

Case Report

Bilateral Inguinal Hernioplasty Using the Hernia Sac for Posterior Wall Reinforcement

Hernioplastia Inguinal Bilateral Utilizando o Saco Herniário no Reforço da Parede Abdominal

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ABSTRACT

Inguinal hernioplasty is among the most frequently performed surgical procedures. The recurrence and complication rates have prompted continuous investigation into alternative techniques and materials. We aimed to report the case of a 67-year-old male patient who underwent bilateral inguinal hernioplasty utilizing a flap from the hernia sac for posterior wall reinforcement. The use of synthetic meshes, particularly polypropylene mesh introduced in the 1950s, has become widespread, especially in laparoscopic and complex hernia repairs. Despite advances, complications related to mesh use persist. An alternative for repairing indirect inguinal hernias is to use the peritoneal tissue from the hernia sac. Being autologous, it minimizes the risks of rejection or other adverse reactions. Peritoneal tissue can be effectively used to reinforce the posterior wall in inguinal hernia repairs, including cases involving large hernias.

Keywords: Hernia, Inguinal/surgery; Herniorrhaphy; Polypropylenes; Surgical Mesh

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RESUMO

A hernioplastia inguinal é uma das cirurgias mais frequentes e o índice de recidivas e complicações leva a um estudo constante de técnicas e materiais que possam ser utilizados na correção da hérnia. O nosso objetivo foi relatar o caso de um paciente de 67 anos que foi submetido a hernioplastia inguinal bilateral com uso de retalho do saco herniário para reforço da parede abdominal. O uso de materiais sintéticos, como a prótese de polipropileno, é hoje universalmente utilizado, quer nas hernioplastias videolaparoscópicas, quer nas cirurgias de abordagem anterior. No entanto, o uso de próteses poderá estar associado a complicações graves, motivo pelo qual uma opção para a correção da hérnia inguinal é o uso do retalho do saco herniário presente nas hérnias indiretas, uma vez que o tecido peritoneal, por ser autógeno, não provoca rejeição ou outras complicações. O tecido peritoneal pode ser utilizado no reforço da parede na cirurgia das hérnias inguinais mesmo nas hérnias de grande volume.

Palavras-chave: Hérnia Inguinal/cirurgia; Hernioplastia; Polipropilenos; Telas Cirúrgicas

INTRODUCTION

Inguinal hernia affects approximately 5% of the global population, with 75% of abdominal hernia cases occurring in the inguinal region. Two-thirds are indirect hernias. Prevalence is significantly higher in males—up to 25 times—and increases with age. A higher incidence is also observed on the right side.^{1,2}

Most inguinal hernia repairs are elective. However, cases involving incarceration or strangulation require urgent surgical intervention, increasing operative risk, the likelihood of systemic complications, and recurrence rates.¹

Hernia surgery is one of the oldest known procedures, with descriptions dating back to Ancient Egypt around 1552 BCE. Modern surgical approaches advanced significantly after Edoardo Bassini introduced an anatomically based, repair in 1884. Although still used, techniques developed by Bassini, Halsted, and McWay exhibit limitations such as local muscular tension.³

Persistent high recurrence and complication rates have driven the search for new surgical methods and materials. In this context, the introduction of polypropylene mesh by Usher in 1950 revolutionized hernia surgery and remains widely used, including in laparoscopic procedures.^{4,5}

Thus, the support for the use of polypropylene mesh, as in the Lichtenstein technique, becomes evident, primarily due to evidence indicating that this surgical method yields the lowest recurrence rates among all open techniques for inguinal hernia repair.⁶ In this context, Rasador *et al*⁷ demonstrated, through a systematic review and meta-analysis including 2926 patients, that the use of mesh in the elective repair of hernias smaller

than 2 cm is associated with a lower long-term recurrence rate, as well as a reduced incidence of seroma and wound infection. However, in emergency settings, the use of mesh in inguinal hernia repair does not consistently reduce 30-day recurrence or mortality rates and may slightly increase the risk of surgical site infection. Current evidence remains uncertain and inconclusive regarding the superiority of mesh use in such scenarios, despite its unequivocal endorsement in elective settings.⁸

CASE REPORT

A 67-year-old male, with a history of hypertension but no diabetes, presented with bilateral inguinoscrotal hernias accompanied by inguinal pain. After preoperative assessment and risk evaluation, the patient was admitted and underwent bilateral inguinal hernioplasty.

The procedure was performed under spinal anesthesia combined with sedation, ensuring patient comfort and optimal surgical conditions. A right-sided Felizet incision was chosen for its extensive exposure of the inguinal region. Upon careful opening of the external oblique aponeurosis, an indirect inguinal hernia was identified, following the typical inguinal canal path. The spermatic cord was meticulously isolated, and the hernia sac was dissected to prevent injury to its contents. The sac was then excised, and the corresponding peritoneal tissue was preserved in a sterile saline bath for later use as a reinforcement flap.

