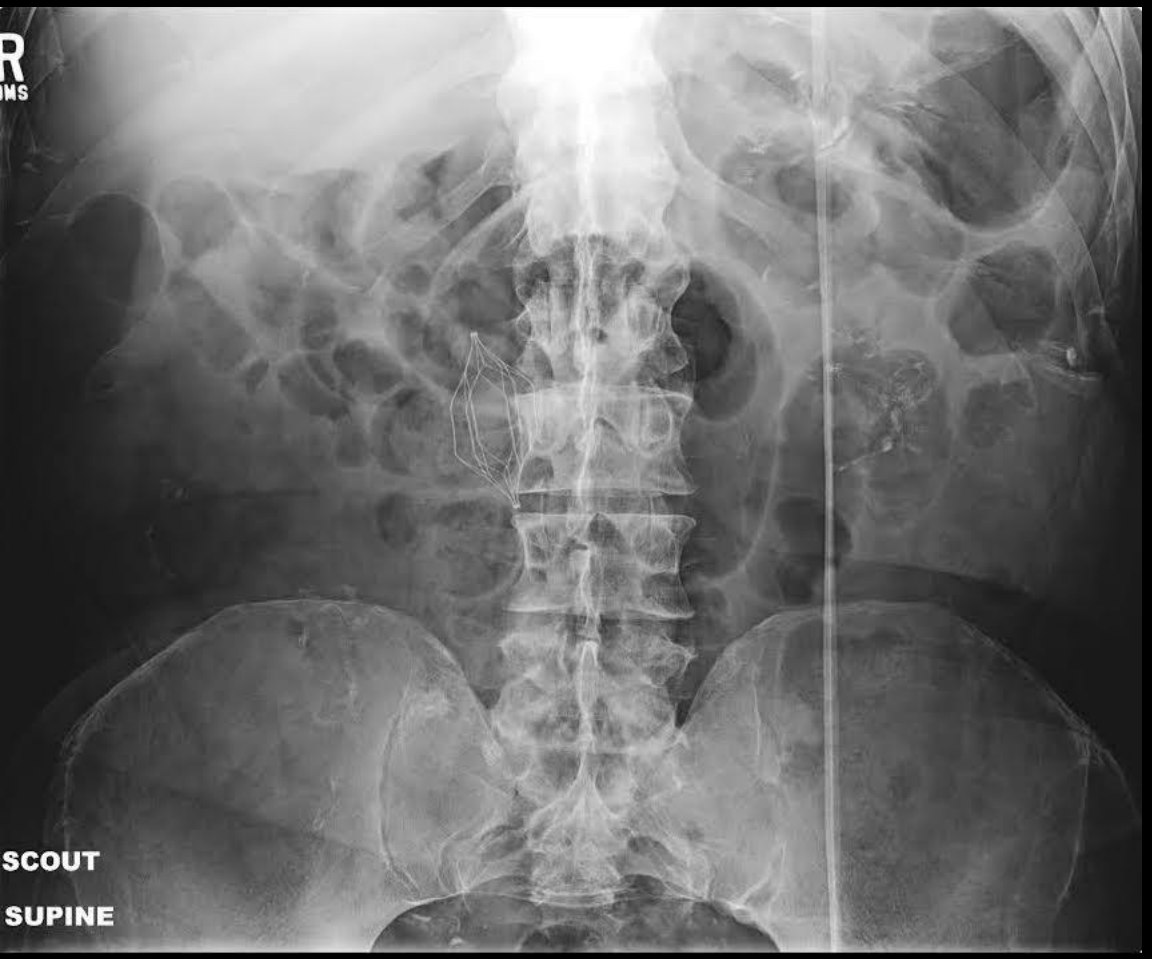
ACR Appropriateness Criteria

Variant 2: **Acute nonlocalized abdominal pain and fever. Postoperative patient. Initial imaging.**

