THE USE OF FIBRIN SEALANT VERSUS SUTURE FOR MESH REINFORCEMENT IN VENTRAL HERNIA REPAIRS

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OBJECTIVES

Large ventral hernia defects are commonly repaired with mesh reinforcement. Suture has predominantly been used for fixation due to accessibility, cost, and outcomes. A newer strategy has been the use of fibrin sealant for mesh fixation rather than suture and/or staples. There is growing evidence to suggest that fibrin sealant is associated with lower incidence of postoperative pain and comparable rates of recurrence in inguinal hernia repairs. However, there is a paucity of data to show similar outcomes with lower rates of postoperative pain in ventral hernia repairs. Analyzing the postoperative course following ventral hernia repairs with either the suture fixation or fibrin sealant will allow for better decision-making, fewer complications, and reduced healthcare costs.

HYPOTHESIS

Our hypothesis is that the use of fibrin glue for mesh reinforcement is associated with reduced seroma formation, duration of postoperative drains, and improved pain control in the postoperative period of the first 90 days with no significant difference in recurrence rate, surgical site infection, or dehiscence.

METHODS

Patient chart data and National Surgery Quality Improvement Program (NSQIP) was used to retrospectively evaluate outcomes. The operation performed either involved exclusive use of suture or use of fibrin with transfascial suture. The primary outcomes evaluated were recurrence rate, postoperative pain, seroma formation, drain output from 72 and 96 hours following surgery, rate of surgical site infection, and abscess formation.

Drain Outputs from Suture and Fibrin Fixation

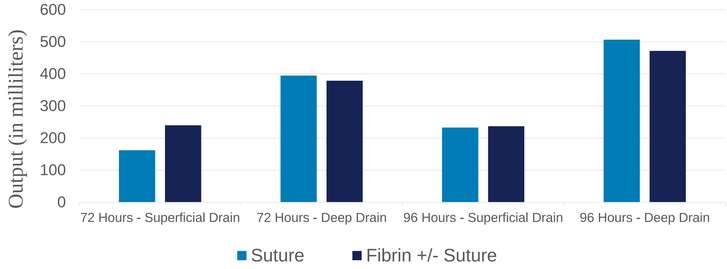


Chart 1: Based on drain outputs measured at 72 hours and 96 hours following operation, there was no significant difference between the groups. Of the 72 hour drain outputs from sutured reinforcement, the average superficial and deep drain outputs were 162 mL and 395 mL, respectively, compared to 346 mL and 164 mL from the superficial and deep drains in the patients with fibrin use, respectively (p = 0.09 for the superficial drain, 0.71 for the deep drain).There was no statistically significant difference in the 96 hour drain outputs (p = 0.92 for the superficial drain, 0.59 for the deep drain).

	Suture		Fibrin +/- Suture		Total		p-Value
No. of Patients	100		35		135		
Seroma formation	9	9.0%	1	2.9%	10	7.4%	.453
30 day SSI rate	15	15.0%	4	11.4%	19	14.1%	.780
Superficial	11	11.0%	4	11.4%	15	11.1%	1.000
Deep	0		0		0		1.000
30 day Dehiscence	1	1.0%	2	5.7%	3	2.2%	.165
Recurrence	1	1.0%	1	2.9%	2	1.5%	.453

Table 1: Of the included patients in this study, 100 (74%) of the patients underwent mesh repair with transfascial suture reinforcement and 35 (26%) underwent mesh repair with fibrin and transfascial suture reinforcement. Seroma formation occurred in 9 (9.0%) of the 100 patients who underwent repair with suture and in 1 (2.9%) of the 35 patients who underwent repair with fibrin. There was no appreciable difference in the SSI rate between the suture repair (15%) from the fibrin repair (11.4%).

RESULTS

There were 135 patients included in the study, with 100 patients in the suture fixation group and 35 patients in the fibrin sealant group. There was no statistically significant difference between recurrence rate, surgical site infections, and pain control. There was 1 patient from each of the fibrin and suture group with a recurrence upon follow-up (p = 0.453) and no difference in drain output within the first 4 postoperative days.

CONCLUSIONS

The use of fibrin sealant did not show any significant difference in primary outcomes compared to suture fixation. Due to the comparable outcomes, these results warrant a prospective study to further evaluate cost effectiveness and value.

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