Subsequently, the contents of the hernial sac were reduced into the abdominal cavity, followed by closure of the transversalis fascia using 0 nylon sutures. The previously obtained flap from the hernial sac was then positioned over the weakened area and secured with simple stitches using



Figure 1: Large right-sided inguinoscrotal hernia in the preoperative period.

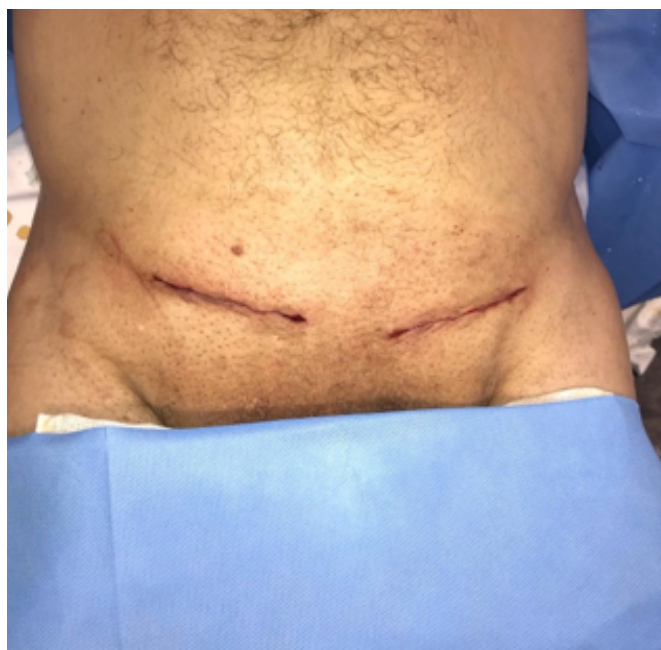


Figure 3: Immediate postoperative aspect of bilateral inguinal incisions.

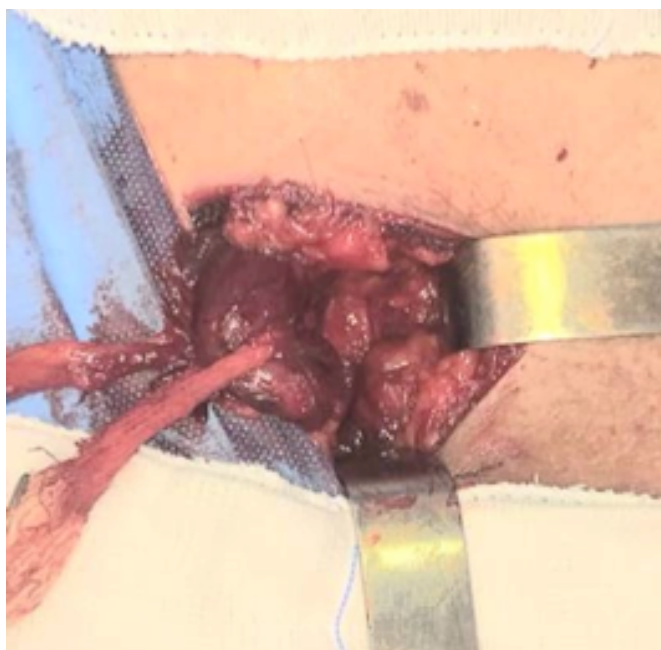


Figure 2: Intraoperative view of hernia sac dissection in the right inguinal region.

3-0 nylon. The spermatic cord was repositioned within the inguinal canal, and finally, the aponeurosis of the external oblique muscle was sutured over the cord, and the skin was closed with an intradermal stitch.

The same technique was replicated on the left side, which also presented with an indirect hernia. The patient was transferred

to the post-anesthesia care unit and then to the ward. Antibiotic therapy was not required due to the use of autologous tissue. At 18 months of follow-up, the patient showed satisfactory postoperative recovery without recurrence.

DISCUSSION

Comparative analysis of surgical techniques in inguinal hernioplasties is crucial, given that procedural success directly influences postoperative quality of life and contributes to optimizing patient clinical management.⁹ In this regard, inguinal hernia repair remains an evolving field due to persistent complications such as inguinodynia. Although widely adopted, polypropylene mesh is associated with adverse outcomes, including infection, rejection, and chronic pain.^{5,10}

In this context, although the possibility of surgical site infection exists, the use of prophylactic antibiotics is not recommended in the literature for most hernia repairs involving mesh, due to the lack of proven clinical significance, particularly regarding the prevention of deep surgical site infections.¹¹ Therefore, in the present case, in which autologous tissue was used for inguinal hernia repair, prophylactic antibiotic therapy was not recommended for the patient, reinforcing such non-requirement.¹¹

Since the work of Alcino Lázaro da Silva (1936–2022), the use of the hernia sac as a reinforcement flap has emerged as

a viable alternative. In 2009, Artur Laizo identified muscle fibers within peritoneal tissue, indicating potential for structural support.¹⁰

In a 2015 prospective study, Laizo evaluated 261 hernia repairs in 251 patients using the hernia sac flap technique. The results were encouraging, with a recurrence rate of only 1.19% and a low complication rate.¹²

Furthermore, simultaneous bilateral hernioplasty has proven to be safe and advantageous, reducing time away from work and limiting anesthesia exposure.²

CONCLUSION

Using the hernia sac flap, an autologous tissue, represents a safe and effective option for reinforcing the abdominal wall in inguinal hernia repairs, including large bilateral cases. This

technique shows promise in reducing complications associated with synthetic materials, such as rejection and infection, and may contribute to improved long-term clinical outcomes. Studies by Lázaro and Laizo support its effectiveness and encourage its adoption in selected clinical scenarios, fostering the ongoing refinement of hernia repair techniques.

