

Mesenteric and Portal Vein Thrombosis: A Review and Case Report

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Abstract:- Mesenteric and Portal vein thrombosis are generally associated with chronic pathologies, being more commonly seen in liver cirrhosis and with the concomitant risk of portal thrombosis (1). For the definitive diagnosis, images are the method of choice, with computed tomography with contrast dye as the preferred method, in addition is useful to find the site and extension of the injury (2). In the context of its acute onset, specific treatment goals are identified that are early recanalization, prevention of progression, and long-term avoidance of recurrences (1). In this article we present the case of a patient with a history of liver cirrhosis, with the first episode of mesenteric thrombosis.

Keywords:- Mesenteric Vein Thrombosis, Portal Vein Thrombosis, Liver Cirrhosis.

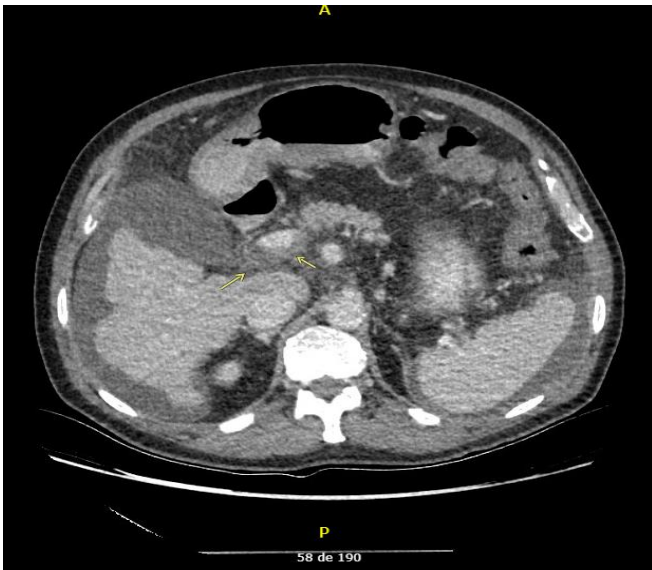
I. INTRODUCTION

Mesenteric and portal vein thrombosis is an entity more associated with chronic diseases (liver cirrhosis, cancer) or surgical procedures (gastric sleeve), its symptoms are framed mainly in pain of variable intensity that is accompanied, according to the degree of severity, to systemic manifestations and functional and structural compromise of the intestine leading to sepsis, septic embolism, intestinal perforation and peritonitis depending on its extension and initial support (1,2). The diagnosis is based on a high degree of clinical suspicion and, finally, characteristic radiological findings, with computed tomography being the method of choice. Treatment is variable, depending on the degree of its extension, the basis of which is to seek recanalization to avoid progression and complications (3). We report the case of a patient in the eighth decade of life, who presents with an episode of mesenteric thrombosis, who during his in-hospital evolution did not present systemic compromise or signs of intestinal distress.

II. DESCRIPTION OF THE CASE

A 70-year-old patient who consulted the emergency department of the Fundación Santa Fe de Bogotá with a complaint of 48-hour abdominal distention complicated 12 hours later by the appearance of a sudden onset, diffuse, maximum intensity abdominal pain, associated with liquid stools without blood or mucus. Asymptomatic in the other systems, on physical examination alert, painful, hydrated, BP: 144/70 mmHg, HR: 90 x min, RR: 18 x min, T: 37 °, distended abdomen, with bowel sounds Present, generalized mild tenderness without signs of peritoneal irritation. The patient has history of primary arterial hypertension, type 2 diabetes mellitus and hospital discharge 7 days ago after the management of upper gastrointestinal bleeding in the context of alcoholic liver cirrhosis and portal hypertension.

