Single-institution Evaluation of Outcomes in Transplant Patients Undergoing Ventral Hernia Repair

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Background/Purpose

- Incidence of ventral hernias after transplant surgery is high
- Transplant patients undergoing VHR (Ventral Hernia Repair) classified as Ventral Hernia Working Group 2 VHWG2) indicating a higher risk for adverse outcomes
- Objectives: To evaluate if this higher risk is present at a high volume center using a case-matched comparison of outcomes in transplant and non-transplant patients with VHR

Methodology

- Retrospective review using a prospectively maintained database
- Inclusion criteria: Prior liver, kidney, heart, lung, islet cell, or pancreas transplant recipient undergoing VHR case matched to patients without previous transplant undergoing VHR
- Primary outcomes: 30-day complications and hernia recurrence
- Sub-analyses: Impact of mesh type, hernia location, and immunosuppressive therapy in transplant cohort only

Table 1. Matched Analysis Outcomes

Outcomes	Transplant (N=32)	Non-Transplant (N=32)	P-value
30-day SSO	2 (6.2%)	6 (18.8%)	0.132
30-day SSI	1 (3.1%)	3 (9.4%)	0.302
30-day reoperation	1 (3.1%)	2 (6.2%)	0.552
30-day ileus	4 (12.5%)	2 (6.2%)	0.392
30-day small bowel obstruction	1 (3.1%)	1 (3.1%)	1.002
30-day UTI	2 (6.2%)	0 (0.0%)	0.152
30-day renal failure	1 (3.1%)	1 (3.1%)	1.002
30-day PE	0 (0.0%)	0 (0.0%)	-
30-day DVT	0 (0.0%)	0 (0.0%)	-
30-day PNE	1 (3.1%)	0 (0.0%)	0.312
30-day respiratory failure	2 (6.2%)	0 (0.0%)	0.152
30-day transfer to ICU	1 (3.1%)	0 (0.0%)	0.312
30-day other complications	8 (25.0%)	3 (9.4%)	0.102
30-day readmission	3 (9.4%)	6 (18.8%)	0.282
30-day ED visit	3 (9.4%)	5 (15.6%)	0.452
30-day any complications	11 (34.4%)	9 (28.1%)	0.592
Hernia recurrence	4 (12.5%)	4 (12.5%)	1.002
Months for hernia recurrence	9.8 (5.4)	13.0 (2.5)	0.401

Table 2. Synthetic vs non-synthetic mesh (Transplant Only)

Outcomes	Non-absorbable (N=34)	Absorbable (N=13)	P-value
30-day SSO	2 (5.9%)	0 (0.0%)	1.00
30-day SSI	1 (2.9%)	0 (0.0%)	1.00
30-day readmission	3 (8.8%)	1 (7.7%)	1.00
30-day ED visit	3 (8.8%)	1 (7.7%)	1.00
30-day any complications	12 (35.3%)	5 (38.5%)	1.00
Hernia recurrence	1 (2.9%)	3 (23.1%)	0.06

Table 3. Hernia Location (Transplant Only)

Outcomes	Midline (N=31)	Lateral (N=12)	P-value
30-day SSO	1 (3.2%)	0 (0.0%)	1.00
30-day SSI	0 (0.0%)	1 (8.3%)	0.28
30-day readmission	3 (9.7%)	0 (0.0%)	0.55
30-day ED visit	3 (9.7%)	0 (0.0%)	0.55
30-day any complications	11 (35.5%)	4 (33.3%)	1.00
Hernia recurrence	**0 (0.0%)**	**3 (25.0%)**	**0.02**

Table 4. Immunosuppressant Analysis (Transplant Only)

Outcomes	Tacrolimus(N=29)	Sirolimus(N=5)	Other(N=15)	P-value
30-day SSO	0 (0.0%)	1 (20.0%)	1 (7.7%)	0.07
30-day SSI	0 (0.0%)	1 (20.0%)	0 (0.0%)	0.11
30-day readmission	2 (6.9%)	1 (20.0%)	0 (7.7%)	0.56
30-day ED visit	3 (10.3%)	1 (20.0%)	0 (0.0%)	0.28
30-day any complications	12 (41.4%)	2 (40.0%)	3 (23.1%)	0.78
Hernia recurrence	**0 (0.0%)**	**2 (40.0%)**	**2 (15.4%)**	**0.01**

Conclusion

- No difference in outcomes between complex VHR in patients with and without previous transplant surgery
- Mesh type, hernia location, and immunosuppressive therapy significantly influence hernia recurrence in transplant patients undergoing VHR.
- Patients undergoing VHR should be temporarily transitioned off of sirolimus onto another medication like tacrolimus in the perioperative period