

RESEARCH ARTICLE

Management of Strangulated Groin Hernias in Adults at the Brazzaville University Hospital

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Received: 05 November 2024 Accepted: 20 November 2024 Published: 25 November 2024

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Abstract

Purpose: To report our experience in the management of strangulated groin hernias in adults.

Patients and Method: This was a descriptive, retrospective study conducted in the medical-surgical emergency department of the Brazzaville University Hospital Centre over a 36-month period (1^{er} January 2020 to 31 December 2022).

Results: During the study period, 1,715 patients underwent surgery in the emergency department, including 113 cases of strangulated groin hernia (frequency: 6.58%). The mean age of our patients was 45.62 ± 17.26 years, with extremes of 18 and 90 years. Males predominated, with 109 cases (96.46%). The hernia was inguinal in 39.93% of cases (44 patients), inguinal-scrotal in 59.29% (67 patients) and crural in 1.76% (2 cases). It was located on the right in 75% of cases and on the left in 25%. The average consultation time for our patients was 37.88 ± 32.31 hours, with extremes ranging from 4 to 120 hours. Most of the contents of the pouch were small intestines and 105 patients had viable intestines. The most frequently performed hernia repair was the McVay repair in 80.53% of cases, i.e. 91 patients, followed by the Bassini repair in 18.58% of cases, i.e. 21 patients. One patient had a prosthetic cure (0.88%). The associated procedures were: resection with small bowel anastomosis in 6 patients (5.31%) and ileostomy in 02 patients (1.77%). Post-operative management was straightforward in 104 patients (92.03%) and complicated by parietal suppuration in 8 patients (7.08%).

Conclusion: Hernial strangulation of the groin remains a frequent pathology in our context. Its treatment is a genuine surgical emergency. Cure by raffia is still the treatment of choice in our context.

Keywords: Groin Hernia, Strangulation, Adult, Brazzaville.

1. Introduction

A groin hernia is a condition defined by the exit of an intra-abdominal viscera contained in a peritoneal diverticulum through a zone of weakness in the inguinal region [1]. It is said to be strangulated when its contents are constricted at the neck. It includes inguinal hernias and femoral or crural hernias. Almost congenital, due to the persistence of the peritoneo-vaginal canal in children, it is often linked to parietal

weakness in this region in adults. Diagnosis is essentially clinical and straightforward. The most serious complication is strangulation, which is still a frequent reason for consultation in sub-Saharan Africa [2]. This complication can be life-threatening if treated late. It is treated surgically, using a number of procedures [3]. In the West, these procedures are dominated by open or laparoscopic prosthetic cure; in sub-Saharan Africa, they are dominated by

Citation: Elion Ossibi Pierlesky, Bhodeho Medi Monwongui, Massamba Miabaou Didace, *et al.* Management of Strangulated Groin Hernias in Adults at the Brazzaville University Hospital. Open Journal of Surgery. 2024; 5(1): 1-5

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herniorrhaphy [1]. The choice of procedure depends on a number of factors, especially local conditions. This is a common condition, mainly in men, as well as children than adults. The aim of this paper is to report on our experience in the management of strangulated groin hernias in adults.

2. Patients and Method

This was a descriptive study with retrospective data collection, conducted over a 36-month period from 1^{er} January 2020 to 31 December 2022. It took place in the medical-surgical emergency department of the Brazzaville University Hospital. We included in our study all adult patients operated on for a strangulated groin hernia. Patients were classified according to the intensity of their daily physical activity into high, moderate, light or sedentary intensity and physical inactivity.

2.1 High-Intensity Physical Activities

Require a great deal of effort, resulting in shortness of breath and an increase in heart rate. These include competitive sports and games, cycling at high speed, working in the fields and carrying loads;

2.2 Moderate-Intensity Physical Activities

Require a moderate effort while increasing the heart rate. Examples include brisk walking, dancing, gardening, housework and domestic chores

2.3 Light-Intensity Physical Activity or Sedentary lifestyle: activity spent sitting or lying down, with no increase in heart rate

2.4 Physical Inactivity

This is when you do less than 2h30 minutes of moderate-intensity physical activity per week. Data were collected on a pre-established survey form and analysed using Excel 2016 software. The data studied were epidemiological, clinical, therapeutic and prognostic.

