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Ileitis as the exclusive manifestation of COVID-19. The first reported case[☆]



Ileítis como manifestación exclusiva de COVID-19. El primer caso reportado

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection generally presents with respiratory symptoms. However, in a recent meta-analysis of 35 studies, Mao et al. reported that 10–21% of patients with respiratory Coronavirus disease 2019 (COVID-19) had gastrointestinal manifestations. The most frequent gastrointestinal symptomatology was diarrhea (9%) and SARS-CoV-2 RNA was detected in stool in 54% of cases.¹ In the reported studies radiologic and endoscopic examinations, when performed, were normal.

By contrast, other studies had found endoscopic and radiological changes. Thus, Carvalho et al. reported a patient admitted for hemorrhagic colitis attributed to COVID-19 due to a negative etiologic study and the development of respiratory symptoms, being diagnosed of SARS-CoV-2 by nasopharyngeal swab.² Tullie et al. reported eight cases of isolated ileal involvement detected by abdominal ultrasound or CT scan attributed to COVID-19 in children diagnosed by a positive nasopharyngeal swab test, in these patients, neither ileal biopsies nor stool detection was not performed.³ No similar cases have been reported in adults.

We present the case of a 47-year-old female worker of an elderly nursing home with no previous significant medical history was admitted to the emergency room. She reported 10 days of right lower quadrant abdominal pain, high fever (maximum 39.5 °C) and non-bloody diarrhea. The patient did not report any respiratory symptoms. No other family members were affected. Two nasopharyngeal and oropharyngeal swab specimens performed before admission had been negative for SARS-CoV-2. Respiratory auscultation was strictly normal, and pain was noted on the palpation of the right lower abdominal quadrant. Blood test showed markedly increased inflammatory parameters (leukocytes, D-Dimer, ferritin C-reactive protein). Chest X-ray was normal (Fig. 1a). Abdominal CT scan showed inflammatory signs in the distal ileum (Fig. 1b). The pulmonary images of the abdominal CT scan were normal (Fig. 1c).

Empiric treatment with ceftriaxone, metronidazole and azithromycin was started. The patient was admitted to the gastroenterology unit after a confirmatory negative SARS-CoV-2 NAAT (nucleic acid amplification test) (GeneFinder™ COVID-19 Plus RealAmp Kit, Osang Healthcare Korea) by amplification of RdRp, E and N genes in a nasopharyngeal swab.

The study was completed with an enzyme immunoassay which revealed negative *Yersinia* spp and *Campylobacter* spp antibodies. A rectal swab was performed and NAAT was positive for SARS-CoV-2. A fourth nasopharyngeal swab resulted negative.

Ileocolonoscopy was performed eleven days after because of the pandemic situation and the recommendation by our infectiology department of avoid the colonic preparation to prevent the possible risk of fecal SARS-CoV-2 elimination and the contagious to the medical team (currently this fact is not proved). No mucosal changes were found in the ileocolonic mucosa (Fig. 1d). Biopsies were taken and histology study showed no significant changes (Fig. 1e). NAAT of SARS-CoV-2, intestinal bacteria, viruses and parasites (Gastrointestinal panel Filmarray®, Biomerieux France) were performed being positive for SARS-CoV-2 and negative for *Salmonella* spp., *Shigella* spp., *Yersinia enterocolitica*, *Aeromonas* spp., *Vibrio* spp., *Plesiomonas shigelloides*, *Clostridioides difficile*, *Campylobacter* spp., *Cryptosporidium* spp., *Entamoeba histolytica*, *Giardia intestinalis*, *Cyclospora cayetanensis*, norovirus, astrovirus, sapovirus, adenovirus and rotavirus. At that time, serology was performed and both SARS-CoV-2 IgM + IgA and IgG antibodies were positive (Vircell SL®, Spain).

The patient recovered completely, with normalization of the previous blood test abnormalities. A SARS-CoV-2 control NAAT in rectal swab was negative before discharge from hospital. The patient remains asymptomatic after three-month follow-up.

To our knowledge, our report is the first well-documented case of SARS-CoV-2 intestinal infection without evidence of pulmonary involvement. The multiple negative nasopharyngeal swabs plus the normal chest X-ray and CT findings rule out pulmonary infection. Intestinal involvement was suspected by the finding of an ileitis in the CT scan. Ileal mucosa was normal, showing a mismatch between radiology and endoscopy. However SARS-CoV-2 confirmed by two independent rectal and intestinal NAAT. The diagnosis of ileitis due to SARS-CoV-2 was made by the exclusion of other potential causes. In this context, it seems probable that the patient became infected by fecal-oral transmission.

No other studies detected the SARS-COV-2 in intestinal samples. However, during the SARS-CoV-1 epidemic in 2003 studies in patients with gastrointestinal manifestations

[☆] The patient has given his informed consent to publish the information included in the article.

