

Epidemiological Profile of Intestinal Obstructions in Koutiala, Mali: About 65 Cases

Mahamadou Coulibaly^{1,2*}, Drissa Traoré^{1,3}, Birama Togola^{1,3}, Souleymane Sanogo³, Bréhima Bengaly^{1,3}, Drissa Ouattara³, Siaka Diallo³, Madiassa Konaté^{1,4}, Nouhoum Ongoiba^{1,3}

¹Faculty of Medicine, University of Science, Technique and Technologies of Bamako, Bamako, Mali

²Department of Surgery, Koutiala Hospital, Bamako, Mali

³Department of Surgery, University Hospital Center Point G, Bamako, Mali

⁴Department of General Surgery, CHU Gabriel Touré, Bamako, Mali

Email: *cmahamadou38@yahoo.fr

How to cite this paper: Coulibaly, M., Traoré, D., Togola, B., Sanogo, S., Bengaly, B., Ouattara, D., Diallo, S., Konaté, M. and Ongoiba, N. (2020) Epidemiological Profile of Intestinal Obstructions in Koutiala, Mali: About 65 Cases. *Surgical Science*, 11, 117-121. <https://doi.org/10.4236/ss.2020.116015>

Received: May 16, 2020

Accepted: June 9, 2020

Published: June 12, 2020

Copyright © 2020 by author(s) and Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

Aim: To assess the epidemiological profile of intestinal obstructions at the Koutiala district hospital. **Patients and Method:** This was a prospective and descriptive study taking place from August 1, 2017 to April 30, 2020. The files of patients with acute intestinal obstruction in the general surgery department of the Koutiala district hospital were collected. In this study, patients operated on for acute intestinal obstruction were included. Non-operated patients were not included in the study. **Result:** The records of 65 patients operated on for acute intestinal obstruction were collected. The mean age was 32 ± 22 with extremes of 1 year and 94 years. 7 infants (10.8%) and 1 4-year-old child (1.5%) were identified. The 16 to 59 age group was more common. Males were the majority with 70.8% (n = 46). The sex ratio was 2.4. The rate of bowel obstruction in the general population in the circle was 8.1 cases per 100,000 population. According to provenance, patients came from inside the circle (rural areas) in 87.7% of the cases (n = 57) and from the city of Koutiala in 12.3% (n = 8). 33.9% of our patients had undergone laparotomy (n = 22). Patients consulted urgently in 93.8%. The etiologies are dominated by post-operative straps (33.8%) and volvulus (24.6%). We noted 12 cases of intestinal necrosis. Postoperative morbidity was 13.8% of cases (n = 9) and mortality of 6.1% of cases (n = 4). **Conclusion:** Bowel obstruction is one of the most frequent surgical emergencies in our circle. They most often affect young subjects and young adult males. The etiologies are dominated by the post-operative flanges. Complications remain elevated.

Keywords

Epidemiology, Intestinal Obstruction, Koutiala

1. Introduction

Acute bowel obstruction is characterized by a complete and persistent cessation of the transit of materials and gases through any segment of the digestive tract. It is one of the main causes of acute abdominal emergencies. In Dakar, Soumah brought in 4 years, 202 cases and in Niger, Harouna brought in 18 months 124 cases [1] [2]. It is a disease that is seen most often in adult males [2]. Mortality linked to intestinal obstruction is high, varying from 6% to 20% [1] [3]. The aim of the present study was to assess the epidemiological profile of patients with intestinal obstruction at the Koutiala district hospital.

2. Methodology

This was a prospective and descriptive study from August 1, 2017 to April 30, 2020. The records of patients with acute bowel obstruction in the general surgery department of Koutiala District Hospital were collected. In this study, patients operated on for acute intestinal obstruction were included. Non-operated patients were not included in the study. The comparison test was the Chi-square test and the probability $p < 0.05$ was considered significant. The realization of this work required a detailed database which was validated by our scientific staff, we used for that the medical file of the patients, the consultation register, the notebooks of the operative report. The parameters studied were frequency, sex, age, incidence rate, geographic origin, duration of development, contributing factors, etiologies, morbidity and mortality.

