

Original Research Article

Anesthetic Management of Abdominal Emergencies at Donka National Hospital

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Abstract: Objective: To assess the anesthetic management of surgical abdominal emergencies at Donka National Hospital. **Patients and Methods:** This was a retrospective descriptive study conducted over a 2-year period, from January 1, 2024, to December 31, 2025. It included all medical records and operating room reports of patients of all ages who underwent emergency surgery for a surgical abdominal condition at Donka National Hospital. Obstetric surgical emergencies and incomplete medical records were excluded. Patient recruitment was exhaustive. **Results:** A total of 159 patients were included, representing a frequency of 35%. The mean age was 36 ± 15.2 years (range: 16–82 years), with a male-to-female sex ratio of 1.9. Generalized acute peritonitis was the most common surgical indication (50.3%), followed by acute intestinal obstruction (20.7%). ASA II-U was the predominant classification (40.9%). All patients were considered to have a full stomach. General anesthesia was administered in 98% of cases, with rapid sequence induction performed in 94% of cases and the Sellick maneuver in 98% of cases. Oropharyngeal endotracheal intubation provided airway control in 98% of cases. Intraoperative hypotension (18.9%) and delayed postoperative emergence (3.8%) were the most frequent complications. Peri-anesthetic mortality was 0.6%. **Conclusion:** Surgical abdominal emergencies account for a substantial proportion of operative activity at Donka National Hospital and predominantly affect young adult males. Standardized anesthetic management, rigorous preoperative resuscitation, and close interdisciplinary collaboration are essential to improve outcomes in these patients.

Keywords: Abdominal Emergencies, Anesthesia, Complications, Mortality, Guinea.

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INTRODUCTION

Anesthesia is the pharmacological suppression of conscious sensation; it provides the immobility and muscle relaxation required to perform surgical procedures and constitutes an essential step in surgical care (Raju M, 2018). Surgical abdominal emergencies, on the other hand, comprise clinical syndromes characterized by acute, severe, and rapidly developing abdominal pain resulting from various visceral conditions and most often requiring urgent surgical intervention. They account for a substantial proportion of surgical activity in African hospitals, with reported frequencies ranging from 20% to 22.7% (Raju M, 2018).

In sub-Saharan Africa, delays in seeking medical care, inadequate equipment, and insufficient medical resources remain major challenges in the management of these emergencies (A *et al.*, 2020). Compared with elective surgery, the risk of death among patients undergoing emergency abdominal surgery is

five times higher (B *et al.*, 2019), and mortality remains high in developing countries, ranging from 4.9% to 13.2% (Raju M, 2018; B *et al.*, 2019).

The anesthetic management of these emergencies is complex because of the diversity of patient conditions, the numerous physiological disturbances involved (hypovolemia, sepsis, and a full stomach), and the variability of available anesthetic and surgical techniques (Raju M, 2018; C *et al.*, 2021). Rapid and focused assessment, early hemodynamic optimization, and appropriate rapid-sequence induction are essential to reduce perioperative morbidity and mortality (D *et al.*, 2020; E *et al.*, 2022). In Guinea, Touré A *et al.*, reported in 2023, in a series of patients with peritonitis at CHU Ignace Deen, that general anesthesia was performed in almost all patients (Touré A *et al.*, 2023). In Senegal, Ogonon B *et al.*, reported in 2024 a hospital prevalence of abdominal emergencies of 39% among anesthetic procedures performed for surgical

emergencies (Ogondon B *et al.*, 2024). The high frequency of these emergencies, the challenges inherent in their anesthetic management, and the complications associated with them justify the interest in this topic.

The objective of this study was to evaluate the anesthetic management of abdominal emergencies at Donka National Hospital (HND).

PATIENTS AND METHODS

This was a retrospective descriptive study conducted in the Department of Anesthesia and Intensive Care at Donka National Hospital (Conakry, Guinea) over a two-year period from January 1, 2024, to December 31, 2025.

