

Original Research

Duration of Abdominal Pain as a Predictor for Surgical Intervention in Intestinal Obstruction: A Prospective Observational Study

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Abstract

Intestinal obstruction (IO) frequently presents with abdominal pain as an early symptom. The duration of pain may reflect disease severity and can guide clinical decision-making. To evaluate whether the duration of abdominal pain is a significant predictor for the need for surgical intervention in patients with intestinal obstruction, a prospective observational study was conducted on 385 patients diagnosed with IO at Shyam Shah Medical College and Associated Sanjay Gandhi Memorial Hospital, Rewa (M.P.), between September 2022 and March 2024. Duration of pain prior to presentation was recorded and correlated with type of management—conservative or surgical. Patients with pain duration >48 hours were significantly more likely to undergo surgical management ($p = 0.04$). The likelihood of laparotomy increased proportionately with prolonged pain duration. Duration of pain is a valuable clinical indicator, Pain persisting beyond 48 hours is significantly associated with the need for surgical intervention and should prompt early imaging and surgical consultation.

Keywords: Intestinal Obstruction, Abdominal Pain, Duration, Surgical Intervention, Clinical Predictors

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Introduction

Abdominal pain is a hallmark symptom of intestinal obstruction (IO). Although non-specific, the chronicity or persistence of pain may reflect underlying ischemia, necrosis, or progression of obstruction. Determining whether pain duration correlates with surgical need is clinically relevant for early decision-making, especially in resource-constrained environments.

This study investigates the duration of pain as a predictor for the necessity of surgical intervention in patients with intestinal obstruction.

Materials and Methods

Study Design: Prospective observational

Study Period: September 2022 to March 2024
Study Location: Department of Surgery, Shyam Shah Medical College, Rewa (M.P.)

Sample Size: 385 patients

Inclusion Criteria:

- Age 6 months to 80 years
- Clinical and radiological diagnosis of intestinal obstruction

- Minimum hospital stay of 2 days

Exclusion Criteria:

- Chronic comorbidities (e.g., cancer, tuberculosis)
- Congenital gastrointestinal anomalies
- Patient refusal

Data Collection:

Patients were classified based on the **duration of pain prior to admission:**

- <24 hours
- 24–48 hours
- 48 hours

Outcomes measured:

- Conservative management
- Surgical intervention (exploratory laparotomy)

Statistical analysis was performed using SPSS v21. A p-value of <0.05 was considered statistically significant.

Results

Pain Duration and Management Outcome:

>48 hours: 36.53% of all patients (n=141)

52.78% (n=95) required surgery

24–48 hours: 36.1% (n=139)

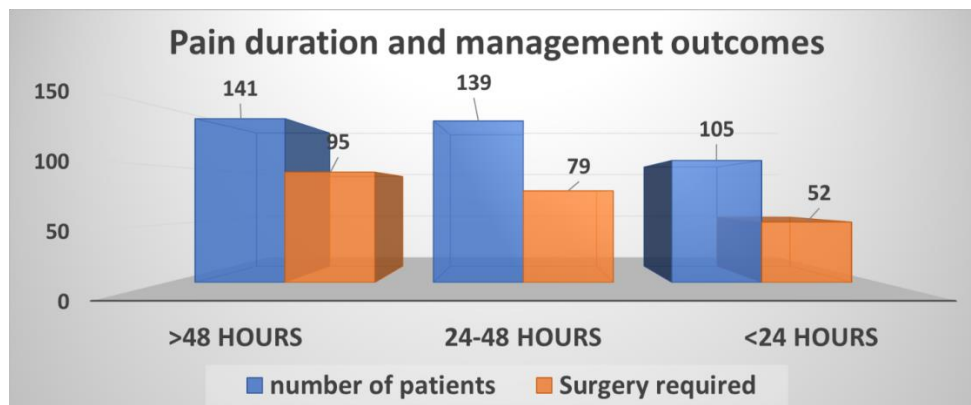
41.73% (n=79) required surgery

<24 hours: 27.27% (n=105)

26.27% (n=52) required surgery

The association between pain duration and surgical intervention was statistically significant (**p = 0.04**)

Patients presenting with pain lasting **>48 hours** had nearly **double the likelihood** of undergoing laparotomy compared to those with pain <24 hours.



Discussion

The findings demonstrate that prolonged abdominal pain is significantly associated with surgical outcomes in IO. The risk of complications like strangulation and ischemia increases with time, which may explain the higher surgical rates in patients with pain >48 hours.

This symptom-based approach is especially useful in primary or secondary care centers where imaging is not immediately available. Duration of pain should be used as a triage criterion for expedited surgical evaluation.

Catena F et al. (2019) described progression of colicky pain to continuous pain due to bowel dilation and ischemia, supporting the surgical indication in prolonged pain cases.

O'Leary EA et al. (2014) found that **persistent abdominal pain beyond 48 hours** alongside distension and fever indicates high-grade obstruction requiring surgical management.

Wassmer CH et al. (2023) included pain ≥ 4 days in a validated SBO risk score with high predictive accuracy for resection.

Conclusion

Prolonged abdominal pain (>48 hours) in patients with intestinal obstruction is a statistically significant predictor of surgical intervention. Pain duration

should be integrated into early assessment algorithms to optimize management and improve patient outcomes.

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