Emergent and Urgent Ventral Hernia Repair: Comparing Recurrence Rates Amongst Procedures Utilizing Mesh Versus No Mesh

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Introduction

- Ventral hernia repairs (VHR) account for over 350,000 operations per year [1] with approximately 10% of repairs being performed emergently [2].
- Emergent hernia repair is performed when patients present with signs of bowel incarceration or strangulation [2].
- Mesh placement reduces hernia recurrence but can increase post-operative risk of infection [3].

Objective

- Analyze recurrence rates and outcomes of emergent and urgent VHR
- Compare emergent procedures which used mesh to those without mesh

Methods

- An IRB approved retrospective study of cases of emergent and urgent VHRs performed between 2013-2017 were conducted at this institution.
- Patient demographics, perioperative characteristics, and 30-day clinical outcomes data were extracted from the local American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) database.
- Review of electronic medical records provided indication for repair and six-month postoperative outcomes including wound events, number of surgical office visits, emergency department (ED) visits, and incidence of hernia recurrence.

Results

	No Mesh	Mesh	p-value
Total Patients	53	41	
Pre-operative Characteristics			
BMI ≤ 30 kg/m²	17.0%	29.3%	0.151
30.1 – 40	37.7%	43.9%	
40.1+	45.3%	26.8%	
ASA Class I-II	11.3%	24.4%	0.016
ASA III	64.2%	70.7%	
ASA IV-V	24.5%	4.9%	
Bleeding Disorder	18.9%	2.4%	0.021
Hernia and Operative Details			
Presentation			<0.001
Delayed	17.0%	58.5%	
Emergent	83.0%	41.5%	
Mean Duration of Procedure, minutes	122	202	<0.001
Clean Wound Class	56.6%	75.6%	0.206
Clean/Contaminated	20.8%	7.3%	
Contaminated	15.1%	9.8%	
Dirty/Infected	7.5%	7.3%	
CPT Incarceration/Strangulation	90.6%	70.7%	0.016
Separation of Components	0.0%	24.4%	<0.001
Outcomes			
Recurrence	24.5%	7.3%	0.030
Wound Complications	28.3%	31.7%	0.821
ED Visits	22.6%	41.5%	0.071
Office Visits			0.004
≤1	75.5%	39.0%	
2	9.4%	26.8%	
3	7.5%	12.2%	
≥4	7.5%	22.0%	

Discussion

Many studies have been done regarding the benefit of mesh in elective VHR where infection is uncommon. However, there is caution amongst surgeons using mesh in contaminated fields as infection increases the risk of hernia recurrence [4]. Due to this, guidelines for mesh placement in emergent cases are poorly defined due to the lack of studies [5]. We are optimistic that the comparable six month wound morbidities in patients who receive mesh versus those who do not as well as the high recurrence rate amongst the non-mesh group will compel surgeons to utilize mesh in the emergent setting.

Conclusion

- Higher risk patients were more likely to not receive mesh
- Emergent and urgent VHRs which utilized mesh had fewer recurrences compared to procedures without mesh
- Wound complications did not differ between the mesh and no mesh groups, despite significantly longer operating times in the mesh group

References

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