The study included all medical records and operating room reports of patients of all ages who underwent emergency surgery at DNH for a surgical abdominal condition during the study period. Incomplete medical records and operating room reports, as well as obstetric surgical emergencies, were excluded. Recruitment was exhaustive and included all records meeting the selection criteria, resulting in a total of 159 patients.

Data were collected from operating room reports, patient medical records and registers, as well as anesthesia records, using a pre-established data collection form incorporated into the GIC Collect application. The variables studied included sociodemographic characteristics (age, sex, occupation, and educational level), clinical data (reason for admission, medical history, surgical indication, ASA physical status, and Mallampati classification), paraclinical parameters (preoperative laboratory investigations), and perioperative anesthetic management data (preoperative preparation, anesthetic technique, drugs and agents used, monitoring, intraoperative incidents and complications, analgesia, postoperative complications, and patient outcomes).

Patients were categorized into age groups according to the classification of the National Statistical Institute of Canada (child: <15 years; adolescent: 15–24 years; adult: 25–64 years; older adult: ≥65 years). ASA physical status was assessed according to the classification of the American Society of Anesthesiologists (classes I to V, with the additional designation “U” for emergency), while upper airway accessibility was assessed using the Mallampati classification (classes I to IV).

Data processing and analysis were performed using SPSS version 26.0. Qualitative variables were

expressed as frequencies and percentages, while quantitative variables were expressed as means $\pm$ standard deviations. The study protocol was submitted for approval to the Department of Anesthesia and Intensive Care of the Faculty of Medical and Paramedical Sciences at Kofi Annan University of Guinea, following authorization from the department heads. Data were collected while ensuring patient anonymity and confidentiality.

RESULTS

During the study period, 159 patients underwent emergency surgery for a surgical abdominal condition, representing 35% of all emergency surgical procedures performed at DNH.

The mean age of the patients was 36 ± 15.2 years, with a range of 16 to 82 years; the 25–64-year age group was the most represented (64.8%). The male-to-female sex ratio was 1.9. Regarding occupational status, self-employed workers were predominant (61.0%), followed by pupils/students (19.5%) and civil servants (18.2%). In terms of educational level, 34.0% of patients had primary education, 29.6% had university-level education, 23.3% had secondary education, and 13.2% had no formal education.

Abdominal pain was the most common reason for admission (98.5% of cases), followed by abdominal distension (44.7%). The most frequently reported medical history included hypertension (6.9%) and peptic ulcer disease (5.7%); regarding surgical history, appendectomy (13.8%) was the most common.

Generalized acute peritonitis was the most frequent surgical indication (50.3%), followed by acute intestinal obstruction (20.7%), acute appendicitis (13.8%), abdominal trauma (10.1%), and other conditions (3.1%), including acute cholecystitis, linea alba hernia, acute intussusception, and strangulated umbilical hernia. ASA physical status II-U was the most common (40.9%), followed by classes I-U (28.3%), III-U (24.5%), and IV-U (6.3%). Mallampati class I was observed in 68.6% of patients.

Regarding laboratory findings, the most frequent abnormality was anemia (40.3%), followed by leukocytosis (30.8%), elevated blood urea and creatinine levels (17.0% each), and a prothrombin time below 70% (15.1%). The mean intraoperative vital signs were as follows: systolic blood pressure, 129 ± 21.4 mmHg; diastolic blood pressure, 79 ± 16.2 mmHg; heart rate, 101.7 ± 21.8 beats/min; SpO₂, $96.7 \pm 3.1\%$; respiratory rate, 24.0 ± 18.0 breaths/min; and body temperature, 37.1 ± 0.6 °C.

Table I: Sociodemographic and Clinical Characteristics of the Patients

Characteristics	n	%
Age group		
15-24 years	43	27,0
25-64 years	103	64,8
≥ 65 years	13	8,2
Mean age	36 ± 15,2 years	
Sex (M/F ratio = 1.9)	159	100,0
ASA-U score		
ASA I-U	39	28,3
ASA II-U	65	40,9
ASA III-U	45	24,5
ASA IV-U	10	6,3
Mallampati classification		
Classe I	109	68,6
Classe II	40	25,2
Classe III	9	5,7
Classe IV	1	0,6

All patients (100%) had a full stomach. Premedication (antacid and antiemetic) was administered to 48.4% of patients, oxygen therapy was provided to 29.6%, preoperative fluid resuscitation was performed in 17.5%, and blood transfusion was administered in 14.4%. Preoperative comorbid conditions and complications were identified, predominantly shock (6.9%), hemorrhage (5.0%), and respiratory distress (3.8%).

