

# Management of Inguinal Hernia at a District Hospital: About 328 Cases at the Prefectural Hospital of Siguiiri - Guinea

BARRY MS<sup>1,2\*</sup>, Camara D<sup>1</sup>, Barry B<sup>1</sup>, Doumbouya M<sup>3</sup>, Diallo AT<sup>1,2</sup> and TOURE A<sup>1,2</sup>

<sup>1</sup>General Surgery Department, Ignace Deen National Hospital, Conakry, Guinea.

<sup>2</sup>Faculty of Health Sciences and Techniques, Gamal Abdel Nasser University of Conakry.

<sup>3</sup>Surgery Department, Prefectural Hospital of Siguiiri, Guinea.

## \*Correspondence:

Barry Mamadou Sakoba, General Surgery Department, Ignace Deen National Hospital, Conakry, Guinea, Tel: +224 620 00 88 89.

Received: 10 Sep 2023; Accepted: 18 Oct 2023; Published: 25 Oct 2023

**Citation:** BARRY MS\*, Camara D, Barry B, et al. Management of Inguinal Hernia at a District Hospital: About 328 Cases at the Prefectural Hospital of Siguiiri - Guinea. Surg Res. 2023; 5(2): 1-3.

## ABSTRACT

**Introduction:** The aim of this study was to assess the management of inguinal hernias in the general surgery department of Siguiiri.

**Methodology:** This was a retrospective descriptive study conducted over a period of 2 years (January 1, 2021 - December 31, 2022) in the surgery department of the Prefectural Hospital of Siguiiri, Guinea. The study included all patients admitted to the department and treated for inguinal hernias during the study period.

**Results:** During the study period, 1248 surgical procedures were performed, of which 328 (26.28%) were for inguinal hernias. The average age was 37.39 years. Males were the most affected, accounting for 91.5% (n=300). Farmers were the most common occupational group at 31.7% (n=104).

Clinical signs were predominantly characterized by pain (41.46%, n=136), vomiting (14.63%, n=48), and inguinal or inguinoscrotal swelling (92.7%, n=304). The right side accounted for 39% (n=128) of cases, and hernias were bilateral in 15.9% (n=15.9%). General anesthesia and local anesthesia were the most commonly used, with 55.18% (n=181) and 29.83% (n=98), respectively. The surgical technique used was Bassini's hernia repair in 92.7% (n=304) of cases. Postoperative outcomes were uneventful in 91.5% (n=300) of cases. However, there were recorded complications such as scrotal hematoma in 4.9% (n=16) and surgical site infection in 1.8% (n=6).

**Conclusion:** Inguinal hernia remains a common pathology. The Bassini technique was the most commonly used surgical technique. Adherence to aseptic principles and meticulous dissection of nerve structures are key factors in improving postoperative morbidity.

## Keywords

Hernia management, Siguiiri.

## Introduction

Inguinal hernia is a protrusion of the contents of the abdominal cavity or preperitoneal fat through a hernial defect in the inguinal region [1]. It is a well-known benign condition. Diagnosis is clinical, and the management methods remain a topic of discussion [2]. Its primary complication is strangulation. Many surgical repair techniques have already been developed, and the trend continues [3]. The criteria for the effectiveness of this treatment

are simplicity, safety, and easy reproducibility. The two quality criteria selected are the recurrence rate and the rate of residual pain [4]. The purpose of this study was to evaluate the management of inguinal hernias in the general surgery department of Siguiiri.

## Methodology

This was a retrospective descriptive study conducted over a 2-year period (from January 1, 2021, to December 31, 2022) in the surgery department of the Prefectural Hospital of Siguiiri, Guinea. The study included all patients admitted to the department and treated for inguinal hernias during the study period. Patients admitted

and operated on for inguinal hernias in the department during the study period were included. We used consultation registers, hospitalization registers, operative report registers, and a pre-established survey form. The variables were sociodemographic, clinical, therapeutic, and prognostic. Data were entered and collected using the Kobo Collect application and analyzed using SPSS version 21 statistical software. The results were presented in text and tables.

## Results

During the study period, we collected 1,248 cases of surgical interventions, among which 328 (26.28%) were inguinal hernias. The average age was 37.39 years. Males were the most affected, accounting for 91.5% (n=300). Farmers were the most common occupational group at 31.7% (n=104).

