

Images of Interest / Imagens de Interesse

## Infectious Thrombophlebitis in the Context of Diverticulitis – A Rare Complication

### *Tromboflebite Infeciosa no Contexto de Diverticulite – Uma Complicação Rara*

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#### Abstract

Diverticulitis is a very common entity in emergency Radiology. Despite its high incidence it may have rarer complications that may lead to a worse prognosis and that need to be quickly diagnosed to allow for a timely treatment.

This article describes the case of a 71-year-old male who came to our emergency room with complaints of abdominal pain and melena.

In this context, an abdominal and pelvis CT was done where sigmoidal diverticulitis was identified along with heterogeneous filling and gas in the inferior mesenteric vein with partial thrombosis of the splenic and portal vein and its intrahepatic segments compatible with the diagnosis of infectious thrombophlebitis.

Treatment with broad spectrum antibiotics and oral anticoagulation was started, with resolution of the radiological findings and clinical improvement in the follow-up examination.

#### Keywords

Diverticulitis; Infectious thrombophlebitis; Computed tomography.

#### Resumo

A diverticulite é uma entidade muito comum nos exames de urgência de Radiologia. Apesar da sua frequência existem algumas complicações mais raras que podem levar a um prognóstico mais reservado e que necessitam de ser diagnosticadas atempadamente para permitir um tratamento precoce.

Este artigo descreve o caso de um homem de 71 anos que deu entrada no serviço de urgência com dor abdominal e melenas.

Neste contexto foi realizada uma TC abdominal e pélvica, tendo sido identificada diverticulite do colon sigmóide com preenchimento heterogéneo associado a gás na veia mesentérica inferior e trombose parcial da veia esplénica, veia porta e ramos portais intra-hepáticos, traduzindo processo de tromboflebite infecciosa.

Foi iniciada antibioterapia de largo espectro e anticoagulação oral, com resolução dos achados imagiológicos e melhoria clínica no exame de seguimento.

#### Palavras-chave

Diverticulite; Tromboflebite infecciosa; Tomografia computadorizada.

A 71-year-old male patient was admitted to our emergency department with abdominal pain and melena. After analytical evaluation, anemia, elevated glucose within the personal context of known type 2 diabetes mellitus, leukocytosis, mild analytical changes in Aspartate Aminotransferase (AST) and Alanine Aminotransferase (ALT) and elevated C-reactive protein were documented. As a relevant history, he had undergone laparoscopic cholecystectomy one month earlier. In the emergency context, an abdominal and pelvic CT scan with intravenous contrast was performed, showing diverticulitis of the sigmoid colon with heterogeneous filling associated with gas in the inferior mesenteric vein (figure 1) and partial thrombosis of the splenic vein, portal vein and intrahepatic portal branches, as well as multiple transient hepatic perfusion changes in the arterial phase, translating a process of infectious thrombophlebitis with pylephlebitis (figure 2).

Suppurative thrombosis of the portal vein, also known as pylephlebitis, is a rare but potentially lethal complication of an intra-abdominal infection, with a mortality rate of 25% and is difficult to diagnose due to its non-specific clinical presentation.<sup>1</sup>

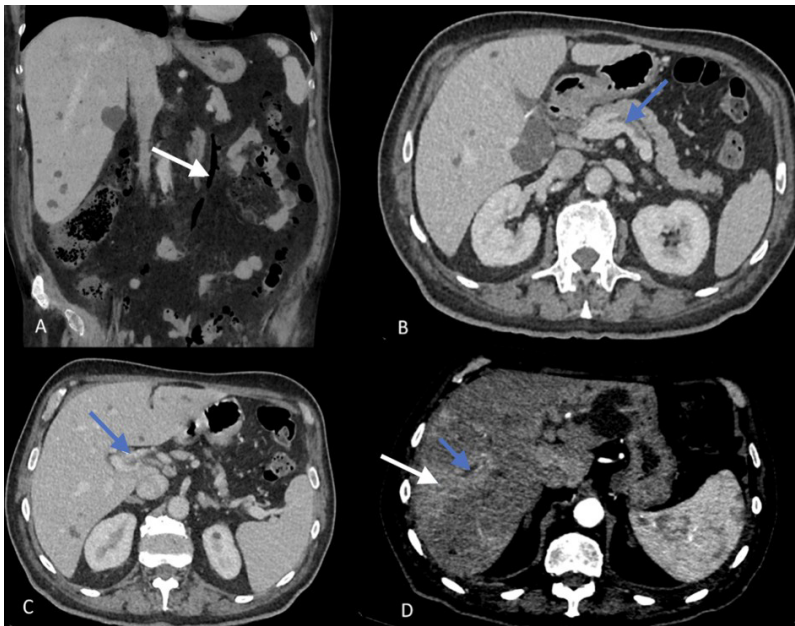
The most frequently reported etiology for pylephlebitis is diverticulitis, followed by appendicitis, cholecystitis, pancreatitis and other intra-abdominal infections, occurring



