Outcomes of Minimally Invasive versus Open Lysis of Adhesions in the Geriatric population: A 5-year NSQIP review

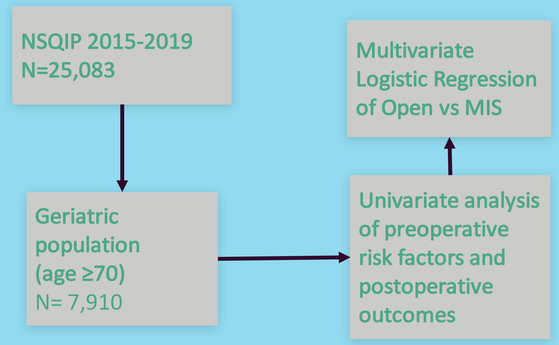
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Background

Adhesiolysis remains the standard surgical care for intestinal obstruction following the failure of conservative management (1). It has been previously described that minimally invasive (MIS) intervention results in more favorable outcomes with lower morbidity and mortality (2,3). Here we sought to describe the outcomes related to lysis of adhesions within the geriatric population.

Methods



Preoperative Risk Characteristics/Risk Factors

Variable	MIS N=2,903	Open N=5,007	P-value
Female	3,034	1,766	0.83
Age (mean)	77.5	78.3	<0.001
Smoker	7.1%	8.8%	0.008
History of CHF	2.4%	3.2%	0.029
Hypertension	67.7%	70%	0.035
Pre-Op Renal Failure	1%	2.4%	<0.001
Disseminated Cancer	2.2%	4.5%	<0.001
Pre-Op Transfusion	0.9%	1.6%	0.004
ASA>3	75%	86.6%	<0.001

Geriatric patients undergoing lysis of adhesions were more likely to experience higher morbidity and mortality with an open approach



Multivariable Regression

Variable	Odds Ratio	95% Confidence Interval	P-value
Mortality	2.6	1.9-3.5	0.001

*Comparison of Open versus MIS, controlling for significant preoperative risk factors

Postoperative Outcomes

Variable	MIS N=2,903	Open N=5,007	P-value
Mortality	1.9%	6.7%	<0.001
Return to OR	4%	4.6%	0.21
Any readmission	8.6%	9.8%	0.13
Length of stay (average days)	6	10.1	<0.001
Still in hospital at 30 days	0.7%	1.8%	<0.001
Total Operative time (average minutes)	69.1	80.8	<0.001
Pneumonia	3.2%	8.5%	<0.001
Unplanned Intubation	1.3%	4.1%	<0.001
On ventilator >48 hours	1.5%	5.1%	<0.001
Acute Renal Failure	0.5%	1.1%	0.003
Cardiac Arrest Requiring CPR	0.4%	1.3%	<0.001
Pulmonary Embolism	0.7%	0.6%	0.47
Septic Shock	1.1%	3.9%	<0.001

Conclusion

Patient's undergoing open lysis of adhesions appear to have a greater number of pre-morbid conditions. Open lysis of adhesions within the geriatric population carries a higher chance of morbidity and mortality. Similar to other studies showing increased morbidity with an open approach, the minimally invasive approach should be considered (2,3) even within the geriatric population.

References

1. Kelly, et al. Laparotomy for small-bowel obstruction: first choice or last resort for adhesiolysis? A laparoscopic approach for small-bowel obstruction reduces 30-day complications. Surg Endosc. 2014. 28(1):65-73. PMID: 24002917
2. Sebastian-Valverde et al. The role of the laparoscopic approach in the surgical management of acute adhesive small bowel obstruction. BMC Surg. 2019. 19:40. PMID: 31014318
3. Sajid et al. A systematic review comparing laparoscopic vs open adhesiolysis in patients with adhesional small bowel obstruction. Am J Surg. 2016. 212(1):138-50. PMID: 27162071