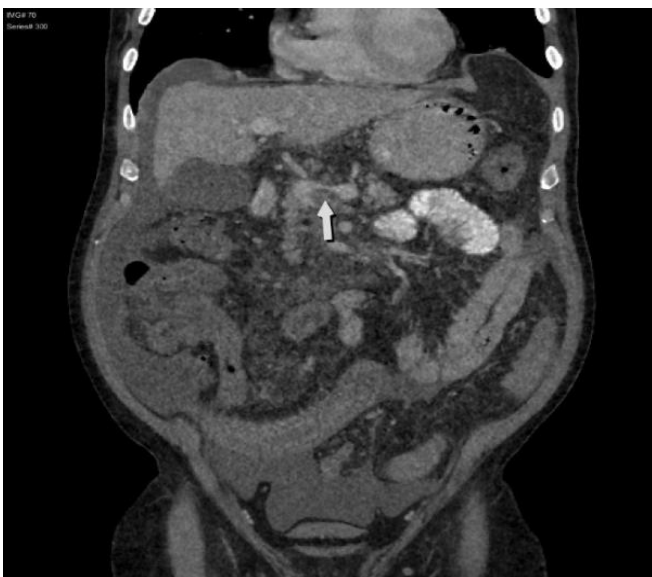
Labs on admission: Hemoglobin 11.6 g / dl
Hematocrit: 36.4 Platelets 204,000, Normal transaminases, Indirect hyperbilirubinemia (stable given his antecedent) arterial gases in acid base balance with mild hypoxemia. The abdominal X-ray imaging study revealed distention of intestinal loops secondary to ileus without a typical obstructive pattern and the contrast computed tomography of the abdomen revealed partial thrombosis of the proximal portal vein (Img. 1 and 2) with extension of the thrombus to the territory of the superior mesenteric vein and signs of intestinal wall inflammation without signs of perforation (Img 1 and 3).



Img. 1 Parcial thrombosis of the portal an superior mesenteric vein.



Img.2 Parcial thrombosis of the portal Vein



Img. 3 Thrombosis of the superior mesenteric vein.

The patient underwent general surgery and hepatology service consultant without emergency surgical indication, the patient remained stable during his observation in the emergency room and anticoagulation was started at a prophylactic dose until he was transferred to the gastroenterology procedure room where they performed an endoscopy of upper digestive tract, which revealed multiple ulcers in the distal esophagus due to a history of previous ligations and ligature material in a procedure previously performed without signs of active bleeding, which meant that therapeutic anticoagulation could be started safely.

III. DISCUSSION

Portal vein thrombosis is an entity that develops mostly secondary to a chronic pathology; Among the most common are liver cirrhosis followed by hepatobiliary neoplasms, intra-abdominal inflammatory diseases and myeloproliferative disorders (1,2). In the context of cirrhosis, its incidence increases concomitantly with the severity of the disease, reaching 25% in patients who are candidates for transplantation, which may be even higher if infections of any kind occur and being less than 1% in people with adequate control of their condition (3–7). Occasionally this pathology is not linked to a chronic disease, fulfilling the WHO criteria for rare disease, given that its prevalence is less than 5 per 10,000 inhabitants and requires an extensive study before declaring that it is an isolated entity (1).

Portal thrombosis in turn has a large number of complications, however, one of the most relevant is intestinal ischemia, which is generated due to the absence of collateral vessels, increasing the hydrostatic forces that generate stasis and an inadequate blood flow that compromises the supply of oxygen (2,8). These characteristics form the favorable environment for the development of thrombi in the superior mesenteric vein, increasing the risk of developing them if the patient has previously undergone endoscopic sclerotherapy as a treatment for upper gastrointestinal bleeding, one of the most common causes of visits to the Emergency department in patients with liver cirrhosis (8,9).

The cardinal symptom is abdominal pain that will depend on the speed of onset and the extent of the thrombosis. It can be associated with fever, dyspepsia, ileus and systemic inflammatory response and complications such as septic thrombosis and mesenteric venous thrombosis already mentioned, in which case it would present together with colicky pain without signs of peritoneal irritation, which can radiate to the dorsolumbar region, abdominal pain, distension and diarrhea, which is disproportionate to the findings on physical examination (1,10). Patients may have normal liver function tests due to the compensation of arterial flow, however, some may present with an increase in transaminases; acidosis with renal or respiratory disorders, elevation of acute phase reactants, and hemoconcentration are usually associated with complications, mainly intestinal infarction and sepsis (2,10).

