

Post-Operatory Acute Eviscerations in Teaching Hospitals of Bamako (Mali)

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Abstract

Introduction: Post-operative acute evisceration is defined as a total dehiscence of the abdominal wall of all the constituents of the abdominal wall. The objective is to determine hospital frequency, identify favorable factors and key etiologies, and assess the rate of morbi-mortality. **Patients and Method:** This is a retrospective and descriptive study carried out in the general surgery departments of the Teaching Hospitals of Point “G”, Gabriel TOURE and the pediatric surgery department of the Gabriel TOURE University Hospital in Bamako, involving 53 patients. The study ran from January 1, 2005 to December 31, 2007. **Inclusion Criteria:** All cases of postoperative acute evisceration operated. **Non-Inclusion Criteria:** All cases of evisceration of other etiologies. **Results:** The average age was 34.2 years with extremes of 6 and 75 years, the sex ratio was 1.12 in favor of women. The initial clinical picture was peritonitis in 26 cases or 49.1%, occlusion in 16 cases or 30.2% and tumors in 6 cases or 11.3%. The post-operative complications responsible for evisceration were: parietal suppuration 28 cases or 52.8%; digestive fistulas 15 cases or 28.3%; post-operative ascites 4 cases or 7.5%. **Conclusion:** Post-operative acute evisceration is a rare but serious condition due to morbidity and mortality.

Keywords

Post-Operatory, Acute Eviscerations, Teaching Hospitals, Mali

1. Introduction

Postoperative acute evisceration is an externalization of the abdominal viscera through a sutured surgical wound, disunited by a lack of healing of all parietal plans including the skin [1]. It is a rare but dreadful post-operative complication of abdominal surgery and can lead to an unsightly gap in the abdomen perceived

by the patient as a failure of the first procedure. Its occurrence can lengthen the length of hospital stay and increase medical costs [2]. It occurs with a frequency close to 14% in at-risk subjects and is associated with a high mortality of around 45%, which reflects its prophylaxis [3].

In France it occurs in 0.3% of laparotomies and accounts for 17% of post-operative complications. In Greece it represents 0.46% or 89 cases out of 19,206 laparotomies [4]. In the USA [5], 12 cases of abdominal wall dehiscence out of 2785 laparotomies over a 5-year period were found. Risk factors were: undernutrition, hemodynamic instability, lung infections, anemia, hypo-prothidemia and infection of the surgical wound [4] [5] [6] [7].

In Mali few studies have been conducted specifically on post-operative acute eviscerations, which is why we initiated this study with the following objectives.

1.1. General Objective

To study post-operative acute eviscerations in the general surgery services “A” and “B” of the Point “G” Hospital, in the general surgery department and the pediatric surgery department of the Gabriel TOURE Hospital in Bamako.

1.2. Specific Objectives

To determine the hospital frequency of post-operative acute eviscerations; to identify favorable factors and key etiologies; to assess the mortality rate and the results of management.

2. Patients and Method

Study framework:

These were the general surgery services “A” and “B” of the Point “G” hospital, the general surgery department and the pediatric surgery department of the Gabriel TOURE Hospital in Bamako.

Type of study: This was a retrospective and descriptive study.

Study period: The study took place over a 3-year period, from January 1, 2005 to December 31, 2007.

Our inclusion criteria were: all patients who presented with a picture of evisceration and who were managed surgically. These inclusion criteria enabled us to recruit 53 patients with acute postoperative evisceration out of a total of 4368 laparotomies.

The non-inclusion criteria were: traumatic evisceration, postoperative trans-anal evisceration, omphalocele cases, laparoschisis cases.

Data were collected from medical records, surgical records, hospitalization and consultation records, and anesthesia records. Data entry and analysis was done on the Epi-info 7 software.

3. Results

During the study period, we identified: 17,570 surgical consultations; 12,820

hospitalized patients; 8741 surgeries; 4368 laparotomies; 2209 emergency surgeries; 2159 scheduled interventions. Post-operative acute eviscerations accounted for 0.3%, 0.41% of hospitalizations, 0.6% of surgical patients and 1.2% of laparotomies.

