

## Total colectomy of patients having synchronous lesions of five cases in Sylhet MAG Osmani Medical College Hospital, Bangladesh

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**Background:** Synchronous colorectal lesions present unique challenges in diagnosis and treatment, particularly in resource-limited settings. This study aims to evaluate the outcomes of total colectomy for synchronous colorectal lesions in a regional medical centre in Bangladesh.

**Methods:** A retrospective case series of five patients who underwent total colectomy for synchronous colorectal lesions at Sylhet MAG Osmani Medical College Hospital between January 2019 and December 2023 was conducted. Patient demographics, clinical presentation, operative details, histopathological findings, and short-term outcomes were analyzed.

**Results:** The median age was 62 years (range: 48-75), with a male-to-female ratio of 3:2. The median number of synchronous lesions was 3 (range: 2-5). Three patients underwent open surgery, while two had laparoscopic-assisted procedures. The median operative time was 285 minutes (range: 240-360), with a median estimated blood loss of 350 mL (range: 200-600). Histopathology revealed adenocarcinoma in at least one lesion in three patients. The median length of hospital stay was 10 days (range: 8-15). Postoperative complications included ileus (n=2) and wound infection (n=1). No mortality or anastomotic leaks were observed within 30 days postoperatively. At 30-day follow-up, all patients reported satisfactory bowel function with a median stool frequency of 4 times per day.

**Conclusion:** Total colectomy for synchronous colorectal lesions can be safely performed with acceptable short-term outcomes in a regional medical centre in Bangladesh. However, challenges remain in terms of resource availability and long-term follow-up. Further research is needed to optimize patient selection and perioperative management in resource-constrained settings.

**Keywords:** Synchronous colorectal lesions, Total colectomy, Bangladesh, Resource-limited setting, Colorectal cancer, Surgical outcomes

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## Introduction

Colorectal cancer remains a significant global health concern, with an increasing incidence in many developing countries, including Bangladesh. Synchronous colorectal lesions, defined as two or more primary tumours identified simultaneously in the colon and rectum, pose unique challenges in diagnosis and treatment. The management of such cases often necessitates more extensive surgical interventions, such as total colectomy, to ensure the complete removal of all neoplastic lesions and minimize the risk of recurrence. In Bangladesh, the burden of colorectal cancer has been rising in recent years, with a reported age-standardized incidence rate of 3.8 per 100,000 population [1].

However, data on the prevalence and management of synchronous colorectal lesions in the country remain limited. This knowledge gap is particularly pronounced in regional medical centres outside the capital city of Dhaka, where resources and expertise may be more constrained. Sylhet MAG Osmani Medical College Hospital, located in northeastern Bangladesh, serves as a crucial tertiary care centre for the Sylhet Division. As one of the oldest medical institutions in the country, it plays a vital role in providing specialized surgical care to a large population. However, the management of complex colorectal cases, such as those involving synchronous lesions, has not been extensively documented in this setting. Total colectomy, while a radical approach, offers several potential benefits in the treatment of synchronous colorectal lesions. These include the complete removal of all existing and potential neoplastic lesions, reduced risk of metachronous tumours, and simplified follow-up protocols [2].

However, the procedure also carries significant risks, including alterations in bowel function, nutritional deficiencies, and potential impact on quality of life [3].

The decision to perform a total colectomy in patients with synchronous lesions must be carefully weighed against alternative treatment strategies, such as segmental resections or endoscopic approaches. Factors influencing this decision may include the number and location of lesions, patient age and comorbidities, genetic predisposition, and the availability of advanced surgical expertise and postoperative care [4].

## Objective

This study aims to analyze the clinical outcomes and perioperative experiences of five cases of total colectomy performed for patients with synchronous colorectal lesions at Sylhet MAG Osmani Medical College Hospital. By examining these cases, we seek to:

1. Evaluate the indications, surgical techniques, and immediate postoperative outcomes of total colectomy in the management of synchronous colorectal lesions.
2. Assess the challenges and feasibility of performing such complex procedures in a regional medical centre in Bangladesh.
3. Compare our findings with existing literature on the management of synchronous colorectal lesions in similar resource-limited settings.
4. Provide insights that may guide future decision-making and improve patient care for individuals presenting with synchronous colorectal lesions in our institution and similar healthcare facilities in Bangladesh.

