Journal of african clinical cases and reviews / Journal africain des cas cliniques et revues

www.jaccrafrica.com ISSN 2712-6412 Open access

JaccrSURGERY

Original article

Management of Strangulated Abdominal Wall Hernias in Hospitals in Ziguinchor

Prise en charge des hernies étranglées de la paroi abdominale dans les centres hospitaliers de Ziguinchor

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Résumé

Objectif : Évaluer les aspects épidémiologiques, diagnostiques, thérapeutiques et pronostiques des hernies étranglées de l'adulte prises en charge dans les services de chirurgie générale des hôpitaux de Ziguinchor. Patients et méthodes : Étude rétrospective descriptive bicentrique menée sur quatre ans chez tous les patients âgés de 18 ans ou plus opérés pour une hernie étranglée de la paroi abdominale. Résultats : Quatre-vingt-quinze patients ont été inclus : 79 hommes (83,2 %) et 16 femmes (16,8 %), d'âge moyen 50,2 ans. Soixante-cinq patients (68,4 %) ont consulté plus de 24 heures après l'étranglement. Une tuméfaction douloureuse était présente chez tous les patients et des vomissements chez 47,4 %. Les hernies de l'aine représentaient 88,4 % des cas. Le sac contenait principalement l'intestin grêle (60 cas ; 63,2 %), puis l'épiploon seul (18 cas ; 18,9 %). Quatorze patients (14,7 %) ont nécessité une résection intestinale avec anastomose pour nécrose. La durée moyenne d'hospitalisation était de 3,55 jours. Les suites étaient favorables dans 93,7 % des cas. La morbidité était de 6,3 % et la mortalité nulle. Conclusion : Les hernies étranglées demeurent une urgence chirurgicale potentiellement grave. La consultation tardive augmente le risque d'ischémie, de nécrose et de résection intestinale.

Mots-clés : hernie étranglée ; urgence ; chirurgie ; Ziguinchor.

Abstract

Objective: To evaluate the epidemiologic, diagnostic, therapeutic, and prognostic features of strangulated abdominal wall hernias in adults managed in the general surgery departments of hospitals in Ziguinchor. Patients and methods: We conducted a four-year, two-center retrospective descriptive study including all patients aged 18 years or older who underwent surgery for a strangulated abdominal wall hernia. Results: Ninety-five patients were included: 79 men

(83.2%) and 16 women (16.8%), with a mean age of 50.2 years. Sixty-five patients (68.4%) presented more than 24 hours after strangulation. Painful swelling was present in all patients and vomiting in 47.4%. Groin hernias accounted for 88.4% of cases. The sac most commonly contained small bowel alone (60 cases; 63.2%), followed by omentum alone (18 cases; 18.9%). Fourteen patients (14.7%) required bowel resection and anastomosis because of necrosis. Mean hospital stay was 3.55 days. Postoperative outcomes were favorable in 93.7% of patients. Morbidity was 6.3%, and there were no deaths. Conclusion: Strangulated hernia remains a potentially severe surgical emergency. Delayed presentation increases the risk of ischemia, necrosis, and bowel resection.
Keywords: strangulated hernia; emergency; surgery; Ziguinchor.

Introduction

An abdominal wall hernia is the protrusion of abdominal contents through a weak point in the abdominal wall [1]. It is a common benign surgical condition and accounts for approximately 10% of operations [2]. Although diagnosis is usually clinical, strangulation is a serious complication that may threaten life through ischemia and necrosis of the herniated organ [3]. It requires urgent surgery. Repair options range from tissue-based herniorrhaphy to prosthetic mesh repair. This study evaluated the epidemiologic, diagnostic, therapeutic, and prognostic characteristics of strangulated abdominal wall hernias in adults treated in the general surgery departments of hospitals in Ziguinchor.

Methodology

We performed a retrospective, descriptive, two-center study from 1 January 2019 to 31 December 2022, covering four years. All patients aged 18 years or older who were admitted and managed for a strangulated abdominal wall hernia were included. Variables included demographic characteristics, occupation, medical and surgical history, route of admission, circumstances of diagnosis, consultation delay, symptoms and signs, diagnostic findings, operative approach, intraoperative findings, repair technique, anesthesia, analgesia, antimicrobial treatment, and short-, medium-, and long-term outcomes.

Results

A total of 95 patients were included: 79 men (83.16%) and 16 women (16.84%), yielding a male-to-female ratio of 4.93. Mean age was 50.19 years. Sixty-five patients (68.42%) presented more than 24 hours after strangulation. A surgical history was present in 22 patients, including 21 previous hernia repairs and one cesarean section.

Painful swelling was present in all patients, associated with vomiting in 47.4%, failure to pass stool and flatus in 6.3%, and diarrhea in 1.1%. Chronic constipation was reported by three patients (3.15%). Groin hernias accounted for 84 cases (88.4%), followed by midline hernias in eight (8.42%) and umbilical hernias in three (3.15%). Among groin hernias, 55 were right-sided. The distribution is shown in Table I.