KEY MESSAGES / LEARNING POINTS

The hernia sac flap can be employed for posterior wall reinforcement as a viable alternative to polypropylene mesh.

The technique has demonstrated low complication and recurrence rates, even in bilateral cases.

It offers a safe approach, particularly for patients contraindicated for synthetic materials.

ETHICAL DISCLOSURES

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CONTRIBUTORSHIP STATEMENT

AL: The author designed the study and reviewed and edited the manuscript.

BDR, IMS, ICMI and SRP: The author reviewed and edited the manuscript.

All authors approved the final version to be published.

DECLARAÇÃO DE CONTRIBUIÇÃO

AL: O autor concebeu o estudo e revisou e editou o manuscrito.

BDR, IMS, ICMI e SRP: O autor revisou e editou o manuscrito.

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REFERENCES

1. Amaral DO, Silva JE, Silva LM, Carnesi FL, Penhavel FA, Melo RM. Emergency admissions for inguinal hernia in Brazil from 2010 to 2019: mortality and costs in the public health system. *ABCD Arch Bras Dig Surg.* 2023;36:e1738. doi:10.1590/0102-672020230020e1738.
2. Hidalgo NJ, Guillaumes S, Bachero I, Butori E, Espert JJ, Ginestà C, et al. Bilateral inguinal hernia repair by laparoscopic totally extraperitoneal (TEP) vs. laparoscopic transabdominal preperitoneal (TAPP). *BMC Surg.* 2023;23:270. doi:10.1186/s12893-023-02177-2.
3. Chibata M, Daronch OT. Postoperative risk assessment of complications in inguinal hernioplasty and their association with risk factors. *Rev Assoc Med Bras.* 2020;66:623-9. doi:10.1590/1806-9282.66.5.623.
4. Messias BA, Almeida PL, Ichinose TMS, Mocchetti ER, Barbosa CA, Waisberg J, et al. Is the Lichtenstein technique properly used in inguinal hernia repairs? National analysis and surgical technique review. *Rev Col Bras Cir.* 2023;50:e20233655. doi:10.1590/0100-6991e-20233655.
5. Cunha-e-Silva JA, Oliveira PG, Oliveira L, Silva J, Silva R, Silva A, et al. Conventional inguinal herniorrhaphy with self-fixating mesh versus totally extraperitoneal laparoscopic repair with polypropylene mesh: early postoperative results. *Rev Col Bras Cir.* 2017;44:238-44. doi:10.1590/0100-69912017003003.
6. Kumar HR. The current status of open inguinal hernia repair in adults: a narrative review. *Asian J Med Health.* 2024;22:142-5.
7. Rasador AC, da Silveira CA, Lima DL, Nogueira R, Malcher F, Sreeramoju P, et al. Mesh versus suture for elective primary umbilical hernia open repair: a systematic review and meta-analysis. *Hernia.* 2024;28:2069-78. doi:10.1007/s10029-024-03106-9.
8. Sæter E, Wilsgaard T, Wara H, Holtedahl KH, Glomsaker T, Johannessen HO, et al. Mesh versus non-mesh for emergency groin hernia repair. *Cochrane Database Syst Rev.* 2023;12:CD015160. doi:10.1002/14651858.CD015160.pub2.
9. Sanderson R, De-Marchi DD, Cesário JC, Sanderson LG, Zilberstein B. Quality of life using EURAHS-QoL scores after surgical treatment of inguinal hernia: transabdominal preperitoneal (TAPP) and Lichtenstein laparoscopic techniques. *ABCD Arch Bras Dig Surg.* 2024;37:e1798. doi:10.1590/0102-672020240005e1798.
10. Laizo A, Silva Neto JG, Silva Júnior JG. Histology of hernia sacs in inguinal hernias in adults and children: presence of smooth muscle fibers and their relation to blood vessels. *Rev Col Bras Cir.* 2009;36:323-6. doi:10.1590/S0100-69912009000400009.
11. Tian XJ, Wang XM, Lei YH, Wang DC, Wei J, Fu ZJ, et al. The role of prophylactic antibiotics in elective inguinal tension-free hernia repair: A systematic review and meta-analysis. *Int Wound J.* 2023;20:1191-204. doi: 10.1111/iwj.13978.
12. Laizo A, Terzella MR, Rinco EA, Lázaro da Silva A. Surgical technique for inguinal hernia repair using the hernia sac as posterior wall reinforcement. *Rev Port Cir.* 2015;33:21-24.