# Evidence Search Service Results of your search request

## Enteritis as a manifestation of COVID-19

**ID of request:** 26866  
**Date of request:** 29th December, 2020  
**Date of completion:** 6th January, 2021

If you would like to request any articles or any further help, please contact:  Jason Curtis at [jason.curtis1@nhs.net](mailto:jason.curtis1@nhs.net)

Please acknowledge this work in any resulting paper or presentation as: Evidence search: Enteritis as a manifestation of COVID-19. Jason Curtis. ( 6th January, 2021). SHREWSBURY, UK: Shrewsbury and Telford Health Libraries.

**Sources searched**  
EMBASE (5)  
Google Scholar (1)  
MEDLINE (5)

**Date range used** (5 years, 10 years): 2019 -   
**Limits used** (gender, article/study type, etc.): English-language only   
**Search terms and notes** (full search strategy for database searches below):

Relevant natural language and controlled vocabulary terms were selected and combined. Final result sets were de-duplicated and reviewed for relevance by the searcher, irrelevant results being discarded.

Searched: Medline, EMBASE, Google Scholar, UpToDate, BMJ Case Reports

BMJ Case Reports and Google Scholar search strategy: enteritis AND (coronavirus OR "corona virus" OR covid OR wuhan OR hubei OR "novel coronavirus" OR "2019-nCoV" OR "SARS-Cov")

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### [B. Search History](#SearchHistory)

## A. Original Research

1. **Abdominal Imaging Findings in COVID-19: Preliminary Observations.**  
   Bhayana Rajesh Radiology 2020;297(1):E207.

Background Angiotensin-converting enzyme 2, a target of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), demonstrates its highest surface expression in the lung, small bowel, and vasculature, suggesting abdominal viscera may be susceptible to injury. Purpose To report abdominal imaging findings in patients with coronavirus disease 2019. Materials and Methods In this retrospective cross-sectional study, patients consecutively admitted to a single quaternary care center from March 27 to April 10, 2020, who tested positive for SARS-CoV-2 were included. Abdominal imaging studies performed in these patients were reviewed, and salient findings were recorded. Medical records were reviewed for clinical data. Univariable analysis and logistic regression were performed. Results A total of 412 patients (average age, 57 years; range, 18 to >90 years; 241 men, 171 women) were evaluated. A total of 224 abdominal imaging studies were performed (radiography, n = 137; US, n = 44; CT, n = 42; MRI, n = 1) in 134 patients (33%). Abdominal imaging was associated with age (odds ratio [OR], 1.03 per year of increase; P = .001) and intensive care unit (ICU) admission (OR, 17.3; P < .001). Bowel-wall abnormalities were seen on 31% of CT images (13 of 42) and were associated with ICU admission (OR, 15.5; P = .01). Bowel findings included pneumatosis or portal venous gas, seen on 20% of CT images obtained in patients in the ICU (four of 20). Surgical correlation (n = 4) revealed unusual yellow discoloration of the bowel (n = 3) and bowel infarction (n = 2). Pathologic findings revealed ischemic enteritis with patchy necrosis and fibrin thrombi in arterioles (n = 2). Right upper quadrant US examinations were mostly performed because of liver laboratory findings (87%, 32 of 37), and 54% (20 of 37) revealed a dilated sludge-filled gallbladder, suggestive of bile stasis. Patients with a cholecystostomy tube placed (n = 4) had negative bacterial cultures. Conclusion Bowel abnormalities and gallbladder bile stasis were common findings on abdominal images of patients with coronavirus disease 2019. Patients who underwent laparotomy often had ischemia, possibly due to small-vessel thrombosis. © RSNA, 2020.

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1. **Bizarre bariatric complication with small bowel obstruction in a COVID-19 patient with acute abdomen**  
   Kasi K. American Journal of Gastroenterology 2020;115:No page numbers.

