

AMSER Case of the Month

September 2024

Right Upper Quadrant Pain

Cliff De Guzman, MS4 Loma Linda University School of Medicine

Joshua Maclaughlan, MD PGY5 Loma Linda University Health

Jared Webster, MD Loma Linda University Health



LOMA LINDA
UNIVERSITY
HEALTH



Patient Presentation

- **HPI:** 84F presents RUQ abdominal pain which developed this AM 4 hours ago. Pain is constant rated at 5/10 in severity but reports worsening. No nausea, vomiting, or diarrhea.
- **Vitals:** BP 141/85, Pulse 135, Temp 97.3°F (36.9 °C), Resp 18
- **Physical Exam:** RUQ abdominal tenderness

Pertinent Labs

- **CBC:** WNL
- **CMP:** Na 131 (L), BUN 24 (H), Cr 0.8, Tot Bili 0.6, ALP 57, AST 19, ALT 15
- **Lipase:** 28 WNL
- **Lactate:** 1.0 WNL

What Imaging Should We Order?

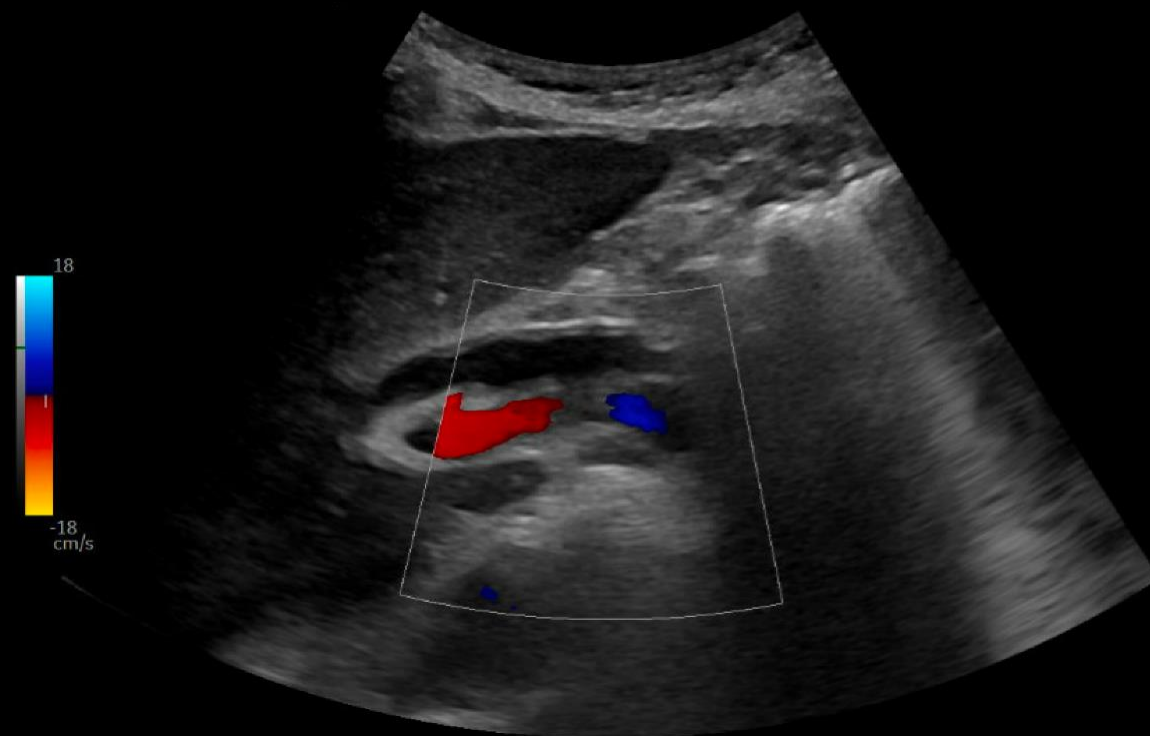
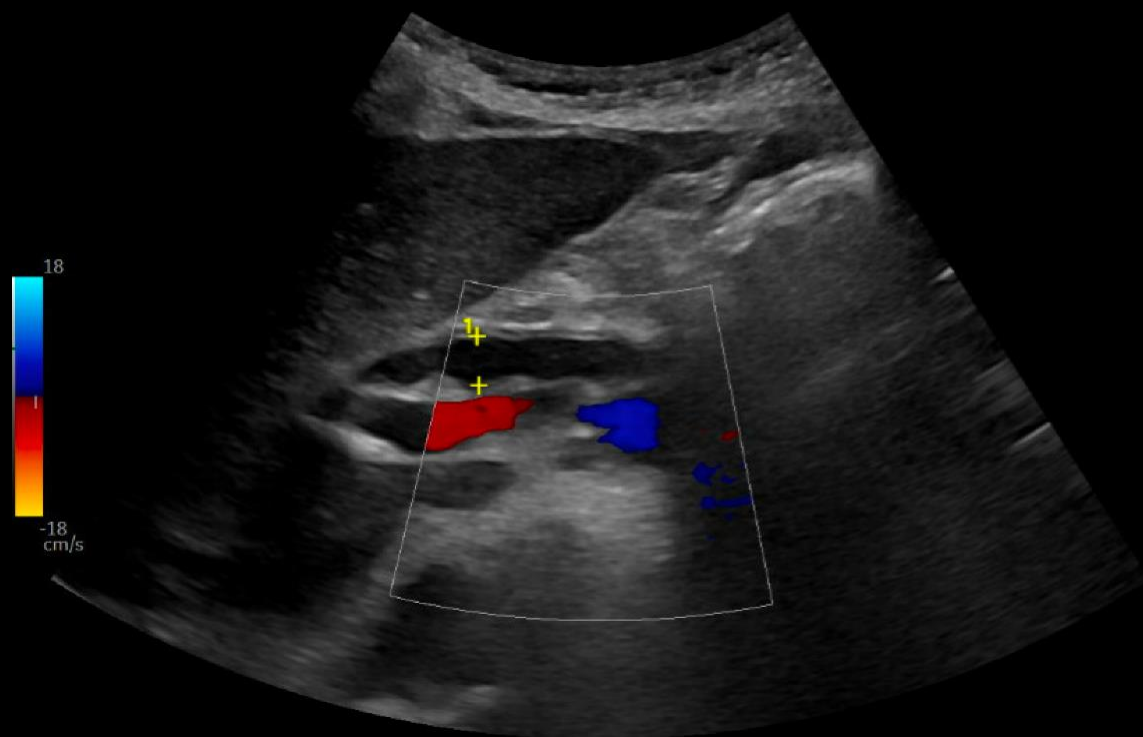
Select the applicable ACR Appropriateness Criteria

