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Case Report

Laparoscopic surgery without peritoneal space contamination in perforated acute abscedated diverticulitis of incarcerated inguinoscrotal hernia

Abstract

Sixty seven year old male patient with hypotension, tachycardia, 38.5°C fever, tensioning left inguinoscrotal hernia and hyperemia (acute scrotum). By abdominal computed tomography, recto-sigmoid perforation in diverticulitis area with collection and free air in hernial sac, was observed. This clinical finding of perforated abscedated diverticulitis with an inguinoscrotal hernia is uncommon. Usefulness of minimally invasive surgery for Hartmann's procedure without peritoneal contamination as well as surgical piece removal via scrotum is discussed, including a literature review.

Introduction

Relation of perforated abscedated diverticulitis with an inguinoscrotal hernia (ISH) is uncommon. There are no cases report published in literature in patient's clinical context. One of most serious complication of an inguinal hernia is to become incarcerated, the inguinal hernia sac most frequently contains the intestine and the omentum and more uncommonly the appendix, like the sigmoid colon is extraordinary found in an inguinal hernia, especially on the right side. We present a case of this class in which for to extract the contaminated specimen, a minimally invasive surgery to remove sigmoid was combined with trans-scrotal via, achieving resolution of the problem.

Case Report

Sixty seven year old male patient who refers a 10 years' evolution of an inguinoscrotal hernia, with no other relevant background, came to emergency room at Hospital Ángeles León, due to a sudden hernia growth, pain, 38.5°C fever, changes in intestinal habits and general bad condition. When clinically explored, he presented hypotension (AT 90/60), tachycardia (113 beats/minute), fever (38.5°C). Abdominal exploration showed inguinoscrotal hernia with hyperemia (Figure 1), pain palpation and tensioning scrotum. Blood cytometry revealed leukocytosis of 15,000/mm³ with 12 bands. Abdominal CT scan (Figure 2) showed inguinoscrotal hernia incarcerated by sigmoid rectum which demonstrated perforated diverticulitis. Patient was admitted in intermediate care unit for shock recovery and broad spectrum antibiotic. Twelve hours later,

patient undergone exploratory laparoscopy. During surgery, sigmoid rectum was observed trapped in the hernia, there was no free fluid in peritoneal cavity, end descending colon resection was performed, starting with meso-colon release



Figure 1: Scrotal pouch with erythema and volume increased due to incarcerated hernia.



Figure 2: CT scan in a coronal section; incarcerated inguinoscrotal hernia by sigmoid perforated by diverticulitis, with free air in scrotum.

with harmonic scalpel followed by linear cutting staples, colon reduction was not attempted in order to avoid peritoneal cavity contamination. Simultaneously, other surgeons approached the scrotum (Figure 3) for *in bloc* extraction preserving the hernia sac with sigmoid rectum and testicle with its elements (Figure 4). Hernia zone was directly closed with continuous non absorbable suture without mesh placement. Penrose drainage was left in scrotum and surgery was concluded with terminal colostomy opening on right iliac fossa. Ertapenem sensibility to *Escherichia coli* was found in exudate culture. Patient overcome was successful and with no complications, he was discharged 5 days post-surgery with intramuscular ertapenem for home application. Histopathologic study revealed acute perforated diverticulitis with ischaemia in the resected colon segment, ischaemia free resection margins and diverticular disease. Laparoscopic Hartmann's reversal was performed three months later, repairing hernia by inguinal via and placing mesh. In one year of follow-up the patient is normal and carries out its usual activities.

Discussion

Combination of inguinoscrotal hernia and diverticulitis is a rare couple [1-3]. In acute scrotum, patient presents acute pain in scrotal bag or its content and could be followed by inflammation, blush, oedema and size increase [3,4]. Cause of acute abdomen in this patient was a perforated diverticula with a previous inguinoscrotal hernia. Patient's clinical evaluation was relevant to obtain a correct diagnosis over decisions in surgical approach. Computed tomography lead us correctly. In this case, laparoscopic strategy let us to examine the peritoneal cavity looking for purulent collections, discarding colon chronic constrictions, and other possible perforations near or far of the hernia neck (avoiding future stenosis), acute ischaemia or colon necrosis and moreover, to perform the Hartmann's intervention easier without contamination of peritoneal cavity when extracting perforated abscedated colon through scrotum. Due to a high pollution degree of scrotal bag, it was impossible to save the testicle, the inguinal plasty was reserved for a second chirurgical time, giving preference to resection and controlling damage for septic shock, fortunately no other constriction was presented during postoperative period. Laparoscopic Hartmann's reversal was performed three months later, repairing hernia by inguinal via with a polypropylene mesh.

PubMed's review (Table 1) of similar cases showed rarity of this clinical presentation, laparoscopic Hartmann's intervention is the most common [1-9].

There are two [10,11] reports of draining abscess via scrotum or by laparotomy, resecting sigmoid with primary anastomosis afterwards. Just in one case, sigmoid anastomosis resection was done laparoscopically [10]. Only two reports make mention of the technique for hernia repair [5,8], reporting no contraindication to use light mesh, however with this procedure, patients could be infected or to present a fistula rejection. Is important to mention that in 11 clinical cases reviewed from 1980 to 2015, two patients died (18%).

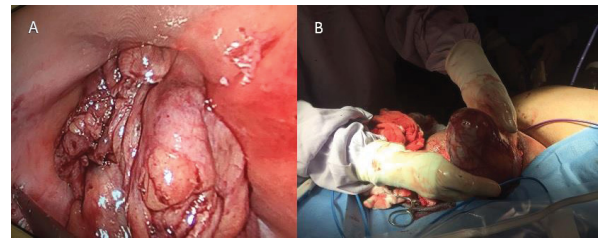


Figure 3: Surgical pathology specimens. Sectioned sigmoid rectum. Incarceration view.



Figure 4: Surgical specimen's extraction via scrotum.

Table 1: Similar cases in literature.

Author	Year	Kind of surgery	Hernia repair
Andrabi SI	2007	Hartmann's intervention via laparotomy	NO
Hwang EJ	2011	Hartmann's intervention via laparotomy	NO
Ota S	2015	None (RIP)	NO
Tufnell ML	2008	Hartmann's intervention via laparotomy	YES, Bassini
Kouraklis G	2004	Hartmann's intervention via laparotomy	NO
Raimoindi P	2016	Hartmann's intervention via laparotomy	NO
Badowski A	1980	Hartmann's intervention via laparotomy	YES
Klutke CG	1988	Hartmann's intervention via laparotomy	NO
Georgiev H	2011	Hartmann's intervention via laparotomy (RIP)	NO
Greenberg J	2005	Sigmoid colectomy with anastomosis via laparotomy	NO
Bunting D	2006	Sigmoid colectomy with anastomosis via laparotomy	NO

Conclusion

Combination of laparoscopic sigmoid resection and perforated diverticulum excision in case of hernia, the via scrotum without peritoneal contamination could be a surgical alternative in these cases.

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