The average age was 34.2 years - 22.5 with extremes of 6 years and 75 years (**Table 1**). The female sex represented 28 cases or 52.8% and the male sex 25 cases or 47.2% (**Table 2**). The ratio of sex was 1.12 in favor of women. In 41 cases or 77.4% the patient was referred by a doctor. 42 patients out of a total of 53 patients were operated on in an emergency. The medical history was: high blood pressure in 8 patients or 15.1%, diabetes in 6 patients or 11.3% and lung infection in 2 patients or 3.8%. A high proportion of patients had no surgical history of 81.1%. The initial reason for hospitalization was peritonitis (26 cases or 49.1%), intestinal obstruction (16 cases or 30.2%), gastric tumour (6 cases or 11.3%), uterine fibroid (3 cases or 5.6%) and vesicular lithiasis (2 cases or 3.8%). Among the causes of acute peritonitis ileal perforation was the most common with 17 cases or 65.4% and among the causes of occlusion the volvulus of the sigmoid colon was the most common with 9 cases or 56.3%.

The median incision was made in 48 patients or 90.6%. The type of parietal closure performed was by plan-by-plan suture in 34 patients or 62.2%. Apothecosis was sutured by "X" points in 39 patients or 73.6%, in 8 patients or 15.1% and in "U" in 6 patients or 11.3%, the wire used was semi-resorbable in 48 patients or 90.6% and not resorbable in 5 patients or 9.4%. Classes IV and III of the Altermeir classification were the most frequent with 26 cases, 49.1% and 18 cases, or 33.9%, respectively. The most common post-operative complications after the initial intervention were: parietal suppuration (28 cases or 52.8%), digestive fistula (15 cases or 28.3%). The average time to appear eviscerate compared to the initial intervention was 7 days with extremes of 4 days and 15 days. Evisceration

Table 1. Distribution of patients by age.

Age range	Effectif	Percentage
0 - 15	13	24.5
16 - 31	13	24.5
32 - 47	5	9.4
48 - 63	14	26.4
≥64	8	15.1
Total	53	100

Table 2. Distribution of patients by sex.

Sex	Effectif	Percentage
Male	25	52.8
Female	28	47.2
Total	53	100

was accompanied by conjunctiva pallor in 42 patients or 72.25%, hyperthermia in 27 patients or 50.95%, cough in 27 patients or 50.9%, vomiting in 22 patients or 41.5%. Evisceration was free in 28 patients or 52.8% and covered in 25 patients or 47.2%. The most common eviscerated organ was the small intestine in 41 patients, or 77.4%. The eviscerated organ was healthy in 31 patients or 58.5%, covered with false membranes in 18 patients, ischemia in 2 patients or 3.7% and necrotized in 2 patients or 3.7%. The blood type most commonly found was group B and rhesus positive. The most frequently isolated germ was *Escherichia Coli* (16 cases out of 22 samples examined or 72.7%). The hematocrite rate was less than 8 g/dl in 22 patients or 41.5%, blood glucose levels were above 6.1 in 6 patients or 11.3%, only 8 patients or 15.1% were transfused. The most common parietal plastic surgery technique used was parietal bumblebee repair in 28 patients, or 52.8%. The non-resorbable wire was used for the closure of the apothecosis in 28 patients or 52.8%. The bumblebee was maintained between 16 and 21 days in 16 patients or 57.1%.

Immediate surgical follow-ups were simple in 37 patients or 69.8% one patient had a second evisceration and 4 patients or 7.5% died. At one month primary scarring was found in 36 patients or 54.7% and 11 patients or 32.1% healed secondary. At 3 three months 22 patients were lost, among the 26 patients reviewed at the consultation 21 patients had good healing or 80.8% and 5 patients or 19.2% had had a ventration.

4. Discussion

Postoperative acute evisceration is a rare but serious complication of abdominal surgery, its frequency varies according to the authors from 0.37% to 0.92% [6] [8]. This variation is related to: sample size; the duration of the study general condition of the patient and the surgical technique.

The average age of 34 years of our patients does not differ significantly from that of Madani [8], it is lower than that found in Turkey [6] and Spain [7], on the other hand it is higher than that found in the USA. The average young age of our patients is said to be linked to the youth of the African population in general and particularly in Mali, where the 29 - 35 age group makes up the majority of the population. In Mali, sex ratios were in favor of women [8], but in the European series men outnumbered women [6] [7] [9].

