

# Management of Colostomy Complications at Yalgado Ouedraogo University Hospital, Burkina Faso

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## Abstract

## Original Research Article

**Introduction:** In Burkina Faso, colostomies lead to serious complications that affect patient prognosis. The aim of this study was to report on complications associated with colostomies in order to improve their management. **Patients and Methods:** This was a descriptive cross-sectional study with retrospective data collection from January 1, 2020, to December 31, 2024. The study included all patients over the age of 15 who underwent surgery at the Yalgado Ouédraogo University Hospital and who experienced a colostomy-related complication. **Results:** We identified 28 cases of complications out of 176 colostomies performed. The mean age of the patients was 37.8 years, with a sex ratio of 2.1. Twenty-four patients underwent emergency surgery, and four underwent elective surgery. The main indications were acute intestinal obstruction (39.3%), abdominal trauma (17.9%), and acute generalized peritonitis (14.3%). The main complications were stoma prolapse, parietal suppuration, and peristomal suppuration, occurring in 21.4%, 17.9%, and 14.3% of cases, respectively. Medical treatment was administered to all patients, and medical-surgical treatment was provided to 15 patients. The outcome was favorable in 96.4% of cases. The mortality rate was 3.6%. The average length of hospital stay was 16 days. **Conclusion:** Careful colostomy creation, local care, and monitoring would help improve patient prognosis.

**Keywords:** Colostomy complications, prolapse, suppuration, CHU-YO.

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## INTRODUCTION

A colostomy is defined as the surgical creation of an opening from the colon to the skin outside its natural location [1, 2]. Although a colostomy is often life-saving, it remains associated with significant morbidity and mortality. Complications from early or late colostomies have a considerable impact on the patient's long-term prognosis.

In the United States in 2005, Harris [3] reported a complication rate of 37% for colostomies. Traoré in Mali [4], in a study of digestive stomas in general, noted a mortality rate of 9.4%. In Burkina Faso, Boro reported a complication rate of 81% for digestive stomas in 2001 [5]. Since then, few studies have provided an up-to-date and specific analysis of colostomy complications and their management in the Department of General and Digestive Surgery at the Yalgado Ouédraogo University Hospital (CHU-YO).

The aim of this study was to report on the incidence of colostomy complications and management strategies at CHU-YO in order to improve patient outcomes.

## MATERIALS AND METHODS

This study was conducted in the Department of General and Digestive Surgery at Yalgado Ouédraogo University Hospital in Burkina Faso. It was a descriptive cross-sectional study with retrospective data collection over a 5-year period from January 1, 2020, to December 31, 2024. The study included all patients over the age of 15 who underwent colostomy surgery in the General and Digestive Surgery Department of the Yalgado Ouédraogo University Hospital and who experienced a colostomy-related complication during the study period. Exclusion criteria included incomplete medical records and colostomies performed outside the Yalgado Ouédraogo University Hospital. The diagnosis of a colostomy complication was based on clinical and paraclinical findings, as well as intraoperative

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observations. Data were collected using an individual survey form completed using the patients' medical records, the visceral emergency department intake registry, the hospitalization registry, and the surgical report. For each patient, sociodemographic data (age, sex, occupation, place of origin), clinical data (admission status, medical history, functional signs, general signs, physical signs), paraclinical data, and follow-up data were collected. The data were entered into the Epi-Info statistical data processing software (version 7.2.26) before being analyzed. The anonymity of the questionnaire and the confidentiality of the collected data

## RESULTS

From January 1, 2020, to December 31, 2024, this study identified 28 cases of colostomy complications. During this period, 176 colostomies were performed. These complications accounted for 16% of the colostomies. The average age of the patients was 37.8 years, ranging from 18 to 66 years. There were 19 men and 9 women, for a sex ratio of 2.1. By socioeconomic status, 20 patients (71.4%) were employed in the informal sector. Five female patients were homemakers. Twenty-five patients, or 89.3%, had not attended school.

