

# Digestive Surgical Emergencies at the Commune II Reference Health Centre in the District of Bamako

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## Abstract

We conducted a prospective descriptive study from January 1 to December 31, 2018 with the objectives of determining the frequency of digestive surgical emergencies, describing the clinical and para-clinical aspects of the management of digestive surgical emergencies, evaluating the therapeutic aspect of digestive surgical emergencies and analysing the post-operative follow-up of patients operated on in emergencies. We counted 120 patients operated on for digestive surgical emergencies, which corresponds to 5.80% of all consultations and 44.80% of all surgical interventions. The male sex was the most represented with a ratio of 1.80. The average age was 27.5 years. The majority of patients were from Bamako. Abdominal pain was the reason for consultation in 80% of cases. The diagnosis was essentially clinical and paraclinical in doubtful cases. These included ultrasound, unprepared abdomen and sometimes abdominal CT scans. Acute appendicitis was the most common pathology with 42.5%. General anaesthesia and spinal anaesthesia were used with 50% each. The majority of patients were operated on between 30 minutes and 12 hours after their admission to the department (71.7%). Acute peritonitis accounted for 67% of deaths from sepsis. The surgical technique was decided according to the pathology and the surgeon's choice. The post-operative course was simple in the majority of cases. The prognosis is good when the management is early. The treatment is medical-surgical.

## Keywords

Surgical Emergencies, Digestive Tract, General Surgery CSRéf CII

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### 1. Introduction

An emergency is a pathological situation in which a diagnosis and treatment must be made very quickly [1]. Digestive surgical emergencies are defined by their duration (less than a week), requiring very rapid management given the vital risk [2]. ETIENNE, France, 1998 [3] defines emergencies as cases requiring immediate care. According to MONDOR, France, 1928 [4], surgical emergencies are conditions which, for the most part, in the absence of a surgical intervention obtained without delay, cause patients to succumb in a few hours or a few days. Pain is the main symptom and the main reason for consultation. Surgical emergencies are pathologies that occupy an important place in surgery due to their high frequency, their difficult management, and their high mortality and morbidity rate [4]. In a study carried out in the USA in 2004 by BROWER [5] on 1000 patients with an acute abdomen, six surgical aetiologies (acute appendicitis, acute cholecystitis, acute intestinal occlusion, duodenal ulcer, ovarian cyst, aneurysm) were found. Surgical emergencies require a precise diagnosis for optimal management. This is not always easy due to the wide variety of etiologies [6]. We conducted this study to highlight the diversity of problems in the management of digestive surgical emergencies at the commune II reference health centre.

### 2. Methods and Patients

This was a prospective and descriptive study running from 1 January to 31 December 2018, a total duration of 12 months. The general surgery department of the commune II reference health centre (CSRéf CII) served as the setting for our study; one of the six reference health centres in the District of Bamako, each located in a commune. We identified 120 patients during our study period who met the inclusion criteria. Any patient who consulted the general surgery unit of the CSRéf commune II of the district of Bamako, operated, hospitalised in the department for digestive surgical emergencies and accepted to participate in the study.

All patients on admission were given a full clinical examination. At the end of this examination, those whose diagnosis of acute abdomen was obvious were given a B.P.O. and or imaging. Surgical interventions were performed by a surgeon who decided on the operative technique.

### 3. Variables

We studied the following variables: Socio-demographic variables: age, gender, occupation, residence. Physical examination: general signs, functional signs,

physical signs. Complementary examinations: biological check-up, ASP, ultrasound and CT scan. Diagnosis: pre- and intra-operative; Treatment: before and after admission (operator, technique, anaesthesia, procedures performed). Complications: per and post operative. Post-operative follow-up: after one and three months. Follow-up of patients was carried out in the department by appointment or by telephone call after the operation. The minimum follow-up time was three months. The materials used were: medical records of the patients; hospitalization registers; and registers recording surgical reports; individual investigation forms outpatient registers; anaesthesia protocol. Data were entered and processed in Microsoft Excel 2016, SPSS 20. The comparison of results was done by the Chi2 statistical test with a significance level of  $P < 0.05$ .

