REVISTA ESPAÑOLA DE
ENFERMEDADES DIGESTIVAS
The Spanish Journal of Gastroenterology

Title:
Portal thrombosis in a patient with SARS-CoV-2 infection

Authors:
David Ortiz López, Alicia Puente Fernández, Isabel Ramos Gómez, Davinia Godoy Díaz

DOI: 10.17235/reed.2021.8099/2021
Link: PubMed (Epub ahead of print)

Please cite this article as:
Ortiz López David, Puente Fernández Alicia, Ramos Gómez Isabel, Godoy Díaz Davinia. Portal thrombosis in a patient with SARS-CoV-2 infection. Rev Esp Enferm Dig 2021. doi: 10.17235/reed.2021.8099/2021.

REVISTA ESPAÑOLA DE
ENFERMEDADES DIGESTIVAS
The Spanish Journal of Gastroenterology

Portal thrombosis in a patient with SARS-CoV-2 infection

David Ortiz López[1], Alicia Puente Fernández[2], Isabel Ramos Gómez[2], Davinia Godoy Díaz[2]

[1]Servicio de Cirugía General y del Aparato Digestivo, Hospital Universitario de Gran Canaria Doctor Negrín, Las Palmas de Gran Canaria

[2]Servicio de Medicina Interna, Hospital Universitario de Gran Canaria Doctor Negrín, Las Palmas de Gran Canaria

Correspondence: David Ortiz López. dortizlopez91@gmail.com

Keywords: SARS-CoV-2, COVID, Portal thrombosis.

CASE PRESENTATION:

A 72-year-old woman with diabetes and Parkinson's disease came to the Emergency Department presenting fever and dyspnoea. At arrival she presented basal oxygen saturation of 76%. On physical examination, bibasal crackles on auscultation and pain in the right upper quadrant with positive Murphy's sign on abdominal palpation were detected. Analytically she presented leucocytosis of 25500/uL (Normal Values (NV) 3000-12000/uL), platelets 677.000/uL (NV 120000-450000/uL, D-Dimer of 34.56ug/mL (NV 0-0.5 ug / mL) and fibrinogen (Clauss) 865mg/dL (NV 150-450mg / dL). Positive SARS-CoV-2 CRP. A chest X-ray showed bilateral pneumonia. A thoracoabdominal CT which ruled out pulmonary thromboembolism was performed, visualizing a filling defect in the bifurcation of portal vein compatible with portal thrombosis [Figure 1]. A congestion of tributary mesenteric vessels was also observed, without signs of intestinal distress [Figure 2] No findings suggestive of abdominal infectious process.

The patient was admitted to the COVID Unit and received ventilatory support, dexamethasone, antibiotic treatment and anticoagulation with low molecular weight heparin at a dose of 60IU every 12 hours with excellent clinical response. Given the favourable evolution, she was discharged with prolonged anticoagulant treatment.

After six months, the patient remains asymptomatic with partial ultrasound resolution of the portal thrombosis.

DISCUSSION:

The inflammatory effect of SARS-CoV-2 infection triggers a state of hypercoagulability, platelet activation, and endothelial dysfunction which increases the risk of thromboembolic events. This risk can be monitored with analytical parameters such as elevation of D-Dimer, fibrinogen, and platelets. Endothelial damage occurs by direct infection of the vascular cells by the virus [1].

The receptor for the angiotensin converting enzyme 2 (ACE-2) seems to play a fundamental role in the entry of the virus into the body. Although the most common route of infection is the respiratory tract, all organs with an ACE-2 receptor can be gateways for SARS-CoV-2 particles into the body, including the small intestine. In patients in whom the entrance door is the digestive tract, digestive symptoms are more frequent. After the virus enters the intestinal cells through endocytosis, migration occurs to the rest of the body. The portal system plays an important role in this dissemination. For this reason, the appearance of venous thromboembolic events at the portal level could be more frequent in these patients [2].

BIBLIOGRAPHY:

1) Iba T, Connors JM, Levy JH. The coagulopathy, endotheliopathy, and vasculitis of COVID-19. Inflamm Res. 2020 Dec;69(12):1181-1189. doi: 10.1007/s00011-020-01401-6. Epub 2020 Sep 12. PMID: 32918567; PMCID: PMC7486586.
2) Mönkemüller K, Fry L, Rickes S. COVID-19, coronavirus, SARS-CoV-2 and the small bowel. Rev Esp Enferm Dig. 2020 May;112(5):383-388. doi: 10.17235/reed.2020.7137/2020. PMID: 32343593.

REVISTA ESPAÑOLA DE
ENFERMEDADES DIGESTIVAS
The Spanish Journal of Gastroenterology