Variant 1: Right upper quadrant pain. Unknown etiology. Initial Imaging.

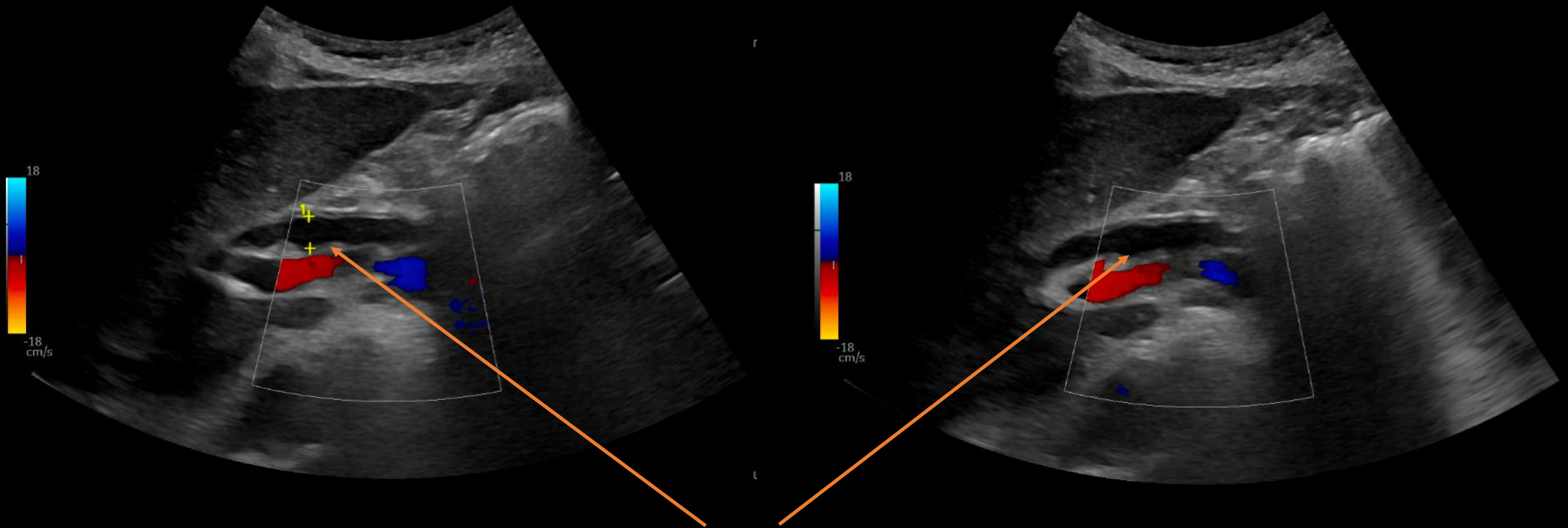
Procedure	Appropriateness Category	Relative Radiation Level
US abdomen	Usually Appropriate	○
CT abdomen with IV contrast	Usually Appropriate	☢☢☢
Radiography abdomen	May Be Appropriate (Disagreement)	☢☢
MRI abdomen without and with IV contrast with MRCP	May Be Appropriate	○
MRI abdomen without IV contrast with MRCP	May Be Appropriate	○
CT abdomen without IV contrast	May Be Appropriate	☢☢☢
Nuclear medicine scan gallbladder	Usually Not Appropriate	☢☢
CT abdomen without and with IV contrast	Usually Not Appropriate	☢☢☢☢

These imaging modalities were ordered by the ER physician

Findings (unlabeled)



Findings (labeled)



Prominent common bile duct

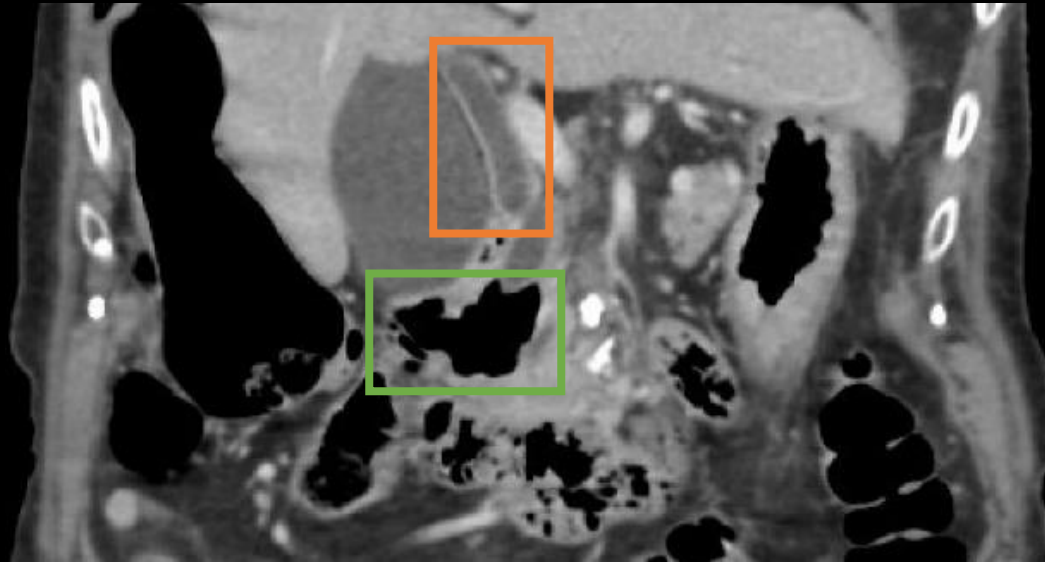
Findings (unlabeled)