By admission route, sixteen patients were admitted directly to the visceral emergency department, and twelve patients were referred from another healthcare facility. Eighteen patients (64.3%) were from urban areas, and 35.7% were from rural areas. Twenty-four patients underwent emergency surgery, and four patients underwent elective surgery.

The main indications for colostomies were acute intestinal obstruction, abdominal trauma, and acute generalized peritonitis, accounting for 39.3%, 17.8%, and 14.3% of cases, respectively. The surgical indications for colostomies and the types of colostomies are presented in Table I. Twenty-four patients underwent a temporary colostomy, and four patients underwent a permanent colostomy. The colostomy was terminal, lateral, or a double Bouilly-Volkman colostomy in 50%, 39.3%, and 10.7% of cases, respectively.

### A study of colostomy complications revealed the following:

- Purulent drainage from the surgical wound at the midline incision was the main complication in nine patients, or 32.1%;
- Twenty patients, or 71.4%, had a Stage II general condition, and 28.6% had a Stage III condition according to the WHO Performance Status;
- Level of consciousness was normal in all patients;
- Hyperthermia was noted in 20 patients;
- Tachycardia was present in 12 patients;
- Blood pressure was normal in all patients;
- Clinical anemia was noted in eight patients;
- Skin turgor was reduced in two cases, and dehydration was noted in one case;
- Leukocytosis was found in nine patients;
- Several general and specific complications were diagnosed. Table II shows the distribution of patients according to the indications for colostomies and the complications observed.

According to the Clavien-Dindo classification, complications were severe (Grade IIIb) in 15 patients. Table III illustrates the distribution of colostomy complications according to the Clavien-Dindo classification. Complications were early-onset in 19 patients and late-onset in 9 patients. Terminal colostomy was responsible for early-onset complications involving parietal suppuration in three patients. Colorectal tumors were the primary indications for colostomies and were responsible for stoma prolapse in six patients.

All patients were hospitalized and received medical treatment via an intravenous line, including analgesics, antibiotics, and intravenous fluids. Surgical treatment was necessary in 15 patients. Local care was provided to nine patients. Table IV illustrates the management of colostomy complications according to the Clavien-Dindo classification. The prognosis following management of the complications was favorable in twenty-seven patients. One patient with stoma necrosis died of septic shock three days after treatment. The average length of hospital stay was 16 days.

**Table I: Distribution of patients by indication and type of colostomy**

| Indications for colostomies                                            | Type of colostomy | n |
|------------------------------------------------------------------------|-------------------|---|
| <b>Acute Intestinal Obstruction</b>                                    |                   |   |
| Sigmoid Colon Volvulus with Necrosis                                   | Terminal          | 5 |
| Stenosing Anorectal Tumor                                              | Lateral           | 3 |
| Sigmoid Colon Tumor                                                    | Terminal          | 2 |
| Colonic intussusception with colonic necrosis                          | Terminal          | 1 |
| <b>Abdominal trauma</b>                                                |                   |   |
| Abdominal contusion with hemoperitoneum and secondary colonic necrosis | Terminal          | 3 |
| Penetrating wound of the descending colon                              | Lateral           | 2 |
| <b>Acute generalized peritonitis</b>                                   |                   |   |
| Postoperative due to colonic anastomotic leakage                       | Double            | 3 |

|                                          |          |   |
|------------------------------------------|----------|---|
| Iatrogenic sigmoid perforation           | Lateral  | 1 |
| <b>Other</b>                             |          |   |
| Perianal abscess                         | Lateral  | 4 |
| Rectovaginal fistula                     | Terminal | 2 |
| Non-stenosing tumor of the lower rectum  | Terminal | 1 |
| Stage IV pressure ulcers of the buttocks | Lateral  | 1 |