Through this case series, we hope to contribute to the growing body of knowledge on the surgical management of complex colorectal pathologies in developing countries and highlight the importance of tailored approaches in resource-constrained environments.

## Materials And Methods

**Study Design and Setting:** This retrospective case series was conducted at Sylhet MAG Osmani Medical College Hospital, Bangladesh. We reviewed the medical records of patients who underwent total colectomy for synchronous colorectal lesions between January 2019 and December 2023.

The study was approved by the institutional ethics committee, and patient confidentiality was maintained throughout the research process.

**Patient Selection:** We included all patients who underwent total colectomy for synchronous colorectal lesions during the study period.

Synchronous lesions were defined as two or more primary tumors identified simultaneously in the colon and rectum. Patients with incomplete medical records or those who underwent partial colectomy were excluded from the study.

**Data Collection:** The following data were extracted from patient medical records:

1. Demographic information: age, sex, body mass index (BMI)
2. Clinical presentation and symptoms
3. Comorbidities
4. Preoperative investigations: colonoscopy findings, imaging studies (CT scan, MRI), tumour markers (CEA)
5. Operative details: surgical approach, duration of surgery, intraoperative findings, blood loss
6. Histopathological findings: number of lesions, tumor staging, lymph node status
7. Postoperative course: length of hospital stay, time to bowel function recovery, complications
8. Follow-up data: up to 30 days post-discharge

**Surgical Technique:** All surgeries were performed by experienced colorectal surgeons. The standard surgical technique for total colectomy with ileorectal anastomosis was employed, with modifications based on individual patient factors and intraoperative findings. The procedure typically involved:

1. Midline laparotomy or laparoscopic approach (based on surgeon preference and patient factors)
2. Mobilization of entire colon and proximal rectum
3. Ligation of major vessels (ileocolic, right colic, middle colic, left colic, and sigmoid arteries)
4. Resection of entire colon and proximal rectum
5. Creation of an ileorectal anastomosis using stapling devices or hand-sewn technique

Placement of abdominal drains as per surgeon discretion

**Postoperative Care:** Patients were managed in surgical ward or intensive care unit based on their clinical status. Postoperative care included:

1. Early mobilization and respiratory physiotherapy
2. Gradual reintroduction of oral intake as tolerated
3. Thromboprophylaxis and antibiotic administration as per hospital protocol
4. Pain management using multimodal analgesia
5. Monitoring for complications and intervention as needed

**Data Analysis:** Due to small sample size, descriptive statistics were primarily used to summarize data. Continuous variables were expressed as median and range, while categorical variables were presented as frequency & percentage.

We analyzed the data for patterns in clinical presentation, surgical outcomes, and postoperative complications.

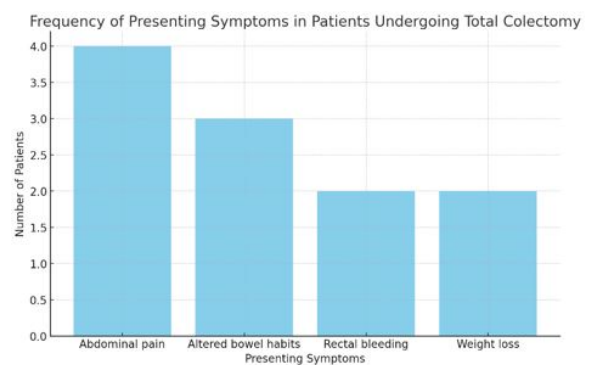
**Limitations:** We acknowledge limitations of this study, including its retrospective nature, small sample size, and single-centre experience. These factors may limit generalizability of our findings. Additionally, lack of a control group prevents direct comparison with alternative treatment strategies.

## Results

**Patient Characteristics:** A total of five patients underwent total colectomy for synchronous colorectal lesions during the study period. The median age was 62 years (range: 48-75 years), with a male-to-female ratio of 3:2. The most common presenting symptom was abdominal pain (4/5 patients), followed by altered bowel habits (3/5 patients) and rectal bleeding (2/5 patients). Two patients had a family history of colorectal cancer.

