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Is the use of the Transversus Abdominis Release (TAR) technique feasible in emergency management of strangulated incisional hernia? A case report

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Abstract:

The transversus abdominis release (TAR) technique is widely used in complex abdominal wall reconstruction under elective conditions. However, its role in emergency settings, particularly for strangulated incisional hernias, remains poorly defined. We report the case of a 64-year-old female patient with a recurrent strangulated incisional hernia treated successfully with TAR in an emergency context.

Keys words: transversus abdominis release, complex abdominal wall reconstruction, incisional hernia

Introduction:

Abdominal wall hernias are common surgical conditions, with incisional hernias representing up to 20% of laparotomy complications.(1) While elective repair techniques have evolved considerably, including the introduction of component separation methods such as posterior transversus abdominis release (TAR), emergency management of strangulated incisional hernias remains challenging.(2) The presence of bowel compromise, inflammation, and potential contamination often discourages the use of prosthetic materials or advanced reconstructive techniques in urgent settings.(3)
Herein, we present a case of a recurrent strangulated incisional hernia managed by emergency TAR with retromuscular mesh placement, and we discuss the feasibility and outcomes of this approach in the context of current literature.

Case presentation

A 64-year-old female, with a medical history of hypertension, presented to the emergency department with acute abdominal pain and vomiting. She had undergone emergency surgery for appendicular peritonitis 15 years earlier and repair of a median incisional hernia 5 years prior (details undocumented).
On clinical examination, the patient was conscious, hemodynamically stable, and afebrile. Abdominal examination revealed a large, irreducible midline hernia measuring 20 × 15 cm, with signs of local inflammation and tenderness. Bowel sounds were preserved, and there was no evidence of systemic sepsis.
A diagnosis of strangulated recurrent incisional hernia was made, and urgent surgical intervention was undertaken.

Operative Findings

Under general anesthesia, exploration revealed a hernia sac containing viable small bowel and ischemic omentum. Adhesiolysis was performed, followed by reduction of the small bowel into the peritoneal cavity. The necrotic omentum was excised. Dissection of the posterior rectus sheath was carried out; however, closure of the posterior layer was under significant tension. In order to achieve tension-free closure, a

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posterior component separation via transversus abdominis release (TAR) was performed bilaterally (Fig 01).A polypropylene mesh was placed in the retromuscular plane (Fig 02), and the anterior fascia was closed without tension (Fig03).

Postoperative Outcomes

The postoperative course was uneventful. There were no complications, including wound infection, seroma, or abdominal compartment syndrome. Oral intake was resumed progressively, and the patient was discharged on postoperative day 7 in good condition.
At 6-month follow-up, the patient remained asymptomatic, with no signs of recurrence or mesh-related complications (Fig 04).