**Table 1:** Distribution of cases according to the reasons for consultation.

Reasons for consultation	Effectifs	Percentage
Pain	136	41,46
Vomiting	48	14,63
Nausea	12	3,65
Stoppage of stool and gas	12	3,65
Paleness	4	1,21
Painless	116	35,36

**Table 2:** Distribution of cases based on physical signs.

Physical symptoms	Effectifs	Percentage
Swelling	304	92,7
Painless	116	64,6
Painful	136	35,4
Hard consistency	64	19,5
Soft consistency	264	80,5
Soft abdomen	64	19,5
Abdominal bloating	264	80,5
Reducible	280	78
Irreducible	48	22,0

**Table 3:** Distribution of cases according to topographical varieties.

Varieties	Effectifs	Percentage
Right inguinal hernia	128	39,0
Left inguinal hernia	56	17,1
Bilateral inguinal hernia	36	15,9
Right inguinoscrotal hernia	64	19,5
Left inguinoscrotal hernia	20	6,1
Femoral hernia	24	7,3

**Table 4:** Distribution of cases by type of anesthesia.

Type of anesthesia	Effectifs	Percentage
Local anesthesia	98	29,88
Regional anesthesia	49	14,94
Regional anesthesia	181	55,18
Total	328	100

The surgical team consisted solely of general practitioners acting as surgeons.

**Table 5:** Distribution of cases based on the content of the hernia sac.

Contents	Effectifs	Percentage
Omentum	52	15,9
Small intestine	128	39
Colon	20	6,1
Appendix	20	6,1
Ovary	4	1,2

**Table 6:** Distribution of cases based on the condition of the hernia sac contents, surgical technique, and associated procedures.

Settings	Effectifs	Percentage
<b>State of the contents</b>		
Viable	324	98,8
Necrotic	4	1,2
<b>Surgical technique</b>		
Bassini	304	92,7
Mac Vay	24	7,3
<b>Associated procedures</b>		
Appendectomy	20	6,1
Resection and Intestinal Anastomosis	4	1,2

**Table 7:** Distribution of cases based on postoperative outcomes.

Immediate outcomes	Effectifs	Percentage
Simple	300	91,5
Scrotal hematoma	16	4,9
Surgical site infection	6	1,8
Recurrence	4	1,2
Decease	2	0,6
Total	328	100

**Table 8:** Distribution of the 328 patients treated for inguinal hernia at the HPS according to the duration of hospitalization.

Hospitalization duration	Effectifs	Percentage
≤ 3 jours	181	55,2
4-6 jours	119	36,3
≥ 7 jours	28	8,5
<b>Total</b>	<b>328</b>	<b>100</b>

## Discussion

Inguinal hernias have been a common reason for consultation in visceral surgery [2]. African studies have found a prevalence of 4.6% in the population [3]. In Dakar, Konaté I et al. found a frequency of 15.3% (n=749) of hernias out of a total of 4,896 surgical cases [3]. A similar observation was made by Boris Amougou et al., who reported a frequency of 15.2% (n=162) out of 1,043 surgical interventions [5]. Sine B et al. reported a frequency of 12.4% (n=205) out of 1,646 surgical interventions [6]. In our series, the frequency was relatively high (26.28%). Our result could be explained by the fact that the majority of our population are farmers engaged in intense and repetitive physical activities.

This is a condition that primarily affects male subjects. In our series, it was the most represented (91.5%) with a male-to-female ratio of 10.71. Our results were comparable to those reported by Konaté I et al. [3], Erraimakh A et al. [2], Goutorbe P et al. [7], with 96%, 81%, and 96% males, respectively.

During our study, young adults were the most represented (mean age =  $37.39 \pm 17.53$  years). This result is consistent with literature data that have reported inguinal hernias frequently occurring in young adults [3,5]. This socio-professional group is heavily involved in physical activities through artisanal gold mining and agriculture.

The high frequency of farmers and miners in our study could be explained by the fact that this physically demanding activity requiring repetitive physical exertion was the most practiced in this region.

Abdominal pain and vomiting were the most frequent reasons for consultation. As for physical signs, reducible inguinal swelling was the dominant physical sign. Right inguinal hernia and bilateral inguinal hernia were the most represented. This result was comparable to studies by Konate I et al. [3] in Dakar in 2010, Traore D et al. [8] in Mali in 2015, Diop B et al. [9] in Senegal in 2018, who observed that bilateral hernia was present in 15.9%, 6.7%, and 14% of cases, respectively. The high rate in our study may be explained by the recurrent physical efforts practiced by the majority of our study population.

