

REVIEW ARTICLE

Intestinal Obstruction Due to a Strangulated Incisional Hernia at the Lubumbashi University Clinics: Two Clinical Cases and a Review of the Literature

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Abstract

An incisional hernia occurs when loops of intestine protrude through a scar in the muscle wall. Intestinal surgeries very rarely result in postoperative incisional hernias; gynecological and biliary surgeries are generally the most common causes. We present two patients treated at the Lubumbashi University Clinics for intestinal obstruction due to strangulated hernia.

Keywords: Intestinal Obstruction, Strangulated Hernia, Incisional Hernia, Clinical Case.

1. Introduction

An incisional hernia is a complication of abdominal surgery associated with weakness or poor healing of the abdominal wall. It is an early or late complication of abdominal surgery that rarely occurs in patients who have undergone abdominal surgery [2–4]. An evisceration occurs when the abdominal viscera (small intestine, colon, omentum), covered by the peritoneum, protrude through a dehiscence of the musculofascial layer of the abdominal wall and can be palpated directly beneath the skin[5]. Unlike umbilical or inguinal hernias, incisional hernias often present with complex features, including peritoneal adhesions, muscle atrophy, and, in the case of a giant hernia, loss of muscle tone [3]. Intestinal surgeries very rarely result in postoperative hernias; gynecological and biliary surgeries are generally the leading causes [6, 7].

The main risk factors statistically associated with the development of incisional hernias were: infection, young age (≤ 45 years), multiple previous pregnancies, female gender, nutritional status, emergency surgery for the initial condition, midline incision, and an initial incision length of ≥ 5 cm; factors likely to increase abdominal pressure may play a contributing role (smoking, chronic bronchitis, chronic constipation, dysuria); other factors are debatable (advanced age, diabetes, the role of the laparotomy closure technique [number of suture layers, type of suture material used, choice between interrupted or continuous sutures] [8, 9]. Secondary incisional hernia following appendectomy is a rare cause [10].

The aim of our study is to present two patients treated at the Lubumbashi University Clinics in the general surgery department for intestinal obstruction due to strangulated hernia.

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2. Methodology

We conducted a descriptive study of two patients treated at the Lubumbashi University Clinics in Haut-Katanga, DRC, for intestinal obstruction secondary to an incisional hernia.

2.1 Patient Presentations and Observations

We present two cases of strangulated incisional hernias that led to intestinal obstruction in patients with a history of appendectomy:

Patient No. 1

This is a 52-year-old female patient transferred from a health center for management of acute abdominal pain.

Her history dates back 5 days prior to the present consultation, when she presented with abdominal pain for which she was admitted to the aforementioned health center, where she was reportedly administered treatment of unknown nature and dosage. The onset of vomiting and the cessation of bowel movements and flatulence prompted the center to transfer her to the university clinics for management.

She is married and the mother of eight children; she underwent an appendectomy nine months ago; a homemaker by occupation, she weighs 81 kilograms and is 1.65 meters tall, resulting in a BMI of 29.8.

She presented with diffuse, paroxysmal abdominal pain that had come on suddenly 5 days prior, yellowish vomiting for 2 days, and an absence of bowel movements and gas for 2 days; no fever; and thirst.

Her general condition was marked by physical weakness, discolored eyelid conjunctiva, and an

icteric sclera. Dark circles under the eyes with dry mouth. Her chest was clear and free of rales;

Her abdomen: enlarged, distended, with an oblique scar approximately 6 cm long in the right iliac fossa. Diffuse tenderness on palpation, diffuse tympanism, and hydroaerial sounds present on auscultation.

Digital rectal exam: clean anal margin, toned sphincter, empty rectal ampulla, supple rectal mucosa, Douglas pouch slightly bulging and non-tender; upon withdrawal, the finger cot was clean.

We diagnosed an acute surgical abdomen: intestinal obstruction due to a band and adhesions, complicated by dehydration.

Preoperative examination: hemoglobin: 18.6 g/dL, blood type: O, Rh factor: positive, bleeding time: 2 minutes 30 seconds, and clotting time: 5 minutes 30 seconds.