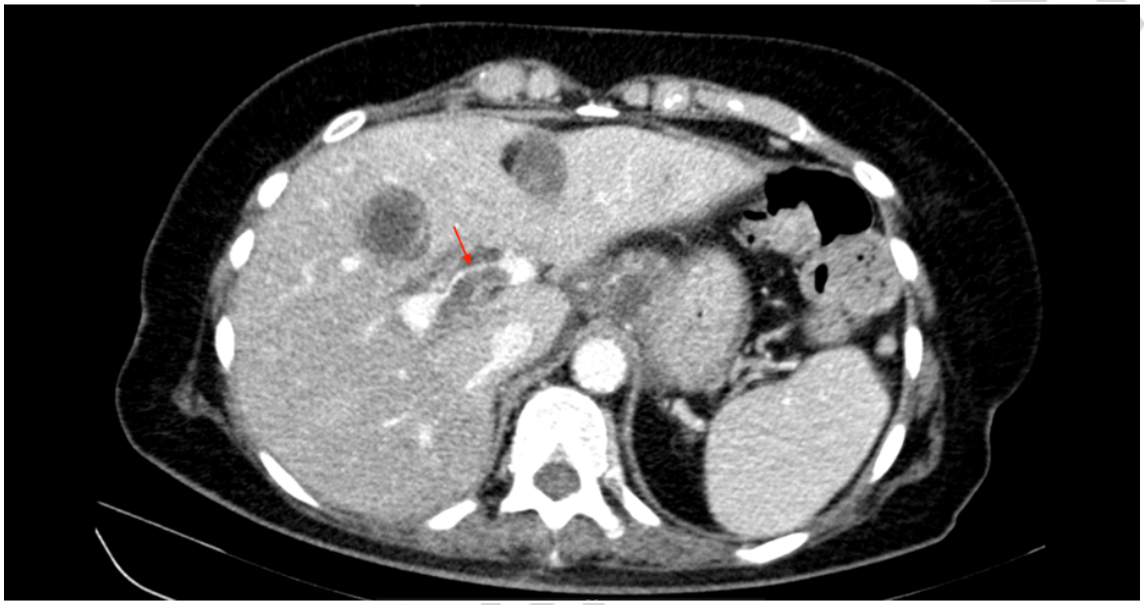

Figure 1: Abdominal CT in portal phase. The red arrow indicates the portal bifurcation where the thrombosis is located.

REVISTA ESPAÑOLA DE
ENFERMEDADES DIGESTIVAS
The Spanish Journal of Gastroenterology

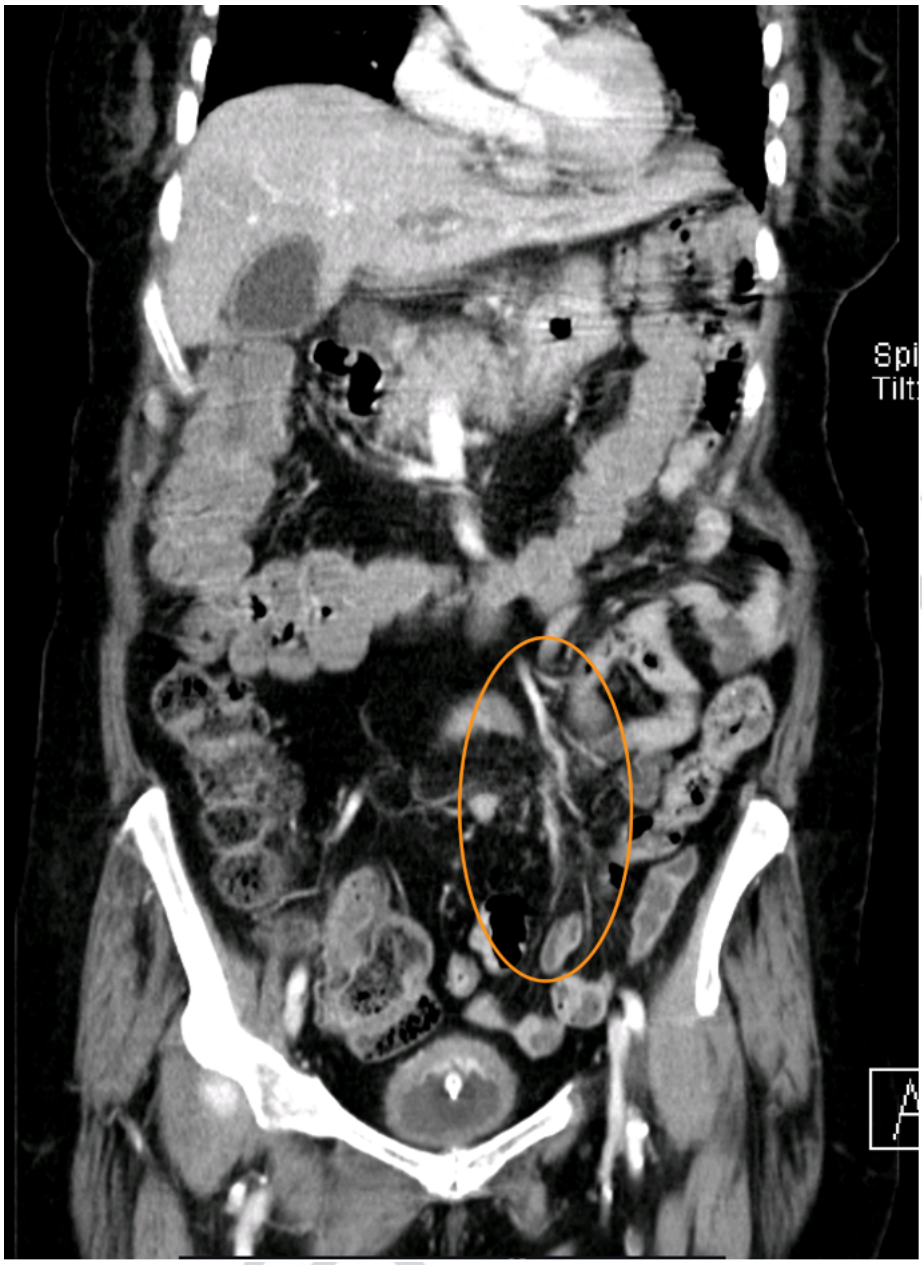

Figure 2: Abdominal CT in arterial phase. The orange circle indicates congestion of the tributary mesenteric vessels. Preserved intestinal wall uptake.