# The Impact of Unilateral Transversus Abdominis Muscle Release on Outcomes in Robot-Assisted Enhanced-View Totally Extraperitoneal Ventral Hernia Repair

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**Objective:**

The impact of unilateral transversus abdominis muscle release (hemi-TAR) technique on postoperative outcomes in patients undergoing robot-assisted enhanced-view totally extraperitoneal (eTEP) retro-rectus ventral hernia repair with mesh placement.

**Methods:**

- Patients: retro-rectus repair with hemi-TAR vs non-hemi-TAR
- Analysis: demographics, comorbidities, hernia characteristics, operative duration, postoperative length of stay (pLOS), and 30-day postoperative outcomes

**Results:**

102 patients; hemi-TAR (*n*=32) and non-hemi-TAR (*n*=70) cohorts

Mean age = 56.3 years, 59.8% male

Hemi-TAR with robot-assisted eTEP retro-rectus ventral hernia repair:

- Is safe and effective in patients with larger anterior abdominal wall defects.
- Increases operative duration.
- May decrease complications, such as early recurrence and posterior layer break.

**Results:**

Similar age (mean ± SD, 55.09 ± 12.47 vs 56.81 ± 12.12, *p*=0.47), BMI (32.28 ± 5.31 vs 31.98 ± 4.97, *p*=0.72), ASA scores (2.34 ± 0.55 vs 2.34 ± 0.51, *p*=0.95)

Hemi-TAR group: higher rate of hypertension as a comorbidity (37.5% vs 61.43%, *p*=0.03)

**Perioperative data**

| Variable | Hemi-TAR | Non-hemi-TAR | *p*-value |
|---|---|---|---|
| Total size of hernia defect ($cm^2$), mean ± SD | 74.6 ± 75.3 | 65.7 ± 169.9 | **<0.05** |
| Number of defects | | | |
| Mode | 1 | 1 | |
| Mean | 1.6 ± 1.0 | 1.6 ± 1.0 | 0.99 |
| *n* = 1 (%) | 21 (65.6) | 45 (64.3) | |
| *n* = 2 (%) | 5 (15.6) | 14 (20.0) | |
| *n* = 3 (%) | 3 (9.4) | 6 (8.6) | |
| *n* ≥ 4 (%) | 3 (9.4) | 5 (7.1) | |
| Conversion to open | 0 (0.0) | 0 (0.0) | |
| Operative duration (hours), mean ± SD | 4.4 ± 1.0 | 3.6 ± 1.3 | **<0.001** |
| Postoperative length of stay, mean ± SD | 0.5 ± 0.9 | 0.5 ± 0.8 | 0.73 |
| 0 – *n* (%) | 23 (71.9) | 47 (67.1) | |
| 1 – *n* (%) | 5 (15.6) | 15 (21.4) | |
| 2 – *n* (%) | 2 (6.3) | 6 (8.6) | |
| 3 – *n* (%) | 2 (6.3) | 2 (2.9) | |

**Rates of Postoperative Complications.**

| Wound-related complications | Hemi-TAR *n* (%) | Non-hemi-TAR *n* (%) | *p*-value |
|---|---|---|---|
| Seroma | 4 (12.5) | 3 (4.3) | 0.20 |
| Hematoma | 0 (0.0) | 1 (1.4) | 0.99 |
| SSI (Surgical site infection) | | | |
| Superficial | 2 (6.3) | 0 (0.0) | 0.10 |
| Deep | 0 (0.0) | 0 (0.0) | |
| Skin necrosis | 0 (0.0) | 0 (0.0) | |
| Superficial wound dehiscence | 0 (0.0) | 1 (1.4) | 0.99 |
| Posterior layer breakdown | 0 (0.0) | 2 (2.9) | 0.99 |
| Mesh infection | 0 (0.0) | 0 (0.0) | |
| Hernia recurrence (anterior layer breakdown) | | | 0.99 |
| 30 days | 0 (0.0) | 0 (0.0) | |
| 1-year | 0 (0.0) | 1 (1.4) | |
| **Non-wound-related complications** | | | |
| Postoperative ileus | 0 (0.0) | 0 (0.0) | |
| Urinary tract infection (UTI) | 0 (0.0) | 0 (0.0) | |
| Acute renal failure (ARF) | 0 (0.0) | 0 (0.0) | |
| Respiratory | 0 (0.0) | 0 (0.0) | |
| DVT/PE | 0 (0.0) | 0 (0.0) | |
| MI | 0 (0.0) | 0 (0.0) | |
| 30-day ED presentation | 1 (3.1) | 2 (2.9) | 0.99 |
| 30-day readmission | 0 (0.0) | 3 (4.3) | 0.55 |
| Medical management | 0 (0.0) | 1 (1.4) | |
| Surgical management | 0 (0.0) | 2 (2.9) | |