

Original Research Article

Transverse Colon Surgery in an Urban African Setting: Indications, Surgical Procedures and Postoperative Outcomes in Douala, Cameroon

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Article History

Received: 13.11.2025

Accepted: 17.01.2026

Published: 27.01.2026

Journal homepage:
<https://www.easpublisher.com>



Abstract: **Background:** Transverse colon surgery is technically demanding because of the anatomical mobility of the colon and its complex vascular supply. In sub-Saharan Africa, late presentation and emergency conditions remain frequent, but dedicated data on transverse colon surgery are scarce. **Objective:** To describe the indications, surgical procedures and postoperative outcomes of transverse colon surgery in four referral hospitals of Douala, Cameroon. **Methods:** We conducted a retrospective multicenter descriptive study over a 10-year period (January 2012–December 2021). All patients who underwent surgery involving the transverse colon were included. Sociodemographic characteristics, operative indications, surgical procedures and in-hospital postoperative outcomes were analyzed descriptively. **Results:** A total of 103 patients were included. Mean age was 44.68 ± 27.63 years (range: 7 months–83 years), with male predominance (sex ratio 2.4). Emergency surgery accounted for the majority of cases. Acute generalized peritonitis was the leading indication (33.0%), followed by intestinal obstruction (22.2%) and abdominal trauma (17.4%). Right hemicolectomy (41.4%) and transverse colectomy (35.9%) were the most frequently performed procedures. Postoperative complications occurred in 18.4% of patients, dominated by surgical site infections (13.6%). In-hospital postoperative mortality was 3.9%. **Conclusion:** Transverse colon surgery in Douala is predominantly performed in emergency settings and is associated with a substantial burden of postoperative infectious morbidity. Improving early diagnosis and perioperative care is essential to improve outcomes.

Keywords: Transverse Colon, Colorectal Surgery, Emergency Surgery, Hemicolectomy, Postoperative Outcomes; Cameroon.

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INTRODUCTION

The transverse colon is the segment of the large intestine that connects the right and left colon. It is suspended by the transverse mesocolon and attached to the greater curvature of the stomach by the gastrocolic ligament, making it the most mobile portion of the colon. Its vascular supply derives from both the superior and inferior mesenteric arteries, which increases the technical complexity of surgical resection and reconstruction [1].

Globally, colorectal diseases represent a major public health burden. Although most colectomies in high-income countries are performed electively for screen-detected neoplasia, outcomes vary according to the colonic segment involved. Transverse colon cancers

account for approximately 8–10% of colon cancers and are associated with poorer oncologic outcomes compared with right- or left-sided tumors, largely due to delayed diagnosis and complex lymphovascular drainage patterns [2, 3].

In sub-Saharan Africa, colorectal surgical practice is characterized by late presentation, limited access to colonoscopy and cross-sectional imaging, and the absence of organized screening programs. Consequently, emergency surgery for bowel obstruction, perforation and generalized peritonitis remains frequent [4–6]. Emergency colorectal surgery is consistently associated with higher postoperative morbidity and mortality than elective surgery, mainly due to sepsis, physiological derangement and limited opportunities for preoperative optimization [6, 7].

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In Cameroon, published data on colorectal surgery mainly focus on right or left colon pathology, while specific data on transverse colon surgery are scarce. Given the anatomical particularities of the transverse colon and the heterogeneity of its surgical indications, local multicenter evidence is needed to guide surgical practice and perioperative quality improvement. This study therefore aimed to describe the indications, surgical procedures and postoperative outcomes of transverse colon surgery in four referral hospitals of Douala, Cameroon.

MATERIALS AND METHODS

Study Design and Setting: This was a retrospective descriptive multicenter study conducted in four referral hospitals of Douala, Cameroon.

Study Period: January 1, 2012 to December 31, 2021.

Study Population:

All patients of any age who underwent surgery involving the transverse colon during the study period were eligible. Records with incomplete operative or postoperative outcome data were excluded.

Data Collection:

Data were extracted from medical records and operative reports. Variables collected included age, sex,

clinical presentation, operative indication, surgical procedure performed, postoperative complications, length of hospital stay and in-hospital postoperative mortality.

Definitions:

Postoperative morbidity was defined as any complication occurring during hospitalization. Postoperative mortality was defined as any death occurring after surgery during the same hospital stay.

Statistical Analysis:

Data were analyzed descriptively using IBM SPSS version 25. Continuous variables are presented as means \pm standard deviation, and categorical variables as frequencies and percentages.

Ethical Considerations: This retrospective study used anonymized data in accordance with institutional ethical standards.

RESULTS

A total of 103 patients were included. The mean age was 44.68 ± 27.63 years (range: 7 months–83 years). Male patients predominated, with a sex ratio of 2.4 (Table 1).

Table 1: Sociodemographic characteristics of the study population (n=103).