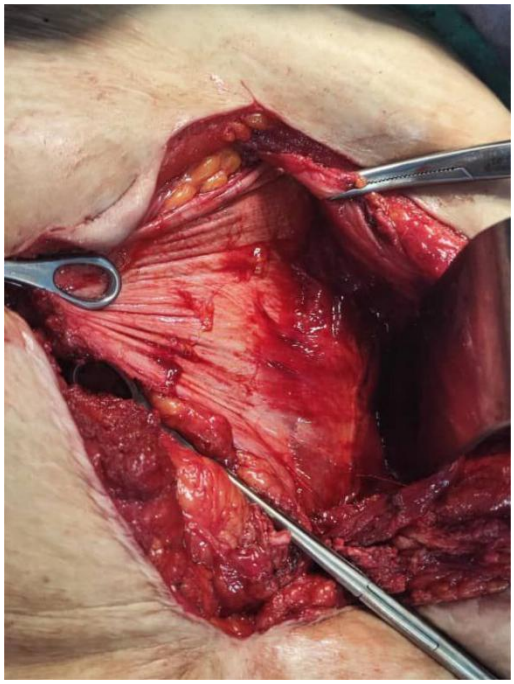

Figure 01

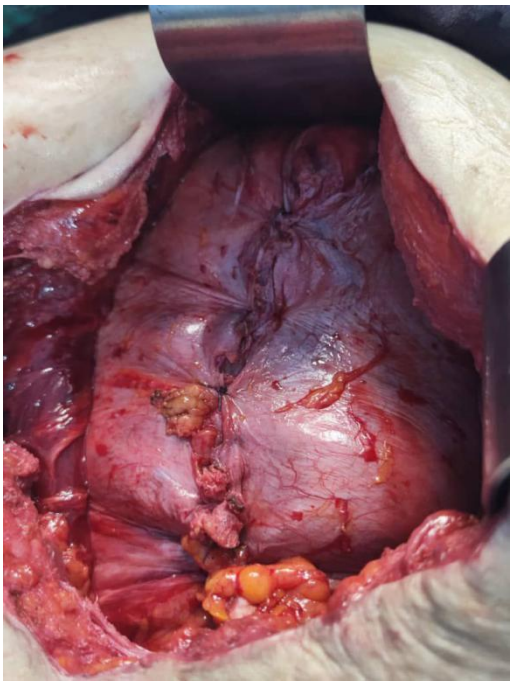

Figure 02

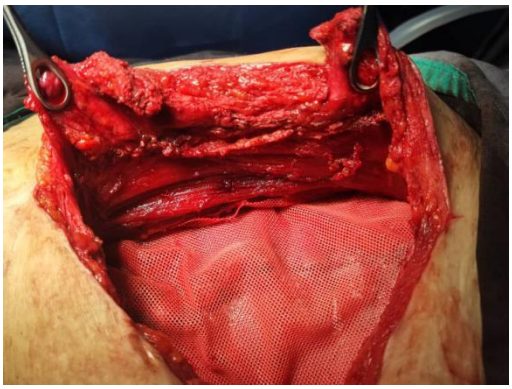

Figure 03

Figure 04

Discussion:

The management of strangulated incisional hernias in emergency settings is often limited to simple hernia repair or mesh-free techniques due to concerns about contamination and complications(3,4). Nevertheless, tension-free reconstruction is critical to reduce recurrence rates(5). The introduction of TAR has revolutionized complex abdominal wall repair by providing large retromuscular space for mesh placement, enabling medialization of the rectus muscles, and minimizing tension(2,6,7).

Several studies have demonstrated the efficacy and safety of TAR in elective complex hernia repairs, with low recurrence rates and acceptable morbidity(8,9). However, evidence regarding its use in emergencies is sparse. Emergency conditions are associated with edema, contamination, and limited operative planning, which have traditionally discouraged prosthetic use(2). Nonetheless, recent literature suggests that in carefully selected cases—when bowel viability is preserved and contamination is minimal—the use of prosthetic mesh may be safe, even in emergency settings(4).

Our case highlights that TAR can be successfully employed in emergencies to achieve tension-free closure, even in the context of strangulated recurrent incisional hernia. The critical points for feasibility are:

Assessment of bowel viability, avoiding mesh placement in cases of gross contamination or perforation. dequate release of the posterior components to permit safe, tension-free reconstruction. And careful postoperative monitoring for compartment syndrome or wound complications.

The favorable postoperative outcome and absence of recurrence at 6 months in our patient support the potential role of TAR in emergencies, though larger series and long-term data are still lacking.

Conclusion

The use of TAR in the emergency management of strangulated incisional hernia is technically feasible and may offer significant advantages in selected cases, particularly by enabling tension-free closure with durable reinforcement. While elective conditions remain the ideal setting for TAR, this case illustrates that, when contamination is limited and bowel viability is preserved, emergency TAR with retromuscular mesh placement can be safe and effective. Further studies are warranted to validate its role in urgent surgical practice.

References:

1. Deeken CR, Lake SP. Mechanical properties of the abdominal wall and biomaterials utilized for hernia repair. J Mech Behav Biomed Mater. 2017;74:411-27.

2. Quiroga-Centeno AC, Quiroga-Centeno CA, Guerrero-Macías S, Navas-Quintero O, Gómez-Ochoa SA. Systematic review and meta-analysis of risk factors for Mesh infection following Abdominal Wall Hernia Repair Surgery. Am J Surg. 2022;224(1):239-46.

3. Abdel-Baki NA, Bessa SS, Abdel-Razek AH. Comparison of prosthetic mesh repair and tissue repair in the emergency management of incarcerated para-umbilical hernia: a prospective randomized study. Hernia. 22 mars 2007;11(2):163-7.

4. Sæter AH, Fonnes S, Li S, Rosenberg J, Andresen K. Mesh versus non-mesh for emergency groin hernia repair. Cochrane Database Syst Rev(2023)

5. Schmitz R, Treckmann J, Shah S, Schneider K. « Tension-free technique » in open inguinal hernia repair. A prospective, randomized study of postoperative pain perception (« tension-free reconstruction » vs. Shouldice technique). Chir Z Alle Geb Oper Medizen. 1997;68(3):259-63.

6. Montelione KC, Zolin SJ, Fafaj A, Thomas JD, Horne CM, Baier K, et al. Outcomes of redo-transversus abdominis release for abdominal wall reconstruction. Hernia. déc 2021;25(6):1581-92.

7. Jones CM, Winder JS, Potochny JD, Pauli EM. Posterior component separation with transversus abdominis release: technique, utility, and outcomes in complex abdominal wall reconstruction. Plast Reconstr Surg. 2016;137(2):636-46.

8. Winder JS, Behar BJ, Juza RM, Potochny J, Pauli EM. Transversus abdominis release for abdominal wall reconstruction: early experience with a novel technique. J Am Coll Surg. 2016;223(2):271-8.

9. Scheuerlein H, Thiessen A, Schug-Pass C, Köckerling F. What do we know about component separation techniques for abdominal wall hernia repair? Front Surg. 2018;5:24.