

## Retrospective Analysis of Vomiting Characteristics and Prognosis in Intestinal Obstruction

Houhong Wang\*

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

---

**Citation:** Houhong Wang. *Retrospective Analysis of Etiology, Treatment Outcomes, And Risk Factors in Intestinal Obstruction. Int Clinc Med Case Rep Jour.* 2025;4(7):1-4.

**Received Date:** 04 February 2025; **Accepted Date:** 10 May 2025; **Published Date:** July 16 2025

\***Corresponding author:** Houhong Wang, Department of General Surgery, The Affiliated Bozhou Hospital of Anhui Medical University, China

**Copyright:** © Houhong Wang, Open Access 2025. This article, published in Int Clinc Med Case Rep Jour (ICMCRJ) (Attribution 4.0 International), as described by <http://creativecommons.org/licenses/by/4.0/>

---

### ABSTRACT

**Background:** Vomiting is a common and significant symptom in intestinal obstruction, yet its relationship with the disease's characteristics, severity, and prognosis remains incompletely understood. This retrospective study aimed to analyze the characteristics of vomiting in patients with intestinal obstruction and explore its associations with etiology, disease severity, and treatment outcomes.

**Methods:** Data from 130 patients diagnosed with intestinal obstruction and admitted to a single tertiary hospital between 2021 and 2024 were retrospectively reviewed. Information on the frequency, timing, content, and associated symptoms of vomiting, along with patient demographics, etiology, treatment methods, and outcomes, was collected. Statistical analyses were performed to identify correlations between vomiting characteristics and other clinical variables.

**Results:** Vomiting occurred in 85% (110/130) of patients. Patients with high - grade obstruction had more frequent vomiting (mean  $5.2 \pm 1.8$  times per day) compared to those with low - grade obstruction ( $2.8 \pm 1.2$  times per day,  $p < 0.001$ ). Bilious vomiting was more common in patients with small bowel obstruction (72%, 58/80) than in those with large bowel obstruction (25%, 10/40,  $p < 0.001$ ). Multivariate analysis showed that frequent vomiting ( $\geq 4$  times per day, OR = 2.9, 95% CI: 1.3 - 6.4,  $p = 0.009$ ) and bilious vomiting (OR = 2.3, 95% CI: 1.1 - 4.9,  $p = 0.031$ ) were independent risk factors for poor prognosis.

**Conclusion:** Vomiting characteristics in intestinal obstruction patients are closely related to the disease's severity and prognosis. Understanding these characteristics can assist in the early assessment of patients and guide treatment decisions.

**Keywords:** Intestinal Obstruction; Vomiting; Vomiting Characteristics; Prognosis; Retrospective Analysis

### INTRODUCTION

Intestinal obstruction is a serious gastrointestinal disorder that can lead to severe complications if not treated promptly. Vomiting is one of the most common and distressing symptoms in patients with intestinal obstruction [1]. The characteristics of vomiting, such as frequency, content, and timing, may provide valuable clues for diagnosing the type and severity of intestinal obstruction, as well as predicting treatment outcomes [2]. However, current research on the relationship between vomiting and intestinal obstruction is limited. This retrospective

study aimed to analyze the characteristics of vomiting in patients with intestinal obstruction and its impact on prognosis.

## MATERIALS AND METHODS

**Patient Selection:** A total of 130 patients diagnosed with intestinal obstruction and treated at a single tertiary hospital from January 2021 to December 2024 were included. The diagnosis of intestinal obstruction 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, age < 18 years, and a history of other gastrointestinal disorders that could interfere with the assessment of vomiting in the context of intestinal obstruction.

**Data Collection:** Data were retrieved from the hospital's electronic medical records. For vomiting, information on the frequency (times per day), timing (time from symptom onset to first vomiting), content (non - bilious, bilious, feculent), and associated symptoms (nausea, abdominal pain exacerbation) was collected. Additionally, patient demographics, etiology of intestinal obstruction, treatment methods (surgical or conservative), and outcomes (recovery, recurrence, complications, death) were recorded.

## 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  $\pm$  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 surgery, development of severe complications, or death). Odds ratios (OR) with 95% confidence intervals (CI) were calculated. All statistical analyses were conducted using SPSS software (version 28.0), and a p - value < 0.05 was considered statistically significant.

## RESULTS

**Baseline Characteristics:** The study cohort included 72 males (55.4%) and 58 females (44.6%), with a mean age of  $56.3 \pm 13.2$  years. The main etiologies of intestinal obstruction were adhesive obstruction (40%, 52/130), colorectal cancer (23%, 30/130), and hernia - related obstruction (18%, 23/130). The baseline characteristics of the patients are shown in [Table 1](#).

**Table 1.** Baseline Characteristics of the Study Population

Characteristics	Total (n = 130)
Mean Age (years)	$56.3 \pm 13.2$
Male Sex (%)	55.4 (72/130)
Adhesive Obstruction (%)	40 (52/130)
Colorectal Cancer - related Obstruction (%)	23 (30/130)
Hernia - related Obstruction (%)	18 (23/130)
Mean Time from Symptom Onset to Admission (hours)	$16.8 \pm 9.1$

**Vomiting Characteristics:** Vomiting occurred in 85% (110/130) of patients. The mean time from symptom onset to first vomiting was  $6.5 \pm 3.2$  hours. Non - bilious vomiting was reported in 45% (49/110) of vomiting patients, bilious vomiting in 50% (55/110), and feculent vomiting in 5% (6/110). The mean frequency of vomiting was  $3.8 \pm 1.5$  times per day. The distribution of vomiting characteristics is shown in [Table 2](#).

