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A Sigmoid Loop Tumor Revealing a Strangulated Inguinoscrotal Hernia Containing the Right Colon: Case Report and Literature Review

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ABSTRACT: Inguinal hernia is a common condition in digestive surgery, predominantly affecting male patients. The main complication is strangulation. However, the presence of the right colon in the hernia sac is an exceptional clinical presentation. Several etiological factors have been suggested. We report the case of a 72-year-old man being monitored for a sigmoid loop tumor who presented with a strangulated right inguinoscrotal hernia containing the right colon.

KEYWORDS: hernia, obstruction, right colon, omentum, emergency, surgery.

INTRODUCTION

Worldwide, more than 20 million people undergo surgery for inguinal hernia each year [1]. The lifetime risk of developing this condition is estimated at 27% in men and 3% in women [2]. It results from a weakness of the muscular wall and/or an increase in intra-abdominal pressure, leading to the passage of abdominal or pelvic contents through a defect in the abdominal wall or the inguinal canal [3]. Diagnosis is primarily clinical, and the treatment is surgical. Hernia strangulation is the main complication, constituting a true diagnostic and therapeutic emergency. The hernia sac typically contains the small bowel and omentum. However, the appendix, Meckel's diverticulum, ovary, and bladder are more rarely found [4]. Exceptionally, the right colon may be identified within the hernia sac. We report a case of a strangulated right inguinoscrotal hernia containing the right colon, reviewing the literature on this rare presentation.

CASE REPORT

The patient was a 76-year-old man with a medical history of gastric ulcer under proton pump inhibitors (PPIs) for five years and benign prostatic hyperplasia under alpha-blockers for six months. He had a known allergy to penicillin and a history of smoking and alcoholism, both ceased 21 years prior. He was also being monitored for a sigmoid loop tumor under investigation.

His clinical history dated back 34 years with the appearance of a painless, reducible, and cough-impulsive right inguinoscrotal swelling. Over the past week, the swelling became painful, irreducible, and non-impulsive to coughing, with inflammatory signs, associated with cessation of stool and gas passage, and vomiting, all evolving in an afebrile context with a deterioration in general condition. On admission, general examination revealed stable consciousness and normal vital signs: respiratory rate at 18 breaths per minute, heart rate at 80 beats per minute, blood pressure at 130/70 mmHg, and temperature at 36.8°C. The conjunctivae were normochromic. Abdominal examination showed a distended and tympanic abdomen. Examination of the hernial orifices revealed a large, painful, irreducible, and non-impulsive right inguinoscrotal hernia with inflammatory signs. A left inguinal hernia, uncomplicated, with a 1 cm neck was also present. Digital rectal examination revealed a healthy anal margin, good sphincter tone, no palpable mass, and normal-colored stool on the examining finger. Lymph nodes were free, and the rest of the somatic examination was unremarkable.

Figure 1 : Image of abdominal distension associated with a strangulated right inguinoscrotal hernia.

Imaging confirmed an intestinal obstruction with colonic distension measuring 8 cm upstream of a stenosing tumor-like thickening of the proximal sigmoid loop on a dolichosigmoid. A large strangulated right inguinoscrotal hernia contained the proximal right colon and a 10x13 cm distended cecum with cecal pneumatosis. The hernia sac also contained the small bowel and omentum. Additionally, an endoluminally budding tumor-like bulbar pyloric process was noted, requiring endoscopic correlation. A small left inguinoscrotal hernia containing epiploic and small bowel structures was also identified but remained uncomplicated.

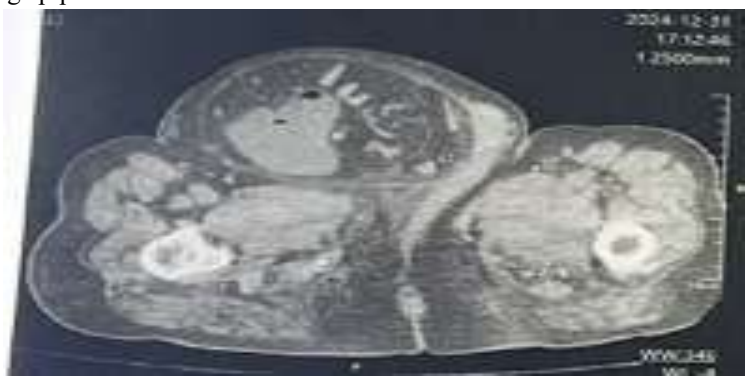

Figure 2 : CT scan of the hernia sac containing the cecum and small intestine.

Figure 3 : CT scan showing colonic distension upstream of the sigmoid loop tumor.

