

Acute thrombosis of inferior mesenteric vein. A case report

Trombosis aguda de vena mesentérica inferior. Presentación de caso

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Summary

Mesenteric venous thrombosis (MVT) represents 5-15% of mesenteric ischemia. It is an infrequent pathology and can occur spontaneously or mostly be related to predisposing pro-thrombotic factors. It has a complicated diagnostic approach due to its clinical non specificity and low prevalence that reduce its suspicion; however, it is extremely important to recognize this pathology in the context of an acute abdomen due to its high mortality. The approach is performed through the use computed tomography angiography (CTA) and the outcome will be determined by the rapid diagnosis and effective treatment. The location of a thrombus at the level of the inferior mesenteric vein (IMV) is very rare, which is why a case report will be presented of an elderly male patient with a history of alcoholism, dilated heart disease and atrial fibrillation under treatment with anticoagulant. The patient has signs of peritoneal irritation and imaging finding of thrombosis in different branches of the mesenteric veins.

Resumen

La trombosis venosa mesentérica (TVM) representa el 5 %-15 % de las isquemias mesentéricas. Es una patología infrecuente y puede ocurrir de manera espontánea o en su mayoría estar relacionada con factores predisponentes protrombóticos. Tiene un abordaje diagnóstico complicado por su inespecificidad clínica y baja prevalencia, lo cual disminuye su sospecha; sin embargo, es de suma importancia reconocer esta patología en el contexto de un abdomen agudo por su alta mortalidad. El diagnóstico se realiza mediante la angiotomografía computarizada (ATC) y su desenlace estará determinado por un rápido diagnóstico y un tratamiento efectivo. La localización de un trombo en la vena mesentérica inferior (VMI) es muy infrecuente. Este hecho motiva la presentación de este caso, un paciente masculino, adulto mayor, con antecedente de alcoholismo, cardiopatía dilatada y fibrilación auricular en manejo con anticoagulante, quien presenta signos de irritación peritoneal y hallazgo imagenológico de trombosis en distintas ramas de las venas mesentéricas.

Introduction

Mesenteric venous thrombosis (MVT) was first described by Warren and Eberhard (1) as a cause of intestinal infarction other than mesenteric arterial occlusion. It accounts for 5-15 % of mesenteric ischemic events (2). The vast majority of cases occur in the superior mesenteric vein (SMV), while in the IMV it occurs in only 11 % (3). The clinical presentation of MVT is nonspecific and varies according to the temporality; whether the presentation is acute (less than 4 weeks) or chronic (more than 4 weeks) (4). Patients with acute MVT debut mainly with abdominal pain, which may increase in intensity and manifest as peritonitis in 33 % to 66 % of cases, indicating intestinal infarction. Patients with chronic MVT are generally asymptomatic, due to the formation of venous collaterals, and it is rare for them to develop intestinal infarction (5). The complexity of clinical and paraclinical diagnosis makes this entity a challenge. We present the case of a 68-year-old male patient diagnosed with MVT of IMV, SMV and spleno-portal confluent.

Methods

Images of patients with clinical picture suggestive of MVT diagnosed by computed tomography angiography (CTA) were analyzed. The most representative images of the case presented were included in this review and at the same time a review of the literature based on risk factors, most frequent age group, diagnostic approach and possible complications of this pathology was performed.

Case Presentation

A 68-year-old male patient with a history of alcoholism, dilated heart disease and atrial fibrillation under management with warfarin, who presented to the emergency department for abdominal pain and distension, emesis and absence of stool for five days of evolution. On admission the patient was in regular general condition: with tachycardia of 152 beats per minute, grade II dehydration and signs of peritoneal irritation. An exploratory laparotomy was performed, showing hypoperfused and edematous intestinal loops,



Key words (MeSH)

Mesenteric ischemia
 Venous thrombosis
 Mesenteric veins
 Computed tomography
 angiography

Palabras clave (DeCS)

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 computarizada

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violaceous lesions with a “port wine” appearance and an irreversible ischemic pattern. Intestinal resection was performed with an end-to-end anastomosis; the patient was taken to the intensive care unit where he presented a torpid evolution, with persistent abdominal distension, emesis and oral intolerance. Due to these alterations, a mesenteric arterial thrombosis was suspected and a CT scan of the total abdomen was performed, which led to the diagnosis of MVT.

Discussion

MVT is a difficult entity to diagnose due to its clinical behavior: disproportionate abdominal pain, nausea, vomiting, absence of stool or bloody diarrhea and the lack of specific paraclinical tests, such as leukocytosis or even metabolic acidosis (6). For this reason, CTA has an important role in the diagnosis of this pathology and is considered the radiological technique of choice, since it allows evaluating the course, caliber and opacification of vascular structures, the characteristics of the intestinal wall and mesentery, with a sensitivity described in the literature of up to 90 % (4, 7).