**Table 1:** Patient Demographics and Clinical Characteristics

Characteristic	Value
Median age (range)	62 years (48-75)
Gender (Male:Female)	3:2
Median BMI (range)	24.5 kg/m <sup>2</sup> (21-28)
Presenting symptoms	
- Abdominal pain	4 (80%)
- Altered bowel habits	3 (60%)
- Rectal bleeding	2 (40%)
- Weight loss	2 (40%)
Family history of CRC	2 (40%)
Comorbidities	
- Hypertension	3 (60%)
- Diabetes mellitus	2 (40%)
- Chronic kidney disease	1 (20%)



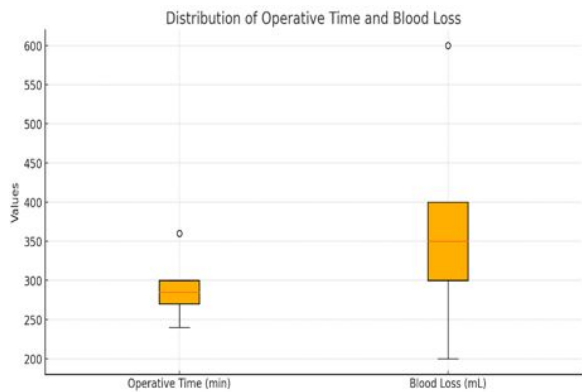
**Figure 1:** A bar graph could be used to visually represent the frequency of presenting symptoms.

**Preoperative Findings:** All patients underwent colonoscopy and contrast-enhanced CT scans of the abdomen and pelvis. The median number of synchronous lesions identified was 3 (range: 2-5). The most common locations were the sigmoid colon (4/5 patients), ascending colon (3/5 patients), and transverse colon (3/5 patients).

**Operative Details:** Three patients underwent open surgery, while two had laparoscopic-assisted procedures. The median operative time was 285 minutes (range: 240-360 minutes), with a median estimated blood loss of 350 mL (range: 200-600 mL). No intraoperative complications were reported.

**Table 2:** Operative and Postoperative Outcomes

Parameter	Median (Range) or n (%)
Operative approach	
- Open	3 (60%)
- Laparoscopic-assisted	2 (40%)
Operative time (minutes)	285 (240-360)
Estimated blood loss (mL)	350 (200-600)
Time to first flatus (days)	3 (2-5)
Time to first bowel movement (days)	4 (3-6)
Length of hospital stay (days)	10 (8-15)
30-day complications	
- Wound infection	1 (20%)
- Ileus	2 (40%)
- Anastomotic leak	0 (0%)



**Figure 2:** A box-and-whisker plot could be used to display the distribution of operative time and estimated blood loss. The plot illustrates the spread of values for both measures, with the box representing the interquartile range (Q1 to Q3) and the whiskers extending to the minimum and maximum values.

**Histopathological Findings:** The median number of lesions confirmed on histopathology was 3 (range: 2-5), consistent with preoperative imaging.

Three patients had adenocarcinoma in at least one lesion, while two patients had only adenomatous polyps. The TNM staging for patients with adenocarcinoma was as follows: Stage I (1 patient), Stage IIA (1 patient), and Stage IIIB (1 patient).

**Postoperative Course:** The median length of hospital stay was 10 days (range: 8-15 days). Two patients experienced postoperative ileus, which was resolved with conservative management. One patient developed a superficial wound infection requiring antibiotic therapy. No anastomotic leaks or mortality were observed within the 30-day postoperative period.

**Follow-up:** At the 30-day follow-up, all patients reported satisfactory bowel function, with a median stool frequency of 4 times per day (range: 3-6). No patients required readmission within this period.

## Discussion

This case series presents our experience with total colectomy for synchronous colorectal lesions in five patients at Sylhet MAG Osmani Medical College Hospital, Bangladesh. Our findings highlight the feasibility and safety of this procedure in a regional medical centre, while also underscoring the challenges faced in managing complex colorectal pathologies in a resource-limited setting. The demographic profile of our patients aligns with existing literature on synchronous colorectal lesions, with a median age of 62 years and a slight male predominance [5]. The presenting symptoms were nonspecific, emphasizing the importance of thorough preoperative evaluation, including complete colonoscopy, in patients with suspected colorectal pathology. The presence of a family history of colorectal cancer in 40% of our cases underscores the potential role of genetic factors in the development of synchronous lesions, as noted in previous studies [6]. Preoperative imaging and colonoscopy were crucial in identifying the extent of the disease and planning the surgical approach. The median number of three synchronous lesions per patient in our series is consistent with reports from other developing countries [7]. However, it is higher than some Western studies, which might reflect delayed presentation or differences in screening practices in our population [8]. The decision to perform total colectomy in these cases was based on the multiplicity of lesions and their distribution throughout the colon.