Abdominal and pelvic ultrasound showed dilated intestinal loops, slowed peristalsis, no lymphadenopathy, anechoic thin-walled bladder, and normal pelvic organs

Diagnosis: Acute surgical abdomen: Intestinal obstruction; rule out paralytic ileus

She underwent surgery the same day, and the intraoperative findings reported:

- a loose cord-like band 35 cm from the ileocecal valve and
- a loop of approximately 10 cm of terminal ileum herniating through the old appendectomy incision: the portion of the loop that was herniated was located 20 cm from the ileocecal junction and was strangulated with an area of gangrene (Figure 1)



Figure 1. Intestinal hernia in Patient No. 1

She underwent:

- Resection of the omentum and the strangulated loops
- Release of the loops trapped in the hernia after

enlargement of the neck;

- Resection and end-to-end ileo-ileal anastomosis of the gangrenous portion (Figure 2)



Figure 2. End-to-end intestinal resection and anastomosis in Patient 1

- Repair of the hernia via the midline approach (Figure 3)



Figure 3. Inguinal hernia repair in Patient No. 1

Her recovery was uneventful, and she was discharged on the 16th day.

Patient No. 2

This is a 52-year-old male patient admitted for abdominal pain, vomiting, and an inability to pass stool or gas.

The symptoms began 4 days prior to this consultation with epigastric abdominal pain followed by diarrhea, vomiting, and an inability to pass stool or gas. He visited a health center where he was started on a treatment—the nature and dosage of which he does not know—and an abdominal-pelvic ultrasound and plain abdominal X-ray were ordered; the results of these tests led to his transfer to the University Clinics of Lubumbashi.

In his medical history, he underwent an appendectomy and umbilical hernia repair 42 years ago, a tonsillectomy 40 years ago, and a laparotomy for the release of adhesions 2 years ago. He has hypertension but is not diabetic.

He weighs 95 kilograms and is 181 cm tall, giving him a BMI of 29.

He has generalized, paroxysmal abdominal pain with a constant underlying ache. Postprandial vomiting. No

bowel movements or flatulence for 4 days; no fever.

He complains of generalized, paroxysmal abdominal pain with a constant underlying ache and postprandial vomiting. No bowel movements or flatulence for 4 days, but no fever.

His general condition is marked by a pained expression. The conjunctiva of the eyelids is discolored; the bulbar conjunctiva is anicteric. His chest is clear and free of sounds.

The abdomen is distended, asymmetrical, with a hypertrophic, expandable mass in the right iliac fossa. There is an umbilical scar extending to the suprapubic region. Light palpation reveals generalized tenderness; the mass in the right iliac fossa measures approximately 10 x 6 cm and is tender on palpation of the parietal ring. The abdomen is tympanic with preservation of prehepatic dullness. Hydro-aerial sounds are present.

Digital rectal examination reveals a clean anal margin, supple mucosa, toned sphincter, empty rectal ampulla, and a non-tender cul-de-sac.

We concluded that this was an acute surgical abdomen: obstruction due to bands and adhesions, as well as an eversion.

Abdominal ultrasound revealed a small amount of fluid in the hepatorenal space and dilation of the intestinal loops. *Ultrasound conclusion:* intestinal obstruction due to adhesions highly probable (Figure 4)

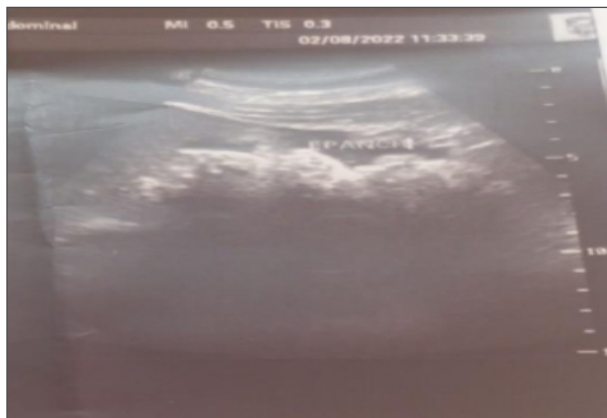


Figure 4. Abdominal ultrasound of the patient showing a slight intra-abdominal effusion

The plain abdominal X-ray shows central air-fluid levels that are wider than they are tall and more pronounced on the right (Figure 5).