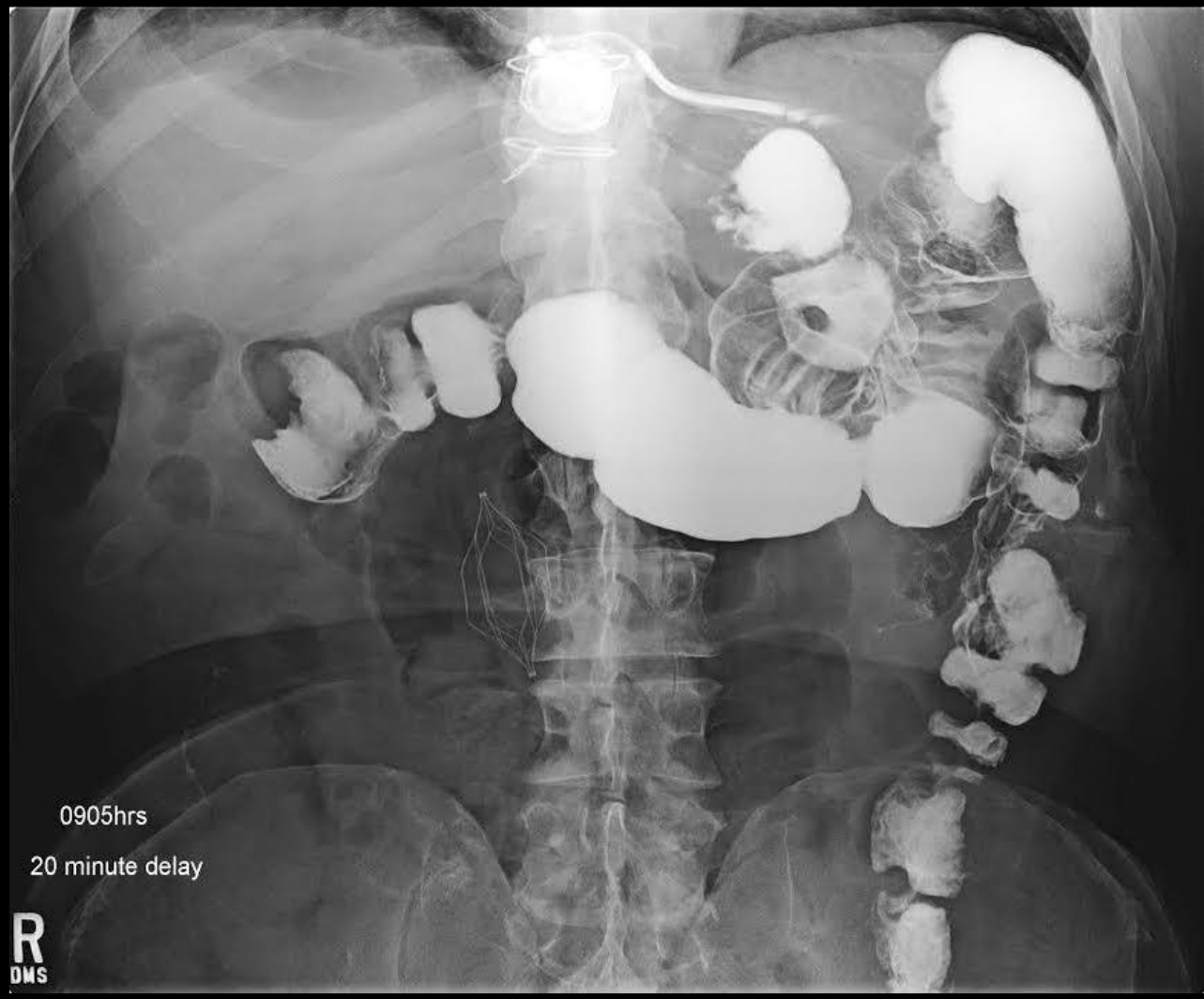
Procedure	Appropriateness Category	Relative Radiation Level
CT abdomen and pelvis with IV contrast	Usually Appropriate	☢☢☢
MRI abdomen and pelvis without and with IV contrast	May Be Appropriate	O
US abdomen	May Be Appropriate	O
CT abdomen and pelvis without IV contrast	May Be Appropriate	☢☢☢
MRI abdomen and pelvis without IV contrast	May Be Appropriate	O
CT abdomen and pelvis without and with IV contrast	May Be Appropriate	☢☢☢☢
Radiography abdomen	May Be Appropriate	☢☢
Fluoroscopy contrast enema	May Be Appropriate	☢☢☢
Fluoroscopy upper GI series with small bowel follow-through	May Be Appropriate	☢☢☢
FDG-PET/CT skull base to mid-thigh	Usually Not Appropriate	☢☢☢☢
In-111 WBC scan abdomen and pelvis	Usually Not Appropriate	☢☢☢☢
Tc-99m cholescintigraphy	Usually Not Appropriate	☢☢
Tc-99m WBC scan abdomen and pelvis	Usually Not Appropriate	☢☢☢☢

Next, this imaging modality was ordered by the physician

Findings (unlabeled)