Risk factors (**Table 3**) for post-operative acute evisceration are significantly lung infection, anemia, malnutrition, diabetes, obesity [7] [4] [8]. The initial interventions that cause post-operative acute eviscerations are those performed in emergency (**Table 4**) and cancer interventions [3] [6] [7]. The bad clash of the different planes of the abdominal wall mentioned by some authors [10] [11] as probable cause of evisceration was not found in our series. On the other hand, factors such as digestive fistula, post-operative ascites formation, parietal suppurations, coughing and vomiting have been found by many authors as the causes of evisceration and these factors would cause delayed healing of the sur-

gical wound [4] [6] [10]. The average time to appear for evisceration (Table 5) of 7 days was found by the majority of authors [8] [12]. The eviscerated organ was the small intestine and this does not differ significantly from that of the other authors [8] [13] [14].

The goal of treating post-operative acute evisceration is to reconstruct the abdominal wall, correct all risk factors and treat the cause. Medical treatment is etiological and is adapted according to the results of radiological and biological examinations. Acute postoperative evisceration, despite being infrequent, has a high morbidity rate. Reducing this pathology requires correcting the risk factors: hypoproteinemia, anemia, diabetes, intra-abdominal sepsis, hemodynamic instability, pulmonary infections, fistulas, ascites [4] [6] [7] [13]. Surgical treatment is performed under general anesthesia. The suture of the wall is the most realized

Table 3. Risk factors for evisceration according to the authors.

Risk Factors Authors	Bad clash of different plans	Fistula	Postoperative ascites	Postoperative peritoneal abscess	Parietal suppuration
Pavlidis TE, Grèce 2001 [4]	-	+	+	+	+
P. Fagnier, France 1996, [10]	+	+	+	+	+
Gurleyik G, Turquie 2001 [6]	-	+	-	+	44%
Garcia Iniguez Espagne 2004 [11]	33%	-	-	-	24%
Tohme C, France 1991 [18]	-	-	4.42%	-	-
Madani, Mali 2007 [8]	+	3.1%	-	-	+
Our Study	-	28.3%	7.5%	11.3%	52.8%

Table 4. Etiologies of the initial intervention according to the authors.

Etiology Authors	Peritonitis	Occlusions	Gastric Tumor	Vesicular Lithiasis
Gurleyik G, Turquie [6]	+	+	-	-
Rodriguez H, Espagne 2005 [7]	50.9%	33.33%	-	-
Tohme C, France 1991 [18]	16.37%	-	-	-
Madani, Mali 2007 [8]	46.8%	40.6%	6.3%	-
Our study	49.1%	30.2%	11.3%	3.2%

Table 5. Time to onset of evisceration compared to the initial intervention according to the authors.

Time Limit Authors	Intermediary (day)	Extreme (day)
G. Menegaux, France 1971 [19]	-	5 - 10
J. Patel, L. Leger France 1969 [15]	-	4 - 9
Cigdem MK, Turquie 2006 [12]	7	5 - 10
Madani, Mali [8]	7	5 - 15
Our Study	7	4 - 5

and is the subject of controversy that deals with the technical details. It includes, the suture in one plane or in several planes, the stitches are simple with often reinforcements, the mode of tightening of the nodes in lateral bumblebees [8] [13] [15]. The wires used may be resorbable or not resorbable. The use of prostheses, transient or definitive helps to strengthen the sutures in a plane especially in eviscerations with a large orifice [3] [16]. Some authors practice skin grafting, but its drawback was that its survival depends on its penetration by neo-vessels [13] [16].

Immediate post-operative complications are marked by parietal suppuration in 20.8% of patients, this rate does not differ significantly from that found in Mali [8], but is lower than those found in Spain [7] and the USA [5]. The mortality rate was 9.4%, in Spain it was 28% and in Turkey it was 34.5%. The average length of stay of 26 days is not significantly different from that of the literature [7] [8] [12]. Late surgical suites of postoperative acute eviscerations were dominated by vents [8] [10] [16] [17].

The correction of significant risk factors such as pulmonary infection, anemia, under nutrition, diabetes, obesity, poor confrontation of the different planes of the abdominal wall, factors leading to delayed healing of the operative wound such as: digestive fistula, the formation of postoperative ascites, parietal suppurations, cough and vomiting would significantly reduce the occurrence of acute postoperative eviscerations.

