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Outpatient Treatment of Parietal Hernias in Koutiala, Mali: About 704 Cases

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Abstract **Original Research Article**

***Purpose*:** To evaluate the result of outpatient treatment of parietal hernias at the Koutiala district hospital**.** ***Patients and method*:** This was a prospective and descriptive study taking place from August 1, 2017 to August 31, 2023. The files of patients with parietal hernia and operated on in the general surgery department at the Koutiala district hospital were collected. ***Result*:** The files of 704 patients were retained. The average age was 34 ± 25 years. We noted 285 patients under 15 years old and 84 patients over 60 years old. Men were in the majority with 92%. Patients had accommodation in the town of Koutiala in 93%. According to the topography, there were 418 cases of groin hernias, 112 cases of umbilical hernia, 18 cases of linea alba hernia, and 156 cases of patent peritoneal-vaginal canal. The surgical technique involves ligation and sectioning of the canal to resection of the sac in patients under 15 years of age and Shouldice techniques and aponeurotic closure with or without resection of the hernia sac in adult patients. The average duration of intervention was 47.9±2.2 minutes. The average time to wake up, move around and urinate were 26.5±7.2 min, 47.7±8.7 min and 96.4±18.2 min, respectively. Feeding was authorized on average for 71.2±14.3 min. The average length of hospitalization was 6 hours. Postoperatively, we noted 26 cases of scrotal edema, 8 cases of scrotal hematoma and 42 cases of parietal suppuration. ***Conclusion*:** The success of this practice requires mastery of the surgical technique and strict compliance with the selection criteria and discharge criteria.

Keywords: Parietal hernias, outpatient surgery, Koutiala.

INTRODUCTION

A hernia is characterized by the spontaneous, temporary or permanent exteriorization of a viscera which represses all the elements of the abdominal or pelvic wall at the level of a weak, anatomically predictable point whose state of deficiency can be aggravated, outside of any trauma, by a special predisposition, congenital or acquired [1]. It is a common pathology in Africa and developed countries. In 2000, P. OBERLIN *et al.*, reported in France, an incidence rate of 272 interventions per 100,000 inhabitants [2]. Treatment must be carried out quickly because these pathologies can pose a risk of strangulation, endangering intestinal, testicular and/or adnexal vitality. This treatment is surgical and is increasingly done on an outpatient basis. The absence of a study on the outpatient treatment of parietal hernias in the general population in the department motivated this work, the aim of which was to evaluate the result of the outpatient treatment of parietal hernias at the Koutiala district hospital.

METHODOLOGY

This was a prospective and descriptive study running from August 1, 2017 to August 31, 2023. The files of patients with parietal hernia in the general surgery department of the Koutiala district hospital were collected. Patients who underwent outpatient surgery and met the eligibility criteria were included. Patients who underwent surgery and were hospitalized for more than 24 hours were excluded. The eligibility criteria for an outpatient procedure were the absence of medical pathology in the 15 days preceding the intervention; the presence of a working telephone number and a means of travel and having accommodation in the town of

Koutiala or within a radius of 15 kilometers from the town. Patients potentially eligible for an outpatient procedure are invited for a pre-hospitalization consultation. Patients or parents respond to a standardized medical screening questionnaire intended to identify possible comorbidities and conditions contraindicating outpatient care. After confirming the indication and eligibility, we explain to patients and parents the modalities of the planned treatment and its progress. A pre-operative assessment as well as an anesthesia consultation are carried out. At the end of these consultations, each patient and their parent receive an information sheet setting the date and time of the summons to the hospital and the conditions to be respected the day before and the day of the intervention. After the operation, return home depends on meeting the discharge criteria which were based on waking up, analgesia, movement, eating and urination for patients operated under general anesthesia and on urination correct, the absence of vomiting, the non-persistence of post-operative pain, absence of bleeding and hematoma of the operating site for patients operated under local anesthesia. The comparison test was the Chi2 test and the probability $p<0.05$ was considered significant. The parameters studied were patient selection criteria, frequency, diagnosis, treatment, discharge criteria and operative outcomes.

