

Clinical Science

Geriatric small bowel obstruction: an analysis of treatment and outcomes compared with a younger cohort



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Abstract

BACKGROUND: Small bowel obstruction (SBO) is a common condition, but little is known about its presentation, management, and outcomes in geriatric patients.

METHODS: A retrospective review was performed comparing geriatric (≥ 65 years of age) and non-geriatric patients admitted with SBO. Admission characteristics, treatment, and outcomes were compared. Data analysis included Student *t* test and chi-square test or Fisher's exact test.

RESULTS: Among 80 geriatric and 136 nongeriatric patients, no difference was observed among admission characteristics, treatment, time to or type of surgery, length of postoperative stay, or overall complications. Cardiac complications (15% vs 0%, $P = .0082$) and subacute care facility discharge (29% vs 5%, $P < .001$) were more common for geriatric patients.

CONCLUSIONS: Compared with younger adults, elderly patients with SBO have similar presentations and overall outcomes with the exception of cardiac morbidity and discharge disposition. Preoperative attention to cardiac risk profile and discharge disposition discussion should be encouraged.

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As the population of Americans ages, the number of elderly patients requiring acute medical care and emergency general surgical procedures is likewise increasing.^{1,2} It is believed that elderly patients present with higher levels of acuity of illness, greater comorbid diseases, and an overall decreased physiologic reserve ultimately impacting outcomes and consumption of healthcare resources.¹⁻³ However, little is known about many surgical disease processes and outcomes as they relate specifically to geriatric patients. To improve outcomes, it is

important to study specific emergency general surgical disease processes and outcomes for this special population of adults.

Compared with elective surgery, emergency surgery is associated with increased morbidity and mortality, and this increased risk is most evident in geriatric patients.^{2,4,5} Emergency abdominal surgery to treat a small bowel obstruction (SBO) is a common reason for hospital admission and emergency surgery for adults of all ages. Intestinal obstruction accounts for approximately 15% of all emergency department visits for acute abdominal pain and SBO accounts for 20% of all acute surgical admissions.⁶ SBO is caused by a variety of pathologic processes including postoperative adhesions, malignancy, and hernias.^{7,8} Strangulated obstructions are surgical emergencies, and if not treated quickly lead to bowel ischemia and further morbidity and mortality.⁸⁻¹⁰ Surgery for complete obstructions without known strangulation is controversial, but if medical therapy fails surgery is absolutely

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necessary.⁷ Although management principles have not changed dramatically over the past decade, the population of patients continues to evolve, and thus the disease process must be reviewed to understand whether elderly patients have similar presentations, management, and outcomes as younger adults.

Surgical outcomes for SBO in the general population are good if they are performed in a timely manner after diagnosis.^{1,8–11} If surgery is performed within 36 hours of presentation, the mortality rate has been reported to be 8%.⁸ Wound infections are common complications of SBO surgery in the elderly.³ Other factors such as comorbid diseases, late presentation, delay in treatment, and decreased physiologic reserve have all been implicated in poor outcomes in the elderly.^{11–15}

Acute care surgery (ACS) has developed to meet the needs of emergency general surgery patients.¹⁶ The ACS model highlights the challenges in taking care of acutely ill patients with a high level of acuity and illness, but others have demonstrated good outcomes with elderly patients undergoing emergency abdominal surgery.¹⁷ Many patients present with previously untreated disease processes and poor preventive medicine history.¹⁷ The rapid increase in the elderly population has led to an increased awareness of the differences in presentation and outcomes for many acute surgical illnesses in this special population. The acute care surgeon needs to develop a better understanding of the patient population that is being served and develop better practices for managing emergency general surgery disease processes through risk reduction and early discussions regarding expected outcomes.

Methods

A retrospective chart review was performed comparing 2 historic cohorts admitted to an urban academic institution between June 1, 2009 and July 1, 2011. We reviewed the electronic medical records of all adult geriatric (≥ 65 years of age) and nongeriatric (18 to 64 years of age) patients diagnosed with an acute SBO admitted by or receiving consultation from an ACS providing all emergency general surgery coverage for the hospital. The patients were identified for inclusion using a prospectively collected patient

dataset of all patients encountered by the ACS service. Only patients with a diagnosis of SBO on admission or initial consultation were included. The diagnosis of mechanical SBO was made clinically and with plain abdominal X-rays as a minimum of radiographic evidence. Other imaging studies such as computed tomography scan and contrast studies were used selectively at physician discretion. We compared the outcomes of the 2 groups after examining the chart data and recording patient information.

Patient data recorded and analyzed included age, sex, admitting service, previous abdominal operations, preoperative radiologic investigations, pre-existing cardiac diseases, time interval between hospital admission and operation, type of surgery if required, length of postoperative stay, complications, and discharge disposition. Each admission was entered as a separate “episode” in the database.

Univariate analysis was performed using Student *t* test or Mann–Whitney *U* test for continuous variables, and chi-square test or Fisher’s exact test for categorical variables. *P* value less than .05 was considered statistically significant.

Results

Initial review of the dataset identified 288 patients encountered in the study time period with a diagnosis of SBO during hospital admission. Patients who developed an early postoperative SBO while hospitalized for another surgical problem or who were eventually determined to not have an SBO were excluded. Patients with incomplete histories were also excluded from our study. Two hundred sixteen patients were ultimately included for this analysis including 80 geriatric and 136 nongeriatric patients. Both groups had similar admitting characteristics, which are presented in Table 1. The only significant difference seen between the 2 cohorts was the presence of pre-existing cardiac disease, with geriatric patients much more likely to have a comorbid cardiac disease (26.3% vs 12.5%, *P* = .0104).

Treatment characteristics

The measured treatment characteristics were also similar between the geriatric group and younger cohort. These

Table 1 Comparative results of admitting characteristics of patients treated for SBO

Admitting characteristics	All geriatric patients (<i>n</i> = 80)	All younger patients (<i>n</i> = 136)	<i>P</i> value
Male	37 (46.3%)	57 (41.9%)	.5345
Female	43 (53.8%)	79 (58.1%)	.5345
Previous surgery	67 (83.8%)	114 (83.8%)	.9887
History of SBO	28 (35%)	49 (36%)	.8787
Cardiac disease	21 (26.3%)	17 (12.5%)	.0104
Admitting service			
Surgery	55 (68.8%)	98 (72.1%)	.6053
Medicine/other	25 (31.3%)	38 (27.9%)	.6053

SBO = small bowel obstruction.

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