Salient Visionary Publications

Retrospective Analysis of Abdominal Pain Characteristics and Prognosis in Intestinal Obstruction

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ABSTRACT

Background: Abdominal pain is a prominent symptom of intestinal obstruction, but the relationship between pain characteristics and the disease's progression and prognosis remains unclear. This retrospective study aimed to analyze the characteristics of abdominal pain in patients with intestinal obstruction and explore their associations with etiology, severity, and treatment outcomes.

Methods: Data from 120 patients diagnosed with intestinal obstruction and admitted to a single tertiary hospital between 2021 and 2024 were retrospectively reviewed. Information on pain location, intensity, nature, duration, associated symptoms, and treatment - related data was collected. Statistical analyses were performed to identify correlations between pain characteristics and other clinical variables.

Results: Diffuse abdominal pain was observed in 65% (78/120) of patients, and the mean pain intensity score (Visual Analogue Scale, VAS) was 7.2 ± 1.8. Patients with strangulated obstruction had significantly higher VAS scores (8.5 ± 1.5) compared to those with simple obstruction (6.2 ± 1.6, $p < 0.001$). Multivariate analysis showed that severe pain (VAS ≥ 8) (OR = 3.2, 95% CI: 1.4 - 7.3, $p = 0.006$) and persistent pain duration over 24 hours (OR = 2.8, 95% CI: 1.2 - 6.5, $p = 0.019$) were independent risk factors for poor prognosis.

Conclusion: Abdominal pain characteristics in intestinal obstruction patients are closely related to the disease's severity and prognosis. Understanding these characteristics can assist in early identification of high - risk patients and guide treatment decisions.

Keywords: Intestinal Obstruction; Abdominal Pain; Pain Characteristics; Prognosis; Retrospective Analysis

INTRODUCTION

Intestinal obstruction is a serious gastrointestinal disorder, and abdominal pain is one of the most common and distressing symptoms [1]. The pain associated with intestinal obstruction can vary in location, intensity, and nature, and these characteristics may provide valuable clues for diagnosis, predicting disease severity, and guiding treatment [2]. However, current research on the relationship between abdominal pain characteristics and intestinal obstruction is limited. This retrospective study aimed to fill this gap by analyzing the abdominal pain characteristics of patients with intestinal obstruction and their impact on prognosis.

MATERIALS AND METHODS

Patient Selection: A total of 120 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 chronic abdominal pain disorders that could interfere with the assessment.

Data Collection: Data were retrieved from the hospital's electronic medical records. For abdominal pain, information on pain location (localized or diffuse), intensity (measured by Visual Analogue Scale, VAS, ranging from 0 to 10), nature (colicky, constant, or dull), and duration was collected. Associated symptoms (nausea, vomiting, fever), etiology of intestinal obstruction, treatment methods (surgical or conservative), and outcomes (recovery, recurrence, complications) were also 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 ± 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 68 males (56.7%) and 52 females (43.3%), with a mean age of 54.2 ± 12.5 years. The main etiologies of intestinal obstruction were adhesive obstruction (45%, 54/120), colorectal cancer (20%, 24/120), and hernia - related obstruction (15%, 18/120). The baseline characteristics of the patients are shown in Table 1.

Table 1. Baseline Characteristics of the Study Population

Characteristics	Total (n = 120)
Mean Age (years)	54.2 ± 12.5
Male Sex (%)	56.7 (68/120)
Adhesive Obstruction (%)	45 (54/120)
Colorectal Cancer - related Obstruction (%)	20 (24/120)
Hernia - related Obstruction (%)	15 (18/120)
Mean Time from Symptom Onset to Admission (hours)	18.5 ± 8.2

Abdominal Pain Characteristics: Diffuse abdominal pain was the most common, reported in 65% (78/120) of patients, while 35% (42/120) had localized pain. Colicky pain was present in 58% (69/120), and the mean pain intensity (VAS) was 7.2 ± 1.8. The median pain duration was 12 hours (IQR: 6 - 24). The distribution of abdominal pain characteristics is shown in Table 2.

Table 2. Distribution of Abdominal Pain Characteristics

Pain Characteristics	Number (%)
Diffuse Pain	78 (65)
Localized Pain	42 (35)
Colicky Pain	69 (58)
Constant Pain	32 (26.7)
Dull Pain	19 (15.8)
Mean VAS Score	7.2 ± 1.8
Median Pain Duration (hours)	12 (6 - 24)

Relationship between Pain Characteristics and Disease Severity: Patients with strangulated obstruction had a significantly higher mean VAS score (8.5 ± 1.5) compared to those with simple obstruction (6.2 ± 1.6, $p < 0.001$). Additionally, patients with longer pain durations tended to have more severe forms of obstruction. The comparison of pain characteristics between different severity groups is shown in Table 3.

Table 3. Comparison of Pain Characteristics between Different Severity Groups

Variables	Simple Obstruction (n = 80)	Strangulated Obstruction (n = 40)	p - value
Mean VAS Score	6.2 ± 1.6	8.5 ± 1.5	< 0.001
Median Pain Duration (hours)	10 (4 - 18)	16 (12 - 28)	0.003

Factors Associated with Poor Prognosis: Univariate analysis showed that severe pain (VAS ≥ 8), persistent pain duration over 24 hours, advanced age (≥ 60 years), and presence of comorbidities were associated with poor prognosis. Multivariate logistic regression identified severe pain (VAS ≥ 8) (OR = 3.2, 95% CI: 1.4 - 7.3, p = 0.006) and persistent pain duration over 24 hours (OR = 2.8, 95% CI: 1.2 - 6.5, p = 0.019) 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
Severe Pain (VAS ≥ 8)	4.1 (1.8 - 9.3)	0.001	3.2 (1.4 - 7.3)	0.006
Pain Duration > 24 hours	3.5 (1.5 - 8.2)	0.004	2.8 (1.2 - 6.5)	0.019
Age ≥ 60 years	2.3 (1.1 - 4.8)	0.029	1.8 (0.8 - 4.1)	0.13
Presence of Comorbidities	2.1 (1.0 - 4.4)	0.048	1.6 (0.7 - 3.6)	0.23

DISCUSSION

This retrospective study analyzed the abdominal pain characteristics in patients with intestinal obstruction and their relationship with disease severity and prognosis. Diffuse and colicky pain were common, which is consistent with previous reports [3]. The significant difference in pain intensity between simple and strangulated obstruction indicates that pain can be an important indicator for evaluating the severity of intestinal obstruction [4].

Severe pain and long - lasting pain were identified as independent risk factors for poor prognosis. These findings suggest that patients with such pain characteristics may require more aggressive treatment and closer monitoring [5]. However, this study has limitations. The single - center design may introduce selection bias, and the retrospective nature of the study may lead to recall bias in pain assessment.

CONCLUSION

Abdominal pain characteristics play an important role in the evaluation of intestinal obstruction. Clinicians should pay close attention to pain intensity and duration to identify high - risk patients and improve treatment outcomes. Further multicenter, prospective studies are needed to validate these findings.

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