RESULT

The files of 704 patients operated on as an outpatient for parietal hernias were collected. These represented 94.1% of all operated parietal hernias (n=748), 5.6% of consultations (n=12148) and 31.7% of surgical interventions (n=2218). They were the leading cause of surgery followed by peritonitis (12.6% n=280) and appendicitis (6.5% n=146). The mean age was 34 ± 25 years with extremes of 1 year and 85 years. We noted 285 patients under 15 years old (40.9%) among whom there were 171 infants (60%) and 84 patients over 60 years old (12%). Men were in the majority with 92% (n=648). The sex ratio was 12.6. Patients had accommodation in the town of Koutiala in 93% of cases (n=655) and within a radius of 15 kilometers from the town in 7% (n=49). According to topography, the groin hernia (n=418) was inguinal in 344 patients (82.3%), crural in 6 patients (0.8%) and inguinoscrotal in 68 patients (9.7%). There were 112 cases of umbilical hernia (15.9%), 18 cases of white line hernia and 156 cases of patent peritoneal-vaginal canal (22.2%) [Table 1]. The lesion was located on the right in 344 patients (60%), on the left in 190 patients (33%) and bilateral in 40 patients (7%). An anesthesia consultation was carried out in all patients before the day of the operation. A fast of at least 4 hours was observed by all patients on the day of the procedure. The procedure is preferably carried out in the morning. The anesthesia technique was general in 174 patients or 24.70% and local in 530 patients or 75.3%. All our patients underwent open surgery. For the 418 cases of groin hernia, the Shouldice technique with or without hernia sac resection was used (59.3%). For cases of umbilical hernia and white line (n=130), simple aponeurotic closure was carried out, i.e. 18.5%. For patients under 15 years of age, the surgical technique was ligation and sectioning of the canal in 95 patients (61%), resection of the sac associated with ligation and sectioning of the canal in 61 patients (39%). At the end of the procedure, paracetamol is systematically administered intravenously by the anesthetist at a rate of 1.5ml per kg. For postoperative analgesia in adult patients (77.8%), paracetamol was renewed at the sixth hour and continued at home orally every 6 hours for 48 hours. For patients under 15 years old, paracetamol was replaced by an anti-inflammatory rectal medication for 72 hours. Discharge criteria are presented in Table 2 for patients operated on with general anesthesia. After a six-hour postoperative monitoring, the patients operated with local anesthesia were all discharged after the evaluation of the discharge criteria. The average hospitalization time was 6.17± 0.3 hours (6-8 hours). The immediate postoperative complications recorded were vomiting after eating in 17 patients, delay in urination in 22 patients and persistence of pain in 35 patients. Cases of vomiting and delayed urination were corrected by simple monitoring and cases of persistent pain were treated by combining injectable tramadol with paracetamol. Upon discharge, patients and their parents were instructed to return to the hospital as soon as certain signs were noted, namely persistent swelling of the surgical site and bursa, persistent pain of the surgical site and fever. This allowed us to note between D1 and D3, 26 cases of inguino-scrotal edema (4.5% groin hernia) and 8 cases of inguino-scrotal hematoma (1.4% hernia of the groin). the groin) and between D5 and D7, 42 cases of parietal suppuration (6%). For cases of scrotal edema, anti-inflammatory treatment was continued orally for 7 days. For parietal suppurations, oral amoxicillin is continued for 7 days. For cases of scrotal hematoma, 3 cases were reoperated to evacuate the hematoma and the other cases were observed. We reviewed 566 patients at 3 months of progression and 322 patients at 6 months of evolution. The examination was normal in most patients apart from the presence of scar keloid (0.9%, n=6) and hernia (0.6%, n=4). The rest was lost sight of.