Characteristic	n	% / value
Male sex	73	71.0
Female sex	30	29.0
Age (years), mean \pm SD	—	44.68 ± 27.63
Age range (years)	—	0.6–83

Most procedures were performed in an emergency context. Acute generalized peritonitis was the leading indication (33.0%), followed by intestinal obstruction (22.2%) and abdominal trauma (17.4%).

Other indications included abdominal tumors, intussusception, transverse colon cancer and digestive fistulas (Table 2). The distribution of indications is illustrated in Figure 1.

Table 2: Indications for transverse colon surgery (n=103)

Indication	n	%
Acute generalized peritonitis	34	33.0
Intestinal obstruction	23	22.3
Abdominal trauma	18	17.5
Abdominal tumors	14	13.6
Intussusception	6	5.8
Transverse colon cancer	3	2.9
Digestive fistula	2	1.9
Other indications	3	2.9

Regarding operative management, right hemicolectomy was the most frequently performed procedure (41.4%), followed by transverse colectomy (35.9%). Other procedures included colostomy, primary

repair and extended resections depending on intraoperative findings (Table 3). The distribution of surgical procedures is shown in Figure 2.

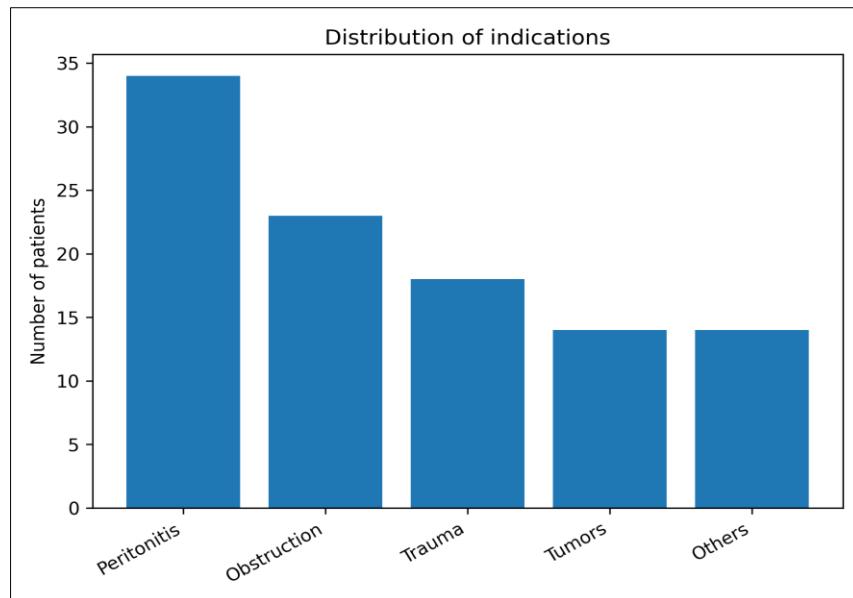


Figure 1: Distribution of indications for transverse colon surgery

Table 3: Surgical procedures performed (n=103)

Procedure	n	%
Right hemicolectomy	43	41.7
Transverse colectomy	37	35.9
Other procedures	23	22.3

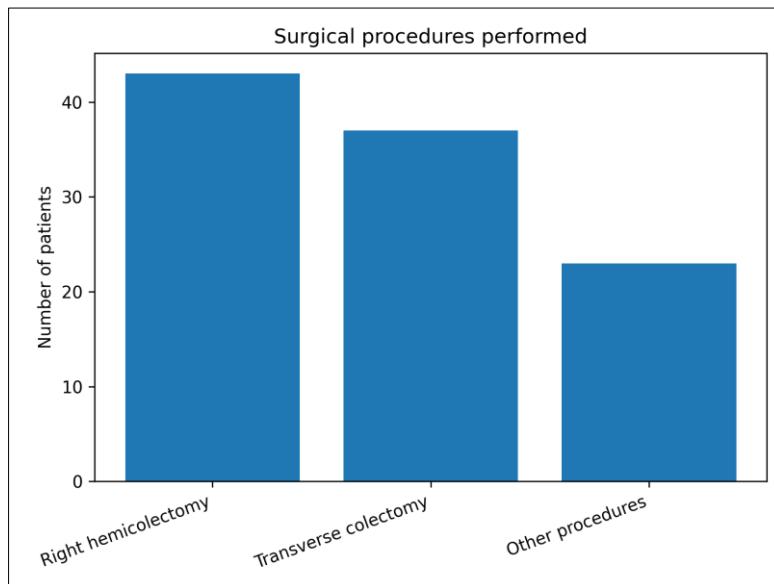


Figure 2: Distribution of surgical procedures performed

Postoperative complications occurred in 19 patients (18.4%). Surgical site infection was the most common complication (13.6%). In-hospital

postoperative mortality was 3.9% (Table 4). The distribution of postoperative complications is presented in Figure 3.

