



Incisional hernia of giant abdominal wall: a case report

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Abstract

Incisional hernia results from inadequate healing in the area of an operative incision and its diagnosis is clinical or imaging. Complex incisional hernias are difficult to treat and have complications, especially compartment syndrome. Thus, technical care in closing incisions in primary surgeries reduces the risk of developing an incisional hernia. Therefore, the study aimed to present a case report of a patient who performed the present correction of a giant incisional hernia with a double-sided mesh.

Keywords: Incisional hernia. compartment syndrome. Herniorrhaphy.

Introduction

Incisional hernia (IH) results from inadequate healing in the area of an operative incision, and its diagnosis can be clinical or imaging tests [1,2]. Complex incisional hernias, with loss of home, are conditions that are difficult to treat and have great potential for complications. Among the complications, abdominal compartment syndrome stands out [3,4]. This syndrome is potentially fatal and is characterized by abdominal hypertension associated with reduced venous return, cardiac output and diuresis, and worsening of the ventilatory pattern [1,5].

Several risk factors include obesity, advanced age, malnutrition, multiple laparotomies, type of incision and technical care in closing the abdominal wall,

postoperative infection of the surgical wound, chronic obstructive pulmonary disease, and diabetes [1]. This finding demonstrates the surgeon's responsibility in its prevention through adequate care, both in the technique of closing the abdominal wall and in the prophylaxis of wound infection.

Large incisional hernias are accompanied by a marked reduction in the muscle-aponeurotic tissue of the abdominal wall, and atrophy of the large abdominal muscles with loss of their anatomical and physiological functions that determine severe respiratory and visceral impairment [2,4]. Low intra-abdominal pressure alters the function of the diaphragm, promoting its lowering and progressive atony. As a consequence, patients may have respiratory problems, due to motor incoordination between the chest wall, the diaphragm, and the abdominal muscles [3,6].

Also, IH tends to increase progressively, with the consequent enlargement of the hernia ring. In large hernias, the herniated viscera adapt to the extra-abdominal site [2,4]. The increase in the volume of the loops, their meso, and the retraction of the abdominal cavity make it difficult to reintroduce them into the cavity. Under these conditions, there may be an exaggerated increase in intra-abdominal pressure with serious systemic repercussions, especially in the respiratory part [7]. The progressive expansion of the hernia sac makes the skin overlying the hernia thin and the subcutaneous tissue scarce and revascularized. For this reason, areas of necrosis, ulcers, and intestinal

fistulas are frequent.

Therefore, the present study aimed to present a case report of a patient who underwent correction of a giant incisional hernia with a double-sided mesh.

Methods

Study Design

The present study was elaborated according to the rules of the CARE case report (<https://www.care-statement.org/>). A descriptive literature review was also carried out to provide sufficient scientific data for the theoretical basis of this study. The patient's medical record was analyzed, and who authorized access to it and signed the Free and Informed Consent Term, together with those involved in this work. This patient underwent treatment and medical follow-up with the supervisor of this work. A thorough evaluation of the aspects inherent to the physical examination, complementary exams, and surgical technique was carried out, to correlate with the literature cited in the bibliography. Data collection and analysis of the patient's medical records will be carried out at Hospital Unimed São Domingos Catanduva-SP.

Ethical Approval

This study was analyzed and approved with the number 5.691.798 by the Research Ethics Committee from the FAMECA/UNIFIPA, Catanduva, Brazil, and obtaining the Informed Consent Form according to CNS/CONEP Resolution 466/12.

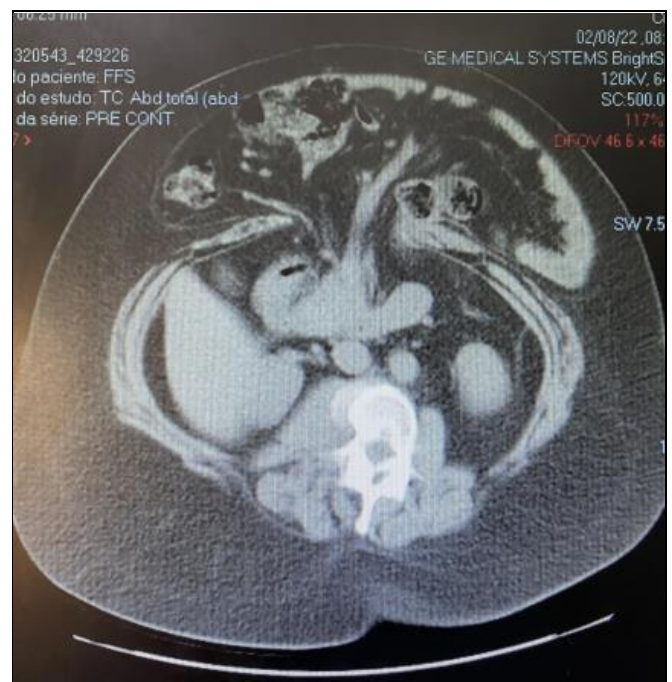
CASE REPORT

Patient Information and Clinical Findings, Timeline, Diagnostic Assessment, Therapeutic Intervention, and Follow-up