This approach offers the advantage of removing all potential sites of current and future neoplasia, which is particularly relevant in patients with a genetic predisposition to colorectal cancer [9]. However, it is a more extensive procedure compared to segmental resections, with potential implications for long-term bowel function and quality of life. Our operative outcomes, including surgical duration and blood loss, are comparable to those reported in series from more resource-rich settings [10]. This suggests that with appropriate expertise and careful patient selection, complex colorectal procedures can be safely performed in regional centres in Bangladesh. The use of laparoscopic-assisted technique in two cases demonstrates the gradual adoption of minimally invasive approaches in our institution, although resource constraints still limit its widespread application. The postoperative course of our patients was generally favourable, with no mortality and a manageable complication rate. The median length of stay of 10 days is longer than reported in some Western series [11], which may reflect differences in perioperative care protocols and cultural expectations regarding hospital discharge. The occurrence of postoperative ileus in two patients highlights the need for enhanced recovery protocols tailored to our setting. Histopathological findings revealed a mix of adenocarcinomas and adenomatous polyps, reinforcing the importance of total colectomy in addressing both current and potential future malignancies. The variability in tumour staging among patients with adenocarcinoma underscores the heterogeneity of presentation and the need for individualized treatment planning. The satisfactory bowel function reported at 30-day follow-up is encouraging, although longer-term follow-up is necessary to assess the full impact of total colectomy on quality of life. The median stool frequency of 4 times per day is within the expected range following this procedure [12]. Several limitations of our study must be acknowledged. The small sample size and retrospective nature limit the generalizability of our findings. The lack of a control group prevents direct comparison with alternative surgical strategies. Additionally, our follow-up period was limited to 30 days, precluding assessment of long-term oncological outcomes and functional results. Despite these limitations, our study provides valuable insights into the management of synchronous colorectal lesions in a regional centre in Bangladesh.

It demonstrates that total colectomy can be safely performed with acceptable short-term outcomes, even in resource-constrained settings. However, careful patient selection, preoperative planning, and availability of skilled surgical teams are crucial for success. Future research directions should include prospective studies with larger sample sizes, longer follow-up periods, and comparison with alternative treatment strategies. Additionally, investigation into the genetic and environmental factors contributing to the development of synchronous lesions in our population could inform screening and prevention strategies. In our study, our experience suggests that total colectomy is a viable option for managing synchronous colorectal lesions in selected patients at a regional medical centre in Bangladesh. While challenges remain, particularly in terms of resource availability and long-term follow-up, this approach offers the potential for comprehensive management of complex colorectal pathology. Continued efforts to enhance surgical expertise, perioperative care, and follow-up protocols will be essential to optimize outcomes for patients with synchronous colorectal lesions in resource-limited settings.

## Conclusion

This case series of five patients undergoing total colectomy for synchronous colorectal lesions at Sylhet MAG Osmani Medical College Hospital provides valuable insights into the management of complex colorectal pathologies in a regional centre in Bangladesh. Our findings demonstrate that:

1. Total colectomy can be safely performed for synchronous colorectal lesions in selected patients, even in resource-limited settings.
2. Thorough preoperative evaluation, including complete colonoscopy and imaging, is crucial for appropriate patient selection and surgical planning.
3. Short-term outcomes, including perioperative complications and early functional results, are encouraging and comparable to those reported in more resourced environments.
4. Challenges remain, particularly in terms of adopting minimally invasive techniques, implementing enhanced recovery protocols, and conducting long-term follow-ups.
5. Further research is needed to optimize patient selection, improve perioperative care, and assess long-term oncological and functional outcomes in our population.

In conclusion, while total colectomy for synchronous colorectal lesions presents unique challenges in our setting, it appears to be a feasible and effective treatment option. Continued efforts to enhance surgical expertise, perioperative management, and follow-up strategies will be essential to improve outcomes for patients with complex colorectal pathologies in Bangladesh and similar resource-constrained environments.

**Permission from Institutional research board:**  
Yes

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