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# Clinical and Therapeutic Aspects of Inguinal Hernia at the Reference Health Centre of Commune II of the District of Bamako

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## Abstract

**Objective:** To study the diagnostic and therapeutic aspects of uncomplicated inguinal hernias in the general surgery unit of CSRéf CII. **Method:** This was a prospective, descriptive, single-centre study from 1 January 2016 to 31 December 2016 of 84 patients operated on for inguinal hernias in the general surgery unit of CSRéf CII. **Results:** Inguinal hernia accounted for 8% of surgical consultations and hernia repair accounted for 30.22% of surgical procedures. Hernia repair accounted for 30.22% of surgical procedures. The male sex was the most represented with a ratio of 7.40. The average age of our patients was 43.19 years. Recurrence occurred in 10% of cases. The right side was most affected in 71.43% of cases, 19.05% on the left side in; it was bilateral in 09.52%. Local anaesthesia was used in 67.86% of our patients, general anaesthesia in 13.09% of cases and locoregional anaesthesia in 19.05% of cases. The hernia was external oblique in 75% of cases. Shouldice's technique was the most used with 88%; Bassini's technique was used in 7% and Mac Vay's in 5% of cases. The postoperative course was simple in 96.43% of cases, with an early postoperative morbidity rate of 3.57%, one case of wall abscess and two cases of parietal haematoma. No deaths were observed during our study. **Conclusion:** The new methods of tension-free cure should be used more and more by our users in our facilities.

**Keywords**

Inguinal Hernias, Strangulation, Management, CSRéf CII

## 1. Introduction

Inguinal hernia is a permanent or intermittent spontaneous discharge of intra-abdominal viscera through the inguinal region [1]. The discovery of groin hernias is very old, as attested by certain documents found in ancient Egypt. documents found in ancient Egypt, but it was only at the end of the 19th century that the first surgical repairs were described [2]. It is by far the most common and one of the most widespread surgical conditions. It is mostly seen in men (85%) with 2 peaks of frequency: the neonatal period and from the age of 50 [3]. In France, approximately 150,000 inguinal hernia operations are performed each year [4]. In England: the inguinal hernia cure rate is 10 cases per 100,000 inhabitants with more than 80,000 procedures performed annually [5]. Inguinal hernia is one of the most frequent pathologies in general surgery, particularly in Africa where it affects about 4.6% of the population [6]. The factors of mortality are age and associated pathologies. According to LANCET 2001, elective hernia mortality increases from 0.2 per 1000 before 60 years to 5 per 1000 after 60 years [7].

Despite the frequency and seriousness of this pathology, no study has been carried out on inguinal hernia at the reference health center in commune II of Bamako. We studied the diagnostic and therapeutic aspects of inguinal hernia in this center.

## 2. Results

Frequency of inguinal hernia.

This was a prospective study from 1 January 2016 to 31 December 2016, during which we recorded:

- 84 inguinal hernias including 10 cases of strangulation.
- 1050 surgical consultations.
- 278 interventions performed.
- The frequency of hernia was 8%.

Inguinal hernia represented 30.22% of all operations. Inguinal hernia comes second after appendicitis with 30.22% of cases. The most represented age group was 46 to 60 years with 38% of the cases. Average age: 43.19 years with extremes of 15 and 87 years. Standard deviation: 15.13 years. The sex ratio was 7.40. Farmers were the most represented with 35.71% of cases. Only 10% of patients were seen in emergency. Approximately 73% of patients complained of inguinal swelling. The hernia was not recognized in 73.81% of cases. About 81% of the patients had no previous surgical history. Fourteen percent (14%) of cases were recurrences. The hernia was reducible in more than half (61.91%) of the cases. In

64.29% of the cases, the superficial inguinal orifice was permeable to the pulp of the finger. Hydrocele was the most common condition associated with hernia with 13.10% of cases. The right side was the most affected in 71.43% of cases. The hernia was strangulated in 11.90% of cases. Ninety (90%) percent of patients were operated on by a general surgeon. Local anaesthesia was the most used with 67.86% of cases. The hernia was external oblique in 75% of cases. The contents of the bag were small grains in most cases with 69.05%. The Shouldice technique was the most common with 88% of cases. In our study, 96.43% of the cases did not present any intraoperative complications. More than half of the patients (71.43%) did not need to be hospitalised. Only 28.57% of the patients stayed between 1 and 3 days in hospital.

Average length of stay = 1.46 days;

Standard deviation = 0.76 days.

The extremes are 1 to 3 days. The immediate aftermath was simple in 96.43% of cases. They were simple in 79.76% of cases.

## 3. Discussion

Frequency.

Place of inguinal hernias in relation to other abdominal.

The surgical treatment of groin hernias is the most frequent operation in general surgery in general surgery in Marseille in France [7]. It is one of the pathologies in general surgery, particularly in Africa, where it affects about 4.6% of Africa where it affects about 4.6% of the population [3].

Inguinal hernia is the most frequent surgical pathology in Mali [8]. Authors have reported [9] [10] that hernia is the most frequent pathology in general surgery.

