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Management of Groin Hernias in the Department of General Surgery at Boke Regional Hospital (Guinea)

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Abstract: *Background*: Groin hernia is one of the most common conditions in surgical pathology. Worldwide, more than 20 million patients undergo groin hernia repair annually with a prevalence 4.6% in Africa. The purpose of this study was to describe the epidemiological, clinical and management aspects of groin hernias in the general surgery department of the regional hospital of Boke. *Material and methods*: This was a prospective cross-sectional descriptive study of 24 months (January 2019 to December 2020), conducted at the regional hospital of Boke, on consecutive patients who had surgery for groin hernia. *Results*: During these two years, groin hernias represented 19.90% (n=418) of all surgical admissions (n=2100). The mean age of the patients was 46.05 years. The male gender was the most predominant (87.08%). The average time to consultation was 36.4 months. In 17.83% of cases, the hernia was strangulated. The Bassini technique was the most used method of cure (87.56%). Morbidity was dominated by surgical site infection (26.08%), persistent groin pain (14.11%). Mortality was nil. At six months postoperative follow-up, we observed 29 recurrences (6.94%). *Conclusion*: Groin hernias are still a concern in our rural populations and their adequate management requires continuous training of surgical staff on tension-free cure techniques and acquisition of prosthetic materials.

Keywords: Groin Hernias, Repair, Guinea

1. Introduction

Groin hernia is one of the most common conditions in surgical pathology. They are extremely common, with an estimated lifetime risk of 27-43% for men and 3-6% for women [1] Worldwide, more than 20 million patients undergo groin hernia repair annually [2].

In the tropical context, hernias are particularly frequent in rural or peri-urban areas among heavy laborers and are particularly significant in terms of volume, duration of evolution and frequency of complications such as strangulation [3]. African studies have found a prevalence of 4.6% of the population [3-5].

The treatment of hernia is surgical and well codified. Many surgical cure techniques have already been developed for its treatment and the trend continues [6]. The choice of a therapeutic procedure depends on several factors, including local realities, the surgeon's experience, and the materials available.

The aim of this study was to describe the epidemiological, clinical and therapeutic aspects of groin hernias in the regional hospital of Boke (Guinea).

2. Patients and Methods

This was a 24-month (January 2019 to December 2020) prospective cross-sectional study of groin hernia management in a secondary level hospital. Patients were operated on by the same surgical team after a standard clinical and biological examination including physical examination, evaluation of cardiac, respiratory, urological and renal functions. For elective surgery, patients with important defects were managed by the competent services

before the hernia repair. In emergency, the treatment of hernia strangulation was the priority. The patients were reviewed in postoperative follow-up at one month, three and six months after hospital discharge. The study concerned the sociodemographic characteristics of the patients, the clinical aspects, the techniques of hernia repair and the therapeutic follow-up (length of hospitalization, complications and recurrence rate at 6 months). Qualitative variables were expressed as frequency and quantitative variables as mean and extremes. The analysis of the data was descriptive.

3. Results

During the two-year period, we recorded 418 cases of groin hernias representing 19.90% of all admissions to the general surgery department (n=2100). The mean age was 46.05 years with extremes of 10 and 80 years. Patients aged 30 to 49 years represented 27.27%. Males were predominant (87.08%). They were mostly farmers (34.45%), workers (23.92%) living in rural and suburban areas (77.03%). In programmed surgery, the patients consulted within an average of 36.4 months with extremes of 3 months and 21 years. In emergency, the average admission time was 5.92 hours. The hernia was bilateral in 32% of cases (Figure 1). Table 1 shows the distribution according to the Nyhus classification [7]. Comorbidity factors were dominated by dolichocolon (n=45), hypertension (n=11), and benign prostatic hypertrophy (n=6).

Local anesthesia with xylocaine was the most used (63.30%) followed by spinal anesthesia (27.7%) and general anesthesia (9%). Hernia repair was performed using the Bassini (87.56%) and Mac-vay (11%) techniques. The cases of benign prostatic hypertrophy were referred after healing to the urology department for management.

Morbidity is shown in Table 2. Mortality was zero. The average length of stay was 4 days with extremes of 1 day and 16 days. At 6 months postoperative follow-up for 307 patients, we noted 29 recurrences.

Table 1. *Distribution according to the Nyhus's classification.*

Type	Number	Percentage
I	79	18.90
II	91	21.77
III	113	27.03
IV	135	32.30
Total	418	100

Table 2. *Distribution according to the postoperative course.*

Postoperative course	Number	Percentage
Simple	155	37.08
Wound infection	109	26.08
Persistent groin pain	59	14.11
Acute urinary retention	37	8.85
Recurrence	29	6.94
Scrotal hematoma	21	5.02
Sexual dysfunction	8	1.91
Total	418	100

Figure 1. *Male, 57 years old carpenter, presenting bilateral hernia with 9 years of evolution.*

4. Discussion

Groin hernia is one of the most common pathologies in general surgery particularly in Africa where it affects about 4.6% of the population [4, 5]. It was the second most common abdominal surgical condition after acute appendicitis in our department. It concerned young adult males living in rural areas where traditional non-mechanized agriculture is the main activity [3-5, 8]. The anatomical features of the groin area associated with the hard work of force exerted by men, chronic cough, constipation and obstructions of the lower urinary tract (stenosis, prostate hypertrophy) could explain in part this male predominance [8, 9].

In Africa, due to socio-cultural prejudices, hernia is often considered a shameful disease. This reality fully justifies the delay in consultation, the large volume of hernias, the parietal weakness and the frequent occurrence of complications (strangulation) observed in African series [3, 8, 10].

The predominance of right inguinal hernias reported in the literature [3, 8, 10, 11] can be explained by the high position of the right testicle in relation to the left testicle and the late obliteration of the right peritoneovaginal canal [11].

The definitive treatment of all hernias is surgical repair, inguinal hernia repair being one of the most common surgical procedures performed [12]. The choice of a therapeutic procedure depends on several factors, including local realities, the surgeon's experience, and the materials available. In industrialized countries, the management of groin hernias has undergone a revolution with the advent of prosthetic materials and laparoscopy [13-15]. In Africa, particularly in primary and intermediate level hospitals, classical herniorrhaphy procedures are often the only means of treatment available to patients [16-17]. In this environment, in addition to the low qualification of the surgeons, there is often a lack of asepsis and antisepsis measures.

It should be noted that the Bassini and Mac Vay techniques are still indicated for inguinal hernia repairs. They are easily reproducible, easy to learn, economical, and effective [16]. Also, the new technique of aponeurotic raphia, known as the Desarda technique, using physiological

procedures to reinforce the inguinal canal, may be an alternative to prosthetic plasty in a limited-resource environment [6, 18-20]. Based on the new International guidelines for groin hernia management, there is no one surgical technique that is suited to all patient characteristics and diagnostic findings; therefore, a tailored approach should be used [21]. In all cases, the criteria for judging the treatment of hernias are postoperative morbidity (infection, pain) and above all the recurrence rate. We noted a recurrence rate of 9.4% in our study.

The occurrence of postoperative complications is often responsible for prolonging the hospital stay and increasing the cost of treatment.

5. Conclusion

Groin hernias still remain a concern for our rural populations who usually present to the hospital with large, often strangulated hernias. And despite the development of surgical techniques of cure, we continue to record high rates of complications and recurrences thus contributing to increase the cost of care. To improve the management of groin hernias in our country, we require continuous training of surgical personnel on tension-free cure techniques and the acquisition of prosthetic materials. The implementation of these measures could reduce the incidence of complications associated with groin hernias repair and the difficulties of rural population to access a high-quality health service.

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