Table 4: Postoperative outcomes (n=103)

Outcome	n	%
Any postoperative complication	19	18.4
Surgical site infection	14	13.6
Other complications	5	4.9
Postoperative mortality	4	3.9

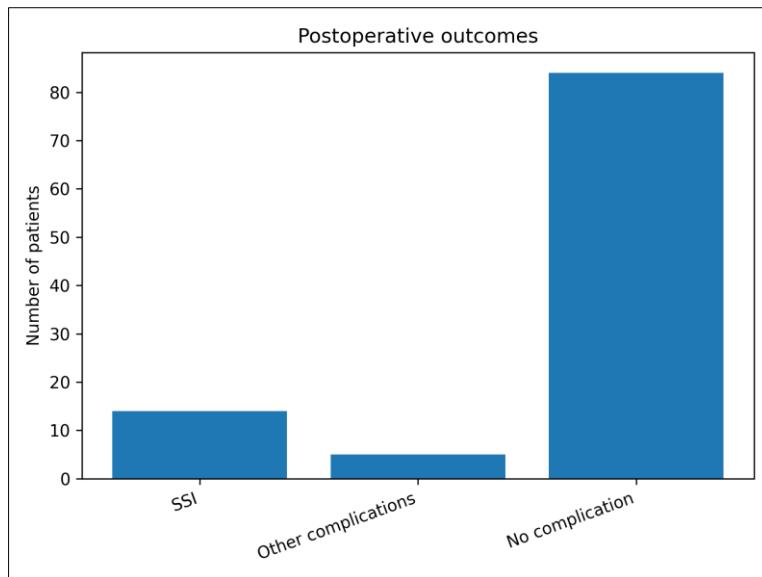


Figure 3: Postoperative complications after transverse colon surgery

DISCUSSION

This multicenter study provides one of the few detailed descriptions of transverse colon surgery in an urban African setting. The relatively young mean age of patients contrasts with reports from high-income countries, where colorectal surgery is typically performed in older populations. This difference may reflect demographic structure, environmental exposures and, importantly, delayed access to diagnostic and preventive healthcare services [3–5].

Emergency surgery predominated in this series, mainly driven by generalized peritonitis, intestinal obstruction and abdominal trauma. This pattern is consistent with other African studies and contrasts with high-income settings, where elective surgery for screen-detected colorectal disease is the norm [4–6]. Emergency colorectal surgery is associated with increased postoperative morbidity due to sepsis, physiological derangement and limited preoperative optimization [6, 7].

Right hemicolectomy and transverse colectomy were the most commonly performed procedures, reflecting both the anatomical characteristics of the transverse colon and the nature of intraoperative findings. In high-income countries, laparoscopic approaches have demonstrated reduced postoperative pain, fewer wound complications and shorter hospital stay while maintaining oncologic safety [8, 9]. However, in low-resource settings, their implementation is limited by equipment availability, maintenance costs and training constraints.

Postoperative infectious morbidity was the most frequent adverse outcome in our study, with surgical site infections accounting for 13.6% of cases. Similar rates have been reported in other African colorectal surgery series and are likely amplified by

emergency presentation, fecal contamination, nutritional deficits and limited perioperative antibiotic stewardship [6, 7]. Despite this, the observed postoperative mortality rate (3.9%) remained within the range reported in comparable settings.

These findings highlight the need to strengthen early diagnostic pathways for colorectal disease, standardize perioperative infection prevention measures and progressively implement feasible components of enhanced recovery pathways adapted to local realities.

CONCLUSION

Transverse colon surgery in Douala is predominantly performed in emergency settings, mainly for acute generalized peritonitis and intestinal obstruction. Right hemicolectomy and transverse colectomy are the most frequently performed procedures. Postoperative morbidity is dominated by surgical site infections, while postoperative mortality remains non-negligible. Improving early diagnosis and perioperative care should be prioritized to improve outcomes.

DECLARATIONS

Ethics approval and consent to participate: Retrospective anonymized study (institutional standards applied).

Consent for Publication: Not applicable.

Availability of Data and Materials: Available upon reasonable request.

Competing Interests: The authors declare no competing interests.

Funding: None

Authors' Contributions: All authors contributed to study conception/design, data interpretation and manuscript drafting; all approved the final version.

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Cite this article: Jean Paul Engbang, Pierre Valery Onana Mvondo, Fred Dikongue Dikongue, Ambroise Ntama, Jean Gérard Babondog, Basile Essola, Marcelin Ngowe Ngowe (2026). Transverse Colon Surgery in an Urban African Setting: Indications, Surgical Procedures and Postoperative Outcomes in Douala, Cameroon. *EAS J Anesthesiol Crit Care*, 8(1), 12-16.
