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Case Report

Cecal Volvulus Following Biliopancreatic Diversion with Duodenal Switch: A Case Report

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Abstract

Due to the worldwide obesity epidemic, bariatric operations are gaining more and more popularity due to their effectiveness in battling this disease [1]. One such operation, the biliopancreatic diversion with duodenal switch (BPD-DS), is being used more frequently on the super morbidly obese population[1]. This operation is a combination of the sleeve gastrectomy and intestinal bypass that results in the most significant long-term weight loss and the least weight recidivism [2, 3]. This procedure can be performed in both single and staged operations depending on surgeon preference and patient factors. The risks associated with this particular operation are well documented and include but are not limited to anastomotic leak, bleeding, bowel obstruction, wound infection and deep vein thrombosis [4]. Late complications such as vitamin and protein deficiency are not uncommon with this procedure [5]. We are presenting a case of a patient with cecal volvulus 13 months after a BPD-DS who presented to an outside hospital with acute abdominal pain and was transferred to our facility for management.

Keywords: Cecal Volvulus; Biliopancreatic; Duodenal Switch

Introduction

Due to the worldwide obesity epidemic, bariatric operations are gaining more and more popularity due to their effectiveness in battling this disease [1]. One such operation, the biliopancreatic diversion with duodenal switch (BPD-DS), is being used more frequently on the super morbidly obese population[1]. This operation is a combination of the sleeve gastrectomy and intestinal bypass that results in the most significant long-term weight loss and the least weight recidivism [2, 3]. This procedure can be performed in both single and staged operations depending on surgeon preference and patient factors. The risks associated with this particular operation are well documented and include but are not limited to anastomotic leak, bleeding, bowel obstruction, wound infection and deep vein thrombosis [4]. Late complications such as vitamin and protein deficiency are not uncommon with this procedure [5]. We are presenting a case of a patient with cecal volvulus 13 months after a BPD-DS who presented to an outside hospital with acute abdominal pain and was transferred to our facility for management.

Case Presentation

A 38-year-old female presented to our hospital as a transfer from an outside facility with acute abdominal pain. The patient had undergone BPD-DS 13 months prior without complications and had lost 150 lbs since her operation. Her initial body mass index (BMI) at the time of index operation was 60 kg/m^2 and on presentation her BMI was 36 kg/m^2. She presented with one day of acute bilateral upper quadrant abdominal pain, obstipation, nausea, and emesis. Upon further discussion, she mentioned she had similar symptoms a few months prior when she became severely constipated and took multiple laxatives with resolution of the pain. She was moderately tender in her upper abdomen but not peritonitic on exam. She had a leukocytosis of 14.5 x 10^9/L. A computed tomography (CT) scan of the abdomen/pelvis was performed and found that she had a cecal volvulus without evidence of pneumoperitoneum.

She was taken to the operating room later that day for diagnostic laparoscopy converted to exploratory laparotomy with right hemicolectomy and conversion of duodenal switch to loop gastric bypass. At the time of operation her cecum had internally herniated under the duodenal-ileal anastomosis and was volvulized. We were unable to reduce and untwist the cecum from under the anastomosis laparoscopically and so we converted to an open laparotomy. Once the cecum was reduced, we performed a right hemicolectomy with ileotransverse colostomy due to ischemic changes that were present. We corrected the intestinal bypass of the duodenal switch thus restoring continuity to the ileum and then created a loop gastric bypass after distal gastrectomy.

We chose to convert her duodenal switch to a loop gastric bypass due to the right hemicolectomy. Her post-operative recovery was complicated by a prolonged ileus requiring total parental nutrition (TPN). She was eventually discharged home without TPN, tolerating oral intake well and no complaints of diarrhea.

Discussion

Biliopancreatic diversion with duodenal switch is a safe operation with great long-term weight loss results [5]. However, late complications such as cecal volvulus from the rapid and significant weight loss can occur. The significant intra-abdominal weight loss following BPD-DS leads to a reduction of intra-abominal fat and increased intra-abdominal capacity that allows the cecum to mobilize and volvulize. We previously reported a case series regarding cecal volvulus in gastric bypass patients but to the authors' knowledge this is the first reported case of cecal volvulus following BPD-DS [6].

We converted duodenal switch to a loop gastric bypass due to the right hemicolectomy and to avoid another anastomosis at the jejunum. We were concerned that without a competent ileocecal valve and a shorter common channel the patient would have significant diarrhea causing severe malnutrition. Resection and anastomosis, the surgical treatment of gangrenous bowel, is also equally recommended in viable bowel since it is associated with less chance of recurrence [7]. The loop gastric bypass will allow the patient to maintain her weight loss from the BPD-DS but will also have less nutritional deficiencies [8].

Abdominal pain after BPD-DS has numerous etiologies. Thorough history and physical must be performed in a timely manner to rule out acute and life-threatening causes such as bowel obstruction, internal hernia and mesenteric venous thrombosis. Failure to recognize these potential complications could lead to fatal consequences.

Disclosures

Dr. Bornstein has no conflicts of interest or financial ties to disclose. Dr. Tammany has no conflicts of interest or financial ties to disclose. Dr. Teixeira is a consultant for Intuitive Surgical and Ethicon Endo-surgery. Dr. Jawad is a consultant for Ethicon Endo-surgery.

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