http://dx.doi.org/10.4322/2357-9730.55948

Blind pouch syndrome: case report and literature review

Oly Campos Corleta[1], Laura Moschetti[2], Adriano Basso Dias[3], Guilherme de Araújo[3]

ABSTRACT

Blind pouch syndrome is the set of signs and symptoms caused by intestinal content stasis and consequent bacterial hyperproliferation in a segment excluded from the intestinal flow after surgical procedure. This paper reports the case of a 65-year-old male patient complaining of diffuse abdominal pain, poor oral intake, nausea, diarrhea, fever and chills. Surgical history included cecal resection five years before due to a tubulovillous adenoma. On physical examination, the abdomen was tender and distended, without signs of peritonitis. Complete blood cells count showed microcytic anemia. Computed tomography of the abdomen revealed ileocolonic anastomosis (ascending) with blind loop presenting signs of inflammatory process. Exploratory laparotomy was indicated, in which the resection of the blind loop was performed. After gradual improvement of the symptoms, the patient was discharged in12th post-operative day.

Keywords: *Blind pouch syndrome; case report*

Clin Biomed Res. 2015;35(3):159-162

1 Departament of Surgery, Hospital de Clínicas de Porto Alegre (HCPA). Porto Alegre, RS, Brazil.

2 Departament of Coloproctology, Hospital Nossa Senhora da Conceição (HNSC). Porto Alegre, RS, Brazil.

3 Medical School, Universidade Federal do Rio Grande do Sul (UFRGS). Porto Alegre, RS, Brazil.

Corresponding author:
Oly Campos Corleta
E-mail: ocorleta@gmail.com
Hospital de Clínicas de Porto Alegre
Rua Ramiro Barcelos, 2350
90035-903, Porto Alegre, RS, Brazil.

Blind pouch syndrome is the set of signs and symptoms caused by intestinal content stasis and consequent bacterial hyperproliferation in a segment excluded from the intestinal flow after surgical procedure[1]. The gastrointestinal signs and symptoms are variable in occurrence and intensity[2]. The most common symptoms are abdominal pain, nausea, vomit, diarrhea, and melena; constitutional symptoms such as fever, prostration, anorexia, and weight loss may arise as well[2-5]. This excessive bacterial proliferation may be a consequence of several factors related to intestinal dysmotility[2]. A blind loop resulting from an intestinal anastomosis is the condition that most frequently causes this syndrome[2]. The incidence of this complication is not described in the literature; nevertheless, there is an agreement that this is an uncommon condition[1-3]. The type of anastomosis that most often causes this complication is side-to-side anastomosis, followed by end-to-side anastomosis[2,3]. It may occur in enteroenteric, enterocolonic or colocolonic anastomosis[3]. The diagnosis is based on clinical manifestations, history of previous intestinal anastomosis, and imaging findings. Abdominal computed tomography (CT) is a valuable exam in these cases[2,3]. Treatment consists of resection of the pouch involved and may include intestinal reconstruction, in which end-to-end anastomosis is preferred[2-4].

CASE REPORT

A 65-year-old male patient was admitted in the emergency room presenting with a one-week history of diffuse abdominal pain, nausea, diarrhea, poor oral intake, fever, and chills. On physical examination, the abdomen was tender and distended, without signs of peritonitis. Medical history included refractory microcytic anemia, systemic arterial hypertension, and gastroesophageal reflux disease. Surgical history was the following: five years before, he had

undergone a cecal resection followed by side-to-end ileum and ascending colon anastomosis, due to a tubulovillous adenoma. Relevant laboratory findings were hematocrit 26.1%; hemoglobin 7.4 g/dL; leukocytes 8,850, 28% of bands. All other laboratory tests were unremarkable. Abdominal CT revealed alterations on right iliac fossa and presence of metallic wires on cecal topography. The anastomotic region presented signs of distension with regular parietal thickening and infiltration of the adjacent fat tissue, probably due to inflammatory process (Figure 1).

At exploratory laparotomy, serous-purulent ascites was observed, as well as an ileocolonic side-to-end anastomosis with distal ileal blind pouch (measuring approximately 18 cm in length), which presented signs of dysfunction, dilatation, edema, venous congestion, and areas covered with fibrin. The resection of the compromised ileal segment was performed with a stapler. After surgery, the patient evolved with gradual improvement of the symptoms, being discharged in the 12th post-operative day. The surgical specimen was sent to pathologic examination (Figure 2).