In our study, it occupied the second place after appendicitis with 30.22% of surgical interventions in the department.

According to Johanet [11] and Boudet *et al.* [12], it is the second most frequent pathology in general surgery in France after appendicitis. Any diagnosed inguinal hernia should be operated on before strangulation occurs [9]. Our strangulation rate is 11.90%. There is no significant difference between our study and that of NGOM.G *et al.*; and that of Bouaré Mamadou Mali. It is higher than that found in Turkey with 10% of cases. The efficiency of the health care systems in favour of hernia repair without delay could explain this difference. In our series, the mean age was 43.2 years. Sangaré *et al.* [9] reported 40 years as the mean age. There was no difference between these two studies. Gender is a risk factor in relation to occupation and effort. In several studies, the male gender was the most represented. EL. Alaoui and Morocco 1995 [13], Campanelli, Italy 2006 [14] and Sangaré *et al.* [9] in Mali, as well as Harouna [10] in Niger, have all found a higher frequency of hernial disease in men. In our series, the sex ratio was 7.40 in favour of men compared to that reported in the literature.

Inguinal hernia is by far more frequent in men than in women and this could

be explained by women and could be explained by:

- The anatomical configuration of the inguinal canal in men;
- The stressful work most often performed by men;
- The social factors that make the inguinal region a shameful area in our society; as a result, women consult less than men for pathologies of this region. Intense physical work exposes the patient to an inguinal hernia because frequent exertion weakens the abdominal wall through repeated pushing [15] [16].

In our series, 35.71% of our patients were farmers. This profession occupies an important place in the country's population. A large number of patients in our study can be explained by the favourable role of repeated intense physical effort in this activity. Sangaré *et al.* [9] and Harouna [10] have respectively reported 65.2% and 44.4% of farmers. These results are consistent with ours. Any factor that can lead to intra-abdominal hyper pressure can cause inguinal hernia [17]. There is no statistically significant difference between our results and those of these authors. This predominance of the right side of the inguinal hernia is linked to [18]:

- Late obliteration of the right peritoneovaginal canal.
- The right side has a larger mass than the left.
- The high position of the right testicle in relation to the left testicle.

Inguinal hernia is more common in its external oblique form. The form is related to the weakness of the posterior wall and is observed especially in older patients [19].

We report a rate of external oblique hernia of 75%. This form of hernia represented 77.38% in Mr. Dieng [19] ($Chi^2 = 0.17$, $p = 0.67$), 85.71% in Blanc P's series [20] ($Chi^2 = 2.73$, $p = 0.09$) and 84.3% for Faik *et al.* [21] ($Chi^2 = 2.37$, $p = 0.12$). There was no difference between our results and those of these authors. However, other studies such as that of Millikan *et al.* [22] in the USA reporting 60.79% external oblique hernia ($Chi^2 = 6.65$, $p = 0.009$); and Ouattara [23] with 57.5% ($Chi^2 = 3.90$, $p = 0.048$) are not comparable to ours. This difference could be explained by the exclusion of recurrences and bilateral hernias [22] [23] in these samples. Indeed, congenital (external oblique) hernias are more frequent in young children [24]. The operation is performed under general anaesthesia, particularly for laparoscopic surgery, laparoscopic surgery; for open surgery, it can be performed under local or locoregional under local or locoregional anaesthesia [25]. The treatment of inguinal hernias nowadays raises the question of the choice between several surgical techniques (tensioned and non-tensioned procedures) with tension) offering comparable clinical results. We used the Shouldice technique in 88% of cases, followed by Bassini in 7% and Bassini in 7%, and Mac Vay in 5%. It should be noted that the Shouldice technique is usually the reference procedure because of the less than 1% recurrence rate of less than 1% published by the Toronto team. We did not use prosthetic methods.

Our study is comparable with that of Sangaré *et al.* [9] and Samake [26] who

reported respectively 63.1% (p = 0.1121) and 68% (p = 0.1808) of cases performed by the Shouldice technique.

Even if the superiority of the Shouldice technique has been demonstrated by different studies [27] [28]; it is still not widely practiced by some authors such as Halidou [29] with 11.7% (p = 0.000001) against 51.5% for the Bassini Bassini's procedure. Several other techniques have been described, including that of Desarda [19], thus testifying to the diversity of the treatment. This shows the diversity in the surgical treatment of inguinal hernias. Indeed, each surgeon has a preferred technique that he considers to give the best results. In the eighty-four patients operated on, no recurrence was observed. The rate of recurrence, the only criterion for evaluating a hernia repair technique, can only be assessed after a minimum of two years [9].

## 4. Conclusion

Inguinal hernia is a frequent pathology in surgery affecting male subjects. It is pathology of the young adult, its diagnosis is essentially clinical and hernial strangulation is the most complication that can lead to intestinal necrosis. Hernia repair using the Shouldice technique and under local anaesthesia has made it possible to the majority of our patients to be treated on an outpatient basis. The new methods of tension-free cure should be used more and more by our users in our facilities.

## Conflicts of Interest

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

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