

## Diagnostic Aspects and Results of Surgical Treatment of Post-Operative Incisional Abdominal Wall Hernias at The University Hospital Center of Libreville (Gabon)

Dyatta Mayombo K<sup>1,2</sup>, Angue Obiang M<sup>1</sup>, Mpira YM<sup>1,2</sup>, Ondo JD<sup>1</sup>, Mbana Boukoulou FCA<sup>1</sup>, Moussounda Bamba PM<sup>1</sup>, Diallo Owono FK<sup>1,2</sup> and Ondo N'Dong F<sup>1,2</sup>

*1*Department of Visceral Surgery of the University Hospital Center of Libreville, Gabon.

*2*Department of Surgery and Specialties of the University of Health Sciences of Libreville / Owendo, Gabon.

### \*Correspondence:

Dr. Kévin DYATTA MAYOMBO, Department of Visceral Surgery of the University Hospital Center of Libreville, Gabon, Tel: +241 66 23 22 67.

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### ABSTRACT

**Introduction:** Incisional hernias are a loss of continuity of the abdominal wall secondary to surgery or penetrating wound. The authors proposed to evaluate the surgical treatment of incisional hernias at the visceral surgery department of the University Hospital of Libreville in Gabon.

**Patients and Method:** This was a retrospective and prospective, analytical, transverse and mono-centric study performed at the CHUL visceral surgery department from January 1, 2017 to December 31, 2018, amounting to 2 years. All patients' records with abdominal incisional hernias were retained. Parameters were collected from the operating room registers and patient records.

**Results:** The study involved 19 women and 5 men. The mean age was 44, 2 years with extremes ranging from 24 and 72. Obesity ( $n = 9$ ), history of abdominal surgery ( $n = 6$ ), prior postoperative wall infections ( $n = 5$ ) were the most frequent contributing factors. Clinically, large incisional hernias were the most frequently found size. All patients underwent surgical treatment including 14 prosthetic repairs and 12 alloplasties. The average duration of hospitalization was 7, 3 days.

**Conclusion:** Eventrations is a frequent complication of parietal surgery, with a clear predominance of women. Large incisional hernias lead patients to consult. Prosthetic parietoplasty is used more with a preference for the RIVES technique. The results are satisfactory in the short term.

### Keywords

Incisional hernias, Prosthetic parietoplasty, Parietoraphy.

### Introduction

Incisional hernias are solutions of musculo-aponeurotic continuity of the abdominal wall secondary to surgery or a penetrating wound [1]. They concern 10 to 13% of laparotomies [2]. Few local studies have examined this relatively common complication of abdominal surgery. Several surgical techniques, between autoplasty, alloplasty and auto-alloplasty, are proposed to restore a normal anatomy with fairly satisfactory results. However, the surgical treatment of

eventrations presents its own complications which are sometimes serious [2]. What about in our context?

The authors propose to identify a few diagnostic aspects and to evaluate the surgical treatment of eventrations in the visceral surgery department of the University Hospital Center of Libreville (CHUL) in Gabon.

### Patients and Method

It was a retrospective and prospective, analytical, transversal and mono-centric study carried out in the visceral surgery department

of the CHUL. The study period went from January 1, 2017 to December 31, 2018, i.e. 2 years.

The files of patients over 16 years old who underwent post-operative abdominal eventration were retained. The files of patients under the age of 16 who had been operated on for digestive etiology were not retained. Traumatic eventrations were not retained.

The following parameters were studied and collected from operating room registers and patient records: age, sex, indication for previous abdominal surgery, number of abdominal surgeries, contributing factors, preoperative diagnosis, the size of the parietal orifice of the eventration, the type of surgical repair, the length of hospital stay and the complications. The data were entered and analyzed using Excel version 2013 software.

### Results

A total of 26 patients had undergone surgical repair for eventration out of the 1268 laparotomies performed during the 2 years of the study. The frequency was 2.05% of the activity of our surgery department.

The average age of the patients was 44.2 years with extremes of 24 and 72 years. The most affected age group was that of 36-45 years with 30.76% of cases (Table 1). More than half of the patients (57.67%) were under the age of 45 (Table 1). There were 6 men and 20 women, a sex ratio of 0.3 (Table 1).