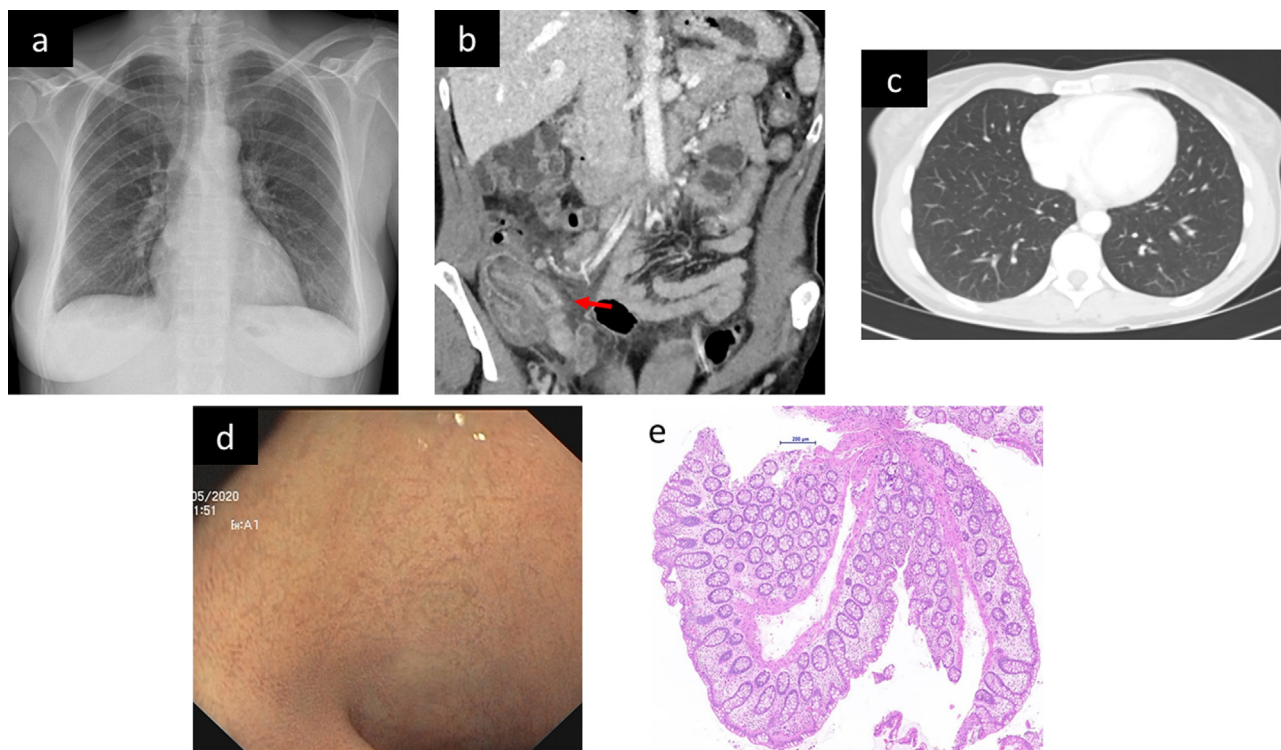


Figure 1 (a) Normal chest X-ray. (b) Inflammatory ileocectitis (red arrow) in an abdominal CT scan. (c) Normal pulmonary base images of the abdominal CT scan. (d) Ileocolonoscopy with normal mucosa. (e) Histology with no mucosal changes.

detected the virus in intestinal cells by molecular methods.⁴ In our case, no immunohistochemical or FISH study was performed because commercial tests were not yet available.

We report a patient with SARS-CoV-2 infection apparently limited to the bowel. However, no recommendations or conclusions can be drawn from this case report. The patient had an important delay between the admission and the colonoscopy and, despite we found a radiological ileitis, endoscopic mucosa was normal.

In conclusion, SARS-CoV-2 may occur with an exclusive intestinal symptoms. Is important for clinicians to know and recognize this clinical presentation, a rectal swab may be necessary to establish the diagnosis.

Authors' contribution

Eduard Brunet and Albert Villoria managed the patient during hospitalization and wrote the manuscript. Antonio Casabella and Sonia Calzado critically reviewed the text and provided important intellectual content. All authors definitively approved the submitted version.

Conflict of interest

Albert Villoria has served as a speaker and consultant from MSD, Abbvie, Jansen and Falk. Eduard Brunet, Antonio Casabella, and Sonia Calzado, have not conflicts of interest.

