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Superior Mesenteric Artery: Clinical Case

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ABSTRACT

Acute mesenteric ischemia refers to a sudden onset of intestinal hypoperfusion, which can be due to a reduction or cessation of arterial inflow leading to cellular damage, intestinal necrosis and eventually death if untreated.[1] The incidence is low, estimated at 0.09-0.2% of all acute surgical admissions [2] , this incidence increases with age having a median age of presentation of 70 years old and has a predispose for women at a 3:1 ratio. [3] Prompt diagnostic and innervation are necessary due to increase mortality rates from 50-80%. Mayor risk factors include atrial fibrillation, recent myocardial infarction, cardiac valvulopathies, hypertension, atherosclerosis, obesity, and tabaco. [4]

Keywords: Toxic megacolon, exploratory laparotomy, superior mesenteric ar-tery ischemia.

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INTRODUCTION

The disease was first reported as a case report in 1842 by Carl Von Rokitansky, and in 1927, Wilkie further detailed the pathophysiology and diagnostic findings of the disease. [5]

The superior mesenteric artery [SMA] is the primary blood supply to the small bowel , the duodenum passes between the aorta and the SMA forming an angle of 35º to 60º, the disease has been associated with the decrease in this angle; [6] however, mayor risk factors include atrial fibrillation, recent myocardial infarction, cardiac valvulopathies, hypertension, atherosclerosis, obesity, and tabaco. [4] The diagnosis is difficult due to vague and non specific symptoms, however clinical scenario is a patient complaining of excruciating abdominal pain with an unrevealing abdominal exam. Common finddings associated have been 44% with nausea, 35% with vomiting, 35% with diarrhea, and 16% with blood per rectum. [2,6] We report a case of superior mesentery artery ischemia, resulting in a toxic megacolon, who presented with abdominal pain and signs of bowel obstruction.

CASE PRESENTATION

A 72 year old man presented to office in the San Martin Clinic located in Guadalajara, Mexico with severe abdominal pain that started a few hours ago and irradiated to his back, as well as bloody diarrhea, nausea and vomiting, patient has a history of hypertension, diabetes mellitus since 15 years ago and atrial fibrillation, he is also a heavy smoker since 50 years ago, he didn't drink nor had any other major problem in his personal background, patient is evaluated and is believed to have a toxic megacolon . for which immediate surgery is performed.

FINDINGS

Under general anesthesia a toxic megacolon containing a superior mesenteric artery ischemia was found using an exploratory laparotomy

METHODS

Due to the patients age as well as the size of the colon a surgical procedure was performed in order to visualize the size of the lesion, time is important in this type of procedure because of the high mortality it encircles. The goal of the surgery in this case was to achieve 3 scenarios first one was to perform surgery to localize the site of the embolic lesion and revascularize, second goal was to perform a resection of the necrotic tissue and adjacent areas as well as cleaning the area with abundant solutions in order to get rid of all of the necrotic and putrified colonic tissue in the area in the patients abdominal wall and third goal to perform resection of the necrotic tissue and perform a cecostomy for feeding purposes.

We will describe a patient who came to the emergency department for treatment of acute abdominal pain and bloody diarrhea for which an emergency damage control abdominal surgery is performed under general anesthesia detecting a toxic megacolon furthermore decompression and cecostomy were fulfill. Subsequential localization of the obstruction and the ischemic segment localized succeeding by resection.

An exploratory laparotomy was performed in the beginning of surgery an enlarged and inflammed toxic megacolon was visualize after performing an incision next to the umbilicus in the hypogastrium, the patients colon was then inspected vigorously assessing most of the colon looking to find the site of the superior mesenteric artery and the embolic lesion once it was liberated from the tissue adajacent to it the mesenteric tissue, the superior mesenteric artery is the revascularized and once this is performed we must continue to locate all of the necrotic tissue and perform an inscision and posterior resection of the necrotic colonic tissue and the adjacent areas to this tissue, once it is performed closing of the colon was also perform with a laterolateral anastomosis of all of the open wound areas, posterior to this all of the intestinal wall was cleaned vigorously with solutions and antibiotic was given intravenously, posterior to this after anastomosis of the colon was performed then patients appendix was localized

then separated from adipose tissue adjacent to it and once it was liberated it was used as a site for feeding posterior to cecostomy.

During the surgical procedure most of the intestinal wall was inspected with the objective to localize all of the necrotic regions localized in the colon and perform a cecostomy for feeding purposes as well as localizing the site of where the embolic lesion was localized, first resection of the necrotic tissue was performed.

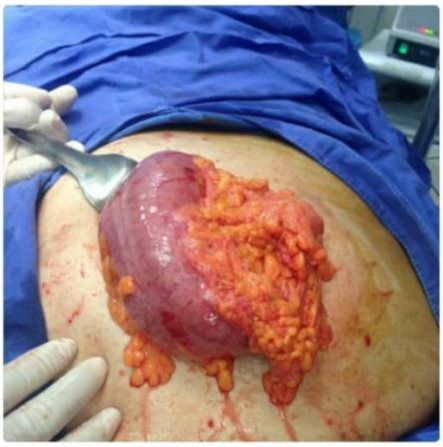

Figure 1: Toxic megacolon, located on hypogastrium region.