A female patient, 53 years old, diabetic, hypertensive, and overweight, sought outpatient care due to a symptomatic bulky abdominal hernia. About 10 years ago, she underwent laparotomy to correct a hiatal hernia, evolving with the appearance of bulging in the abdominal region and recurrent episodes of pain. After 5 years of the surgical procedure, she underwent abdominal herniorrhaphy. Since then, she evolved with hernia recurrence and progressive increase in volume with consequent worsening of episodes of abdominal pain in the last 2 years.

On physical examination, she had a large, irreducible abdominal hernia, and it was not possible to palpate the ring. Abdominal tomography showing supraumbilical epigastric/ mesogastric incisional hernia of the ostium measuring 7 cm, with protrusion of intestinal loops, adipose tissue, and mesentery vessels (**Figure 1**).

Figure 1. Abdominal tomography showing an epigastric/supraumbilical mesogastric incisional hernia of an ostium measuring 7 cm.



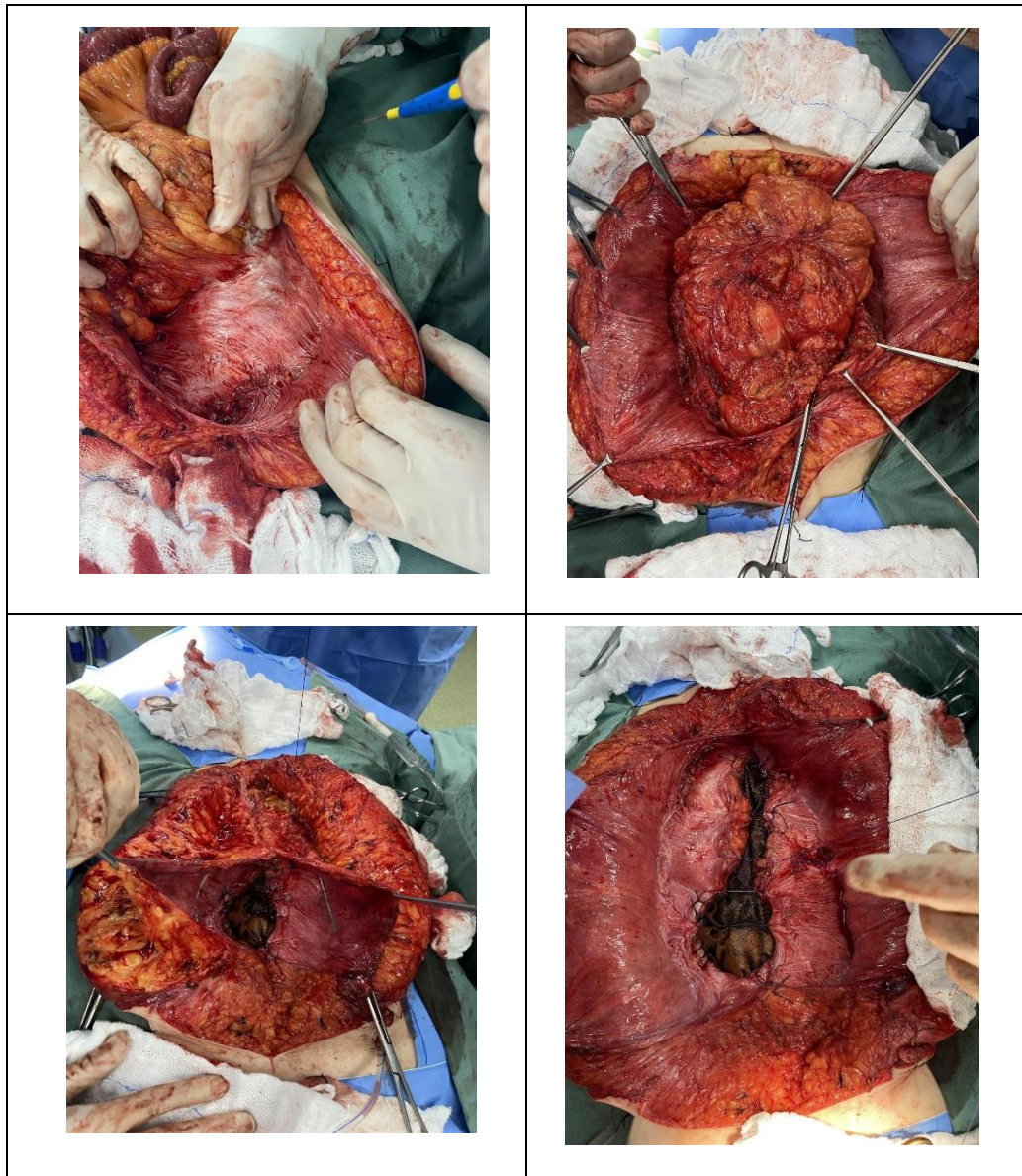
Electively hospitalized for herniorrhaphy and abdominal wall reconstruction, a technique with a 30x30cm double-sided mesh firmly fixed to the edges of the hernia ring was chosen (**Figure 2**). Procedure in complications. In the immediate postoperative period, she remained in an intensive care bed, kept on mechanical ventilation for 2 days, and required the use of vasoactive drugs. After 6 days, she was transferred to the ward with adequate evolution and was discharged on the seventh postoperative day. In the review, she presented good healing of the surgical wound and improvement in pain, referring to sporadic episodes of dyspnea on exertion.