#### 4. Results

Over a period of 12 months, we recorded 120 cases of digestive surgical emergencies out of 2067 consultations, *i.e.* 5.80%, and 268 patients operated on, *i.e.* 44.80%. The majority of our patients, *i.e.* 58.3%, were aged between 20 and 39 years. The average age was 30.09 years. The extremes were 15 years and 75 years. The majority of patients were male (64.2%). The sex ratio was 1.80 in favour of men. Most of our patients were from commune II with 50% of the cases. Pupils/students represented 30.8% of our patients. Emergencies constituted 76.4% of the mode of recruitment. The majority of our patients were referred (71.6%). The majority of patients were admitted between 30 minutes and 12 hours after their referral, *i.e.* 70.9%. The reason for consultation was dominated by abdominal pain (80%), painful swelling (11.7%), anal pain (8.3%). Only 12.5% of patients had a medical history. Ten percent (10%) of patients had a surgical history. The right iliac fossa was the site of pain in the majority of cases (60%). The pain was permanent in the majority of cases (91.7%). The majority of patients (61.2%) had a temperature between 37.5°C and 38.5°C. The pulse rate was normal in the majority of patients (70.8%). The Karnofsky index was 70% in 70 patients. Gas and fluid retention was present in 25% of cases. Nausea or vomiting was present in the majority of patients (90.9%). Generalized contracture was present in 22.6% of cases. On rectal examination, pain was present on the right in 52.5% of cases. The majority of patients had a normal haematocrit level (90.8%). A PSA was requested in 50% of the patients. The majority of patients had a thickening of the appendicular wall on ultrasound (49%). The diagnoses selected preoperatively are shown in **Table 1**

Phlegmonous appendicitis was the most frequent form with 41.5%. 56% of peritonitis was of appendicular origin. Tumours constituted 66.6% of the aetiologies of acute intestinal obstruction. Strangulated inguinal hernia was the most frequent type of hernia with 42.8%. 75% of the patients were operated on between 30 minutes and 12 hours after admission. 34.3% of patients received antibiotic prophylaxis alone. General anaesthesia was used in the majority of cases (50%). The Mac Burney stitch was the most used procedure with 54.2% of cases.

Appendectomy and appendectomy + peritoneal lavage were the most common procedures performed with 43.3% and 17.7% respectively. The most frequent intraoperative complication was haemorrhage with 2.5% followed by one case of death. The postoperative course was simple in all our patients operated on for acute appendicitis during hospitalisation.

The postoperative course was complicated by parietal suppuration in 40% of cases. The postoperative course was simple in the majority of cases (66.7%). Parietal suppuration was the most frequent complication during hospitalisation with 8.3% of cases. Most patients, 98.1%, had a hospital stay of less than or equal to 10 days. The postoperative follow-up at one month was simple in the majority of cases (85.8%). Post-operative follow-up is summarised in **Table 2**.

## 5. Discussion

During our study, digestive surgical emergencies accounted for 44.80% of all surgical interventions at the health centre in commune II of the Bamako district. This rate is similar to a study carried out at the Montpellier University Hospital in France in 2003 [4] which found 42.63%. In our series, the most represented age group was 20 - 39 years old, with a rate of 58.3%. This result is comparable to that of Diop [6]. The sex ratio was 1.80 in favour of males. In African, and

**Table 1.** Patients according to preoperatively diagnosis.

DIAGNOSIS	NUMBERS	PERCENTAGE (%)
Acute appendicitis	52	43.3
Peritonitis	25	20.8
Strangulated hernia	14	11.7
Appendicular abscess	13	10.8
Acute intestinal obstruction	6	5
Hemorrhoidal thrombosis	10	8.3
TOTAL	120	100

**Table 2.** Post-operative developments according to pathologies.

Intraoperative diagnosis	1 month postoperative follow-up				Total
	Simple	Parietal Suppuration	Evisceration	Death	
Acute appendicitis	51	1	0	0	52
Peritonitis	13	10	1	1	25
Acute intestinal obstruction	4	1	0	1	6
Strangulated hernia	14	0	0	0	14
Hemorrhoidal thrombosis	10	0	0	0	10
Appendicular abscess	10	3	0	0	13
Total	102	15	1	2	120
Percentage (%)	85	12.5	0.8	1.7	100

