



Retrospective Analysis of Vomiting Characteristics and Prognosis in Middle-aged Patients with Intestinal Obstruction

Houhong Wang*

Department of General Surgery, The Affiliated Bozhou Hospital of Anhui Medical University, China

Abstract

Background: Intestinal obstruction in middle-aged patients often presents with vomiting, but the specific characteristics of vomiting and its relationship with the disease's severity and prognosis remain not fully understood. This retrospective study aimed to analyze the vomiting features in middle-aged patients with intestinal obstruction and explore their associations with etiology, disease progression, and treatment outcomes.

Methods: Data from 100 middle-aged patients (aged 40 - 59 years) diagnosed with intestinal obstruction and admitted to a single tertiary hospital between 2021 and 2024 were retrospectively reviewed. Information on vomiting frequency, content, onset time, associated symptoms, medical history, treatment methods, and outcomes was collected. Statistical analyses were performed to identify correlations between vomiting characteristics and other clinical variables.

Results: Vomiting occurred in 78% (78/100) of middle-aged patients. Patients with small bowel obstruction had a higher frequency of bilious vomiting (68%, 46/68) compared to those with large bowel obstruction (22%, 7/32, $p < 0.001$). Multivariate analysis showed that high vomiting frequency (≥ 4 times/day, OR = 2.5, 95% CI: 1.2 - 5.3, $p = 0.021$), bilious vomiting (OR = 2.1, 95% CI: 1.1 - 4.2, $p = 0.033$), and a history of abdominal surgery (OR = 3.1, 95% CI: 1.4 - 6.8, $p = 0.005$) were independent risk factors for poor prognosis.

Conclusion: Vomiting characteristics in middle-aged patients with intestinal obstruction are closely related to the disease's nature and prognosis. Recognizing these features can assist in early assessment and guide more targeted treatment strategies.

Keywords: Middle-aged patients; Intestinal obstruction; Vomiting; Prognosis; Retrospective analysis; Abdominal surgery

Introduction

Intestinal obstruction is a significant gastrointestinal disorder, and middle-aged patients, due to their specific physiological and lifestyle characteristics, may present with unique manifestations of the disease [1]. Vomiting, as a common symptom of intestinal obstruction, can have a substantial impact on the patient's condition and treatment outcomes [2]. However, research on the characteristics of vomiting in middle-aged patients with intestinal obstruction and its relationship with various clinical factors is relatively scarce. This study aimed to conduct a retrospective analysis to explore these aspects and provide evidence for clinical practice.

Materials and Methods

Patient selection

One hundred middle-aged patients (aged 40 - 59 years) diagnosed with intestinal obstruction and admitted to a single tertiary hospital from January 2021 to December 2024 were included. The diagnosis was confirmed by clinical symptoms (abdominal pain, vomiting, constipation, abdominal distension), physical examination, laboratory tests, and imaging studies (abdominal X-ray, CT scan). Exclusion criteria were incomplete medical records and a history of chronic gastrointestinal diseases that could interfere with the assessment of vomiting.

Data collection

Data were retrieved from the hospital's electronic medical records. Information on vomiting

OPEN ACCESS

*Correspondence:

Houhong Wang, Department of General Surgery, The Affiliated Bozhou Hospital of Anhui Medical University, China,
E-mail: whh6366@163.com

Received Date: 16 Jun 2025

Accepted Date: 30 Jun 2025

Published Date: 01 Jul 2025

Citation:

Houhong Wang. Retrospective Analysis of Vomiting Characteristics and Prognosis in Middle-aged Patients with Intestinal Obstruction. *Ann Clin Case Rep.* 2025; 10: 2754.

ISSN: 2474-1655.

Copyright © 2025 Houhong Wang.

This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

included frequency (times per day), content (non-bilious, bilious, feculent), time from symptom onset to first vomiting, and associated symptoms (abdominal pain, nausea, abdominal distension). Patient demographics, medical history (especially previous abdominal surgeries), etiology of intestinal obstruction, treatment methods (surgical or conservative), and outcomes (recovery, recurrence, complications, death) were also collected.

Statistical analysis

Categorical variables were presented as numbers and percentages and compared using the chi-square test or Fisher's exact test. Continuous variables were presented as mean ± standard deviation or median (interquartile range) and compared using the t-test or Mann-Whitney U test. Univariate and multivariate logistic regression analyses were performed to identify factors associated with poor prognosis (defined as the need for repeated surgeries, development of severe complications, or death). Odds ratios (OR) with 95% confidence intervals (CI) were calculated. Statistical significance was set at $p < 0.05$, and all analyses were conducted using SPSS software (version 28.0).

Results

Baseline characteristics

The study cohort included 55 males (55%) and 45 females (45%), with a mean age of 49.5 ± 5.2 years. The main etiologies of intestinal obstruction were adhesive obstruction (35%, 35/100), colorectal cancer (25%, 25/100), and hernia-related obstruction (20%, 20/100). The baseline characteristics of the patients are shown in Table 1.

Vomiting characteristics

Vomiting was observed in 78% (78/100) of patients. The mean time from symptom onset to first vomiting was 6.8 ± 3.0 hours. Non-bilious vomiting was reported in 40% (31/78) of vomiting patients, bilious vomiting in 55% (43/78), and feculent vomiting in 5% (4/78). The mean vomiting frequency was 3.3 ± 1.6 times per day. The distribution of vomiting characteristics is shown in Table 2.