**Figure 1** – Coronal reconstruction in the venous phase with diverticulitis (black arrow) and heterogeneous filling with associated gas bubble of the inferior mesenteric vein (blue arrow)

more frequently in the context of recent abdominal surgeries as in the case of this patient, who underwent abdominal surgery one month earlier.<sup>1</sup>

More recent sources suggest that in younger patients, appendicitis is the most common etiology whereas in older patients, diverticulitis is the most common instead.<sup>2</sup> Although it may also be associated to coagulation disorders<sup>2</sup>, in this patient, the analytical tests did not reveal changes in the coagulation tests.



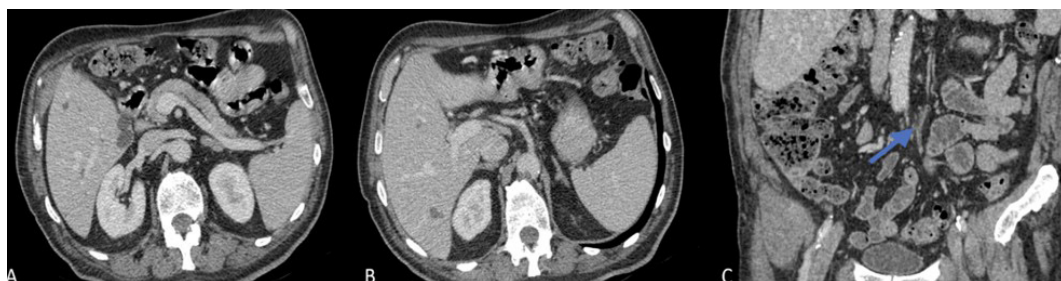
**Figure 2** – (A) Coronal reconstruction in Minimum intensity projection (MinIP), with inferior mesenteric vein filled with air (arrow); (B) Axial view in the venous phase with thrombus (arrow) partially filling the splenic vein; (C) Axial view in the venous phase with thrombus (arrow) partially filling the portal vein trunk - pylephlebitis; (D) Axial view in the late arterial phase, with thrombosis of intrahepatic portal branches (blue arrow) and transient hepatic perfusion changes (white arrow).

Pylephlebitis is generally polymicrobial, the *Bacteroides fragilis* and *Escherichia coli* being the most frequently isolated agents. However, in 30% of cases blood cultures are negative<sup>1,2</sup> so the absence of positive blood cultures should not be a factor in excluding this diagnosis in the presence of intra-abdominal infectious processes and of new detection of portal thrombosis.

The treatment of pylephlebitis consists of broad-spectrum antibiotics, although due to its low incidence, there is still no consensus on the best therapeutic regimen. There is also no

consensus on the prescription of anticoagulant medication in patients with pylephlebitis.<sup>2</sup>

In this case, the medical and surgical team chose to admit the patient to the hospital in the first phase, with broad-spectrum antibiotics and low molecular weight heparin. After clinical and analytical improvement, the patient was admitted to home hospitalization, with antibiotics and oral anticoagulants. A reevaluation CT was performed one month later, with imaging resolution of most of the changes, where only mild fibrosis of the inferior mesenteric vein persisted (figure 3).



**Figure 3** – (A, B) Axial view in the venous phase with resolution of partial thrombosis of the splenic vein and portal vein; (C) Coronal plane in the venous phase with reduction in caliber and some densification of the adjacent fat, reflecting probable fibrotic changes in the inferior mesenteric vein (blue arrow).

#### Ethical Disclosures / Divulgações Éticas

*Conflicts of interest:* The authors have no conflicts of interest to declare.

*Conflitos de interesse:* Os autores declaram não possuir conflitos de interesse.

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*Suporte financeiro:* O presente trabalho não foi suportado por nenhum subsídio ou bolsa.

*Confidentiality of data:* The authors declare that they have followed the protocols of their work center on the publication of data from patients.

*Confidencialidade dos dados:* Os autores declaram ter seguido os protocolos do seu centro de trabalho acerca da publicação dos dados de doentes.

*Protection of human and animal subjects:* The authors declare that the procedures followed were in accordance with the regulations of the relevant clinical research ethics committee and with those of the Code of Ethics of the World Medical Association (Declaration of Helsinki).

*Proteção de pessoas e animais:* Os autores declaram que os procedimentos seguidos estavam de acordo com os regulamentos estabelecidos pelos responsáveis da Comissão de Investigação Clínica e Ética e de acordo com a Declaração de Helsínquia da Associação Médica Mundial.

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