European series [6] [7] [8] [9], digestive surgical emergencies are frequent in males. The majority of our patients were evacuated, 71.6%. This is justified by the location of the centre at the second level of the health pyramid in Mali. Then percent of patients were operated on between 12 and 24 hours after their admission, and 71.7% were operated on between 30 and 12 hours after their admission. This can be explained by the following facts: The financial problems of the families for the execution of certain examinations (biology and radiology) and the costs of prescriptions. Some complementary examinations are not available on an emergency basis at the centre, insufficient equipment and nursing staff. Pain was the first reason for consultation for all patients in the study. This shows that the digestive surgical emergency most often comes down to the diagnosis and management of acute abdominal pain. Its semiological characteristics and the other associated signs have in all our cases allowed diagnostic orientation. This pain has been reported in the literature as the most frequent reason for consultation by Mabilia-Babela [9] who found 100% cases of pain in their series. In our series, pain on the right side of the cul de sac of Douglas was found in 52.5% of cases was located throughout the Douglas in 12.5% of cases and was absent in 15% of cases. The vaginal examination was normal in 34.9% of our patients. Ultrasound has an important place in the diagnosis of digestive surgical emergencies. During our study, it was the most frequently performed imaging procedure in our patients (83.3%). The practice of this examination in emergency, obliged a displacement of the patient out of the centre by its own means; from where the delay in the therapeutic management due to the absence of a team of guard at the imaging unit. Some of our patients were referred with an ultrasound result. It helped in the diagnosis in 83 cases. In 17 cases (17%), it appeared to be non-contributory to the diagnosis, as in a study carried out in Morocco by Abi [10]: in 48 cases, ultrasound did not help the diagnosis in 17 cases (35.42%). We can conclude that the diagnosis of an acute abdomen is mainly clinical and should not be delayed in the absence of ultrasound. The rate of appendicitis in our series was 43.3% this rate is close to that obtained in the prefectural hospital of Inezgane [10] and that of Cassina in 1996 in Germany [7] which are 43.41% and 47.4% ( $P = 0.002$ ) respectively. As in our study, acute appendicitis is considered in Europe as the first cause of abdominal surgical emergencies [6]. In other African series [6] [9], it ranks third after occlusion and peritonitis. This could be linked to the fact that our health centre is a second level hospital structure. Peritonitis ranked second (20.8%) in digestive surgical emergencies after acute appendicitis in our practice. This result is slightly lower than that of Harouna in Niger [11] 28.2% ( $P = 0.2$ ). Contrary to the series carried out in the USA, Europe and Morocco where it was the fourth cause of digestive surgical emergencies with respectively 6.09%; 4.04% and 9.01%. This can be explained by the frequency in our study of the complication of acute appendicitis and self-medication with anti-inflammatory drugs. Strangulated hernia had a rate of 11.7% in our series. This rate is similar to that of Gbessi in Benin [12]

who had 15.3%. This rate is higher than that of Harouna in Niger [11] who had 9.8% of cases ( $P = 0.1938$ ). It is lower than that of Mabilia. [9] Congo 24.75% ( $P = 0.5272$ ). It is lower in Europe 1/1500 cases for Papagrigroridas *et al.* [13], 1% for Bargy *et al.* [14]. This could be explained by the early management of hernias in Europe than in Africa. Appendicular abscess is a complication of acute appendicitis. Like appendicitis, its diagnosis is clinical and does not require any paraclinical examination for its management. Its frequency was 10.8% of cases in our series. This rate is lower than that Diop [6]. This difference could be linked to the delay in consultation or diagnosis in their study. In our study, the most frequent mechanism of occlusion was tumour obstruction with 66.6% against 33.3% for strangulation in our sample. We had the same results as some authors who found obstruction more frequent than strangulation: 74% versus 26% for Adloff [15] on 109 cases and 77% versus 23% for Abi [10] on 100 cases. This finding is contrary to that of Harouna (Niger) [11] who found in his series a higher frequency of strangulation occlusions than other mechanisms.

