Risk Factors for Conversion to Open Surgery in Patients Undergoing Diagnostic Laparoscopy for Small Bowel Obstruction

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OBJECTIVES

- **Operative intervention** may be indicated for patients with **small bowel obstruction (SBO)** who worsen or fail to improve with conservative management.
- Laparoscopic interventions **may not always tenable** and **intraoperative conversion to open procedure may be required**.
- Previous work[1,2] has identified female sex, age ≥70 years, and BMI ≥25 kg/m^2 with conversion from laparoscopic to open in other surgical procedures.
- We seek to examine **factors associated with conversion from laparoscopic to open** for procedure for surgical management of SBO.

METHODS

Identification of cases of operative management of radiographically confirmed SBO from 10/2017-8/2023.

Stratification of patients based on whether case was performed laparoscopically or converted to open.

Chart review to examine:

- Patient demographic data
- Operative findings
- Communication between interpreting radiologist and ordering provider about emergent findings

RESULTS

148 patients met inclusion criteria

94 (64%) performed laparoscopically | **54 (36%)** converted to open

Table 1: Patient demographics

Variable	Laparoscopic (n=94)	Converted to open (n=54)	p-value
Age ≥ 70 years	39 (26%)	23 (42%)	0.89
Female sex	48 (51%)	38 (70%)	***0.02***
BMI ≥ 25 kg/m^2	49 (52%)	37 (69%)	0.051
Transfer from OSH	15 (16%)	10 (19%)	0.69
Communication between interpreting radiologist and ordering provider	68 (72%)	36 (67%)	0.46
Radiographic concern for closed loop obstruction	23 (24%)	16 (30%)	0.49

Of the 54 cases converted from laparoscopic to open:

38 (70%) converted to open due to **appearance of threatened bowel**

Bowel resection performed in **33 (87%)** of these cases

16 (30%) converted to open due to **technical limitations of laparoscopy**

Risk of iatrogenic enterotomy and **need for extensive adhesiolysis** frequently described as reason for conversion

CONCLUSIONS

- Diagnostic laparoscopy and laparoscopic intervention is an accepted minimally invasive surgical option for management of SBO. However, technical considerations or intraoperative findings may require conversion to open procedure for optimal care.
- In our cohort, when previously described risk factors for conversion to open were examined, **only female sex** was significantly associated with **conversion to open for surgical management of SBO**.
- Potential risk factors uniquely examined by this study (**transfer status, radiologist communication, imaging findings concerning for closed loop SBO**) were **not significantly associated** with conversion to open.
- Further work is needed to elucidate outcomes and root cause analysis, as well as develop models that can predict risk of conversion.

REFERENCES

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