Given the suspicion of a patient with portal vein thrombosis, abdominal images are the diagnostic method of choice. Abdominal radiography is very unspecific and can be normal in up to 25% of patients; In settings where advanced radiology equipment is not available, loop distension and intestinal wall thinning can guide the physician to think about this entity according to risk factors and the patient's symptoms. On the other hand, abdominal tomography with contrast dye is the method of choice, which in addition to identifying the lesion can assess its extension, it can also assess signs of ischemia or intra-abdominal infection (1,8,11). In case contraindications to the contrast dye are found, an MRI can be chosen, with high sensitivity and specificity for diagnosis (12). With the increase in the use of ultrasound as a diagnostic method, Doppler ultrasound can suggest thrombosis, but it should be noted that it is not sensitive to determine complications or evaluate the extent of the lesion, not to mention that it is operator dependent, becoming normal even in a third of the cases (13,14).

In the setting of acute mesenteric thrombosis, the goals of treatment are recanalization, prevention of progression, and long-term prevention of recurrences. Treatment should include support, pain management, fluid and electrolyte replacement, and intestinal rest, as well as blood transfusion in cases of bleeding (15). The use of antibiotics is not recommended since it is not associated with a decrease in mortality or a decrease in hospital stay, except in cases where it is indicated (peritonitis due to perforation or bacterial translocation) (16).

As soon as the diagnosis is made, anticoagulation with low molecular weight or unfractionated heparins should be started, regardless of whether the patient has bleeding or is in the preoperative period, since it has been associated with a decrease in mortality, finding recanalization in up to 80 % of cases when starting anticoagulation early (17,18). With evidence in other studies of mesenteric recanalization up to 61% and portal up to 30% (19). Anticoagulation should be maintained for 3 to 6 months in patients with reversible causes (trauma, infection, pancreatitis), always taking into account each patient individually (20). In patients with no identifiable cause or with persistent hypercoagulable states, lifelong anticoagulation should be considered. When using Warfarin, seek a therapeutic range of INR of 2-3. Another option is the use of factor Xa inhibitors with potentially less risks associated with interaction and without the need for close monitoring. Always take into account the risk of bleeding associated with treatment (up to 10%), the most common site being the gastrointestinal tract in patients with esophageal varices, preferring prophylaxis with beta-blockers to ligation, which can lead to ulceration and bleeding. (21).

More recently, treatment options have been implemented for acute mesenteric ischemia involving interventional radiology procedures, which are reserved for patients with deterioration despite the initiation of anticoagulation at an adequate dose, peritonitis, or non-surgical candidates, with access being through the femoral

artery or jugular vein (22). Systemic alteplase (tPA) has been used successfully in this context, with trans-catheter thrombolysis being the one with the highest grade of recommendation given its good results and thrombectomy is reserved in patients who are in the immediate postoperative period or with malignancies to reduce the time of thrombolysis (23,24).

The use of TIPS (transjugular intrahepatic portosystemic shunt) is recommended as a support measure, reducing portal pressure, favoring the redistribution of clots and improving the effectiveness of thrombolysis (successful recanalization and symptomatic improvement in up to 83% of treated patients) (25,26).

Surgical management should be immediate in patients with deterioration despite adequate initial management, who present clear signs of perforation or peritonitis, the standard procedure being resection of the non-viable bowel and anastomosis of healthy areas.

IV. CONCLUSIONS

Porto-mesenteric venous thrombosis is an entity that is usually associated with a variety of chronic pathologies. Its early detection is key to the establishment of timely management and thus avoid the risk of complications that can become fatal. Maintaining a high degree of suspicion in the clinical context and the history can lead to taking appropriate actions focused on its diagnosis and are of vital importance in the emergency department.

In the case presented, difficulties arose due to the fact that the laboratories did not particularly guide this entity, however, given the clinic and the background described, it was decided to request the image with contrast dye so the diagnosis was established; It was decided to defer treatment with full anticoagulation due to previous variceal bleeding, which began after weighing the risk-benefit of the patient and the endoscopic finding of absence of bleeding. We observe how with a conservative strategy it is possible to keep the patient stable and with strict follow-up a favorable evolution develops, without evidence of other complications or the requirement to carry out surgical or invasive procedures at the vascular level with which most patients with this entity present an adequate clinical evolution that with adequate follow-up, clinical resolution is achieved.

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