

## Portomesenteric vein thrombosis after complication in patient with gastric bypass.

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### Abstract:

Porto mesenteric vein thrombosis (PMVT) is an infrequent but potentially serious complication after bariatric surgery. We report the case of a 41-year-old woman undergoing a gastric bypass in 2013. 4 years later and after four urgent surgeries secondary to an internal hernia she is diagnosed with PMVT. Therefore, she presented an intestinal fistula with good response to medical treatment. Obesity and abdominal surgery are well-known causes of risk of portal vein thrombosis. Bariatric surgery increases this risk, being more frequent in the postoperative period of tubular gastrectomy than gastric bypass. With the increase in the number of patients with morbid obesity a raise in bariatric surgeries is expected. Which is why we emphasize the importance of the clinical guessing of complications such as this one, given that it manifests as an indolent clinical situation despite its seriousness.

### Keywords:

- Porto mesenteric Vein Thrombosis
- Gastric Bypass
- Bariatric surgery
- Internal hernia

### Introduction

Bariatric surgery is the only effective treatment of morbid obesity demonstrated in the long term. This surgery is effective in regard to the loss of weight and the improvement of the quality of life of the patients, as well as in the improvement of the decrease of the cardiovascular risk, the complications derived from the diabetes mellitus, and the arterial hypertension or the SAHOS (1).

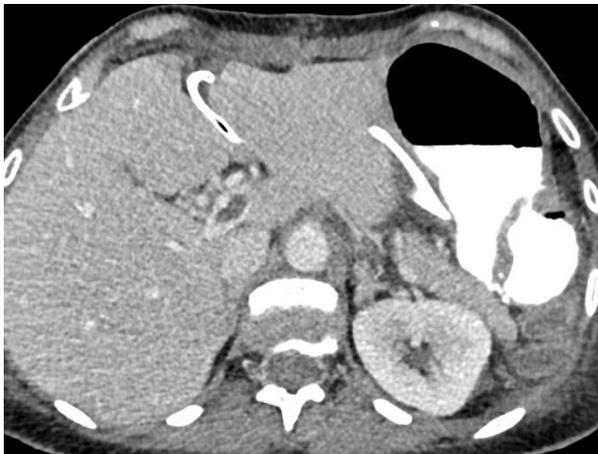
Porto mesenteric venous thrombosis is an uncommon but potentially serious complication after bariatric surgery, more associated with tubular gastrectomy than gastric bypass. The most frequently affected vein is the portal vein, although thrombosis can spread to other gastrointestinal vessels (2). Its diagnosis requires a high degree of guessing since it does not debut with a clinical or analytical alteration characteristics. Abdominal-pelvic computed tomography (CT) with oral and intravenous contrast is the most sensitive and used test and anticoagulation at therapeutic doses of 6 to 12 months is the treatment of choice reserving surgery in case of complications (3,4).

### Case report

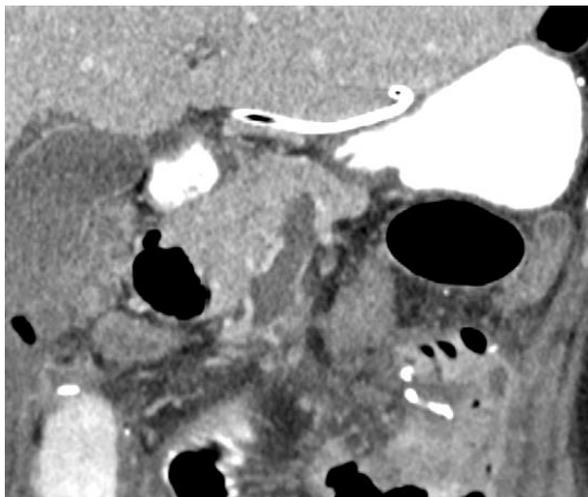
We present the case of a 41-year-old woman who comes to the emergency room of another Center in a situation of hemodynamic shock (TA 76/57 mmHg, FC 136 bpm) with abdominal pain and vomiting. As a background in 2013, she underwent bariatric surgery by means of a gastric bypass with a 50-cm of biliopancreatic loop (ABP), 150-cm of food loop (AA), and another common loop (AC) not measured but larger than a meter (previous BMI 42.9 kg / m<sup>2</sup>, current BMI 21.8 kg / m<sup>2</sup>). Given the warning signs, an abdominal CT scan is performed, showing an intestinal