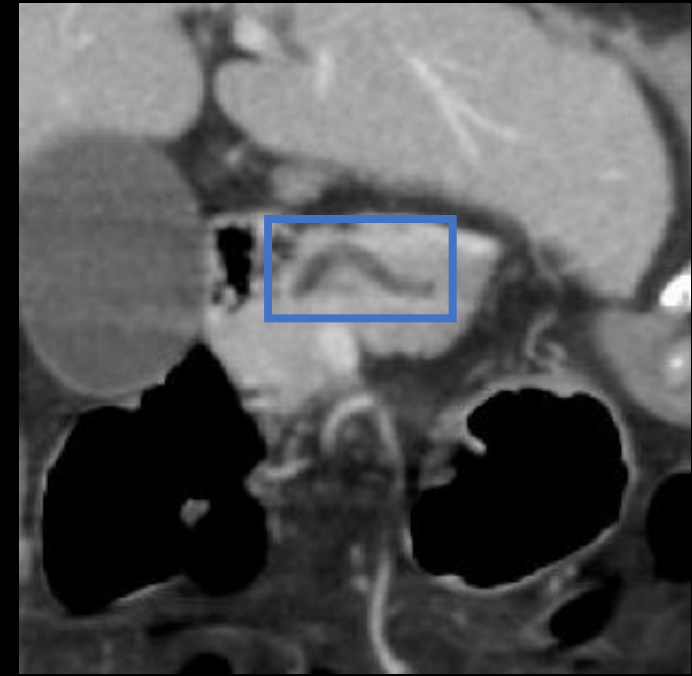
Findings (labeled)



Green Boxes: Duodenal diverticulum



Orange box: Common bile duct measuring up to 10 mm



Blue Box: pancreatic duct measuring up to 6 mm

Final Dx:

Lemmel Syndrome

Lemmel Syndrome

- **Definition:** Periapillary duodenal diverticulum causing compression and dilation of the common bile duct. The pancreatic duct can be involved.
- **Etiology:** Periapillary diverticulitis and inflammation may cause:
 - Fibrosis of the papilla
 - Sphincter of Oddi malfunction
 - External compression of the common bile duct or ampulla of Vater
- **Radiographic features:** Periapillary duodenal diverticula are usually thin-walled, debris-filled structures arising from the second part of the duodenum. MRCP and endoscopic US are useful for ruling out choledocholithiasis or periapillary lesions.

Lemmel Syndrome

- **Clinical Features:**
 - Abdominal pain
 - Fever
 - Abdominal tenderness - RUQ
 - Jaundice
 - Elevations total bilirubin, liver enzymes
- **Treatment:** Depends on the symptoms of the disease. Conservative management is recommended for asymptomatic patients. If this approach fails, diverticulectomy, sphincterotomy, or papillary balloon dilation may be indicated.

References:

- Frauenfelder G, Maraziti A, Ciccone V, et al. Computed Tomography Imaging in Lemmel Syndrome: A Report of Two Cases. *J Clin Imaging Sci*. 2019;9:23. Published 2019 May 24. doi:10.25259/JCIS-17-2019
- Love JS, Yellen M, Melitas C, Yazici C, Zar F. Diagnosis and Management of Lemmel Syndrome: An Unusual Presentation and Literature Review. *Case Rep Gastroenterol*. 2022;16(3):663-674. Published 2022 Dec 16. doi:10.1159/000528031
- Goroztieta-Rosales LM, Gómez-Farías J, López-García KD, Davila-Rodriguez DO. Lemmel syndrome: an extraordinary cause of obstructive jaundice-a case report. *J Surg Case Rep*. 2022;2022(1):rjab593. Published 2022 Jan 17. doi:10.1093/jscr/rjab593
- Bernshteyn M, Rao S, Sharma A, Masood U, Manocha D. Lemmel's Syndrome: Usual Presentation of an Unusual Diagnosis. *Cureus*. 2020 Apr 16;12(4):e7698. doi: 10.7759/cureus.7698. PMID: 32431977; PMCID: PMC7233497.