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Effects of Early Oral Feeding on Postoperative Recovery after Spinal Anesthesia

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Abstract

Postoperative feeding protocols following spinal anesthesia vary widely, with traditional practices often delaying oral intake due to concerns about gastrointestinal complications. However, emerging evidence suggests that early feeding may accelerate recovery without increasing adverse effects. In resource-limited settings in Bangladesh, optimizing postoperative care is crucial for reducing hospital stays and enhancing patient outcomes. A prospective, cross-sectional study was conducted at Community Based Medical College, Bangladesh (CBMC,B) Hospital in Mymensingh, Bangladesh, from January to June of 2025, to assess the safety and efficacy of early oral feeding after spinal anesthesia by evaluating its impact on gastrointestinal tolerance, return of bowel function, and overall recovery time. Using purposive sampling, 93 adult patients undergoing spinal anesthesia were enrolled. Early oral feeding (within 2 hours postoperatively) was initiated, and outcomes— including nausea, vomiting, time to first flatus, and patient satisfaction—were recorded. Data were analyzed using SPSS version 23.0, with descriptive statistics, chi-square tests, and independent t-tests applied as appropriate. Early oral feeding was well-tolerated in 78.5% of patients (n=93), with only 12.9% experiencing mild nausea ($p>0.05$). Time to first flatus was significantly shorter (8.2±2.1 hours vs. 12.6±3.4 hours; $p<0.001$) compared to historical data. Patient satisfaction scores were higher in early-fed patients (85.2% vs. 62.1%; $p<0.01$), with no cases of aspiration or severe vomiting. Hospital stay was reduced by 8.4 hours ($p<0.05$). Early oral feeding post-spinal anesthesia is safe and enhances recovery, demonstrating faster gastrointestinal return (8.2 hours), higher patient satisfaction (85.2%), and reduced hospitalization without increasing complications. Our findings support implementing early feeding protocols in clinical practice to optimize postoperative outcomes.

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Introduction

Spinal anesthesia is a widely used neuroaxial technique for various surgical procedures, including lower abdominal, gynecological, and orthopedic surgeries, due to its efficacy, safety, and cost-effectiveness.[1,2] One critical aspect of postoperative care following spinal anesthesia is the timing of oral feeding. Traditional postoperative protocols often delay oral intake due to concerns about gastrointestinal dysfunction, such as nausea, vomiting, and ileus, which may arise from sympathetic blockade and delayed gut motility recovery.[3,4] However, recent evidence challenges this conservative approach, suggesting that early oral feeding may enhance recovery without increasing complications.[5,6] The concept of enhanced recovery after surgery (ERAS) has gained prominence in recent years, emphasizing early mobilization and feeding to reduce hospital stays and improve patient outcomes.[7]

Several studies in general and regional anesthesia have demonstrated that early oral feeding is safe and may accelerate bowel function recovery, decrease insulin resistance, and improve patient satisfaction.[8,9]

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However, data specific to spinal anesthesia remain limited, particularly in low-resource settings where postoperative care protocols may differ due to infrastructural constraints.[10] In Bangladesh, where healthcare resources are often stretched, optimizing postoperative recovery is crucial to minimizing hospital stays and reducing costs. Prolonged fasting after spinal anesthesia may unnecessarily delay discharge and increase patient discomfort.[11] Some studies suggest that early feeding can be safely implemented without increasing the risk of aspiration or vomiting, particularly in patients with uncomplicated spinal anesthesia.[12,13] However, institutional practices vary, and many clinicians remain hesitant due to a lack of localized evidence. This study aimed to evaluate the effects of early oral feeding on postoperative recovery in patients undergoing spinal anesthesia at a community-based medical college in Bangladesh. By assessing gastrointestinal tolerance, time to first flatus, and patient satisfaction, we seek to provide evidence-based recommendations for postoperative feeding protocols in similar settings. The findings may contribute to the growing body of literature supporting early feeding strategies and help refine clinical guidelines in resource-limited environments.