Age (years)	Man N (%)	Woman N (%)	Total N (%)
16 – 25	-(-)	1 (3,84)	1 (3,84)
26 – 35	2 (7,69)	4 (15,38)	6 (23,07)
36 – 45	3 (11,53)	5 (19,23)	8 (30,76)
46 – 55	-(-)	3 (11,53)	3 (11,53)
56 – 65	1 (3,84)	3 (11,53)	4 (15,38)
66 – 75	-(-)	4 (15,38)	4 (15,38)
Total N (%)	6 (23,07)	20 (76,92)	26 (100)

**Table 1:** Distribution of patients by age and sex.

As contributing factors, obesity was found in 34.61% of patients. The notion of parietal infection during the previous operation was found in 19.23% of the patients and the notion of constipation was found in 11.53% of them. Six patients (23.07%) had at least 2 previous surgeries (Table 2).

Promoting factors	N	%
BMI > 35	9	34,61
Constipation	3	11,53
Obstructive prostatic pathology	1	3,84
Chronic Bronchopneumopathy	1	3,84
Anterior postoperative wall infection	5	19,23
Number of previous operations > 2	6	23,07

**Table 2:** Determination of the factors favoring the occurrence of an eventration found in patients. BMI= Body Mass Index.

All of the eventrations were on a midline laparotomy scar. There were 34.60% of the patients who presented with a small sized eventration and 19.23% of them had a giant one. Large eventrations were found in 46.15% of patients (Table 3).

Parietoplasty according to Mayo-Judd was performed in 12 patients. Fourteen patients (%) had benefited from a prosthetic cure, including 8 (30.76%) implanted in a pre-fascial retro-muscular position using the Rives technique (Table 3).

Diameter Defect (depending on the diameter of the incisional hernia)	Surgical Gestures	N	(%)
0 -5 cm Small disruption	Parietoraphy of Mayo-Judd	6	23,07
0 – 5 cm Small disruption	Prothesis / laparotomic pre-peritoneal route	3	11,53
5 – 10 cm Great ripping	Parietoraphy of Mayo-Judd	4	15,38
5 – 10 cm Great ripping	Prothesis / laparotomic way (Rives)	5	19,23
5 – 10 cm Great ripping	Prothesis / laparotomic pre-musculo-fascial way	3	11,53
> 15 cm Giant eventration	Parietoraphy de Mayo-Judd	2	7,69
> 15 cm Giant eventration	Prothesis / laparotomic way (Rives)	3	11,53
Total		26	100

**Table 3:** Distribution of patients operated for hernias according to indications (according to the classification of Chevrel) and surgical procedures.

Cm = centimeters.

In the case of prosthetic surgery, the average length of hospital stay was 8.2 days with extremes of 5 and 14 days (Table 4). The average length of hospital stay for parietoraphy was 4.4 days with extremes of 2 and 5 days. The cumulative average hospital stay was 7.3 days (Table 4).

Duration of Hospitalization (Days)	Prothesis (%)	Parietoraphy (%)	Total (%)
0 – 3	-(-)	7 (26,92)	7 (26,92)
4 – 6	2 (7,69)	5 (19,33)	7 (26,92)
7 – 9	7 (26,92)	-(-)	7 (26,92)
10 – 12	3 (11,53)	-(-)	3 (11,53)
> 12	2 (7,69)	-(-)	2 (7,69)
Total	14 (53,84)	12 (46,15)	26 (100)

**Table 4:** Distribution of patients according to the length of hospital stay and the type of surgery.

One case of parietal infection (3.84%) was found after parietoraphy. One case of seroma (3.84%) and one case of parietal infection (3.84%) were found after prosthetic surgery in the pre-peritoneal position (Table 5). There was no recurrence with a minimum follow-up of 14 months (Table 5).