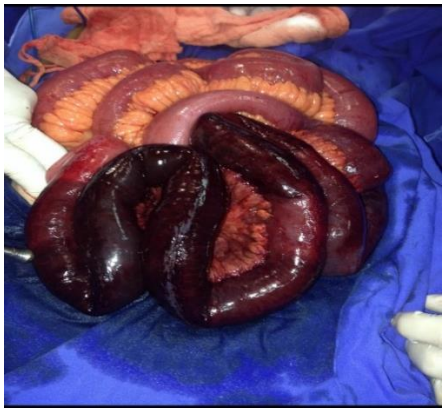

Figure 2: Necrotic colonic tissue previous to resection we can observe the colonic wall with necrotic tissue.

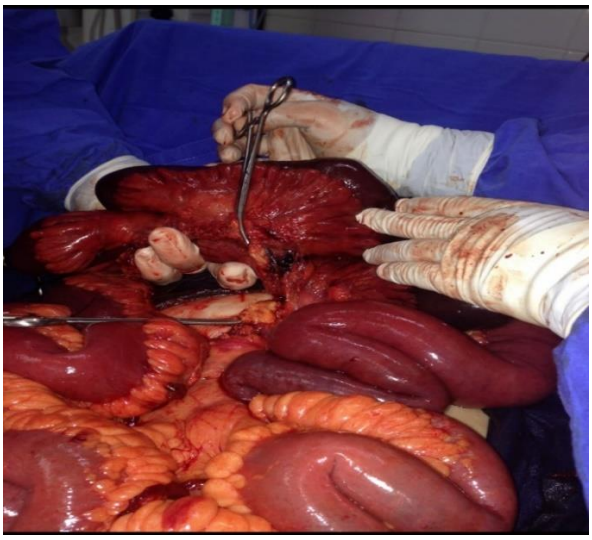

Figure 3: Site of embolic lesion.

Once the embolic site was located decompression of the toxic megacolon would be the next step and a cecostomy, the patients appendix site was used for a location for feeding purposes having a direct entry into the colon.

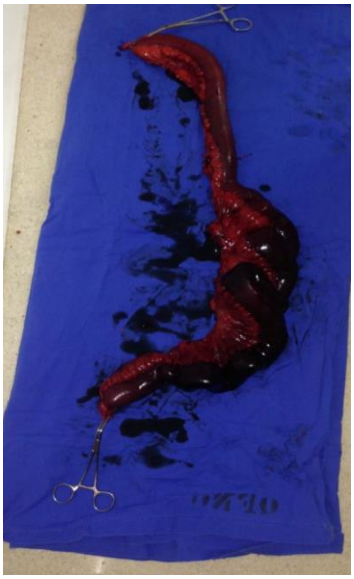

Figure 4: Resected portion of instestine.

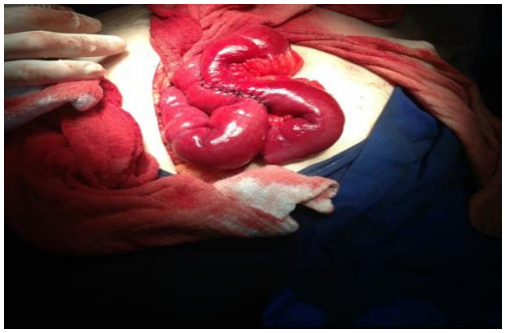

Figure 5. In this image we can visualize the colon with a laterolateral anastomosis performed on the colonic tissue.

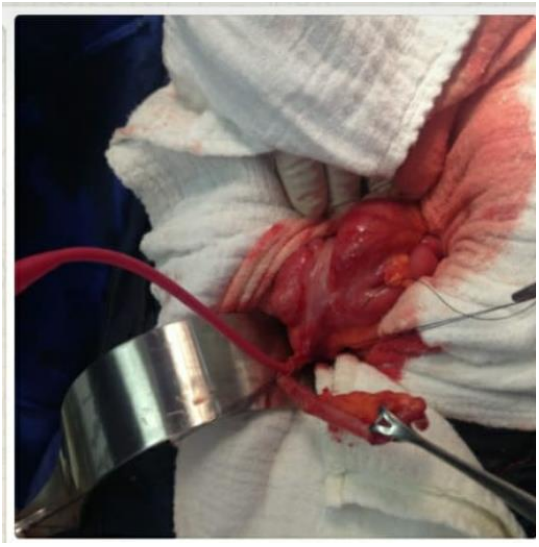

Figure 6: Cecostomy site.

Discussion

Mesenteric ischemia is mostly of acute origin and in just 10 % of cases it is due to a chronic embolism or venous occlusion, it most commonly occurs in patients that have atrial fibrillation and it mostly occurs due to an embolism that is pump from the ledt atrium and travel towards the superior mesenteric artery, there are three major parts that can be affected the superior mesenteric artery, the inferior mesenteric artery as well as the celiac region, and it occurs mostly as a severe abdominal pain that can irradiate to the back and is mostly present in males 70 years old and heavy smokers, nausea, vomiting can also be present in this type of condition. [1]

Conclusion

This type of condition is very dangerous and mostly has a poor prognosis but if surgery is perform fast and by an experience medical team the prognosis should improve it is important to take into account the patients age, diet, weight, and chronic illness.

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