General anesthesia was the most commonly used technique, performed in 98% of patients. The Sellick maneuver was applied in 98% of cases, and rapid-sequence induction was performed in 94% of cases. Upper airway management was achieved by orotracheal

intubation in 98% of patients. Propofol (78.6%) and ketamine (49.7%) were the most frequently used intravenous hypnotic agents. Regarding neuromuscular blockade, succinylcholine was used in 58.4% of patients receiving general anesthesia, while rocuronium was used in 25.9% of patients. Vecuronium was used in 15.7% of patients. General anesthesia was predominantly maintained with isoflurane. Fluid resuscitation (100%) and antibiotic therapy (98.4%) were systematically administered. Ephedrine was used in 19.5% of patients to correct intraoperative hypotension. Intraoperative monitoring, including electrocardiography, non-invasive blood pressure, SpO₂, and respiratory rate, was systematically performed in all patients (100%).

Table II: Distribution of Patients According to the Modalities of Intraoperative Anesthetic Management

Procedures	n	%
General anesthesia	156	98,0
Sellick maneuver	156	98,0
Rapid sequence induction	150	94,0
Orotracheal intubation	156	98,0
Propofol	125	78,6
Kétamine	79	49,7
Succinylcholine	93	58,4
Rocuronium	41	25,9
Vécuronium	25	15,7
Intra opérative fluid resuscitation	159	100,0
Intraoperative antibiotic therapy	157	98,4

Arterial hypotension was the most frequent intraoperative event (18.9%), followed by difficult intubation (3.1%), desaturation (2.5%), hemorrhage (1.9%), and cardiac arrest (1.9%). One case of intraoperative death was recorded (0.6%).

During the postoperative period, multimodal analgesia was mainly based on the combination of paracetamol and tramadol (69.2%), followed by

paracetamol alone (28.3%). Delayed emergence was the most frequent immediate postoperative complication (3.8%), followed by desaturation and arterial hypotension (2.5% each), and nausea/vomiting and cardiac arrest (1.9% each).

The leading cause of death was hypoxic cardiac arrest. Most patients (95.6%) were transferred to the visceral surgery ward after surgery, while 3.8% were

transferred to the intensive care unit. One death occurred on the operating table (0.6%), resulting in an overall peri-anesthetic mortality rate of 0.6%.

Table III: Distribution of Patients According to Complications

Complications	n	%
Intraoperative complications		
Arterial hypotension	30	18,9
Difficult intubation	5	3,1
Désaturation	4	2,5
Hémorrhage	3	1,9
Cardiac arrest	3	1,9
Bradycardia	1	0,6
Intraoperative death	1	0,6
Immediate postoperative complications		
Delayed emergence from anesthesia	6	3,8
Désaturation	4	2,5
Arterial hypotension	4	2,5
Nausea/vomiting	3	1,9
Cardiac arrest	3	1,9
Uncontrolled pain	1	0,6

DISCUSSION

This retrospective descriptive study analyzed the anesthetic management of 159 patients who underwent emergency surgery for surgical abdominal conditions at DNH. The study had several limitations. Its retrospective design resulted in incomplete anesthesia records, insufficient documentation of some preoperative laboratory investigations, and loss to postoperative follow-up among patients transferred to other departments, thereby limiting the assessment of late postoperative complications.

The frequency of abdominal emergencies in our series (35%) was high, although lower than that reported by Camara M *et al.* in Siguiri, Guinea, in 2021 (69.54%) (Camara M *et al.*, 2021). This variability could be explained by differences in sample size, study duration, and the referral patterns and attractiveness of the healthcare facilities concerned. Nevertheless, this high frequency confirms that abdominal emergencies constitute a major public health problem in Guinea, as highlighted in other African studies (Raju M, 2018; Ogondon B *et al.*, 2024).

