Is Early Primary Anastomosis Feasible in Patients With an Open Abdomen?

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Introduction

- Damage control surgery for mesenteric ischemia and trauma usually requires small bowel resection with delayed abdominal fascial closure.
- This affords the surgeon to re-examine the small bowel and perform an anastomosis prior to closure.
- Small bowel anastomosis during the index procedure may be safe and lead to early abdominal closure in select patients.
- The study aims to compare abdominal closure times and the safety of patients undergoing primary anastomosis (PA) during index operation versus small bowel resection only (SBRO)

Methods

- We present a retrospective analysis of patients who have undergone damage control surgery with small bowel resection during July 1, 2009 to Sept 1, 2024 at a community-based academic hospital by a single-surgeon.
- Surgical pathologies related to colonic diverticular disease were excluded from the study.
- Those who had PA during index operation were compared with the group with SBRO.
- The primary outcome measured was time to abdominal closure. Secondary outcomes measured were all complications (cardiovascular, pulmonary and renal morbidities) and mortality within 30 days.

Results

- A total of 15 patients were identified, with 8 undergoing PA at the index operation and 7 with SBRO.
- PA was associated with faster closure of the abdomen (57 versus 110 hours), though there was no statistically significant difference (p=0.281).
- Additionally, there was no statistical difference between groups for overall complications within 30 days (p=0.714) and mortality within 30 days (p=0.268).

Tables

Characteristic	PA	SBRO	p-value
Gender			
Female (%)	2 (13)	4 (27)	
Male (%)	6 (40)	3 (20)	
Complications within 30 days			
No (%)	5 (33)	5 (33)	**0.714**
Yes (%)	3 (20)	2 (13)	
Mortality within 30 days			
No (%)	8 (53)	6 (40)	**0.268**
Yes (%)	0 (0)	2 (7)	
Time to closure in hours			
Mean	57	110	**0.281**
Median	58	89	

Table 1. Comparison of patients undergoing primary anastomosis (PA) and small bowel resection only (SBRO) during index procedure for damage control surgery.

Characteristic	Frequency	Percent
Gender		
Female	6	40.0
Male	9	60.0
Treatment		
Early primary anastomosis	8	53.3
Left in discontinuity	7	46.7
Complications within 30 days		
No	10	66.7
Yes	5	33.3
Mortality within 30 days		
No	14	93.3
Yes	1	6.7

Table 2. Description of patients undergoing primary anastomosis (PA) and small bowel resection only (SBRO) during index procedure for damage control surgery.

Discussion

- Primary anastomosis during index operation for damage control when feasible may be technically easier, because there is less bowel edema related to aggressive resuscitation.
- As a retrospective study, selection bias for which patients undergoing PA could not be accounted for.
- Further analysis of patient characteristics will elucidate patients where PA may be appropriate even if they are on vasopressor therapy.

Conclusion

- Though performing a primary anastomosis during index operation for damage control with an open abdomen, may go against surgical dogma, it can lead to safe and early closure in select patients.

References

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