INTRODUCTION: Gastrointestinal emergencies in the novel coronavirus pandemic present as acute abdomen in 4-5% of patients as gathered from emerging studies. Nausea, abdominal pain, diarrhea, rectal bleeding, dysgeusia, anorexia and jaundice have been recorded in these patients. Additionally there are cases with hemorrhagic gastritis, ischemia of bowel, and hepatitis often due to systemic immune complex phenomenon and thrombosis. We report a rare case of small bowel obstruction in a Covid-19 patient with a dislodged and migrated EG junction stent, initially placed to circumvent a leak at a prior gastrojejunal (GJ) bypass surgical revision, and then presenting to the emergency room with acute abdomen. CASE DESCRIPTION/METHODS: A 54 year old woman underwent a routine laparoscopic GJ revision in 2/2020 after which she developed a GJ leak 2 weeks later warranting an esophageal stent placement . She was then discharged home, at the height of the Covid-19 outbreak in a pandemic hotspot. She developed a small intra abdominal abscess post op 2 weeks warranting hospitalization for drainage and discharged on antibiotics. 2 months later, she presented with nausea, malaise, vomiting and diarrhea followed by worsening RLQ pain. An Abdominal CT w/ contrast revealed an impacted stent in the distal ileum with localized perforation and obstruction. After reporting generalized body aches and malaise at presentation, PCR testing revealed a positive Covid19 status. She underwent a successful emergency laparoscopic stent retrieval and repair, with no post op complications. DISCUSSION: Covid19 gastrointestinal emergencies are common, and varied with a favorable prognosis in respect to initial presentation. Our patient had subtle nausea, emesis and enteritis, as noted in 10-20% of patients with similar Covid presentation, which likely led to stent dislodgement and distal migration with subsequent bowel obstruction. Fortunately, her clinical course was mild so she was managed with optimal laparoscopic retrieval and supportive medical therapy after which she was successfully discharged from the hospital. Our case is unique in that an acute Covid19 case presenting concomitantly with post bariatric stent migration and bowel obstruction was successfully managed in a standard fashion during the height of a pandemic in a hotspot with stifling restrictions in place for routine emergencies. Though the exposure risk is high for medical staff, all such patients should be optimally managed like any Covid negative patients for optimal outcomes. (Figure Presented).

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1. **Enteritis and Severe Abdominal Pain as the First Presentation of Covid-19.**  
   Kecler-Pietrzyk A. Irish medical journal 2020;113(6):102.

Presentation A male patient with no significant past medical history presented to emergency department with progressive in severity abdominal pain, associated with mild nausea and diarrhea. No other significant symptoms were reported. Diagnosis On investigation with CT, duodenojejunitis was diagnosed as the cause of abdominal pain. Lung basal changes were also visualized and subsequently proven to be secondary to Covid-19 infection. Treatment After few days of hospitalization and supportive treatment, the patient improved clinically and was discharged. Conclusion Covid-19 infection typically presents with respiratory symptoms associated with fever and myalgia. Anorexia, diarrhea and nausea have been reported. Severe abdominal pain is rare, particularly as the initial presenting compliant. It is important to be aware of the varied clinical presentations that may occur in Covid-19, including isolated gastrointestinal symptoms. This will allow to increase the timely detectability of infected patients and more effective contact control measures.

1. **Faecal calprotectin indicates intestinal inflammation in COVID-19**  
   Effenberger M. Gut 2020;69(8):1543-1544.

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=9781a3303fc380f092376f560f4a84aa)

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=37edfaa53a47907d1ec0eadb69fa02d1)

1. **Focal small bowel thrombotic microvascular injury in COVID-19 mediated by the lectin complement pathway masquerading as lupus enteritis.**  
   Plotz Benjamin Rheumatology (Oxford, England) 2020;:No page numbers.

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=b068dc398df34d15fedd8d3586b3a4ee)

1. **Haemorrhagic enteritis and COVID-19: causality or coincidence.**  
   Amarapurkar Anjali D. Journal of clinical pathology 2020;73(10):686.

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1. **Letter: intestinal inflammation, COVID-19 and gastrointestinal ACE2-exploring RAS inhibitors**  
   Garg M. Alimentary Pharmacology and Therapeutics 2020;52(3):569-570.

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[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=f5df00ea30930dbfed68a2f8fa3bab7a)

1. **Letter: intestinal inflammation, COVID-19 and gastrointestinal ACE2-exploring RAS inhibitors. Authors' reply**  
   Taxonera C. Alimentary Pharmacology and Therapeutics 2020;52(3):571-572.

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=4a60ba2b6d9d7ac91f53100f3d59480a)

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=080259c14f58ca1182a3cb7889fd40be)

1. **Mesenteric ischemia: An unusual presentation of COVID-19**  
   Esparragoza P. American Journal of Gastroenterology 2020;115:No page numbers.

