

## Preperitoneal Ventral Hernia Repair (VHR): Is Robotic Inferior to Open? A Propensity-Matched Analysis

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**Aim:** To compare outcomes of patients undergoing open and robotic VHR in a matched patient population.

### Methods:

- Prospectively maintained hernia database
- Tertiary hernia center in USA
- Preperitoneal only
- 2016-2023
- 1:1 propensity-score matching was performed based on surgery year, BMI, CDC wound class, ASA score, defect size, diabetes, smoking status, primary vs. recurrent repair

### Results:

#### PSM Data

**91 well-matched pairs (all  $p > 0.05$ ):**

**BMI:**  $31.0 \pm 7.8$  vs.  $31.4 \pm 5.9$  kg/m<sup>2</sup>

**Diabetes:** 23.1% vs. 23.1%

**Current smokers:** 1.1% vs. 1.1%

**# comorbidities:**  $3.6 \pm 2.4$  vs.  $3.0 \pm 2.2$

**Primary hernia:** 80.2% vs. 80.2%

**CDC 1/2:** 100% vs. 100%

**ASA III:** 48.9% vs. 48.9%



### Operative Details

**Average defect size:**  $43.0 \pm 44.9$  vs.  $35.2 \pm 43.6$  cm<sup>2</sup>;  $p = 0.291$

**Mesh size:**  $503.8 \pm 440.3$  vs.  $262.2 \pm 177.8$  cm<sup>2</sup>;  $p < 0.001$

**Synthetic mesh:** 91.2% vs. 100%;  $p = 0.007$

**Operative time:**  $132.4 \pm 70.6$  vs.  $137.1 \pm 75.2$  mins;  $p = 0.686$

**Operative charges:**  $\$16,067 \pm 11,347$  vs.  $\$36,047 \pm 11,472$ ;  $p < 0.001$

**Total charges:**  $\$58,134 \pm 33,500$  vs.  $\$72,757 \pm 23,748$ ;  $p < 0.001$



### Outcomes

**Average length of stay:**  $3.7 \pm 2.7$  vs.  $1.6 \pm 1.6$  days;  $p < 0.001$

**Wound complications:** 7.7% vs. 3.3%;  $P = 0.330$

**Hernia recurrence:** 0.0% vs. 2.2%;  $p = 0.497$

**Reoperation:** 0.0% vs. 1.1%;  $p > 0.999$   
**30-day readmissions:** 2.2% vs. 6.6%;  $p = 0.278$

**Follow-up:**  $16.7 \pm 23.3$  vs.  $19.7 \pm 21.7$  months;  $p = 0.050$

### Conclusions:

- Preperitoneal OVHR and RVHR are comparable in terms of wound complications, reoperations, operative time, and hernia recurrence.
- While RVHR was associated with shorter length-of-stay, it resulted in higher charges.