3. Result

The files of 65 patients operated on for acute intestinal obstruction were collected. These occlusions represented 1.1% of consultations ($n = 5657$), 6.2% of surgical procedures ($n = 1050$) and 21.7% of acute surgical abdomens ($n = 299$). They were the second cause of abdominal surgical emergencies after peritonitis (40.5%, $n = 121$) and before acute appendicitis (21.1%, $n = 63$). The mean age was 32 ± 22 with extremes of 1 year and 94 years. 7 infants (10.8%) and 1 4-year-old child (1.5%) were identified. The 16 to 59 age group was more frequent with 64.6% of the cases (Table 1). Males were the majority with 70.8% ($n = 46$). The sex ratio was 2.4 (Table 2). The rate of bowel obstruction in the

Table 1. Distribution of patients operated on for acute intestinal obstruction in Koutiala from August 1, 2017 to March 31, 2020 according to age group.

Slices	Male	%	Female	%	Number of cases	%
0 - 5 years	6	13	2	10.5	8	12.3
6 - 15 years	4	8.7	4	21.1	8	12.3
16 - 59 years	29	63	13	68.4	42	64.6
>60 years	7	15.2			7	10.8
Total	46	70.8	19	29.2	65	100

Table 2. Distribution of patients operated on for acute intestinal obstruction in Koutiala from August 1, 2017 to March 31, 2020 according to etiologies and sex.

Etiologies	Male	Female	Number of cases	%
Primitive flanges	1	1	2	3.1
Post-operative flanges	11	11	22	33.8
Strangled parietal hernia	9	4	13	20
Strangulated internal hernia	4	0	4	6.2
Acute intestinal invagination	6	1	7	10.8
Volvulus	14	2	16	24.6
Stenosing intestinal tumor	1	0	1	1.5
Total	46	19	65	100

general population in the circle was 8.1 cases per 100,000 population. In the 0 to 5 year old population, 4.9 cases per 100,000 inhabitants were identified. According to provenance, patients came from inside the circle (rural areas) in 87.7% of the cases (n = 57) and from the city of Koutiala in 12.3% (n = 8). 33.9% of our patients had a history of laparotomy (n = 22). The occlusions were favored by intense physical activities (farmers, breeders, workers, housewives) in 69.2% of the cases (n = 45). We also noted medical factors (dysuria, constipation) in 40 patients (61.5%). Emergency consultations represented 93.8% of cases (n = 61). The median duration of bowel obstruction was 3 ± 6.3 days with extremes of 1 and 30 days. The strangulation mechanism made up 98.5% of cases (n = 64) including postoperative bridles (33.8%, n = 22), strangulated hernias (26.2%, n = 17) and volvulus (24.6%, n = 16) (Table 2). We noted 12 cases of intestinal necrosis or 18.5% of the cases. Bowel obstruction was associated with malaria in 4 patients (6.1%), high blood pressure in 3 patients (4.6%) and diabetes in 2 patients (3.1%). Postoperative morbidity was 13.8% of cases (n = 9). These were 4 cases of parietal suppuration, 2 cases of anastomotic release, 2 cases of external digestive fistula and 1 case of peri-stomal ulceration. Mortality was 6.1% of cases (n = 4). The average length of hospital stay was $5.18 \text{ days} \pm 2.66$ (2 - 17 days).

4. Discussion

Acute intestinal obstructions are frequent in our department, it is the second cause of acute surgical abdomen after acute peritonitis as reported by the authors [3] [4]. They can appear at all ages. In Africa, it is young people and young adults who are most affected with an average age between 28 and 40 years [2] [4]. This would be linked to the strangulation mechanism whose rate is high in this population. On the other hand in Western countries, intestinal obstructions generally occur after an obstruction or a digestive compression by tumor and which are seen much more in elderly subjects [5]. Our study also brings some cases in infants and small children who were secondary to an acute intestinal intussusception as evidenced by the study of Arnaud [6]; and in this population

(0 - 5 years), the incidence of bowel obstruction was 4.9 cases per 100,000 population. This rate is much lower than those reported by Westerners who included between 20 and 38 cases per 100,000 inhabitants [6] [7]. This rate certainly does not reflect the real incidence of intestinal obstructions in this age group in the circle because of the under medicalization of the circle but also by the presence in the circle of other health structures which take care of occlusions intestinal. Sex is not a risk factor for the occurrence of intestinal obstruction, but the predominance of men is clear in the literature [2] [4] [8]. Concerning the strangulation mechanisms, the postoperative flanges were the majority; this would be justified by a considerable number of previous laparotomies (33.9%). This notion of anterior laparotomy is provided by several authors with a rate varying between 43% and 66% [1] [9].