ischemia in relation to a possible Petersen internal hernia. It is taken to the operating room where an urgent laparotomy is performed with the finding of generalized ischemia of the small intestine secondary to the complete torsion of the root of the mesentery, so that damage control surgery is performed. The AA next to the gastric reservoir is sectioned thus reducing the hernia. The abdomen is left open and a negative pressure therapy (TPN) system is placed. In a second intervention it is observed that the ABP and the excluded stomach are under tension, so decompressive gastrostomy is performed using a Pezzet catheter; a long segment of the ileum shows signs of necrosis, 3 meters of AC is resected at 30 cm from the ileocecal valve and the AC (ileostomy) and AA (jejunostomy) communicating with the base of the handle are skinned. In a third intervention, ileostomy is remade due to its necrosis and the patient is referred to our Center. Upon arrival at our Center, the patient has three stomata (decompressive gastrostomy, jejunostomy and ileostomy) and the abdomen open with TPN. Urgent surgery is decided. In the operating room we observed the following: stomach excluded with Pezzet catheter; gastric reservoir and 10 cm of sectioned AA; jejunostomy with 30 cm of AA up to the base of the handle, 50 cm of ABP and 160 cm of AC to the skin (ileostomy); and 30 cm of ileum until the ileocecal valve is continued with an entire colon. Traffic reconstruction was decided by reversing the bypass: gastrostomy was removed and mechanical later lateral reservoir-gastric anastomosis was performed; resection of the 10 cm of AA attached to the reservoir and the remaining 30 cm of AA to the base of the handle; Mechanical later lateral ileo-ileal anastomosis connecting distal end of AC with last centimeters of ileum to ileocecal valve. It is necessary to perform splenectomy for bleeding.

There are 150 cm of small intestine left and the abdomen is closed. On the 7th postoperative day it begins with severe epigastric pain. Urgent analytical is extracted: hemoglobin 10 g / dl, 25710 leukocytes (95.3% neutrophils), C-reactive protein 13.3 mg / dl. Urgent gasometry: pH 7.42, lactic 1.6 mmol / L. Given the findings, CT with intravenous contrast is performed, showing thrombosis of the entire portal axis (Figure 1), including the intrahepatic portal (Figure 1) and extending to the superior mesenteric vein (Figure 2 and 3), even identifying thrombi in pelvic branches with radiological signs of suffering from jejunal loops that present wall thickening with submucosal edema. There is no evidence of pneumoperitoneum or pneumatosis, so it is decided to transfer her to the ICU, conservative treatment and anticoagulation is instituted at therapeutic doses with enoxaparin sodium 60 mg every 12h.



*Image 1: Axial cut. Complete filling defect in the intrahepatic portal that is dilated.*



*Image 2: Coronal Cut. Superior mesenteric vein filling defect with dilation.*



*Image 3: Sagittal cut. Superior mesenteric vein filling defect with dilation.*

On the 10th day, a low-density intestinal fistula was observed. It presented good resolution after conservative treatment. Finally, and after a slow postoperative period, it turns high after 44 days of admission, with home anticoagulant treatment (sodium bemiparin 7500 IU every 24 hours).

#### Discussion

The LMWH is an uncommon but potentially serious complication mainly due to the risk of intestinal ischemia and perforation. A higher incidence of MPTV has been demonstrated in certain laparoscopic procedures: splenectomy, gastric bypass, vertical gastrectomy, duodenal crossover, Nissen fundoplication, cholecystectomy and colectomy (4). The LMWH is described as a complication in all bariatric procedures. With respect to vertical gastrectomy, the only prospective study conducted to date demonstrated an incidence of 1% (7).

Regarding gastric bypass, the articles published so far, are limited to describing isolated cases (3,4,6,8) or series of cases (7). We have not found in the literature, studies that analyze the relationship between the LVWH and the gastric bypass.

These results could be undervalued since the LVWH does not present any clinical or analytical features and its evolution can be indolent. Acute abdominal pain at the epigastrium level is the most frequent clinical manifestation, in 65.8% of patients. Less than 30% have tachycardia, 21% fever or show leukocytosis in the analysis. For diagnosis, the most sensitive test is the abdominal-pelvic CT with oral with intravenous contrast. 4.6%, present major complications in the postoperative period. The most important thing in the management of LVCP is the prevention of acute and chronic complications, and their treatment when they are already established. The treatment of choice is anticoagulation at therapeutic doses of 3 to 6 months, although there is no consensus in the recommended period of time. The pathophysiology of the postoperative MPTV is multifactorial although it is

mainly influenced by prothrombotic risk factors prior to surgery (9). In 30% of patients, hereditary thrombophilia was subsequently demonstrated, so, we recommend a coagulation study prior to the start of treatment (7).

### Conclusions

The LMWH after bariatric surgery has a multifactorial etiology. Obesity increases the risk of thrombosis in relation to the pro-inflammatory condition of these patients. In our case, in addition, we must add those related to the complications (vascular torsion, intestinal ischemia and splenectomy). The diagnosis of this condition requires a high degree of guessing since it does not start with a clinical or analytical characteristic alteration (10). The abdomen-pelvic CT with oral and intravenous contrast is the most sensitive test for diagnosis (4). Anticoagulation at therapeutic doses is the priority treatment. Surgery is reserved in case of complications. With the increase in the performance of bariatric surgeries in our environment, it is foreseeable that complications such as the above, will increase, reason by which we highlight the importance of clinical guessing. This will lead us to an early diagnosis and an early treatment that reduces morbidity and mortality. It is possible that the strict application of a thrombosis prevention treatment, and an early postoperative mobilization protocol, may decrease the number of events.

### Conflict of interests

The author declares no conflicts of interest.

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