Type of Complications	Prosthesis (%)	Parietoraphy (%)	Total (%)
Parietal Infection	1 (3,84)	1 (3,84)	2 (7,69)
Seroma	1 (3,84)	-(-)	1 (3,84)
Hematoma	-	1 (3,84)	1 (3,84)
Residual algae	1 (3,84)	1 (3,84)	2 (7,69)
Recidivism	-	-	-
Total	2 (7,69)	2 (7,69)	4 (15,38)

**Table 5:** Summary of post-operative complications of incisional hernias.

## Discussion

Incisional hernias of the anterolateral abdominal wall are frequent complications of open surgery [2]. In our series, the epidemiological profile is that of a young adult female subject. The average age of our series was 44.2 years with extremes ranging from 24 to 72 years. The 36 to 45 age group was the most represented. Comparatively, certain African series found similar mean ages in the group: 36 years for Zaré et al. [3], and 37.8 years for Kante et al. [4], 43 years for Kassi et al. [5]. In Morocco and Senegal, the typical profile was menopausal women 50 years old for Berrada et al. [6], and 52 years old for Diao et al. [1]. Kanté et al. [4] conclude that the young age of patients can be correlated with the youth of the African population in general.

In our series, the sex ratio was largely in favor of women, as in Mali [4], Senegal [1], Côte d'Ivoire [5], Burkina Faso [3], and Morocco [6]. The high female prevalence reported in the literature could be linked to abdominal obesity secondary to multiparity, and to surgical procedures in the gynecological sphere. Obesity was the most common contributing factor in the series. Other contributing factors such as history of abdominal surgery, parietal suppuration, chronic bronchopneumopathy, smoking and chronic constipation have been implicated [7].

All the incisional hernias concerned anterior median laparotomies in the series. In the study by Kassi et al. [5] covering 30 cases, the midline incision was the most frequent approach in previous surgery. Diao et al. [1] found that caesarean section with midline approach was the most common surgical history. The same is true for Berrada et al. [6] who found it in 45% of cases. This can be explained by the fact that midline laparotomy is the first route of choice during surgical emergencies, in that it allows better exposure of the abdominal cavity.

In general, the Chevrel classification by size is the most used in our context. A gut width less than 5 cm is called a "small" eventration, from 5 to 10 cm, "large", from 10 to 15 cm "very large", more than 15 cm, "Huge or giant" [2]. In our series, the large ones were the most frequent followed by small eventrations. In 2008, the expert consensus meeting under the aegis of the European Hernia Society (EHS) [8] proposed a new taxonomy of hernias and hernias. The latter takes into account the seat, the length, the width and the number of recurrences. This classification could not be used in our study due to insufficient clinical information in the patient record.

Surgical treatment of hernias presents a technical challenge due

to the large anatomical defect sometimes causing the formation of a "second" abdomen difficult to suture without tension and locoregional complications (infections, skin ischemia) or systemic (cardiovascular and respiratory).

The parietal repair can be carried out by simple suture, by autoplasty, by prosthetic parieto-plasty, or by combined self and alloplasty. Simple parietoraphies are no longer recommended due to an incidence of recurrence exceeding 50% [2]. But the gold-standard seems to be the use of prosthetic material (alloplasty) [5, 9], although there is no clearly established consensus. In our sub-Saharan regions, the high cost of these materials and the permanent unavailability of pharmacies represent a brake for the popularization of these techniques because the populations are on low to medium incomes in majority. Health insurance does not take into account these prostheses which are quite expensive. The option of autoplasty according to Mayo-Judd associated or not with aponeurotic incisions of discharge according to the techniques of Gibson or Clotteau-Prémont thus represents a good alternative in the event of eventration. In our series, the majority of patients received a prosthetic cure. Less than half of our patients underwent autoplasty with an overcoat suture in two overlapping planes using the Mayo-Judd technique ("vest-over-pants"). On the other hand, Kanté et al. [4] exclusively used this process in their study of 45 patients. In Côte d'Ivoire, Kassi et al. [5] used this technique on 2/3 of their patients.

