Biologic versus Hybrid Mesh Hernia Recurrence Rate in Elective Ventral Hernia Repair: A Retrospective Cohort

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Background

No consensus exists on the best type of mesh to use for prevention of hernia recurrence in ventral hernia repairs. There have not been comparisons in the hernia recurrence between biologic and hybrid mesh placement in the short and long term follow up.

Objective

This study aims to compare the rates of hernia recurrence between biologic mesh and reinforced tissue matrix (RTM) during elective ventral hernia repair.

Methods

A retrospective cohort study was performed to examine hernia recurrence between individuals who underwent ventral hernia repair with biological mesh versus RTM from 2015 to 2023.

Demographic statistics were completed, and the Mann-Whitney U test and Fisher exact tests were used to compare outcomes between mesh types. Time to recurrence was characterized using Kaplan-Meier methods.

Methods

Inclusion Criteria:

- ❑ Patients ≥ 18 years old
- ❑ Patients who underwent elective ventral hernia repair with mesh placement

Primary Outcome:

Short-term (< 30 days) and long-term (≥ 30 days) outcomes for hernia recurrence after elective hernia repair with mesh placement

Results

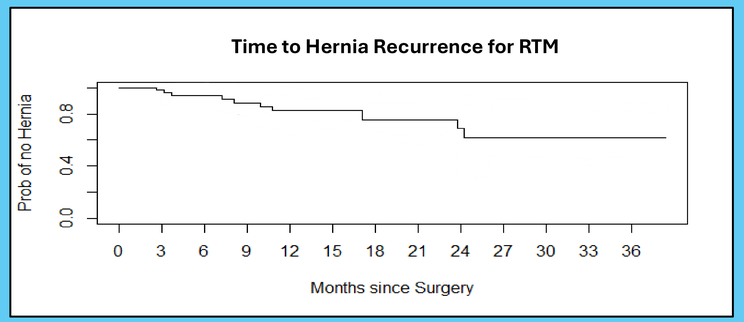
Initial Evaluation					
	RTM n = 99		Biologic n = 57		P-valve
Age	56	[45 - 63]	57	[49 - 64]	0.560
BMI	31	[27 - 35]	32	[27 - 38]	0.110
Prior Abdominal Surgery	83	78%	57	100%	< 0.001
COPD	2	2%	12	21%	< 0.001
Diabetes	15	14%	15	26%	0.098

Short-Term Follow Up					
	RTM		Biologic		P-valve
	n	%	n	%	
	99	93%	57	100%	
Hernia Recurrence	0	0%	0	0%	1.000

Long-Term Follow Up					
	RTM		Biologic		P-valve
	n	%	n	%	
	62	53%	55	47%	
Hernia Recurrence	9	15%	23	42%	**<0.001**

- ❑ **156 patients** underwent elective ventral hernia repair.
- ❑ **99 patients** underwent repairs with RTM and **57 patients** underwent repairs with biologic mesh.
- ❑ **0 % of patients** who underwent hernia repairs with RTM or biologic mesh developed a hernia recurrence within 30 days of surgery
- ❑ **15% of patients** who underwent elective ventral hernia repairs with RTM developed a hernia recurrence after 30 days vs **42% of the patients** who received biologic mesh

Results



Probability of No Hernia Recurrence for RTM		
12 months	91%	95% CI: 82 - 100%
24 months	78%	95% CI: 61 - 100%
36 months	69%	95% CI: 49 - 98%

Patients who received RTM have a 91% [95% CI: 82-100%] probability to be recurrence free at 12 months and 78% [95% CI: 61-100%] will be recurrence free at 24 months.

Conclusions

Use of RTM in elective ventral hernia repairs results in a lower long term hernia recurrence rates compared to use of biologic mesh.