**Table II: Distribution of Patients by Colostomy Indications and Complications**

| Indications for colostomies                         | Colostomy complications | n         |
|-----------------------------------------------------|-------------------------|-----------|
| <b>Acute intestinal obstruction</b>                 |                         |           |
| Sigmoid colon volvulus with colonic necrosis        | Parietal suppuration    | 3         |
|                                                     | Stoma necrosis          | 2         |
| Anorectal tumor                                     | Stoma prolapse          | 3         |
| Sigmoid colon tumor                                 | Stoma prolapse          | 2         |
| Colonic intussusception with colonic necrosis       | Peristomal abscess      | 1         |
| <b>Abdominal trauma</b>                             |                         |           |
| Abdominal contusion with secondary colonic necrosis | Peristomal abscess      | 3         |
| Penetrating wound of the descending colon           | Parietal suppuration    | 2         |
| <b>Acute generalized peritonitis</b>                |                         |           |
| Postoperative due to colo-colic anastomotic leakage | Stoma retraction        | 2         |
|                                                     | Stoma necrosis          | 1         |
| Iatrogenic sigmoid perforation                      | Stoma stenosis          | 1         |
| <b>Other</b>                                        |                         |           |
| Anal margin abscess                                 | Malnutrition            | 2         |
|                                                     | Deshydration            | 1         |
|                                                     | Anxiety                 | 1         |
| Rectovaginal fistula                                | Stoma suture breakage   | 2         |
| Non-stenosing tumor of the lower rectum             | Stoma prolapse          | 1         |
| Stage IV buttock pressure ulcers                    | Stoma retraction        | 1         |
| <b>Total</b>                                        |                         | <b>28</b> |

**Table III: Distribution of Patients by Colostomy complications according to the Clavien-Dindo Classification**

| Clavien-Dindo Classification | Colostomy complications | n         |
|------------------------------|-------------------------|-----------|
| <b>Grade II</b>              | Parietal suppuration    | 5         |
|                              | Dehydration             | 1         |
|                              | Peristomal abscess      | 4         |
|                              | Malnutrition            | 2         |
|                              | Psychological disorders | 1         |
| <b>Grade IIIb</b>            | Stoma prolapse          | 6         |
|                              | Stoma necrosis          | 3         |
|                              | Stoma retraction        | 3         |
|                              | Stoma suture breakage   | 2         |
|                              | Stoma stenosis          | 1         |
| <b>Total</b>                 |                         | <b>28</b> |

**Table IV: Distribution of Patients by Treatment of Colostomy Complications and the Clavien-Dindo Classification**

| Clavien-Dindo classification | Colostomy complications | Treatment                          | n         |
|------------------------------|-------------------------|------------------------------------|-----------|
| <b>Grade II</b>              |                         | <b>Medical treatment</b>           |           |
|                              | Parietal suppuration    | Local care + antibiotic therapy    | 5         |
|                              | Peristomal abscess      | Local care + antibiotic therapy    | 4         |
|                              | Malnutrition            | Parenteral nutrition + transfusion | 2         |
|                              | Dehydration             | Rehydration                        | 1         |
|                              | Psychological disorders | Psychological support              | 1         |
| <b>Grade IIIb</b>            |                         | <b>Surgical treatment</b>          |           |
|                              | Stoma prolapse          | Reduction + stoma reconstruction   | 6         |
|                              | Stoma necrosis          | Resection + stoma reconstruction   | 3         |
|                              | Stoma retraction        | Stoma reconstruction               | 3         |
|                              | Stoma suture breakage   | Mucocutaneous suturing             | 2         |
|                              | Stoma stenosis          | Resection + stoma reconstruction   | 1         |
| <b>Total</b>                 |                         |                                    | <b>28</b> |

## DISCUSSION

Colostomies play a vital role in the management of lesions affecting the lower gastrointestinal tract. However, they are responsible for a significant number of complications and deaths in Burkina Faso. The incidence of colostomy complications was 16% at Yalgado Ouédraogo University Hospital. Our results are similar to those of Haugen in Europe [6], who reported a rate of 15%, and lower than those of Sanogo in Mali [7], who reported a rate of 53%. Underreporting of complications some of which may be managed at other healthcare facilities in Ouagadougou could lead to an underestimation of this figure. However, the findings show that despite better postoperative follow-up in university hospitals, complications from digestive stomas remain a persistent issue. The mean age of our patients was 37.8 years, compared to 31 years in Takongmo's study in Cameroon [8]. This could be explained by the youthfulness of the population in Burkina Faso in particular and in Africa in general. We enrolled 19 men and 9 women, for a sex ratio of 2.1. This male predominance has been reported by other authors [7, 9]. Poor adherence to care and indications such as abdominal trauma, which are more common among men, may account for their high representation.