MVT can be classified as primary or secondary according to its cause. Primary is considered to be that whose origin is spontaneous, such as that related to idiopathic thrombosis of the splanchnic venous system (mesenteric veins, splenic vein, portal vein) and which is not associated with any predisposing condition, so it is considered a diagnosis of exclusion. However, the number of patients with this entity, classified as primary, has decreased notably due to the improvement in the diagnosis of these pathologies (4). It is considered secondary when there are pathologies that predispose to thrombus formation, for example: 1) primary states of hypercoagulability and prothrombotic disorders; 2) myeloproliferative neoplasms and tumors (mainly pancreatic adenocarcinoma and hepatocellular carcinoma), and 3) chronic inflammatory diseases, such as Crohn's disease and ulcerative colitis (8). In particular, IMV thrombosis could be related to neoplastic or inflammatory conditions of the descending and sigmoid colon, since its drainage encompasses veins originating from these segments of the colon. It is more commonly associated with episodes of complicated diverticular disease, and has also been related to the formation of septic thrombi at the level of the portal vein and/or its branches, known as pylephlebitis (8, 9). Other predisposing factors for developing MVT are: recent surgeries, portal hypertension of any etiology, use of oral contraceptives, pregnancy, chemotherapy and parasitic infestation by *Ascaris lumbricoides* (8).

As already mentioned, the diagnosis is mainly radiological and the study of choice is CTA due to its high sensitivity (7, 10). There are mural, vascular and extramural-nonvascular signs that can be identified in CTA to make the diagnosis. Among these can be found: thickening of the intestinal wall (> 2 mm if there is distension of the intestinal lumen, > 4 mm when the intestinal lumen is not distended), intramural edema (loop with heterogeneous attenuation with the halo sign with low attenuation), intramural hemorrhage (loop with high density), abnormal enhancement of the wall and with intestinal pneumatosis that is diagnosed by areas with air density in the wall of the loop (11). Among the vascular signs in the venous phase we can find opacification defects of the venous vasculature, increased caliber of the vascular structures, collateral venous circulation in chronic MVT and free gas in the vascular lumen (12). Finally, the extramural-non-vascular signs,

considered indirect signs, are ascites and edema of the mesenteric fat, which are observed as an alteration of its density (13).

In the case described here, a concentric opacification defect is observed that almost totally compromises the IMV; likewise, an opacification defect of the right colic vein that flows into the MSV and an eccentric opacification defect in the splenoportal confluent (Figures 1-3).

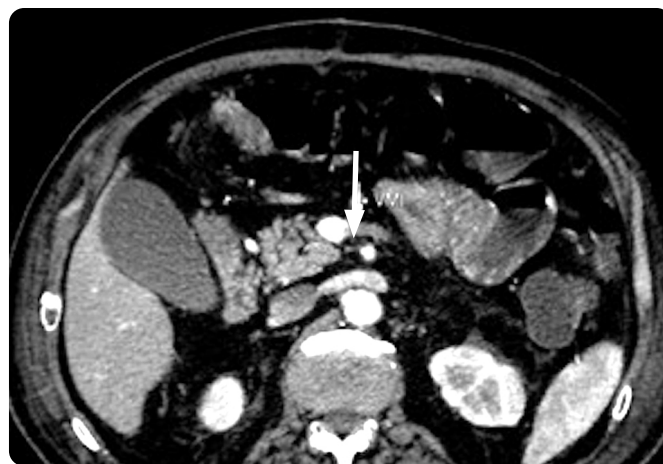


Figure 1. CTA of the abdominal aorta, axial section: concentric opacification defect in the lumen of the inferior mesenteric vein (white arrow).



Figure 2. CTA of abdominal aorta, coronal reconstruction. Concentric opacification defect of the entire inferior mesenteric vein (white arrow).



Figure 3. CTA of the abdominal aorta, coronal reconstruction: eccentric opacification defect of the splenoportal confluence (upper arrow). Concentric defect of the right colic vein which flows into the superior mesenteric vein (lower arrow).

It has been documented that MVT has a high mortality, between 12.5 % and 50 %, so early diagnosis and timely treatment is of vital importance. Initial management includes bowel rest, intravenous hydration, pain control and anticoagulation. In some cases surgical treatment may be necessary, reserved for patients with complications such as mesenteric ischemia, progressive intestinal dilatation or signs of peritoneal irritation (14, 15). CTA has proven to be an effective diagnostic method, since early diagnosis allows rapid initiation of management and thus decreases the high mortality rate. Although the diagnosis is confirmed by diagnostic imaging, an adequate anamnesis is important to determine possible predisposing factors. In the case described, chronic alcohol consumption and atrial fibrillation generate predisposition to thrombotic events (16).

Conclusion

In the clinical context of acute abdomen, MVT should be taken into account because, despite being an infrequent pathology, due to its high mortality, early radiological diagnosis is essential to initiate management. The ideal diagnosis for MVT is with CTA due to its high sensitivity and usefulness to rule out adjacent pathologies. Finally, the location of a thrombus in the IMV is rare and the cause of the lower prevalence of venous thrombi in this location is still unknown.

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