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Diverticulitis yeyunal perforada: una causa rara de abdomen agudo



Perforated jejunal diverticulitis: a rare cause of acute abdomen

La diverticulosis yeyunal es una patología adquirida muy infrecuente, con una incidencia del 0,3-1%¹. Los divertículos se localizan en el borde mesentérico del yeyuno proximal en el 75% de los casos, el 20% en el yeyuno distal y el 5% en íleon¹.

Presentamos un caso de una diverticulitis yeyunal perforada, como causa rara de dolor abdominal agudo y destacamos la importancia de tener una alta sospecha clínica en esta entidad para realizar un diagnóstico y tratamiento tempranos.

Mujer de 66 años que acude a Urgencias por dolor abdominal de tipo cólico en la región epigástrica de cuatro días de evolución, con náuseas y vómitos asociados. Presentaba fiebre de 38 °C y en la exploración física el abdomen era blando y depresible, doloroso a la palpación de manera difusa. El signo de Blumberg fue positivo. La analítica mostraba leucocitosis ($15,9 \times 10^9/L$) y la PCR estaba elevada (3,3 mg/dL). Se realizó un CT abdominopélvico, en el que se observó neumoperitoneo, líquido libre intrapélvico y aumento de la densidad de la grasa mesentérica en hemiabdomen izquierdo. Se evidenció también diverticulosis a nivel del sigma. El diagnóstico inicial de la paciente fue de una diverticulitis sigmoidea perforada, por lo que se decidió realizar tratamiento quirúrgico urgente. Intraoperatoriamente se observó una peritonitis diseminada en todos los cuadrantes con colecciones interasas y múltiples divertículos yeyunales (10 divertículos distribuidos en el yeyuno, que comenzaban desde inmediatamente distal al ángulo de Treitz), con una gran perforación de un divertículo en borde mesentérico yeyunal a 80 cm del Treitz (fig. 1). Se resecó el fragmento yeyunal con el divertículo perforado, realizando una anastomosis T-T mecánica. El postoperatorio transcurrió sin incidencias y la paciente fue dada de alta al séptimo día del postoperatorio. Revisando el CT tras la cirugía, se podían identificar los divertículos (fig. 2). Posteriormente, el estudio anatomopatológico confirmó la enfermedad diverticular yeyunal con perforación, así como una marcada inflamación del mesenterio intestinal.

La diverticulosis yeyunoileal fue descrita por primera vez por Sömmerring en 1794 como una herniación de la

mucosa y la submucosa en el borde mesentérico de la pared del intestino delgado, a través de la capa muscular (pseudodivertículo)². Su etiología es desconocida y se cree que es causada por una combinación de peristaltismo anormal, discinesia intestinal y un aumento de la presión³. Estos divertículos surgen generalmente en conjunción con otros divertículos coexistentes en otros lugares como el colon, en hasta el 75% de los casos³, como ocurrió en nuestra paciente.

La diverticulosis yeyunal suele ser asintomática; solo el 29% de los pacientes desarrollan síntomas inespecíficos, como molestias abdominales crónicas postprandiales, flatulencia, diarrea, malabsorción o esteatorrea, que fácilmente conducen a un diagnóstico erróneo y se requiere un alto grado de sospecha clínica^{1,3}. El 10% desarrolla complicaciones como obstrucción intestinal, peritonitis, hemorragia digestiva baja o perforación, siendo esta última una complicación grave que ocurre en el 2-6% de los casos³.

El diagnóstico es a menudo un desafío, ya que a pesar de que la tomografía computarizada es el mejor método de imagen para diagnosticar una diverticulosis yeyunal complicada, hasta en el 75% de las veces las pruebas de imagen no resultan diagnósticas inicialmente y el diagnóstico se obtiene intraoperatoriamente³, como ocurrió en el paciente que presentamos.

La mayoría de las complicaciones de la diverticulosis yeyunal requieren tratamiento quirúrgico. Aunque el manejo conservador de un divertículo yeyunal perforado se puede realizar en pacientes estables que presentan síntomas y signos abdominales localizados⁴, la exploración quirúrgica con resección segmentaria con anastomosis primaria es el pilar del tratamiento, como se realizó en nuestro caso⁵. Procedimientos quirúrgicos alternativos como el cierre primario, la diverticulectomía o la invaginación están asociados con resultados extremadamente pobres y altas tasa de mortalidad, por lo que deben evitarse⁵.

Debido a factores pronósticos pobres, como la edad avanzada, y a los retrasos en el diagnóstico y el tratamiento, la mortalidad por diverticulitis yeyunal varía del 0 a 5%, aumentando al 40% en caso de perforación^{1,5}.

Para concluir, dada la baja incidencia de los divertículos yeyunales, a su clínica inespecífica y a la baja sensibilidad de las pruebas de imagen, suelen ser un hallazgo incidental en la cirugía y confundirse con otra patología, como en nuestro caso, pudiéndose retrasar el tratamiento de esta entidad.