Our methodology had the advantage that the investigator himself examines the patient, which allowed for reliable and usable results. Our information was collected using patient records, operating theatre registers, hospitalization registers, surgical records, anesthesia records and individual survey forms.

However, we encountered some difficulties, namely:

- Insufficient follow-up during hospitalisation of operated patients due to the lack of nursing staff.
- An unequipped intensive care unit.
- Insufficient post-operative follow-up due to patients not keeping their appointments.

## 6. Conclusion

Digestive surgical emergencies occupy an important place in surgery due to their high frequency. The etiologies are multiple. Delayed intervention increases the cost and delay of treatment as well as the risk of complication. Clinical examination is the key to diagnosis in our context and is sufficient in itself to initiate appropriate treatment.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

## References

- [1] Wainsten, J. (2010) Larousse Médical. Larousse, Paris, 1151 p.
- [2] Mondor, H. (1965) Diagnostic Urgent Abdomen. Masson, Paris, 119.
- [3] Etienne, J.C. (1995) Diagnostic des urgences chirurgicales Encycl. Méd. Chirurgie (Paris) Urgences, 24-039B: 27.
- [4] Laffont, A. and Durieux, F. (2004) Encycl. Méd Chirurgicale. Elsevier Masson SAS,

Paris.

- [5] Brower (2004) Ency Med Chir Urgences (Paris); 2: 24048B10.
- [6] Diop, P.S., Ba, P.A., Ka, I., N'doye, J.M. and Fall, B. (2011) Prise en charge diagnostique des abdomens aigues non traumatiques au service des urgences de l'hôpital général de Grand-Yoff: À propos de 504 cas. *Bulletin Médical d'Owendo*, **13**, 42-46.
- [7] Roscher, R., Frank, R., Baumane, A. and Berger, H.G. (1991) Results of Surgical Treatment of Mechanical Ileus of the Small Intestine. *Chirurg*, **62**, 641-649.
- [8] Padonou, N., Diagne, B., N'Diaye, M., Cherbonnel, G.M. and Noussaume, O. (1979) Les urgences abdominales chirurgicales non traumatiques au CHU de Dakar. Statistiques des quatre années (1973-1976). *Dakar Medical*, **24**, 190-197.
- [9] Mabiála-Babela, J.R., Pandzou, N., Koutaba, E., Ganga-Zandzou, S. and Senga, P. (2006) Etude rétrospective des urgences chirurgicales viscérales au CHU de Brazzaville (Congo). *Medecine Tropicale*, **66**, 172-176.
- [10] Abi, F., El fares, F. and Nechad, M. (1987) Unité de chirurgie viscérale des Urgences, CHU. Ibnou Rochd Casablanca, Maroc. *Journal de Chirurgie (Paris)*, **124**, 471-474.
- [11] Harouna, Y., Ali, L., Seibou, A., et al. (2001) Deux ans de chirurgie digestive d'urgence à l'hôpital de Niamey (Niger). *Médecine d'Afrique Noire*, **42**, 49-54.
- [12] Gbessi, D.G., Dossou, F.M., Ezin, E.F.M., Hadonou, A., Imorou-Souaibou, Y., Lawani, I., Mehinto, D.K., Olory Togbe, J.L. and Bagnan, K.O. (2015) Prise en charge des urgences chirurgicales abdominales à l'hôpital de zone de Comè au Bénin à propos de 169 cas. *Ramur*, **20**, 50-56.
- [13] Papagrigoriadas, S., Browse, D.J. and Howard, E.R. (1998) Incarceration of Umbilical Hernias in Children: A Rare but Important Complication. *Pediatric Surgery International*, **4**, 231-232.
- [14] Bargy, F. and Baudoin, S. (1997) Hernies de l'enfant et de l'adulte. *La Revue du Praticien*, **47**, 289-294.
- [15] Adloff, M. (1984) Occlusion intestinale aiguë de l'adulte: Encycl. Med. Chir, (Paris France), urgences 20459 A10 10-1984: 20 p.