3. Results

During the study period, 9444 patients were admitted to surgical emergency departments and 1715 patients underwent surgery, including 113 cases of strangulated groin hernia. Strangulated hernias accounted for 1.19% of admissions and 6.58% of emergency surgery activity. The average age of our patients was 45.62 ± 17.26 years, with extremes of 18 and 90 years. Males predominated, with 109 cases (96.46%) (Figure 1). Patients with high and moderate levels of physical activity accounted for 49.55% (56 patients) and 32.74% (37 patients) respectively. The hernia was inguinal in 39.93% of cases (44 patients), scrotal inguinal (figure 2) in 59.29% of cases (67 patients) and crural (figure 3 A) in 1.76% of cases (2 cases).

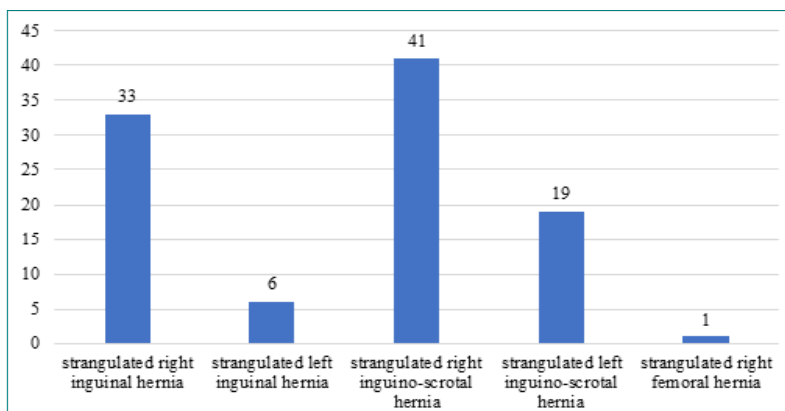


Figure 1. Distribution of patients by type of hernia



Figure 2. Image showing a strangulated right inguino-scrotal hernia

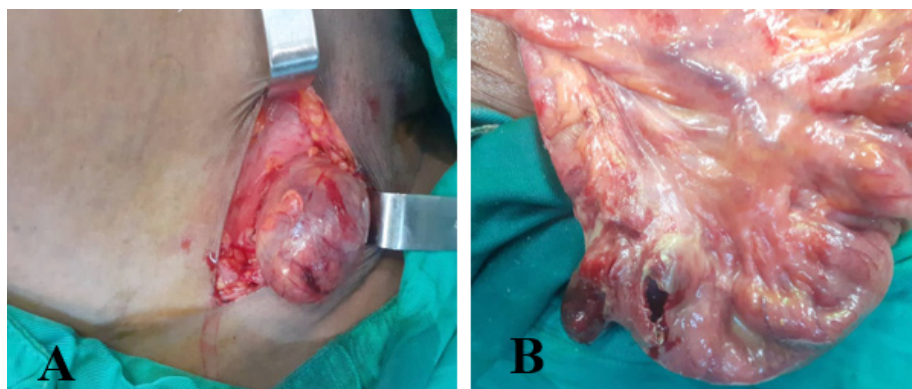


Figure 3. Images showing the right femoral hernia (A) and the small intestine contained in the perforated sac (B)



Figure 4. Image showing necrotic small intestine

It was located on the right in 75% of cases and on the left in 25%. The circumstances in which strangulation occurred were physical effort in 73 patients (64.60%), coughing in 14 patients (12.38%), constipation in 11 patients (9.73%), dysuria in 7.96 cases (9 cases) and undetermined in 4.42% (5 patients). The average consultation time for our patients was 37.88 ± 32.31 hours, with extremes ranging from 4 to 120 hours. All patients were consulted for irreducible, painful swelling in the groin area. This swelling was associated with signs of acute intestinal obstruction in 15% of cases.

The approach was an oblique inguinal incision in 85.84% (97 cases) and a transverse inguinal incision in 14.16% (16 cases). The oblique inguinal incision was combined with a median laparotomy under the umbilicus in 1.76% (2 cases).

The contents of the sac were the small intestine (figures 3B and 4) in 54.86% of cases, i.e. 62 patients, the omentum in 30.97% of cases, i.e. 35 patients, the colon in 4.42% of cases, i.e. 5 patients, and the small intestine and omentum in 15.04% of cases, i.e. 17 patients. The contents were viable in 92.92% of cases, i.e. 105 patients.

Small bowel resection and anastomosis were performed in 6 patients (5.31%) and ileostomy in 02 patients (1.77%).