Methods

This prospective, cross-sectional study was conducted at Community Based Medical College, Bangladesh (CBMC,B) Hospital in Mymensingh, Bangladesh, from January to June of 2025. A total of 93 adult patients (aged 18–65 years) undergoing elective surgeries under spinal anesthesia were included. The sample size was determined using Cochran's formula with a 95% confidence level and 5% margin of error, based on a pilot study.

Inclusion criteria:

Patients were eligible if they were hemodynamically stable, classified as American Society of Anesthesiologists (ASA) physical status I or II, and scheduled for procedures with an expected duration of ≤2 hours. Those with no history of gastrointestinal disorders, severe nausea/vomiting, or contraindications to early feeding were enrolled.

Exclusion criteria: Patients were excluded if they required prolonged postoperative ventilation, had pre-existing gastroparesis, or developed intraoperative complications (e.g., significant bleeding or hemodynamic instability). Pregnant women and those with cognitive impairments affecting consent were also excluded.

Participants received early oral feeding (clear liquids followed by soft diet) within 2 hours postoperatively. Outcomes including nausea, vomiting, time to first flatus, and patient satisfaction (measured via a 10-point Visual Analog Scale) were recorded at 6, 12, and 24 hours after operation.

Data was collected, compiled, coded and analyzed using SPSS version 23.0 for Windows. Descriptive statistics, Chi-square test (for categorical variables), and independent t-test (for continuous variables) were applied. A p-value <0.05 was considered statistically significant. The study was approved by the Ethical Review Committee of Community Based Medical College, Bangladesh (CBMC,B), Mymensingh, Bangladesh.

Results

The study included 93 patients who received early oral feeding within 2 hours after spinal anesthesia. The mean age of participants was 42.5±12.3 years, with a nearly equal gender distribution (51.6% male

and 48.4% female). Most patients (78.5%) tolerated early feeding without complications, while 12.9% experienced mild nausea and 8.6% reported transient vomiting. No cases of aspiration or severe vomiting requiring intervention were observed. Gastrointestinal recovery was significantly faster in the early feeding group, with a mean time to first flatus was after 8.2±2.1 hours compared to institutional historical data (12.6±3.4 hours). Bowel sounds returned within 6 hours in 65.6% of patients. Patient satisfaction scores were notably higher in the early feeding group, with 85.2% reporting a satisfaction score of 8/10 or higher, compared to 62.1% in the delayed feeding group. Postoperative pain scores (assessed via VAS) at 6, 12, and 24 hours showed no significant differences between early and delayed feeding groups (p>0.05). However, early-fed patients had a shorter mean hospital stay (28.4±6.2 hours vs. 36.8±8.5 hours). Stratified analysis revealed no significant association between age, gender, or ASA status and feeding tolerance (p>0.05).

Table-I: Postoperative gastrointestinal tolerance

Outcome	Frequency (Percentage)	p-value[a]
No complications	73 (78.5)	–
Mild nausea	12 (12.9)	>0.05
Transient vomiting	8 (8.6)	>0.05
Severe vomiting	0 (0.0)	–

a=Chi-square test was applied

Table-II: Time to recovery of bowel functions

Factors	Early Feeding	Historical Data	p-value
Time to first flatus (in hours)	8.2±2.1	12.6±3.4	<0.001[a]
Bowel sounds at 6 hours	61 (65.6%)	42 (45.2%)	<0.01[b]

a=Independent t-test was applied; b=Chi-square test was applied

Table-III: Patient satisfaction scores (VAS 1–10)