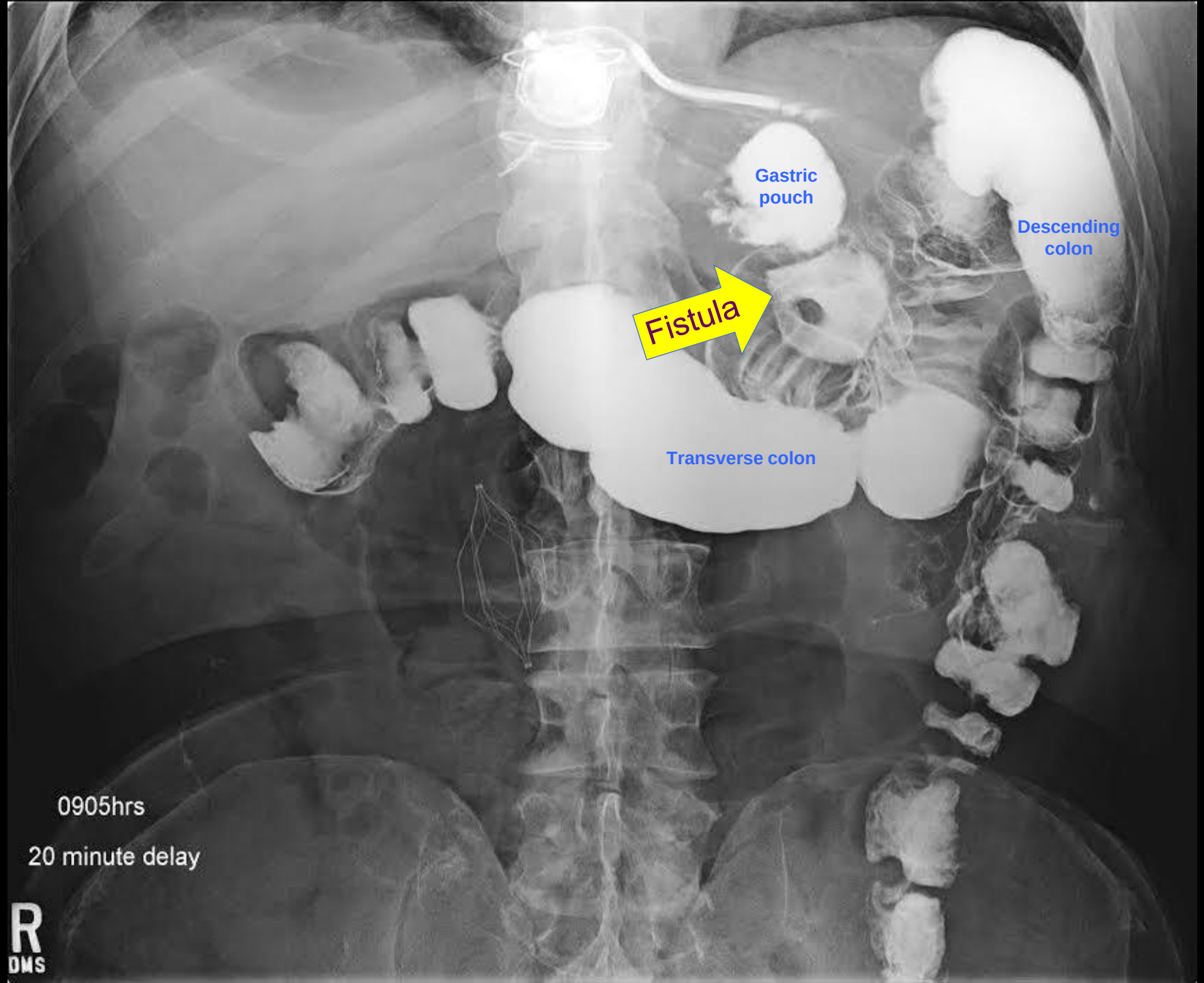


Scout prior to barium administration



Abdominal Radiograph at the end of Upper GI

Findings (labeled)



AMSER

Final Dx:

Gastrocolic fistula following Roux-en-Y gastric bypass

Case Discussion

- The patient underwent surgery to resect a portion of the stomach and a transmural defect consistent with a fistula.
- Following the surgery, the patient gained 100 lbs in 6 months.
- Gastrocolic fistulas are a very rare, late complication of gastric bypass surgery, usually associated with marginal ulcers.
- Other late complications can include gastrogastric fistula, internal hernias, cholelithiasis, nutritional deficiencies and disorders of the remnant stomach.