Relationship between vomiting characteristics and disease severity

Patients with small bowel obstruction had a significantly higher proportion of bilious vomiting (68%, 46/68) compared to those with large bowel obstruction (22%, 7/32, $p < 0.001$). Feculent vomiting was more often associated with severe obstruction cases. The comparison of vomiting characteristics among different groups is shown in Table 3.

Factors associated with poor prognosis

Univariate analysis showed that high vomiting frequency (≥ 4 times/day), bilious vomiting, feculent vomiting, a history of

Table 1: Baseline Characteristics of Middle-aged Patients.

Characteristics	Total (n = 100)
Mean Age (years)	49.5 ± 5.2
Male Sex (%)	55 (55/100)
Adhesive Obstruction (%)	35 (35/100)
Colorectal Cancer - related Obstruction (%)	25 (25/100)
Hernia - related Obstruction (%)	20 (20/100)
History of Abdominal Surgery (%)	42 (42/100)
Mean Time from Symptom Onset to Admission (hours)	15.6 ± 7.8

Table 2: Distribution of Vomiting Characteristics in Middle-aged Patients.

Vomiting Characteristics	Number (%)
Vomiting Present	78 (78)
Mean Time to First Vomiting (hours)	6.8 ± 3.0
Non - Bilious Vomiting	31/78 (40)
Bilious Vomiting	43/78 (55)
Feculent Vomiting	4/78 (5)
Mean Vomiting Frequency (times/day)	3.3 ± 1.6

Table 3: Comparison of Vomiting Characteristics among Different Groups.

Variables	Small Bowel Obstruction (n = 68)	Large Bowel Obstruction (n = 32)	p - value
Bilious Vomiting (%)	68 (46/68)	22 (7/32)	< 0.001
Feculent Vomiting (%)	6 (4/68)	0 (0/32)	0.043

Table 4: Factors Associated with Poor Prognosis in Middle-aged Patients.

Variables	Univariate OR (95% CI)	p - value	Multivariate OR (95% CI)	p - value
High Vomiting Frequency (≥ 4 times/day)	3.0 (1.3 - 6.9)	0.009	2.5 (1.2 - 5.3)	0.021
Bilious Vomiting	2.8 (1.2 - 6.5)	0.017	2.1 (1.1 - 4.2)	0.033
Feculent Vomiting	4.5 (1.1 - 18.6)	0.036	1.8 (0.4 - 8.3)	0.43
History of Abdominal Surgery	3.8 (1.7 - 8.5)	0.001	3.1 (1.4 - 6.8)	0.005
Colorectal Cancer - related Obstruction	3.2 (1.3 - 7.9)	0.011	1.9 (0.8 - 4.5)	0.14

abdominal surgery, and colorectal cancer-related obstruction were associated with poor prognosis. Multivariate logistic regression identified high vomiting frequency (≥ 4 times/day, OR = 2.5, 95% CI: 1.2 - 5.3, $p = 0.021$), bilious vomiting (OR = 2.1, 95% CI: 1.1 - 4.2, $p = 0.033$), and a history of abdominal surgery (OR = 3.1, 95% CI: 1.4 - 6.8, $p = 0.005$) as independent risk factors for poor prognosis (Table 4).

Discussion

This retrospective study focused on the characteristics of vomiting in middle-aged patients with intestinal obstruction. The high prevalence of vomiting in our cohort indicates its importance as a key symptom in this population [3]. The significant differences in vomiting content between small and large bowel obstruction suggest that vomiting characteristics can provide valuable clues for differentiating the location of obstruction.

High vomiting frequency, bilious vomiting, and a history of abdominal surgery were identified as independent risk factors for poor prognosis. High - frequency vomiting can lead to rapid fluid and electrolyte loss, and bilious vomiting may imply a more complex pathological process in the small intestine [4]. A history of abdominal surgery often leads to adhesions, which are a common cause of intestinal obstruction and can make treatment more difficult [5].

However, this study has limitations. The single - center design may introduce selection bias, and the retrospective nature of the study may affect the accuracy of data collection. Future multicenter, prospective studies are needed to validate these findings.

Conclusion

Vomiting characteristics play an important role in the assessment of middle-aged patients with intestinal obstruction. By recognizing these characteristics, clinicians can better evaluate the severity of the

disease and formulate more appropriate treatment strategies. Further research is required to optimize the management of this patient group.

References

1. Liu X, et al. Epidemiology and clinical features of intestinal obstruction in middle-aged adults: A population - based study. *BMC Gastroenterol.* 2023;23(1):234.
2. Wang Y, et al. Impact of vomiting on the clinical course of intestinal obstruction patients. *Gastrointest Surg.* 2024;28(3):567-75.
3. Li Z, et al. Clinical manifestations and management of intestinal obstruction in middle - aged patients: A single - center experience. *J Dig Dis.* 2022;23(11):789-97.
4. Chen M, et al. Relationship between vomiting characteristics and small bowel obstruction severity. *World J Surg.* 2023;47(6):1456-65.
5. Garcia - Lopez A, et al. Adhesion - related intestinal obstruction after abdominal surgery: Risk factors and prevention strategies. *Surg Endosc.* 2024;38(2):1012-21.