Several benign and malignant conditions were the reasons for performing colostomies. The main indications for colostomies were acute intestinal obstruction (11 cases), abdominal trauma (5 cases), acute generalized peritonitis (4 cases), and anorectal conditions (8 cases). Complications of digestive stomas vary widely depending on patients' socioeconomic status and the initial surgical condition. In this study, sigmoid colon volvulus accounted for 45.5% of acute intestinal obstructions. Some African authors have also reported high proportions [10, 11]. In Burkina Faso, volvulus is exacerbated by a high-fiber diet and excessive mobility of the sigmoid colon. This diet is sometimes punctuated by periods of abundance of high-fiber fruits and vegetables. Furthermore, delayed access to care leads to complications (ischemia, necrosis, peritonitis), requiring emergency colostomy. In Europe, the primary indication for colostomies is colorectal cancer, as shown by Aydin [12]. This difference can be explained by distinct epidemiological and environmental profiles between Africa where infectious and traumatic emergencies predominate and Europe, where chronic neoplastic and inflammatory conditions are more prevalent.

Several complications associated with colostomies were reported. Stoma prolapse was the most common complication, occurring in 21.4% of cases, compared with 10.4% and 7.9% in the studies by Bikandou in the Congo and Pemberton in the United States, respectively [13, 14]. Indeed, stoma prolapse could be explained by the excessive length of the externalized stoma loop, the lack of adequate fixation, the surgical technique, intra-abdominal hypertension, and a stoma opening that is too large. In fact, several

authors advocate for a subperitoneal approach in permanent terminal colostomies.

Parietal suppuration was the second most common complication, accounting for 17.9% of cases in our study. Our results are higher than those reported by Andivot, who found a rate of 7% [15]. This could be explained by inadequate irrigation of the peritoneal cavity, a lack of asepsis, contamination of the surgical wound by intestinal contents during the externalization of the loop which must be performed under closed-field conditions—a failure to immediately apply a colostomy appliance, resulting in contact between feces and the surgical wound, and poor local hygiene.

Peristomal suppuration, meanwhile, accounted for 14.3% of cases in our study, ranking it third among colostomy complications. Hazem in Tunisia reported a rate of 15.8% in his study [9]. Indeed, peristomal suppuration resulted from local postoperative contamination, poor hygiene, and the lack of stoma therapists to provide adequate stoma care.

Stoma necrosis and stoma retraction were the fourth most common complications, each occurring in 10.7% of cases. Our results are higher than those reported by Guet in Mali [6], who found a rate of 0.9% for stoma necrosis. Causes of this complication include emergency stoma creation, a parietal opening that is too narrow and compresses blood vessels, mesenteric traction, patient comorbidities, and inadequate postoperative follow-up. Bikandou in the Congo reported a rate of 1.1% for stomal retraction [13]. Stomal retraction is almost always linked to insufficient mobilization of the colon.

Management of colostomy complications most often requires local care. In this study, in addition to medical treatment, revision surgery was performed in fifteen patients. Our results are better than those of Traoré in Mali, who reported a 30% rate of surgical interventions [16]. Indeed, colostomy complications are associated with significant morbidity requiring surgical management. The mortality rate in our study was 3.6%, compared to 6.7% and 10.4% in the studies by Sanogo in Mali and Bikandou in the Congo, respectively [7, 13]. Septic shock was the cause of death.