INTRODUCTION: We report an unusual case of a patient with COVID-19 who presented with acute mesenteric ischemia without pulmonary symptoms. We believe that this observation has important implications for early identification and management of patients with COVID-19. CASE DESCRIPTION/METHODS: An 87 year-old female with atrial fibrillation, not on anticoagulation due to falls, presented to the ED with acute abdominal pain and bloody diarrhea. She denied recent travel but had exposure to a relative who had COVID-19. Initial vitals, including O2 saturation were normal. On exam she exhibited diffuse abdominal tenderness out of proportion to palpation and bloody stool in the rectum. Laboratory studies:WBC 8.4,RBC 12.7,platelets 277,INR 1.0, PTT 36,CRP 25,D-dimer 2262,LDH 126, and lactate 4.0. CT abdomen and pelvis showed focal occlusion of the SMA with ischemic enteritis and colitis involving the terminal ileum and ascending colon. Moreover, a pneumonia was noted with typical findings of COVID-19. The patient was started on a heparin drip and underwent thrombectomy with catheter-directed thrombolysis. A repeat angiogram demonstrated satisfactory SMA perfusion. The patient's abdominal pain and bloody diarrhea resolved. A nasopharyngeal swab was taken (SARS-CoV-2 RT-PCR) which resulted positive on day 2 of admission. Though she remained asymptomatic, she was treated with Plaquenil and discharged on day 7 with Xarelto, Plavix, and Atorvastatin.The patient returned 13 days later with dyspnea requiring O2 via NC and no GI symptoms. CXR showed worsening pneumonia. She was treated with antibiotics and steroids and was discharged on day 2 with 2L of O2. DISCUSSION: The mechanism of COVID-19 induced GI injury or thrombosis is unknown. The virus may have certain tropism to the GI tract as evidenced by the presence of virus in the stool. This may be due to the expression of ACE2 receptors in enterocytes to which the virus binds to and enters the cells, thus increasing GI permeability. The small bowel, a lymphoid organ, may serve as an entry for the virus and potentiate the immune response. Endothelial cells also express the ACE2 receptor. Thus, the virus may predispose patients to thrombosis via endothelial dysfunction and activation of the coagulation cascade related to the interaction of the virus with the receptor.No cases of mesenteric ischemia related to COVID-19 were found. Unusual GI presentations of COVID-19 without pulmonary symptoms should alert gastroenterologists to identify those with the illness promptly.

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[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=0e0013fa5d1df0099e31d2e3e5510971)

1. **SARS-CoV-2-related Hypercoagulable State Leading to Ischemic Enteritis Secondary to Superior Mesenteric Artery Thrombosis.**  
   Mitchell James Michael Clinical gastroenterology and hepatology : the official clinical practice journal of the American Gastroenterological Association 2020;:No page numbers.

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=679439ea24a53909931488277161926b)

1. **Severe Enteritis as the Sole Manifestation of Novel Coronavirus Disease 2019 (COVID-19) in Adolescent Patients**  
   Gupta S. et al Case Reports in Infectious Diseases 2020;:n/a.

[Available online at this link](https://www.knowledgeshare.nhs.uk/index.php?PageID=link_resolver&link=2686e860e200cc70ea7cf2f3d625f79b)

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Click on the Search button (illustrated with binoculars). This will open up a search window. Type in the term you need to find and links to all of the references to that term within the document will be displayed in the window. You can jump to each reference by clicking it.

**Word documents**  
Select Edit from the menu, the Find and type in your term in the search box which is presented. The search function will locate the first use of the term in the document. By pressing 'next' you will jump to further references.

## B. Search History

|  | **Source** | **Criteria** | **Results** |
| --- | --- | --- | --- |
| 1. | Medline | exp CORONAVIRUS/ | 12178 |
| 2. | Medline | exp "CORONAVIRUS INFECTIONS"/ | 10589 |
| 3. | Medline | (coronavirus OR "corona virus" OR covid\* OR wuhan OR hubei OR "novel coronavirus" OR "2019-nCoV" OR "SARS-Cov\*").ti,ab | 100371 |
| 4. | Medline | exp ENTERITIS/ | 13552 |
| 5. | Medline | (enteritis).ti,ab | 11842 |
| 6. | Medline | (1 OR 2 OR 3) | 109587 |
| 7. | Medline | (4 OR 5) | 20410 |
| 8. | Medline | (6 AND 7) | 338 |
| 9. | Medline | 8 [DT FROM 2019] | 31 |
| 12. | EMBASE | (coronavirus OR "corona virus" OR covid\* OR wuhan OR hubei OR "novel coronavirus" OR "2019-nCoV" OR "SARS-Cov\*").ti,ab | 103470 |
| 14. | EMBASE | exp CORONAVIRINAE/ | 22723 |
| 15. | EMBASE | exp "CORONAVIRUS INFECTION"/ | 24359 |
| 16. | EMBASE | (12 OR 14 OR 15) | 115254 |
| 17. | EMBASE | \*ENTERITIS/ | 25464 |
| 18. | EMBASE | (enteritis).ti,ab | 12251 |
| 19. | EMBASE | (17 OR 18) | 34596 |
| 20. | EMBASE | (16 AND 19) | 287 |
| 21. | EMBASE | 20 [DT FROM 2019] | 41 |

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