Table 1: Distribution of patients operated on for parietal hernia in Koutiala between August 1, 2017 and August 31, 2023 according to topography and sex

Topography From the hernia	Male	Female	Number of cases	%
Inguinal	282	21	303	43.0
Crude	0	6	6	0.8
Inguinoscrotal	68	0	68	9.7
Umbilical	93	19	112	15.9

Topography From the hernia	Male	Female	Number of cases	%
White line	12	6	18	2.6
PCPV	156	0	156	22.2
Spiegel	0	0	0	0
Lumbar	0	0	0	0
Shutter	0	0	0	0
Repeat offense	37	4	41	5.8
Total	**648**	**56**	**704**	**100**

Table 2: Distribution of 174 patients operated on as an outpatient under general anesthesia for parietal hernia in Koutiala between August 1, 2017 and August 31, 2023 according to discharge criteria

Exit criteria	Average time (minute)	Extremes (minute)
Alarm clock	26.5±7.2	15-46
Movement	47.7±8.7	33-74
Power supply	71.2±14.3	46-125
Urination	96.4±18.2	68-180

DISCUSSIONS

Outpatient treatment of certain surgical pathologies is not new in Africa. ABOLO and Al in Cameroon and Sangaré and Al in Mali respectively evaluated outpatient surgical treatment of uncomplicated groin hernias with minimal local anesthesia and surgery of groin hernias without hospitalization [3, 4]. The objective of our study was to provide our experience by evaluating the results of outpatient treatment of parietal hernias. This study allowed us to note that 94.1% of parietal hernias in the department are operated on an outpatient basis. And this would be linked to the method of communications between the service, the patients and the parents of the patients, to the presence of an anesthetist-resuscitator and the training of operating room nurses on post-operative monitoring of patients. This result is similar to that of Kabré in Burkina in which 95% of pediatric wall surgery is done on an outpatient basis [5]. The average age was 34 ± 25 years. Olory in Cotonou reported an average age of 43 years [6]. This age difference is linked to the fact that his study focused on adult populations only (15-83 years old). Almost half of our patients under 15 years old were less than 2 years old at the time of the procedure. Some of these children could have benefited from a spontaneous resolution of their persistence thanks to simple monitoring which is carried out in the first months of life and continues until 2 years of age [7]. This early surgery is linked to pressure from parents who consider his pathologies as dysmorphia and a potential source of infertility. Ambulatory surgery is a concept as much as a practice; it involves organizational, therapeutic and architectural reflection which requires a certain number of criteria for patient selection [8, 9]. In this study the criteria were, among others, an absence of medical history in the 15 days preceding the intervention, the availability of a means of travel and a working telephone number and having accommodation in the town of Koutiala or within a radius 15 kilometers from the city. These same selection criteria are observed by other authors for outpatient and day hospitalization care [9, 13]. We made the diagnosis of pathologies through questioning and physical examination in most patients and inguinal hernia was the most common. These lesions were most often located on the right [14]. We opted for general anesthesia especially in patients under 15 years old because of these comforts but also at the request of the parents. The surgical technique involves ligation and sectioning of the canal to resection of the sac in patients under 15 years of age and Shouldice techniques and aponeurotic closure with or without resection of the hernia sac in adult patients. After the operation, all patients were discharged the same day with an average hospitalization time of 6 hours. During this time a rigorous monitoring protocol was respected and which was based on awakening, movements, eating, urination and analgesia. In 74 of our patients this average hospitalization time was extended to 8 hours due to the correction of immediate postoperative complications. Surgery for parietal hernias is a benign but not trivial surgery. It can cause complications, the rate of which was 10.1% (n=76) in this study.

CONCLUSION

Outpatient treatment of parietal hernias is common in our department. The success of this practice requires mastery of the surgical technique and strict compliance with the selection criteria and discharge criteria. The surgical aftermath is most often simple.

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