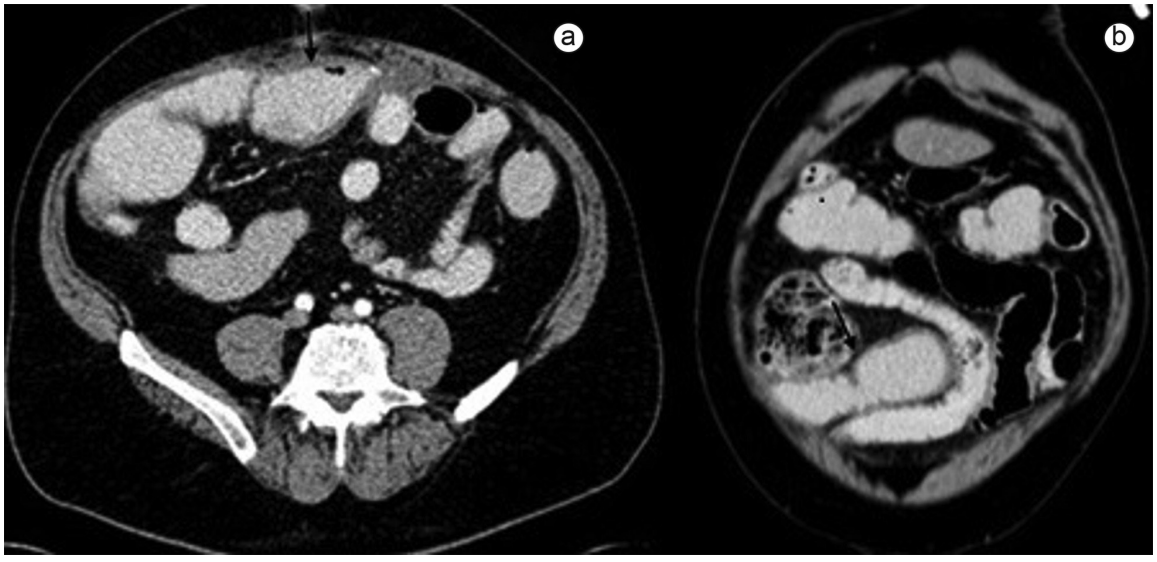

Figure 1: Computed Tomography of the Abdomen, in axial (a) and coronal (b) planes: the anastomotic region (arrows) presents signs of distension with regular parietal thickening and infiltration of the adjacent fat tissue.

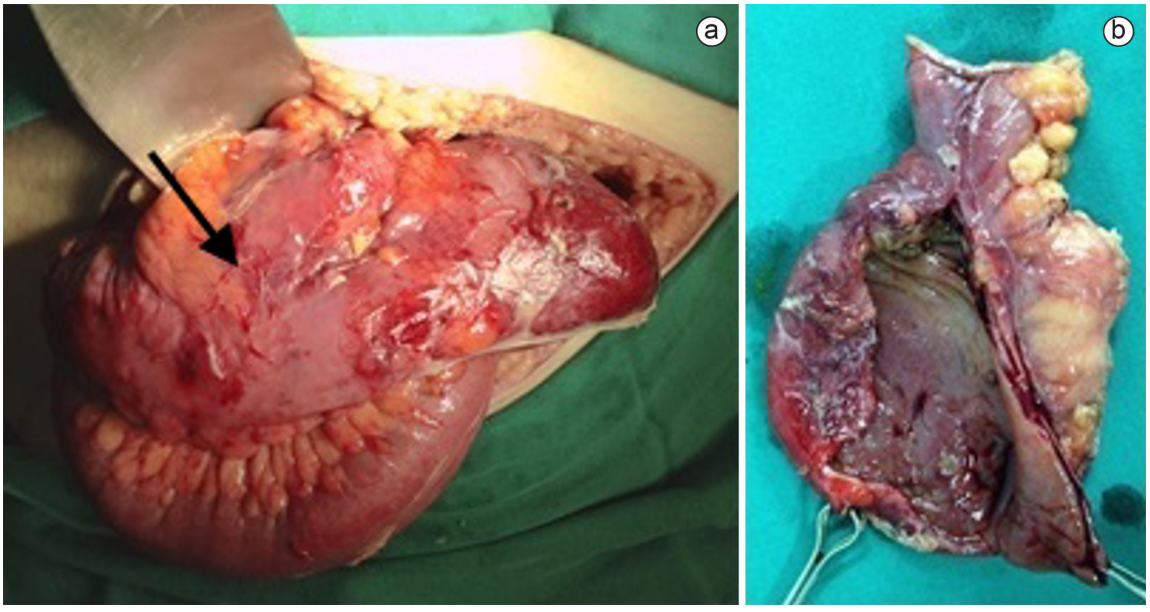

Figure 2: (a) Ileocolonic side-to-end anastomosis (arrow) with distal ileal blind loop. (b) Surgical specimen (blind loop resected).

Macroscopic examination showed small intestine portion with congested serosa and adhered fibrin, dilated intestinal lumen, and edematous mucosa with irregular folding. Microscopic examination revealed intestinal portion with granulation tissue, chronic inflammation, and suppurative peritonitis in the previous anastomotic area.