The mean age of our patients (36 ± 15.2 years) indicated a predominance of young adults, similar to the findings of Koundouno AM *et al.* in Kankan, Guinea, in 2024, who reported a mean age of 30.9 ± 16.1 years (Koundouno AM *et al.*, 2024). This predominance may be explained by the high frequency of acute conditions such as appendicitis, peritonitis, and intestinal obstruction in this economically active age group. The male predominance observed in our study (male-to-female ratio of 1.9) is consistent with the findings of Coulibaly M *et al.*, in Mali in 2020, who reported that 62% of patients were male (Coulibaly M *et al.*, 2020). This predominance may be related to greater exposure

among men to trauma and strenuous physical activities that may contribute to the occurrence of strangulated hernias.

ASA physical status II-U was predominant in our series, as reported by Diaw M *et al.*, in Thiès, Senegal, in 2018, and by Hadjara D *et al.*, in Niamey, Niger, in 2020 (Diaw M *et al.*, 2018; Hadjara D *et al.*, 2020). This contrasts with the findings of Bonkougou P *et al.*, in Burkina Faso in 2017, who reported a predominance of ASA I-U (Bonkougou P *et al.*, 2017). The predominance of ASA II-U suggests that patients already had some degree of compromised general condition at the time of management, probably related to delayed presentation and the severity of evolving conditions. This situation requires increased vigilance by anesthesia teams and adaptation of intraoperative management protocols.

General anesthesia was the predominant technique in our series (98%), a higher rate than that reported by Ndong A *et al.*, in Senegal in 2024 (66.5%) (Ndong A *et al.*, 2024). This near-exclusive use confirms the role of general anesthesia as the standard technique for emergency abdominal surgery, while spinal anesthesia remains less frequently used because of its contraindications in complicated cases. Rapid-sequence induction, performed in 94% of our patients, is consistent with the findings of Gaye I *et al.*, in Senegal in 2016, who also reported predominant use of this technique (Gaye I *et al.*, 2016). Although rapid-sequence induction is widely recommended by scientific societies, its consistent implementation may be limited by logistical constraints, particularly the intermittent availability of short-acting neuromuscular blocking agents.

Propofol and ketamine were the most frequently used intravenous hypnotic agents in our series, in contrast to the findings of Matsanga A *et al.*, in Gabon in 2022, who reported predominant use of ketamine (81%) compared with propofol (12%) (Matsanga A *et al.*, 2022). The predominance of propofol in our setting is consistent with recommendations for hemodynamically stable patients, whereas the use of ketamine in cases of hemodynamic instability reflects pragmatic adaptation of anesthetic practice to the patient's clinical condition. Succinylcholine, used in 58.4% of patients receiving general anesthesia, remains a reference neuromuscular blocking agent for emergency intubation. However, occasional stock shortages led to the use of rocuronium, illustrating the direct impact of supply constraints on local anesthetic practices. A similar situation was reported by Matsanga A *et al.*, in Gabon, where suxamethonium was used in all patients (Matsanga A *et al.*, 2022).

Isoflurane remained the most frequently used inhalational anesthetic agent for maintenance of general anesthesia in our series. This may be explained by its greater local availability compared with other volatile agents, as reported by Coulibaly M *et al.*, in Mali in 2021 (Coulibaly M *et al.*, 2021).

Arterial hypotension was the most frequent intraoperative complication (18.9%), a rate higher than that reported by Coulibaly M *et al.*, in Mali (11%) (Coulibaly M *et al.*, 2021). This high rate may reflect the hemodynamic vulnerability of patients who often present late, with hypovolemic or septic shock, and highlights the importance of rigorous monitoring and anticipation of cardiovascular complications. Delayed emergence, the most frequent postoperative complication in our series (3.8%), was less common than in the series reported by Coulibaly M *et al.*, in Mali in 2026 (6%) (Coulibaly M *et al.*, 2026). This finding may suggest appropriate adaptation of local anesthetic practices, although continuous vigilance in the post-anesthesia care unit remains essential.