The most common hernia repair was McVay in 80.53% of cases (91 patients), followed by Bassini in 18.58% (21 patients). One patient had a prosthetic cure (0.88%).

The average hospital stay was 72 ± 67.84 hours, with extremes ranging from 1 day to 6 days.

Post-operative management was straightforward in 92.03% of cases (104 patients) and complicated by parietal suppuration in 7.08% (8 patients). One patient died (0.88%).

4. Discussion

During the period of our study, strangulated groin hernia accounted for 6% of surgical procedures performed. This frequency is comparable to some authors who report a frequency varying between 6 and 15% of emergency surgical procedures [2, 4, 5]. This frequency is relatively low compared with other African countries, and this difference can be explained by the early management of groin hernias at the uncomplicated stage. The average age of our patients is comparable to that of SANGARE in Mali in 2002 [6] and YEBOAH in Ghana in 2003 [7] who reported 40 and 45 years respectively. The young age is frequently found in African studies, probably due to the fact that in most regions of developing countries, farming is the main means of subsistence for the population, and

the repeated physical effort required for this activity at this age, as well as the use of the abdominal strap, are determining factors in the genesis and/or aggravation of the parietal defect. In Western series, groin hernia is a pathology of the elderly adult, linked to weakness of the walls due to ageing, which explains why their average age varies between 60 and 70 years [8, 9]. Male predominance has been found in several studies. Diabaté [10] and HAOUAT MOHAMMED AMIN [11] reported sex ratios of 31 and 8.66 respectively. This high frequency in favour of the male sex could be related to the anatomical features of the inguinal canal in men and the high physical effort work. In our series, the predominance of males was 97%. In developed countries, patients consult a doctor as soon as they develop a hernia, in order to undergo a cold cure. This is in contrast to underdeveloped countries, where patients have little or no information about the nature and consequences of this pathology, and above all, out of modesty, which reveals their genitals. In our study, the average consultation time was 37.88 ± 32.31 hours, and the hernia was located on the right in 75% of cases. Most authors note a predominance of hernias on the right side [12], as is the case in our series. This could be explained by the fact that during embryogenesis testicular migration and atrophy of the processus vaginalis is slower on the right side than on the left. All our patients, like those in the series by Adesunkanmi et al. in Nigeria [13], consulted for an irreducible painful swelling in the groin area; in fact, the clinical features of hernia strangulation are irreducibility and pain in the swelling area, to which may be added a cessation of intestinal transit with vomiting, which correspond to signs of acute intestinal obstruction; in our study, 15% of patients had signs of acute intestinal obstruction. The diagnosis of a strangulated hernia is essentially a clinical one, and imaging can be of considerable help, as it can reveal the radiological signs of an acute intestinal obstruction, i.e. hydroaerobic levels, the characteristics of which depend on the organ that has been strangulated. Biological tests are used to assess the patient's operability and, above all, the hydro-electrolytic impact in the event of a strangulated hernia complicated by acute intestinal obstruction.

Hernial strangulation is a surgical emergency and must be treated early, as delaying treatment increases the risk of necrosis of the contents of the hernia sac. Reduction by taxis is formally contraindicated in adults [4] as it risks aggravating visceral lesions or could allow viscera in a state of irreversible ischaemia to be reintegrated into the abdomen, with the risk

of peritonitis, digestive haemorrhage or ischaemic stenosis. Several anaesthetic methods can be used to cure a strangulated inguinal hernia, including local anaesthesia, spinal anaesthesia and general anaesthesia [14]. In our series, all patients underwent general anaesthesia; this type of anaesthesia provides the most favourable conditions for good dissection and perfect muscle relaxation. This is perfectly consistent with the data in the literature [2, 14]. There are several methods of surgical treatment of hernias, with the most common emergency approach being an inguinal incision [15, 16]. The choice of surgical procedure depends on the surgeon's experience and the local anatomical conditions, and may involve a prosthetic cure [17, 18, 19] or a herniorrhaphy [20]. The majority of patients underwent curettage by raphia, as in several other African authors [2, 6, 20]. The condition of the incarcerated viscera depends on the duration of the strangulation; beyond 6 hours, the risk of necrosis increases, which often leads to resection during cure.

The average hospital stay was 72 ± 67.84 hours, with extremes ranging from 24 hours to 120 hours, which can be explained by the fact that the majority of patients were young and in good general condition. The post-operative course was often straight forward, with the complication rate varying around 4% according to the literature [12].