Figure 5. Plain abdominal X-ray of Patient No. 2

He underwent surgery the following day, and the intraoperative findings revealed a band constricting the ileocecal junction, thereby creating a stricture, as well as an incisional hernia that had incarcerated and caused gangrene of the ileum approximately 10 cm from the ileocecal junction and was trapped in ileo-fascial adhesions. (Figure 6)



Figure 6. Incarcerated and gangrenous loops as seen during surgery in Patient No. 2

The intraoperative procedure consisted of:

- Resection of the band constricting the ileocecal junction; no area of gangrene or necrosis

- Ileal-ileal resection and anastomosis 15 cm from the ileal segment herniating into the right iliac fossa due to the impossibility of adhesiolysis

- Repair of the incisional hernia via the right iliac fossa (Figure 7)

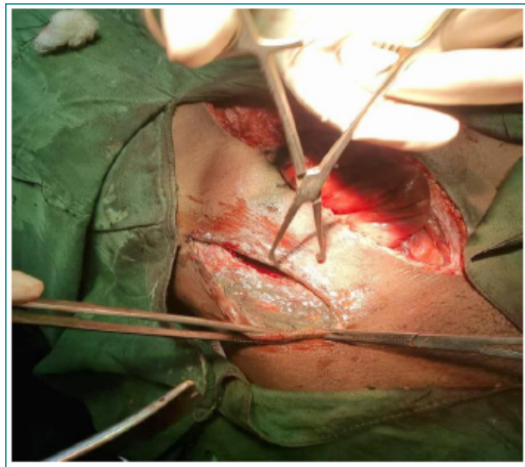


Figure 7. Repair of the wall of the right iliac fossa

The course of the disease was marked by a parietal infection on the 7th day; swabbing of the secretions revealed bacteria... susceptible to piperacillin-tazobactam, and an evisceration was observed on the 15th day.

3. Discussion

With regard to age, both of our patients were 52 years old. In his study, Kanté L. shows that the mean age of our patients was 37.8 years \pm 14.6, with a range of 6 to 67 years [11]. Abdellah ABOURRIG, in his work, demonstrates that the mean age was 49 years, with extremes of 16 and 77 years, and that the age group between 30 and 60 years accounted for 83% of our patients [10]. S. BERRADA, in his study, shows that the mean age was 50 years, with a range of 28 to 72 years [6]. BADAA et al., meanwhile, demonstrated in their study that the mean age of their patients was 55.12 years [9].

Regarding risk factors, our patients had the following medical histories: the female patient was overweight, had given birth to 8 children, and had undergone an appendectomy 9 months prior. As for the male patient, he underwent an appendectomy 42 years ago and had an umbilical hernia repaired 40 years ago. Both were overweight. In his study, Kanté L found that the surgical histories of our patients were dominated by cesarean section and peritonitis, accounting for 33.3% and 26.7%, respectively [11]. Abdellah ABOURRIG, for his part, noted that multiparity was a factor in 49% of cases and obesity in 45% of cases [10]. S. BERRADA found in his study that patients had an average of one or two risk factors: multiparity (66%); obesity (46%); and chronic bronchopneumopathy (15%) [6].

Intestinal surgeries rarely lead to incisional hernias; more commonly, incisional hernias result from gynecological and biliary surgeries [12, 10, 7].

The clinical presentation of our two patients was that of an intestinal obstruction, with the main complaints being abdominal pain and the inability to pass stool or gas. Abdominal asymmetry with palpation of a mass in the right iliac fossa was observed only in the patient.

They were treated with a laparotomy, which remains the primary approach in most cases [12], involving parietal repair with resection of intestinal loops for our patient. In their studies, a few authors have had to resort to parietoraphia rather than the placement of a prosthesis [7, 9, 12]. However, other authors, on the other hand, perform more herniorrhaphy procedures using aponeurotic sutures than the placement of a prosthesis [8, 10].

According to Jean-Louis Paillet, all such patients should, in principle, undergo surgical repair of their abdominal wall. Based on his personal experience with 110 cases of large hernias, he recommends the intraperitoneal approach using a reliable material that is well-tolerated in contact with the viscera: expanded polytetrafluoroethylene [13].

4. Conclusion

Incisional hernia is one of the rare causes of intestinal obstruction, and its prevention requires strict adherence to surgical techniques during initial procedures on the abdominal wall. Lack of awareness of this condition can lead to serious complications of intestinal obstruction, particularly peritonitis caused by intestinal necrosis.

Conflicts of Interest

The authors declare that they have no financial, professional, or personal interests that could influence the work, analyses, or conclusions presented in this article.

Contributions by the Authors

All authors have read and approved the final version.

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