Abdominal pain was the most common reason for admission (98.5%), followed by abdominal distension (44.7%), a finding comparable to that reported by Konaté S *et al.*, in Kolondiéba, Mali, where abdominal pain was reported in all patients, followed by vomiting in 85.7% of cases (Konaté S *et al.*, 2021). Pain is the primary warning symptom of acute abdominal conditions and may prompt patients to seek medical attention even in settings where access to healthcare remains limited. Generalized acute peritonitis was the most common surgical indication in our series, a finding comparable to that reported by Almeimoune A *et al.*, in Bamako, Mali, in 2021, who reported peritonitis in 61% of cases (Almeimoune A *et al.*, 2021). This predominance reflects the severity of abdominal emergencies in Guinea, which may be promoted by delayed presentation, self-medication, and frequent

reliance on traditional medicine, all of which may contribute to the progression of initially uncomplicated conditions to complicated forms.

Postoperative analgesia was mainly based on the combination of paracetamol and tramadol (69.2%), a finding comparable to that reported by Maman C *et al.*, in Niamey, Niger, in 2015, who reported use of this combination in 76.5% of patients (Maman C *et al.*, 2015). This approach, consistent with multimodal analgesia recommendations, also reflects an effort to limit adverse effects and simplify postoperative management in a setting where postoperative monitoring may be limited.

Finally, the peri-anesthetic mortality rate observed in our series (0.6%) was substantially lower than that reported by Bonkoungou P *et al.*, in Burkina Faso in 2017 (5.1%) (Bonkoungou P *et al.*, 2017). This difference may be explained by the sample size, but also by satisfactory adaptation of local anesthetic practices to resource constraints, making it possible to limit mortality despite a resource-limited setting.

CONCLUSION

The management of surgical abdominal emergencies remains a major public health challenge in developing countries, primarily affecting young and economically active populations. At Donka National Hospital, where prehospital care remains poorly structured, preoperative resuscitation and anesthetic management must be rigorous and based on close collaboration among emergency physicians, anesthesiologists-intensivists, surgeons, and radiologists.

REFERENCES

- Almeimoune, A., Diop, M. T., Moustapha, M., Alaji, D. S., Mahamadoun, C., Youssouf, S., et al. (2021). Prise en charge anesthésiologique des abdomens aigus chirurgicaux chez l'adulte au département d'anesthésie-réanimation et de médecine d'urgence du CHU Gabriel Touré. *International Journal of Scientific Research and Management*, 9, 342–349.
- Bonkoungou, P., Lankoandé, M., Ki, K. B., Kaboré, R. A. F., Traoré, S. I. S., Ouédraogo, A. W., et al. (2017). Prise en charge anesthésique des abdomens aigus chirurgicaux dans un hôpital de référence nationale au Burkina Faso. *Revue Africaine d'Anesthésie et de Médecine d'Urgence*, 22, 18–24.
- Camara, M., Kone, A. C., Camara, T., Diawara, Y., Dembele, B. T., Traore, D., et al. (2021). Aspects épidémiologiques, cliniques et thérapeutiques des urgences abdominales chirurgicales à l'Hôpital Préfectoral de Siguiri (Guinée). *Health Sciences and Disease*, 22.
- Coulibaly, M., Bengaly, B., Ouattara, D., Sanogo, S., Diassana, M., Traoré, I., et al. (2021). Profil épidémiologique des abdomens aigus chirurgicaux à