Regarding treatment, general anesthesia and local anesthesia were the most commonly used. This could be justified by the fact that in the context of this study, there were no specialist anesthesiologists at the Prefectural Hospital of Siguiiri. Anesthesia was provided by a nurse anesthetist who did not have expertise in spinal anesthesia.

The hernia sac contained small bowel loops in most cases, followed by omentum and colon. The Bassini technique was performed in the majority of cases in our study. This rate was different from that reported by Mous Ahmed El Amine [10] et al., who noted that the Bassini technique was performed in 7.8% of cases. Our result could be explained by the absence of a specialist surgeon at the Prefectural Hospital of Siguiiri. The practitioners were general practitioners acting as surgeons.

The mortality rate was 0.6% (2 deaths). Immediate postoperative outcomes were uneventful in the majority of cases. However, we recorded postoperative hematoma morbidity (4.9%, n=16 cases). Higher rates have been reported in the literature; it is around 10% for Lebeau [11]. Méhinto DK [12] has a relatively low mortality rate, as does Dieng M [13], with respective rates of 3.73% and 0.4%, with all these deaths being related to the patient's condition and age.

The average length of hospitalization in our series is similar to that of Mous Ahmed El Amine [10] et al. in their 2019 studies, which reported an average length of stay after surgery of 4.18 days, with a minimum duration of one day and a maximum duration of 29 days.

## Conclusion

Inguinal hernia remains a common pathology in the surgical practice of the Prefectural Hospital of Siguiiri. This study has

shown that male patients, engaged in farming and artisanal mining activities, are the most affected. The Bassini technique was the most commonly used surgical technique, as it was the only one mastered by the operators who were non-specialists in surgery. Adherence to aseptic rules and meticulous dissection of nerve structures are key elements to improve postoperative morbidity.

## References

1. Berri T, Brahmi K. Inguinal Hernias. European Hernia Society. 2021; 6: 62-71.
2. Erraimakh A. Inguinal Hernia: A Retrospective Study. Doctoral Thesis, Mohammed VI University Hospital, Marrakech. 2011: 1-5.
3. Konaté I, Cissé M, Wade T, et al. Management of Inguinal Hernias at the Surgical Clinic of Aristide le Dantec Hospital in Dakar: A Retrospective Study of 432 Cases. J AFR CHIR DIGEST. 2010; 10: 1086-1089.
4. Marre P, Pitre J, Timores A. Inguinal Hernia Repair in Adults Using the Lichtenstein Technique: 10-Year Results e-Mémoires de l'Académie Nationale de Chirurgie. 2009; 8: 46-47.
5. Boris Amougou, Divine Eyongeta, Demba Cisse, et al. Inguinal Hernias in Adults at Central Hospital of Niete: Epidemiological and Clinicopathological Aspects. Health Sci. Dis 2021; 22: 107-111.
6. Sine B, Dong An, Sarr A, et al. Management of Inguinal Hernias in a Sub-Saharan African Urology Service: A Study of 205 Cases. JAFRCHIRDIGEST. 2019; 19: 2805-2808.
7. Goutorbe P, Lacroix G, Pauleau G, et al. Inguinal Hernia Repair in Challenging Environments: Feasibility and Efficiency of Ilio-Inguinal and Ilio-Hypogastric Nerve Blocks. Medicine and Tropical Health. 2013; 00: 1-4.
8. Traoré D, Diarra L, Coulibaly B, et al. Inguinal Hernia in Sub-Saharan Africa: What Role for the Shouldice Technique? Pan Afr Med J. 2015; 22: 50-50.
9. Diop B, Sall I, Sow O, et al. Management of Inguinal Hernias with Prostheses Using the Lichtenstein Procedure: A Study of 267 Cases. Health Sci Dis. 2018; 19.
10. Mous Ahmed El Amine. Inguinal Hernia. Doctoral Thesis. Abou Bekr Belkaid University. 2018: 5-12.
11. Lebeau R, Brou Assamoi Kassi F, Kacou Yenon S, et al. Strangulated Inguinal Hernias: A Surgical Emergency Still Relevant in Tropical Environments. Rev Médicale Brux. 2011; 32: 133-8.
12. Mehinto DK, Roux OFJ, Padonou N. Management of Strangulated Inguinal Hernias in Adults: A Study of 295 Cases. J Afr Chir Dig. 2003; 3: 267-71.
13. Dieng M, El Kouzi B, Ka O, et al. Strangulated Inguinal Hernias in Adults: A Series of 228 Cases. Mali Médical. 2008; 23: 12-16.