DISCUSSION

Blind pouch syndrome is characterized by bacterial proliferation within an area of intestinal content stasis[1]. Creation of a blind loop, in consequence of an intestinal anastomosis, might result in this syndrome[1,2]. The exaggerated bacterial growth may be caused by several othe conditions that cause alterations of the normal intestinal peristalsis, such as systemic sclerosis, amyloidosis, diabetic autonomic neuropathy, fistulas, stenosis, and diverticulosis[2]. There is no estimation of the incidence of the blind pouch syndrome in the literature; however, there is an agreement that this is an uncommon post-operative complication[1-3]. The mechanism involved in this complication may be explained by the change of the direction of migratory motor complex propagation in the proximal portion of the anastomosed loop, which ends up being directed towards the blind end[6]. Consequently, normal intestinal peristalsis is altered, leading to a gradual loop dilatation[6]. The consequent stasis generates bacterial proliferation within the blind pouch, resulting in inflammation and edema on the intestinal wall[7]. Ulcerations may emerge, causing intestinal bleeding and, in extreme cases, perforations[3,5,7]. The most common clinical manifestations include abdominal pain, diarrhea, steatorrhea, melena, anemia, weight loss, and fever[1,3,4].The types of anastomosis most frequently associated with blind pouch syndrome are end-to-side, side-to-end (the one implicated in the present case), and side-to-side anastomosis (the most frequently related to this complication)[2]. This syndrome may occur from a month to several years after surgery[2,5]. In the case presented here, the clinical manifestations developed five years after the first surgical intervention.

The diagnosis of blind pouch syndrome is based on clinical manifestations, history of previous intestinal anastomosis, and imaging findings[2]. On abdominal CT, the predominant findings are intestinal dilatation and thickening of the stricken intestinal portion[2]. Surgical clips may appear adjacent to this area[2]. Generally, there is no thickening of the adjacent mesenteric fat, unless perforation is present[2,8]. In some cases, blind pouch syndrome may be diagnosed through endoscopic images, depending on the site of the anastomosis[5]. In the present case, abdominal CT was crucial to the preoperative diagnostic hypothesis.

In order to avoid the occurrence of this syndrome after a surgical procedure, the length of the dysfunctional intestinal segment should not exceed 2.5 cm after an intestinal anastomosis[3]. Definitive treatment is based on resection of the involved blind pouch and, in some cases, intestinal reconstruction with end-to-end anastomosis[2,3,5]. The videolaparoscopic technique is also considered an option for surgical intervention[9]. In the present case, the laparotomy approach was chosen due to the severe clinical condition of the patient.

REFERENCES

1. Townsend CM, Beauchamp RD, Evers BM, Mattox KL. *Sabiston textbook of surgery*. 19th ed. Philadelphia: Elsevier; 2012.
2. Sandrasegaran K, Maglinte DD, Rajesh A, Tann M, Kopecky KK. CT findings for postsurgical blind pouch of small bowel. *AJR Am J Roentgenol*. 2006;186(1):110-3. http://dx.doi.org/10.2214/AJR.04.1628. PMid:16357387.
3. Bourgoin S, Hornez E, Baudoin Y, Platel JP, Thouard H. Blind pouch syndrome following enteroanastomosis. *ANZ J Surg*. 2012;82(10):750-1. http://dx.doi.org/10.1111/j.1445-2197.2012.06213.x. PMid:23025675.
4. Di Stefano M, Miceli E, Missanelli A, Mazzocchi S, Corazza GR. Absorbable vs. non-absorbable antibiotics in the treatment of small intestine bacterial overgrowth in patients with blind-loop syndrome. *Aliment Pharmacol Ther*. 2005;21(8):985-92. http://dx.doi.org/10.1111/j.1365-2036.2005.02397.x. PMid:15813834.
5. Omoya T, Muguruma N, Ichikawa S, Okita Y, Okamura S, Ito S, et al. Case of ileal ulcer in blind pouch syndrome. *Dig Endosc*. 2000;12(3):243-5. http://dx.doi.org/10.1046/j.1443-1661.2000.00051.x.
6. Moon SB, Park KJ, Moon JS, Choe EK, So IS, Jung SE. Migrating motor complex changes after side-to-side ileal bypass in mouse ileum ex-vivo: mechanism underlying the blind loop syndrome? *J Korean Surg Soc*. 2011;80(4):251-9. http://dx.doi.org/10.4174/jkss.2011.80.4.251. PMid:22066044.
7. Adachi Y, Matsushima T, Mori M, Sugimachi K, Oiwa T. Blind loop syndrome: multiple ileal ulcers following side-to-side anastomosis. *Pathology*. 1993;25(4):402-4. http://dx.doi.org/10.3109/00313029309090868. PMid:8165008.
8. Mahmood NS, Suresh HB, Hegde V. Blind pouch syndrome following enterocolic anastomosis:

multidetector computed tomographic findings. *Indian J Gastroenterol*. 2009;28(4):136-42. http://dx.doi.org/10.1007/s12664-009-0049-5. PMid:19937172.

9. Takiguchi S, Yano H, Sekimoto M, Taniguchi E, Monden T, Ohashi S, et al. Laparoscopic surgery for blind pouch syndrome following Roux-en Y gastrojejunostomy: report of a case. *Surg Today*. 1999;29(6):553-6. http://dx.doi.org/10.1007/BF02482352. PMid:10385372.

Received: May 27, 2015
Accepted: Sept 01, 2015