Case Discussion – Roux-en-Y Gastric Bypass

- Roux-en-Y gastric bypass is the most common bariatric procedure performed today and is routinely used in the treatment of morbid obesity. It aims to reduce the amount of food ingested and absorbed, as well as, to decrease neuroendocrine signals.

- During the surgery (Figure 1), the stomach is cut to create a small gastric pouch (red arrow) which is then attached to the jejunum (blue arrow). The proximal portion of the jejunum (purple arrow) is then joined to the small bowel at an area distally.

- After closure of the upper part of the stomach, the gastric remnant is left in situ to provide opportunities for diagnostic and therapeutic intervention. However, complications can also arise.

- Due to the altered anatomy, acid can injure the jejunum leading to anastomotic ulcers and further complications as seen in this patient.

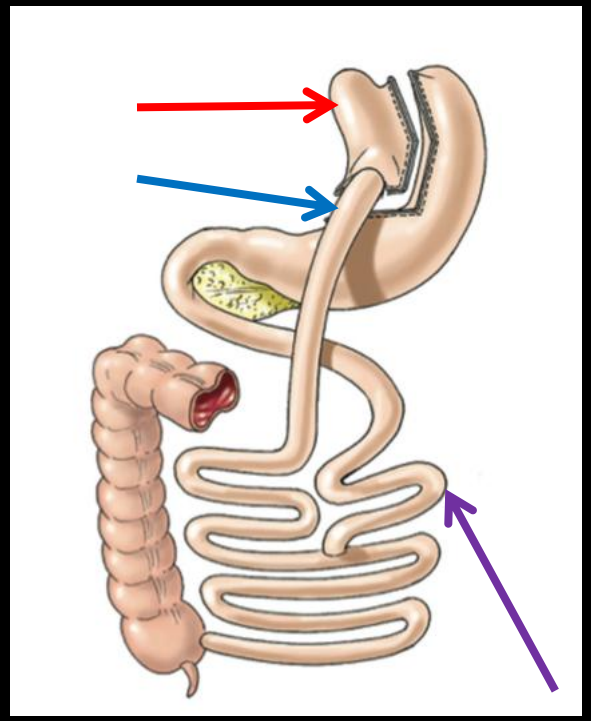


Figure 1

Case Discussion – Gastrocolic Fistulas

- Gastrocolic fistulas are common amongst patients with PUD. They can also occur in Crohn's disease, malignancy or significant ingestion of steroids or NSAIDS.

- Common symptoms are abdominal pain, nausea, vomiting, diarrhea, malnutrition, weight loss, fecal eructation and anemia.

- Gastrocolic fistulas can lead to complications of electrolyte balance, metabolic disorders, respiratory & renal insufficiency disorders and vitamin insufficiency.

Case Discussion – Gastrogastric Fistulas

- A more common type of fistula associated with of Roux-en-Y gastric bypass is a gastrogastric fistula (GGF). This occurs when a pathologic connection occurs between the created gastric pouch and stomach remnant.

- GGF can lead to marginal ulcers or weight regain due to ingested food entering the bypassed organs.

- They are treated surgically, usually via remnant gastrectomy, which can result in improved weight loss and resolution of symptoms.

References:

American College of Radiology. ACR Appropriateness Criteria®. Available at https://acsearch.acr.org/list. Accessed June 6, 2019.

Ellsmere, J. C., MD, MSc, FRCSC. (2019). Late Complications of Bariatric Surgical Operations. Retrieved June 6, 2019, from https://www.uptodate.com/contents/late-complications-of-bariatric_surgical-operations?search=gastrocolicfistula&source=search_result&selectedTitle=2~6&usage_type=default&display_rank=2

Mala T. The Gastric Remnant in Roux-en-Y Gastric Bypass: Challenges and Possibilities. *Journal of Clinical Gastroenterology.* 2016;50(7):527-531.

Palermo, M., Acquafresca, P.A., Rogula, T., Duza, G.E., & Serra, E. (2015). Late surgical complications after gastric by-pass: a literature review. *Arquivos brasileieros de cirurgia digestiva: ABCD = Brazilian archives of digestive surgery, 28(2),* 139-143.

Stamatakos, M., Karaiskos, I., Pateras, I., Alexiou, I., Stefanaki, C., & Kontzoglou, K. (2012). Gastrocolic fistulae; From Haller till nowadays. *International Journal of Surgery, 10(3),* 129-133.