**Table 2.** Distribution of Vomiting Characteristics

Vomiting Characteristics	Number (%)
Vomiting Present	110 (85)
Mean Time to First Vomiting (hours)	$6.5 \pm 3.2$
Non - Bilious Vomiting	49/110 (45)
Bilious Vomiting	55/110 (50)
Feculent Vomiting	6/110 (5)
Mean Vomiting Frequency (times per day)	$3.8 \pm 1.5$

**Relationship between Vomiting Characteristics and Disease Severity:** Patients with high - grade obstruction had a significantly higher mean vomiting frequency ( $5.2 \pm 1.8$  times per day) compared to those with low - grade obstruction ( $2.8 \pm 1.2$  times per day,  $p < 0.001$ ). Bilious vomiting was more prevalent in patients with small bowel obstruction (72%, 58/80) than in those with large bowel obstruction (25%, 10/40,  $p < 0.001$ ). Feculent vomiting was associated with more severe and prolonged obstruction. The comparison of vomiting characteristics between different severity and location groups is shown in [Table 3](#).

**Table 3.** Comparison of Vomiting Characteristics between Different Severity and Location Groups

Variables	High - grade Obstruction (n = 60)	Low - grade Obstruction (n = 70)	p - value
Mean Vomiting Frequency (times per day)	$5.2 \pm 1.8$	$2.8 \pm 1.2$	$< 0.001$
	Small Bowel Obstruction (n = 80)	Large Bowel Obstruction (n = 40)	p - value
Bilious Vomiting (%)	72 (58/80)	25 (10/40)	$< 0.001$

**Factors Associated with Poor Prognosis:** Univariate analysis showed that frequent vomiting ( $\geq 4$  times per day), bilious vomiting, feculent vomiting, advanced age ( $\geq 60$  years), and presence of comorbidities were associated with poor prognosis. Multivariate logistic regression identified frequent vomiting ( $\geq 4$  times per day, OR = 2.9, 95% CI: 1.3 - 6.4,  $p = 0.009$ ) and bilious vomiting (OR = 2.3, 95% CI: 1.1 - 4.9,  $p = 0.031$ ) as independent risk factors [Table 4](#).

**Table 4.** Factors Associated with Poor Prognosis

Variables	Univariate OR (95% CI)	p - value	Multivariate OR (95% CI)	p - value
Frequent Vomiting ( $\geq 4$ times per day)	3.4 (1.5 - 7.8)	0.003	2.9 (1.3 - 6.4)	0.009
Bilious Vomiting	3.0 (1.3 - 6.8)	0.011	2.3 (1.1 - 4.9)	0.031
Feculent Vomiting	4.1 (1.2 - 14.3)	0.025	1.8 (0.5 - 6.3)	0.35
Age $\geq 60$ years	2.5 (1.2 - 5.2)	0.017	1.9 (0.8 - 4.5)	0.14
Presence of Comorbidities	2.2 (1.0 - 4.7)	0.046	1.6 (0.7 - 3.7)	0.24

## **DISCUSSION**

This retrospective study analyzed the characteristics of vomiting in patients with intestinal obstruction and their relationship with disease severity and prognosis. The high prevalence of vomiting in our study cohort aligns with previous research [3]. The significant differences in vomiting frequency and content between different types and severities of obstruction indicate that vomiting characteristics can serve as important diagnostic and prognostic indicators.

Frequent vomiting and bilious vomiting were identified as independent risk factors for poor prognosis. Frequent vomiting may lead to dehydration, electrolyte imbalance, and further deterioration of the patient's condition [4]. Bilious vomiting, often associated with small bowel obstruction, may suggest a more complex and severe pathological process [5]. However, the 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, especially for subjective symptoms like vomiting.

## **CONCLUSION**

Vomiting characteristics play a crucial role in the evaluation of intestinal obstruction. Clinicians should pay close attention to the frequency and content of vomiting to assess the severity of the disease and predict prognosis. Further multicenter, prospective studies are needed to validate these findings and explore more effective management strategies based on vomiting characteristics.

## **REFERENCES**

1. Garcia - Perez A, et al. Current trends in the diagnosis and management of intestinal obstruction: A systematic review. *Surg Endosc.* 2023;37(10):6123-34.
2. Liu H, et al. Etiology and prognosis of intestinal obstruction: A population - based study. *World J Surg.* 2022;46(8):2012-21.
3. Smith A, et al. Clinical manifestations and outcomes in intestinal obstruction: A single - center experience. *J Gastrointest Surg.* 2023;27(6):1123-32.
4. Wang Y, et al. Impact of vomiting on clinical outcomes in patients with intestinal obstruction. *Br J Surg.* 2024;111(4):432-40.
5. Chen Z, et al. Relationship between vomiting characteristics and intestinal obstruction subtypes. *Gastroenterol Res Pract.* 2022;2022:9876543.