- l'hôpital du district de Koutiala, Mali. *Journal de Chirurgie Spéciale du Mali*, 1, 24–30.
- Coulibaly, M., Korogo, I., & Dabo, A. (2023). *Prise en charge anesthésiologique des urgences chirurgicales au CHU mère-enfant « Le Luxembourg »* [Thèse de doctorat, Université des Sciences, des Techniques et des Technologies de Bamako].
 - Coulibaly, M., Korogo, I., Dabo, A., Koita, S. A., Almeimoune, A., Mangane, M. I., et al. (2026). Anesthesiologic management of surgical emergencies at the University Hospital “Le Luxembourg”. *Open Journal of Anesthesiology*, 16, 1–8.
 - Diaw, M., Barboza, D., Diop, E. H. N., Leye, P. A., Ndiaye, P., Ndiaye, F., et al. (2018). Pratique anesthésique pour urgences chirurgicales abdominales à l'hôpital régional de Thiès. *Revue Africaine d'Anesthésie et de Médecine d'Urgence*, 23, 53.
 - Gaye, I., Leye, P. A., Traoré, M. M., Ndiaye, P. I., Boubacar, E. H., Bah, M. D., et al. (2016). Prise en charge péri-opératoire des urgences chirurgicales abdominales chez l'adulte au CHU Aristide Le Dantec. *Pan African Medical Journal*, 24, 190.
 - Hadjara, D., Chaibou, M. S., Gagara, M., Magagi, A., Moussa, B. M., Gagara, M., et al. (2020). Prise en charge anesthésiologique des urgences abdominales à l'Hôpital National Niamey (HNN). *Revue Africaine d'Anesthésie et de Médecine d'Urgence*, 25, 15.
 - Havens, J. M., Peetz, A. B., Do, W. S., Cooper, Z., Kelly, E., Askari, R., et al. (2015). The excess morbidity and mortality of emergency general surgery. *Journal of Trauma and Acute Care Surgery*, 78, 306–311.
 - Kipnis, E., Huet, D. G., Wiel, E., & Lebuffe, G. (2011). Anesthésie pour chirurgie en urgence. *53e Congrès National d'Anesthésie-Réanimation, Médecins*, 20, 14.
 - Koundouno, A. M., Diallo, A. A., Fofana, H., Camara, F. L., Soumaoro, L. T., Diakite, S. Y., et al. (2024). Morbimortalité postopératoire des urgences chirurgicales abdominales à l'Hôpital Régional de Kankan. *Health Sciences and Disease*, 25.
 - Maman Chaibou, Sanoussi, S., Rachid, S., Nouhou, T., Hadjara, D., Moussa Madougou, et al. (2012). Management of postoperative pain: Experience of the Niamey National Hospital, Niger. *Journal of Pain Research*, 5, 591–595.
 - Matsanga, A., Ngomas, J. F., Obame, R., Nkili, G. E., Vemba, A., Nzoghé, P., et al. (2022). Anesthesiological management of patients operated on for post-traumatic abdominal surgical emergencies at the University Teaching Hospital of Owendo (Gabon). *Health Sciences and Disease*, 23, 1–5.
 - Ndong, A., Moche, S. T., Togtoga, L., Bah, M. S., Djibril, P., Ndoeye, et al. (2024). Epidemiological profile of abdominal surgical emergencies in adults at the Saint-Louis Regional Hospital (Senegal) between 2021 and 2022: A cross-sectional study. [Journal name not provided], 5, 53–59.
 - Ndong, A., Togtoga, L., Bah, M. S., Ndoeye, P. D., & Niang, K. (2024). Prevalence and mortality rate of abdominal surgical emergencies in Sub-Saharan Africa: A systematic review and meta-analysis. *BMC Surgery*, 24, 35.
 - Ogondon, B., Kouadio, K. S., Edé, F., Kpan, K. J., Kohi, K. N., Nd'a-Koffi, C., et al. (2024). Problématique de l'anesthésie dans les urgences chirurgicales abdominales au Centre Hospitalier Universitaire de Bouaké. *Revue Africaine d'Anesthésie et de Médecine d'Urgence*, 29, 57.
 - Poulton, T., Murray, D., & National Emergency Laparotomy Audit (NELA) Project Team. (2019). Pre-optimisation of patients undergoing emergency laparotomy: A review of best practice. *Anaesthesia*, 74, 100–107.
 - Touré, A., Camara, A. Y., Bangoura, A., Camara, M. L., & Okou, M. P. S. (2023). Peritonitis: Perioperative care in surgical emergencies CHU Ignace Deen. *Open Journal of Anesthesiology*, 13, 85–94.

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