Discussion

Ventral and incisional hernias are common pathologies in the surgical clinic. However, it should be noted that large-volume hernias are a challenge, as they are accompanied by great technical difficulty to relocate them within the abdominal cavity [6]. Our case, in particular, was a hernia of enormous volume, with a significant amount of abdominal content external to the aponeurosis, with a small hernia orifice, generating a chronic pain clinic.

Given the size of the hernia in question, it was impossible to rehabilitate all the loops within the abdominal cavity, because of this, it was decided to perform a reconstruction of the abdominal wall with a 30 x 30 cm mesh with a gelatinous face facing the viscera, strongly fixed to the edges of the hernia ring.

Figure 2. Herniorrhaphy and reconstruction of the abdominal wall, using a technique with a 30x30cm double-sided mesh firmly fixed to the edges of the hernia ring.



The surgery was a success, and the patient had an excellent response both in the immediate and late postoperative period, with a significant improvement in her quality of life.

Final considerations

In the present study, the case of a patient who underwent correction of a giant incisional hernia with a double-sided mesh was reported. We know that, due to the surgical complexity of this type of procedure, there may be inconveniences, such as hernia recurrence and increased intra-abdominal pressure in the immediate or early postoperative period, which in more severe cases can evolve with abdominal compartment syndrome. Therefore, we emphasize the need for the correct technical choice as well as careful follow-up in the

postoperative period of the giant incisional hernia correction, to avoid complications and promptly treat them when necessary. These considerations also emphasize the importance of technical care in the closure of incisions in primary surgeries, as well as care in the prevention of surgical wound infections and the patient's nutritional conditions, to reduce the risks of developing an incisional hernia and avoid risks of surgical corrections of this pathology, as described in this report.

Acknowledgement

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Ethics approval

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Informed consent

Was applied.

Data sharing statement

No additional data are available.

Conflict of interest

The authors declare no conflict of interest.

Similarity check

It was applied by Ithenticate@.

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References

1. Chevrel JP, Rath AM. Classification of incisional hernias of the abdominal wall. *Hernia*, 2000.
2. Birch DW – Characterizing laparoscopic incisional hernia repair. *Can J Surg*. 2007 50:195- 201.
3. Bisgaard T, Kehlet H, Bay-Nielsen MB, Iversen MG, Wara P, Rosenberg J, Friis-Andersen HF, Jorgensen LN – Nationwide study of early outcomes after incisional hernia repair. *Br J Surg*. 2009, 96: 1452-1457.
4. Brandolese R, Grigoletto R, Munegato G – The importance of measurement of respiratory mechanics during surgery of the abdominal wall. *Hernia*. 2000, 4: 197-201.
5. Burger JWA, Lange JF, Halm JA et al – Incisional hernia: early complication of abdominal surgery. *World J Surg*. 2005, 29: 1608-1613.
6. Bernard C, Polliand C, Mutelica L, Champault G – Repair of giant abdominal wall hernias using open intraperitoneal mesh. *Hernia*. 2007, 11: 315-320.
7. Lechaux JP, Lechaux D, Chevrel JP – Traitement des éventrations de la paroi abdominale. Editions Techniques – Encycl Méd Chir (ParisFrance), Techniques chirurgicales – Appareil digestif. 2004, 40-165, 14p.