We noted an evolution of the disease beyond 5 days in 26.2% of the patients. Bowel obstruction may have been mistaken for malaria syndrome or salmonellosis. This long delay could be explained by self-medication in our context and by the geographical situation because 87.7% of our patients came from inside the circle and some of them would travel more than 100 kilometers before arriving at the hospital. hospital; and this delay in consultation would be the basis of the high number of intestinal necrosis which was 18.5% and post-operative morbidity of 13.8%. This morbidity explains the average hospital stay of 5.18 days in these patients, which can reach up to 17 days. The same observation is made by Dembélé [4]. We also found that age is a factor influencing mortality because among the 4 patients who died, 3 had an age greater than or equal to 60 years. During this study, we were confronted by a certain amount of limitation, namely the lack of financial means of the patients, the insufficiency of technical platform and the lack of qualified personnel.

5. Conclusion

Bowel obstruction is one of the most common surgical emergencies in our circle. They most often affect young subjects and young adult males. The etiologies are dominated by the post-operative flanges. Complications remain elevated.

Conflicts of Interest

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

References

- [1] Soumah, S.A., Ba, P.A., Diop, P.S., Ka, O. and Touré, C.T. (2013) L'occlusion intestinale par brides: aspects étiologiques, cliniques et thérapeutiques à propos de 123. *RECAC*, **1**, 14-17.
- [2] Harouna, Y., Haya, H., Abarchi, H., Rakoto Malala, J., Gazi, M., Seibou, A., Abdou, I., Moussa, M. and Bazira, I. (2000) Les occlusions intestinales: principales causes et morbi-mortalité à l'hôpital national de Niamey Niger, étude prospective à propos de 124 cas. *Médecine d'Afrique Noire*, **47**, 205-207.

-
- [3] Harissou, A., Ibrahim, A., Oumarou, H., Amadou, M., Halidou, M., Mansour, A. and Yacouba, H. (2016) Etiologies et pronostic des occlusions intestinales aiguës mécaniques à l'Hôpital National de Zinder: étude transversale sur 171 patients. *Pan African Medical Journal*, **24**, 248. <https://doi.org/10.11604/pamj.2016.24.248.8372>
- [4] Dembele, B.T., Traore, A., Diakite, I., Kante, L., Togo, A., Maiga, A., Diarra, M.B., Coulibaly, Y., Keita, M., Diango, D.M. and Diallo, G. (2011) Occlusions du grêle sur brides et adhérences en chirurgie générale CHU Gabriel Touré. *Mali Médical*, **26**, 12-15.
- [5] Schwenter, F., Dominguez, S., Meier, R., Saussure, W.O., Gervaz, P., Morel, P. and Platon, A. (2011) Occlusion grêle aiguë: traitement conservateur ou chirurgical? *Revue Médicale Suisse*, **7**, 1341-1347.
- [6] Arnaud, F.K., Chrystelle, V., Lionel, P., Franck, L., Caroline, S., *et al.* (2012) Epidémiologie de l'invagination intestinale aiguë chez l'enfant de moins de 1 an. Résultats préliminaires de l'étude Epistudy. *BEH*, **10**, 138-143.
- [7] Buettcher, M., Baer, G., Bonhoeffer, J., Schaad, U.B. and Heininger, U. (2007) Three-year surveillance of intussusception in children in Switzerland. *Pediatrics*, **120**, 473-480. <https://doi.org/10.1542/peds.2007-0035>
- [8] Dieng, M., Cissé, M., Sanou, A., *et al.* (2010) Résultats à court terme des laparotomies itératives pour occlusion intestinale post opératoire. *Journal Africain de chirurgie*, **1**, 25-28.
- [9] Johannet, H., Traxer, O., Manceau, C., *et al.* (1999) Occlusion aiguë du grêle sur Brides: Indications et résultats. *Annales de Chirurgie*, **53**, 859-864.