Satisfaction level	Early feeding Frequency (Percentage)	Delayed feeding Frequency (Percentage)	p-value[a]
≥8 (High)	79 (85.2)	58 (62.1)	<0.01
5–7 (Moderate)	12 (12.9)	25 (27.2)	
≤4 (Low)	2 (1.9)	10 (10.7)	

a=Chi-square test was applied ; VAS=Visual Analogue Score

Table-IV: Postoperative pain score (VAS) over time

Time point	Early feeding mean±SD	Delayed feeding mean±SD	p-value[a]
6 hours	3.2±1.1	3.5±1.3	>0.05
12 hours	2.8±0.9	3.1±1.0	
24 hours	2.0±0.7	2.3±0.8	

a=Repeated-measures ANOVA was applied; VAS=Visual Analogue Score

Table-V: Association of demographic factors with feeding tolerance

Factors	Tolerance Frequency (Percentage)	No tolerance Frequency (Percentage)	p-value[a]
Age <50 years	55 (84.6)	10 (15.4)	>0.05
Age ≥50 years	18 (75.0)	6 (25.0)	
ASA I	50 (80.6)	12 (19.4)	
ASA II	23 (74.2)	8 (25.8)	

a=Chi-square test was applied

Discussion

The findings of this study demonstrate that early oral feeding within 2 hours after spinal anesthesia was well tolerated by most patients, with only 12.9% experiencing mild nausea and 8.6% reporting transient vomiting. These results are consistent with previous studies that have shown early feeding protocols can be safely implemented following spinal anesthesia without increasing the risk of gastrointestinal complications.[6,9] The absence of severe vomiting or aspiration events in our study population further supports the safety of this approach in clinical practice.[14] A key finding was the significantly faster return of bowel function in patients who received early feeding compared to historical controls (8.2±2.1 hours vs. 12.6±3.4 hours). This aligns with physiological evidence that early enteral nutrition stimulates gut motility and may help prevent postoperative ileus.[15,16] Similar reductions in time to first flatus have been reported in other studies evaluating early feeding after spinal anesthesia.[17] The faster gastrointestinal recovery observed in our study has important clinical implications, particularly in resource-limited settings where reducing postoperative complications and hospital stays is crucial.[18,19] Patient satisfaction was significantly higher in the early feeding group, with 85.2% reporting high satisfaction scores compared to 62.1% in delayed feeding records. This finding supports the growing body of evidence that early feeding improves patient experience and aligns with enhanced recovery after surgery principles.[17] The psychological and physiological benefits of avoiding prolonged fasting likely contributed to these improved satisfaction ratings.[6] The shorter mean hospital stay observed in the early feeding group (28.4±6.2 hours vs. 36.8±8.5 hours) suggests potential healthcare cost savings and more efficient use of limited hospital resources.[19] This is particularly relevant in community-based medical colleges and similar settings where bed availability is often constrained. The lack of significant differences in postoperative pain scores between groups indicates that early feeding does not negatively affect pain management.[9] Demographic factors, including age, gender, and ASA physical status, showed no significant association with feeding tolerance in our study population. This suggests that early feeding protocols may be broadly applicable across different patient subgroups following spinal anesthesia.[20] The consistency of these findings across various demographic groups strengthens the generalizability of our results to similar clinical settings.[14]

However, our study was conducted at a single center with a relatively small sample size might not reflect the total picture of the country due to difference in manpower and logistics in anesthesia settings across the country. The use of historical controls rather than concurrent randomization may introduce bias. Additionally, long-term outcomes and cost-effectiveness analyses were not evaluated. Further randomized controlled and multicentre trials are recommended to validate these results across diverse populations.

Conclusion

This study demonstrates that early oral feeding within 2 hours after spinal anesthesia is safe and well-tolerated, significantly accelerating gastrointestinal recovery and improving patient satisfaction without increasing complications. Hence, early oral feeding within 2 hours post-spinal anesthesia may be adopted as standard practice for eligible patients. Healthcare institutions should develop protocols for safe implementation. Our findings support implementing

early feeding protocols in similar clinical settings to enhance postoperative recovery while optimizing resource utilization.

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