The seroma is the frequent complication in case of prosthetic surgery of the eventrations [3]. Hematoma and infection of the wall are general complications encountered in any type of surgery. Infection with prosthetic material can be serious, sometimes requiring removal of the prosthesis [10, 11]. The case of superficial infection after prosthetic surgery in the series did not require the extraction of the implanted material. With a hindsight of 02 years, they did not record any recurrence was recorded in the series of Kante [4]. Zaré et al. [3] found a case of recurrence with an average follow-up of 9.47 months in their series of 17 cases. With an average decline of 14 months in this series, no recurrence was found, thus corroborating the satisfactory short-term findings of these African series. Although the short-term results seem encouraging, probably linked to the small sample size. The literature reports an overall eventration incidence of 9.9% after laparotomy [12] and 4.6% after laparoscopy [13]. The average length of hospital stay was 7.3 days overall. In the case of prosthetic surgery, the average length was longer because of the systematic suction drainage left in place until the secretions completely dried up. These results are similar to those of Zaré et al. [3] in Burkina-Faso.

On the other hand, Fagalde et al. [14] found an average hospital stay of 2.8 days after plastic surgery according to Rives-Stoppa of the median eventrations. In laparoscopy, the duration is shorter on the order of 2.5 days according to Moreau [13]. But our experience and the deficit of the technical platform do not allow us to achieve these gestures by this way. Drainage is kept in place to prevent complications such as seroma and hematoma [5].

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## Conclusion

Incisional hernias are relatively frequent in abdominal parietal surgery. It mainly concerns middle aged women. Whatever the size of the parietal defect, the parietoplasty technique according to Mayo-Judd is a satisfactory surgical option. But, despite its cost, prosthetic surgery, especially the Rives technique, must be popularized because it offers better long-term results.

## References

1. Diao ML, Tendeng JN, Manyacka Ma Nyemb P, et al. La cure par prothèse des éventrations abdominales à propos de 15 cas. *Rev Afr Chir Spéc.* 2012; 5: 1-8.
2. Lechaux JP, Lechaux D, Chevrel P. Traitement des éventrations de la paroi abdominale EMC-Chirurgie. 2004; 1: 601-619.
3. Zaré C, Traoré S, Ouangré E, et al. Traitement chirurgical des éventrations abdominales avec pose de prothèse expérience à court terme du CHU Yalgado Ouédraogo. *European Scientific Journal.* 2017; 13: 424-431.
4. Kanté L, Togo A, Diakité I. Facteurs étiologiques et thérapeutiques des éventrations post-opératoires au CHU Gabriel Toure. *Mali Méd.* 2010; 25: 21-24.
5. Kassi ABF, Yenon K, Diane B. Aspects thérapeutiques des éventrations post-opératoires au CHU de Cocody. *Rev Int Sc Méd.* 2009; 11: 64-68.
6. Berrada S, El Mouatacim K, Kadiri B. Réparations prothétiques des éventrations post-opératoires. *Médecine du Maghreb.* 1996; 57: 32-34.
7. Briennon X, Lermite E, Meunier K, et al. Cure chirurgicale des larges éventrations par implantation intrapéritonéale d'une plaque composite Parietex associée à une plastie aponévrotique 280 cas. *Journal de Chirurgie Viscérale.* 2011; 148: 56-61.
8. Muysoms FE, Miserez M, Berrevoet F, et al. Classification of primary and incisional abdominal wall hernias. *Hernia.* 2009; 13: 407-414.
9. Poussier M, Denève E, Blanc P, et al. Les différents matériaux prothétiques pour la réparation pariétale abdominale. *J Chir V.* 2013; 150: 55-62.
10. Tolino MJ, Tripoloni DE, Ratto R, et al. Infections associated with prosthetic repairs of abdominal wall hernia pathology management and results. *Hernia.* 2009; 13: 631-637.
11. Gillion JF, Palot JP. Éventrations Prothèses infectées traitement et prévention. *J Chir Visc.* 2012; 149: 21-32.
12. Le Huu Nho R, Mege D, Ouaissi M, et al. incidence et prophylaxie des éventrations abdominales. *Journal de Chirurgie Viscérale.* 2012; 149: S3-S15.
13. Moreau PE, Helmy N, Vons C. Traitement des éventrations par laparoscopie. Quel bilan en 2012.
14. Fagalde AA, Peralta JCJ, Piguillen GG, et al. Eventrations médianes technique de Rives-Stoppa sans fixation de maille. Résultats à long terme. *Revista HispanoAmericana Hernia.* 2013; 1: 95-100.