5. Conclusion

Postoperative acute evisceration is a complication of rare but severe abdominal surgery due to morbidity and mortality. It is mainly favored by poor abdominal wall closure, parietal infection, malnutrition, digestive fistula, cough and vomiting. It usually occurs within 15 days of surgery. The diagnosis is essentially clinical and the treatment is surgical.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- [1] Chirurgicat Pathologie (1975) 2nd Edition, 617-DAT; No.9836: 497.
- [2] Dieng, M., N'Diaye, A.I., Ka, O., Dia, A. and Touré, C.T. (2006) Etiological and Therapeutic Aspect of Generalized Acute Peritonitis of Digestive Origin. A Series of 207 Cases Operated in Five Years. *Mali Medical*, **21**, 47-51.
- [3] Volume, C., Brechet, E., Bernard, A., Arnauld, R. and Viard, H. (1991) Prevention of Post-Operative Eviscerations. Comparative Study of Polyglactin 910 Lattice and Extra Peritoneal Total Points Supported. *Annales de Chirurgie*, **45**, 513-516.
- [4] Pavlidis, T.E., Galatianos, T.N., Pagasiogas, B.T., Lasaridis, C.N., Atmatzidis, K.S. and Makris, J.G. (2001) Complete Dehiscence of the Abdominal Wound and Incriminating Factor. *European Surgery*, **167**, 351-355.

<https://doi.org/10.1080/110241501750215221>

- [5] Wald Hausen, J.H. and Davies, L. (2000) Pediatric Post-Operative Abdominal Wound Dehiscence: Transverse versus Vertical Incisions. *Journal of the American College of Surgeons*, **190**, 688-691. [https://doi.org/10.1016/S1072-7515\(00\)00284-2](https://doi.org/10.1016/S1072-7515(00)00284-2)
- [6] Gürleyik, G. (2001) Factors Affecting Disrupting of Surgical Abdominal Incision in Early Post Operative Period. *Ulusal Travma Dergisi, Turkish Journal of Trauma & Emergency Surgery: TJTES*, **7**, 96-99.
- [7] Rodriguez-Hermoza, J.I., Codina-Cazador, A., Ruiz B., Roig, J.J., Gironis Pagadas, M., Bridge, G., Aldeger, X. and Acero, D. (2005) Risk Factor for Acute Abdominal Wall Dehiscence after Laparotomy in Adult. *Cirugía Española*, **77**, 280-286. [https://doi.org/10.1016/S0009-739X\(05\)70854-X](https://doi.org/10.1016/S0009-739X(05)70854-X)
- [8] Madani, D. (2006) Study of Traumatic and Post-Operative Abdominal Eviscerations in the Surgical, General and Pediatric Emergency Department of the Gabriel TOURE Hospital. Thesis Med.
- [9] Khan, M.N., Naqvi, A.H., Irshad, K. and Chaudhary, A.R. (2004) Frequency and Risk Factor of Abdominal Wound Dehiscence. *Journal of College of Physicians and Surgeons Pakistan*, **14**, 355-357.
- [10] Fagnier, P.L. and Yahvouchy, E. (1996) Urgences chirurgicales: Eviscération post-opératoire. Masson, Paris, No. 8316, 55-56.
- [11] Garcia Invea, J.A., Orozco, C.F., Mucino Hernandez, M.I., Ortega, A.L., *et al.* (2004) Complication of the Management of Secondary Peritonitis with Contained-Open Abdomen. Comparison of the Bogota's Bag vs Polypropylene Mesh. *Revista de Gastroenterología de México*, **69**, 147-155.
- [12] Cigdem, *et al.* (2006) Post-Operative Abdominal Evisceration in Children, as far as Possible and Risk Factors. *Pediatric Surgery International*, **22**, 677-680. <https://doi.org/10.1007/s00383-006-1722-8>
- [13] Detri, P.H. (1976) Ré-intervention d'urgence en chirurgie abdominale: éViscération post opératoire. Chirurgie d'urgence. Ed Masson, Paris, No. 2374, 450-453.
- [14] Brocq, P.F., Poilleux and Chabrut, R. (1956) Traité des urgences en chirurgie. Tome 1, No. 4540, 377-378.
- [15] Patel, J. and Leger, L. (1969) New Surgical Technique Treatment Tome XIII Post-Operative Acute Evisceration after Bile Intervention. 612-089 PAT, 286-287.
- [16] Visset, J. (1974) Plastia in Eviscerations. Surgical News, 75th Surgical Congress, 710-713.
- [17] Berkane, L. (2007) General Surgery: Abdominal Evisceration.
- [18] Tohme, C., *et al.* (1991) Prévention des eviscerations post opératoires. Etude comparative du treillis de polyglactine 910 et les points totaux extra-péritonéaux appuyés. *Annales de Chirurgie*, **45**, 513-516.
- [19] Menegaux, G. (1971) Eviscération post opératoire; Pathologie Chirurgicale Tome II; 617-MEN: 630-631.