The patient was urgently taken to the operating room for surgical exploration. Findings included a large volume of stercoral peritoneal effusion (evacuated); a 5 cm stenosing, mobile sigmoid loop tumor responsible for upstream colonic distension (descending colon at 8 cm, transverse colon at 9 cm, ascending colon at 9 cm, and cecum at 13 cm) with a perforated cecal lesion; a 5 cm mobile, non-stenosing prepyloric gastric tumor; and a strangulated right inguinoscrotal hernia containing the right colon. The patient required 10 mg of norepinephrine intraoperatively and underwent a right hemicolectomy with double-barrel

ileocolostomy, Douglas pouch drainage with a Salem tube, and right inguinoscrotal hernia repair using Bassini's technique. The patient died 12 hours postoperatively.

Figure 4 : Image of the hernia sac content : gangrenous perforated right colon and viable small intestine.

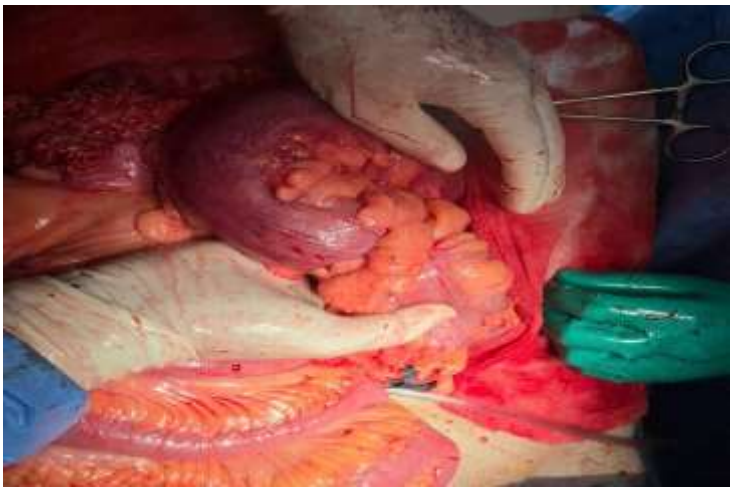

Figure 5 : Sigmoid loop tumor responsible for colonic distension upstream.

Figure 6 : Non-stenosing antral-pyloric endoluminal process.

DISCUSSION

Hernias occur in 75% of cases in the inguinal region [4]. The most serious complication is strangulation, occurring in about 1-3% of cases [4]. According to Stoppa, the etiopathogenic mechanism of hernias, regardless of type, involves degradation at a common weak area: the musculopectineal orifice at the deep level of the transversalis fascia [5]. Hernia strangulation refers to the sudden, persistent, and tight constriction of organs within the hernia sac due to a narrow, inextensible opening [6]. It can be the main complication or the discovery circumstance.

The uniqueness of our case lies in the content: the right colon, responsible for an obstructive syndrome with upstream colonic distension. This distension can involve the entire colon or specific segments such as the right colonic angle, transverse colon, or left colonic angle, with the sigmoid colon being the responsible segment [9].

The primary objective of hernia repair is threefold: elimination of the hernia, reduction of chronic postoperative pain, and prevention of recurrences. Tension-free techniques lead to better reduction of chronic postoperative pain, with Lichtenstein's technique being the gold standard [10]. The transabdominal preperitoneal and totally extraperitoneal approaches yield comparable results, with advantages such as a smaller incision. Laparoscopic approaches should also be considered for better intestinal viability assessment. Shouldice's technique remains the best non-mesh repair method [10].

In resource-limited settings, hernia repair techniques depend on human and material resources and patient socioeconomic status. Studies in Africa have shown that modified Bassini repair is the most commonly used technique in these regions [11,12]. In our patient, given the context, a Bassini repair was performed.

Strangulated inguinal hernia is a severe condition with high morbidity and significant mortality, ranging from 2.6% to 9% [13]. Alvarez et al. reported an overall morbidity of 41.5%, major morbidity of 9.6%, and mortality of 3.4% [14]. Factors influencing morbidity include wound infection and chronic postoperative pain [15]. Patient outcomes also depend on the preoperative interval, which determines strangulated loop viability [16]. Mortality factors include advanced age and decompensation of underlying conditions, with infectious complications adding further risk [15,17]. Early consultation, improved quality of care, and strict asepsis are essential for better prognostic outcomes.

CONCLUSION

Strangulated inguinal hernia is a major surgical emergency with a risk of necrosis of the herniated intestinal segment, potentially life-threatening. The presence of the right colon within the inguinal hernia sac is an exceptionally rare clinical entity in the literature, highlighting the uniqueness of this case.

Provenance and peer review

Not commissioned, externally peer reviewed.

Consent

As per international standard or university standard, patient(s) written consent has been collected and preserved by the author(s).

Ethical approval

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

Conflicts interests

Authors have declared that no competing interests exist.

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