## CONCLUSION

Complications of colostomies are common and primarily consist of prolapse, parietal, and peristomal suppuration. They result in prolonged hospital stays and contribute to a significant mortality rate, as they sometimes require reoperation. To optimize colostomy outcomes, it is essential to respect the surgical technique, improve supportive care, and adhere to the recommended timeline for restoring intestinal continuity.

## REFERENCES

1. Sabbagh C, Rebibo L, Hariz H. Stomal construction: Technical tricks for difficult situations, prevention and treatment of post-operative complications. *Journal of Visceral Surgery* (2018) 155(1), 41–49. <https://doi.org/10.1016/j.jvisc Surg.2017.11.002>
2. Guéye D, Cissé M, Bâ PA, Konaté I, Kâ O, Touré AO, et al., Les complications chirurgicales des stomies intestinales : A propos de 25 cas. *J Afr Chir Digest* 2015; 15(1): 1790–1793.
3. Harris D, Egbeare D, Jones S, Benjamin H, Woodward A, Foster ME. Complications and mortality following stoma formation. *Ann R Coll Surg Engl* 2005; 87: 427-431.
4. Traore A, Diakite I, Togo A. Stomies digestives en chirurgie générale du CHU Gabriel touré. MALI MEDICAL 2010 ; TOME XXV N°4 : 52-56
5. Boro G. Les stomies intestinales au Centre Hospitalier National Yalgado Ouédraogo : Indications et complications à propos de 106 cas. Thèse de Médecine n°27. Ouagadougou, Burkina Faso : Université de Ouagadougou ; 2001. 112p.
6. Haugen E, Wibe A, Myklebust T, et al., Postoperative complications after intestinal stoma formation: a multicenter cohort study in Normay. *Colorectal disease* 2016 ; 18(12) : 451-458.
7. Sanogo ZZ, Yena S, Simega A. Stomies digestives : expérience du service de chirurgie « A » du CHU du point G. *Mali médical* 2004 ;(3) :24-27.
8. Takongmo S. Les entérostomies au CHU de Yaoundé : indications et résultats à propos d'une série de 42 patients. *Health Sci* 2009 ;10(1).
9. Hazem B, Nejmeddine A, Haitham R. Les complications chirurgicales des colostomies. *La Tunisie Médicale* 2014 ;92(7): 482-487.
10. Ouattara A, Sanou A, Ouédraogo S, Ouédraogo S, Traoré SS. Aspects épidémiologiques et thérapeutiques des occlusions intestinales aiguës sur volvulus du côlon sigmoïde au CHU Sanou Souro de Bobo-Dioulasso (Burkina Faso). *Pan Afr Med J* 2016 ;24 :198.
11. Malonga EE, Ndong A, Sango J, Nkoua-Mbon JB. Les colostomies au CHU de Yaoundé : indications, complications et devenir. *J Afr Chir* 2018 ;13(1): 15-18.
12. Aydın S, Kaya O, Yıldırım C, Kaya S, Demir M. A Cross-Sectional Evaluation of Patients with Ostomy in Turkey. *Turkish J Colorectal Dis* 2020 ;30(3): 189-195.
13. Bikandou MB, Samba R, Okoumou A, Loko AL, Ondongo N, Moukassa D. Les iléostomies au CHU de Brazzaville : indications et complications. *J Soc Ouest Afr Chir* 2015 ;15(1): 25-28.
14. Pemberton R, et al., The incidence of stoma related morbidity-a systematic review of randomised controlled trials. *Ann R Coll Surg Engl* 2018 ;100(6): 435-442.
15. Andivot T, Bail JP, Chio F, Juliard G, Topart P, Lozach P, Charles JP. Les complications des colostomies. *Année chirg* 1996 ;50(3): 252-257.
16. Traoré M, Sow AB, Keïta S, Sangaré M, Togo A, Diallo YL, et al., Stomies digestives : gestion et impact sur la qualité de vie. *J Chir Spécialités Mali* 2022 ;1(2): 36-40.