5. Conclusion

Hernial strangulation of the groin is still a frequent pathology in our context, and its rate is decreasing, especially due to the management of uncomplicated forms of groin hernia. Treatment of groin hernia is a real surgical emergency, as the prognosis depends on it. Cure by stenting is still the treatment of choice in our context.

Conflicts of Interest

The authors declare no conflicts of interest.

Authors' Contributions

All the authors played an active role in drafting and editing the article. They have read and approved the final version of the manuscript.

6. References

1. Inguinal hernias in adults at Nieta Central Hospital: Epidemiological and anatomoclinical aspects. B. Amougou, D. Eyongeta, D. Cisse, M. J. Ngandeu et al. Health Sci. Dis : Vol 22 (7) July 2021 pp 107-111
2. Strangulated hernias of the groin in adults: A series of 228 observations. Dieng M, El Kouzi B, Ka O, Konaté

- I et al. *Mali Médical* 2008; Tome 23(1): 12-16.
3. Management of inguinal hernias at the surgical clinic of Aristide Le Dantec Hospital in Dakar: retrospective study of 432 cases. I KONATÉ, M CISSÉ, T WADE, PA BA, et al. *J Afr Chir Digest* 2010; Vol 10(2): 1086-1089.
 4. Pessaux P, Arnaud J-P. Strangulated inguinal hernia. Monographs of the French association of surgery «Surgery of inguinal hernias in adults». Report presented at the 103rd French Congress of Surgery 2002;157-65.
 5. Sowula A, Greole H. Treatment of incarcerated abdominal hernia. Results of treating strangulated external abdominal hernia: *vesten khir Im II wiak lek* 2003; 56(1-2): 40-4.
 6. Sangaré B. Strangulated inguinal hernias in the general and paediatric surgery department of Gabriel Touré Hospital. *Thèse Med Bamako* 2002; N 71 P67
 7. Yeboah M. External hernial strangulation in Kumasi, West Africa *East Afr Med J*. 2003 ; 22(4) :310-3
 8. Bahadir K, Hakan I, Tahir M, Duzgun A, Moran M, Mahir M. Presentation and outcome of incarcerated external hernias in adults *Am j Surg* 2003; 181(2): 101-4
 9. Alvarez-P, José A, Baldonado C, Francisco GR, Isabel S, Barreiro J et al. Presentation and outcome of incarcerated exrenal hernias in adults.
 10. Lansine Diabaté. Study of strangulated inguinal hernias at the Point G National Hospital. *Thèse méd. Bamako: ENMP; 1994*
 11. HAOUAT MOHAMMED AMIN. Strangulated inguinal hernias in adults [thesis: medicine]. Fez: Faculty of Medicine and Pharmacy of Fez; 2012.
 12. De Muynck A. Risk factors for strangulated inguinal hernias: Study of 243 cases in Kasongo ZAIRE. *Ann Soc Belg Med Trop* 1979 ;592 :185-98.
 13. Adesunkanmi A, Adejuyigbe O, Agbakwuru E. Prognostic factors in childhood inguinal hernia at Wesley Guild Hospital. *East Afr Med J* 1999 ;763 :144- 7.
 14. M'hamedi. Strangulated inguinal hernias in 118 cases. *Thèse Doctorat Médecine, Rabat* 2003;(330) :107.
 15. Treatment of inguinal hernia in adults: results of tension-free repairs. *Ann Chir* 2001; 126: 644-648
 16. Pans A. Strangulated groin hernias in adults. *Rev Med Liege* 1996 ;51 (4) : 291-294.
 17. Henry V, Randriamanantsoa V, verhaeghe P, Stoppa R. Does prosthetic material have a reasonable place in the treatment of hernial emergencies? *chirurgie* 1995; 123-8.
 18. Vix J, Meyer C, Rohr S, Bourtoul C. The treatment of incisional and abdominal hernia with a prosthesis in potentially infected tissues: a series of 47 cases. *Hernia* 1997; 1: 157-61.
 19. Palot JP, Flament JB, Avisse C, greffier D, Burde A. Use of prostheses in emergency surgery. *Chirurgie* 1996; 121: 48-50.
 20. Massengo R, Yaba-Ngo B. Strangulated hernias of the groin: about 138 cases in adults. *Med Trop* 1986;46(1): 39-42.