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Incisional hernia

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Initial Results of a Novel Fascial Traction System for the Closure of Large Midline Defects

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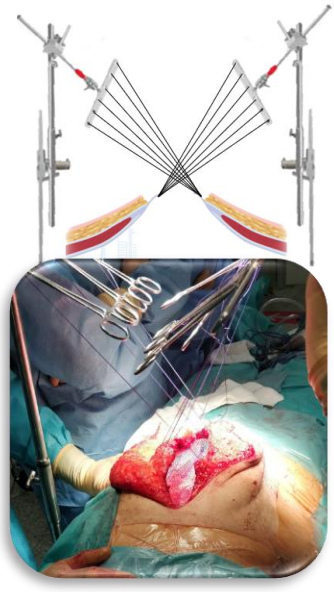
AIM

This study evaluates effectiveness of a novel ratchet-based fascial traction system for closing large midline abdominal wall defects.

MATERIAL AND METHODS

A prospective study of patients undergoing midline W3 incisional herna repair using Botox and a bilateral, ratchet-based fascial traction device between November 2022 and December 2024 in La Paz and Fundación Jiménez Díaz hospitals (Madrid, Sapin) was conducted. Patients with lateral defects (n=8) or tumors (n=1) were excluded. Surgical approach was open or eTEP.



RESULTS

24 patients (50% female, 79% ASA III) were included. Most patients presented with a single defect. Polypropylene mesh was used in 95% of cases. Median hospital stay was 4 days (1-12). Postoperative complications included medical complications (16.7%), surgical site infection (12.5%), seroma (12.5%), and hematoma (8%). No patient required reoperation. At a median follow-up of 13 months (2-24), no recurrences were observed.

Surgical technique N (%)	Open preperitoneal	4 (17.7%)
	Retromuscular (total)	20 (83.3%)
	eTEP retromuscular	4 (17.7%)
TAR N (%)	Total	6 (25%)
CT defect width, mm, median (IQR)		136 (88-248)
CT defect length, mm, median (IQR)		159 (80-294)
Complete fascial closure, N (%)		20 (83.3%)
Posterior flap closure, N (%)		22 (91.6%)
Traction cycles, N (%)		8 (4-15)
Total traction time, minutes, median (range)		16 (8-30)
Total surgical time, minutes, median (range)		227 (120-310)
Mesh size width x length mm, minutes, median (range)		30x20 (25x13, 50x50)
Reoperation, N (%)		0 (0%)
Recurrence, N (%)		0 (0%)
Follow up, months, median (range)		13 (2-24)

CONCLUSIONS

This ratchet-based system, effectively closed large midline defects decreasing component separation, reducing complications and hospital stay. Long-term follow-up is needed to confirm recurrence rates.