All patients underwent surgery. An inguinal incision was used in 81 cases and laparotomy in 14. The sac contained small bowel alone in 60 cases (63.2%), omentum alone in 18 (18.9%), and combined or less common organs in the remaining cases (Table II). Overall, ischemia was recorded in 16 cases, necrosis in 14, and perforation in two.

Fourteen patients (14.73%) underwent small-bowel or ileocolic resection with anastomosis because of necrosis. Bassini repair was the most frequently recorded tissue repair; McVay and Lichtenstein techniques were also used. The source percentages for these techniques exceeded 100% in aggregate and did not specify whether combined techniques or different denominators were used; they were therefore not presented as mutually exclusive proportions. All umbilical and midline hernias were repaired by aponeurorrhaphy.

Mean hospital stay was 3.55 days. The postoperative course was favorable in 89 of 95 patients (93.7%). Six patients developed complications (6.3%): two surgical-site infections and four cases of postoperative pain. No death occurred.

Table I. Distribution of groin hernias by side and type

Side	Type	Number	Percentage (%)
Right	Inguinal	25	29.77
Right	Inguinoscrotal	30	35.71
Left	Inguinal	14	16.67
Left	Inguinoscrotal	12	14.28
Left	Femoral	3	3.57
Total		84	100

Table II. Contents of the hernial sac

Hernial sac content	Number	Percentage (%)
Small bowel	60	63.2
Omentum	18	18.9
Small bowel and omentum	8	8.4
Colon	4	4.2
Colon and omentum	2	2.1
Appendix	1	1.1
Appendix and cecum	1	1.1
Ovary	1	1.1
Total	95	100.1*

**The total is 100.1% because of rounding. The internally inconsistent viability cells in the source table were replaced by the overall counts stated in the Results text (16 ischemic, 14 necrotic, and 2 perforated cases).*

Discussion

Abdominal wall hernia is common in Africa. Risk factors in our region are similar to those described elsewhere, with an important contribution from carrying or lifting heavy loads during subsistence farming [4]. The natural course may be complicated by strangulation, a true surgical emergency in which delayed treatment increases the risk of bowel ischemia, necrosis, perforation, and death.

This condition is frequently encountered in Ziguinchor. Compared with the Malawian study by Williams et al. [4], strangulation was less frequent in our setting despite broadly similar socioeconomic conditions. Age distributions vary between regions, but most series concern economically active adults aged approximately 30–65 years, with a clear male predominance [5–7].

In our study, 68.42% of patients presented more than 24 hours after strangulation. Delayed consultation is commonly related to poverty, distance from surgical facilities, difficult rural access, and cultural reliance on traditional practitioners who are geographically and financially accessible. Studies in sub-Saharan Africa have shown that reduced access to health facilities, limited disease awareness, and cost are common reasons for failure to seek timely medical care [8].

Painful swelling was the leading symptom, often associated with vomiting or bowel obstruction, as reported by Dieng et al. [9]. The groin was the most frequent site because of the relative weakness of the abdominal wall in this region [10]. The preferred initial approach was an incision over the hernia, consistent with Kuubiere et al. [11] and other series. Small bowel and omentum were the most common sac contents [12].

We recorded 16 cases of ischemia (16.84%), 14 of necrosis (14.74%), and two of perforation (2.1%); 14 patients underwent bowel resection and anastomosis. These findings are similar to those reported by Drissa et al. [13] but higher than in several European series [14,15], probably because of delayed presentation. Advanced age, femoral hernia, and comorbidity have been associated with an increased risk of bowel resection, whereas defect size and recurrent repair history may have less influence [14]. Our study was not designed to assess these correlations.

Mesh repair is increasingly recommended in selected emergency cases when the operative field is suitable and gross contamination is absent [16]. Mesh use was limited in our study because of cost, low patient income, and concerns regarding local aseptic conditions, as also discussed in the meta-analysis by Ndong et al. [12]. Tissue repair, especially Bassini repair, remained predominant because surgeons were familiar with it and it required no costly prosthetic material.

Mean hospital stay was 3.55 days, close to the 3.36 and 3.6 days reported by Ba et al. and Dieng et al., respectively [17,9]. Postoperative morbidity was 6.3%, with two surgical-site infections and four cases of postoperative pain, and mortality was zero. These outcomes compare favorably with those of Dieng et al. [9] and Lebeau et al. [18]. However, the low response rate to long-term pain assessment was an important limitation. More regular long-term follow-up is necessary because non-mesh repair may be associated with chronic pain and recurrence [19].

Conclusion

Strangulated abdominal wall hernia is a common and potentially life-threatening surgical emergency in low-resource settings. Previous studies consistently show poorer outcomes after emergency repair than after elective repair. Public education, early consultation, and elective treatment of uncomplicated hernias could reduce strangulation and the need for bowel resection.

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Available online : September 3, 2026

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Conflict of interest : None

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To cite this article

CH Badji, O Sow, M Dieng, M Ndiaye, S Mangane, R Sessou et al. Management of Strangulated Abdominal Wall Hernias in Hospitals in Ziguinchor. Jaccr Surgery 2026; 2(3): 8-12

https://doi.org/10.70065/2623.jaccrSurg.001L010309