

# Morbidity of laparoscopy surgery at the general surgery department of aristide le dantec hospital: retrospective study of 43 cases

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## Abstract

**Background:** Laparoscopy is a modern surgical approach introducing the concept of minimally invasive surgery. It can, however, be a source of complications of varying severity. Our aim is to describe the prognostic aspects and morbidity and mortality of laparoscopy. **Patients and methods:** We carried out a retrospective study on patients' files operated by laparoscopy from January 2006 to December 2015 at the General Surgery Department of Aristide Le Dantec University Hospital in Dakar, which presented postoperative complications. The studied parameters were the epidemiological data, the nature and classification of the complications, their management and prognostic aspects. **Results :** Of 842 patients operated under laparoscopy during this period, a morbidity of 5.1% was noted (n = 43). The majority were noted after emergency laparoscopy with 30 cases (69.7%). Acute appendicitis was the most frequently identified emergency indication with 15 cases (34.8%) followed by acute generalized peritonitis with 10 cases (23.2%). Parietal suppurations were the most common postoperative complications with 15 cases (35.3%), followed by postoperative peritonitis with 7 cases (16.2%) and deep suppuration with 6 cases (13.9%). Our complications were classified as grade I of Dindo and Clavien in 23 cases (53.4%), grade II in 1 case (2.3%), grade IIIb in 17 cases (39.5%), and grade V in 2 cases (4.6%). The management of postoperative complications was surgical (laparotomy) in 55.8% of cases (n = 24). The follow-up was simple for 41 patients (93%). Two deaths were noted (1.9%) following postoperative peritonitis. **Conclusion:** Although with numerous advantages, coelio-surgery can be a source of serious complications requiring careful management.

**Keywords:** laparoscopy, complication.

## INTRODUCTION

Laparoscopic surgery subsequently invested and upset all fields of surgery by introducing the concept of minimally invasive surgery [1, 2]. Although it has many advantages, this

approach may lead to complications that are often non-fatal but require adequate management [3]. Our objectives were to describe the postoperative complications related to this technique by studying their frequency, their epidemiological profiles, their nature, their management and their prognosis.

## Patients and methods

This was a retrospective study conducted over a period of 10 years (January 1, 2006 to December 31, 2016). It covered the patients' files, regardless of age and sex, operated under laparoscopy, whatever the indication, at the service of General Surgery of the Aristide Le Dantec University National Hospital Center in Dakar, and having had to submit post complications. -opératoires. The parameters studied were: age, sex, diagnosis and actions performed. We also studied postoperative complications by describing their nature, their time of onset, their grade according to the classification of Clavien and Dindo, their care and the consequences.

## RESULTS

In our study period, 842 patients underwent laparoscopic surgery. Postoperative morbidity was 5.1% (n = 43). There were 20 men and 23 women (sex ratio = 0.9) with an average age of 31.5 years with extremes of 15 and 85 years. The average time to onset of these complications was 3 days with extremes of 2 to 10 days. The majority of complications were noted urgently with 30 cases (3.5%) especially after laparoscopic appendectomy (N = 14 or 1.8%) as shown in Table I. Parietal suppurations were the most common with 15 cases (35.3%) followed by postoperative peritonitis with 7 cases (16.2%) (Table II). In settled program, we counted 13 cases (30.2%) distributed according to the gesture in Table III. In emergency, postoperative peritonitis was most often found (7 cases or 23.3%). They occurred in 6 cases (13.9%) after a flange section (Table IV). According to Dindo and Clavien's classification [4], 53.4% of complications were classified as grade I (Table V). Medical management was the most common (n = 23 or 53.4%) as detailed in Table VI. The follow-up was simple in the majority of cases (n = 41 ie 95.3%).

Overall mortality was 3.4% (n = 2)

- The first patient was managed for flanged occlusion with an ileal perceloscopic wound requiring conversion. The patient had benefited from an ileal suture which had become complicated by postoperative 3-day postoperative peritonitis by suture release. The death occurred 5 days later in a context of multi-visceral failure.
- The 2nd patient had laparoscopic perforation of duodenal ulcer in a context of septic shock. He presented on the 2nd postoperative day a recovery by laparotomy for postoperative peritonitis. The death was observed at the 5th post-operative day by multi-visceral failure following septic shock.

## DISCUSSION

Our morbidity was 5.1% (n = 43 cases). In a study carried out in France on 1091 cases of complications of laparoscopy, post-operative complications represent 33% [3]. Other Western studies have shown a low prevalence of laparoscopic complications compared to our contexts [5]. Experience, good perioperative resuscitation can be incriminated as factors influencing the occurrence of these complications [3]. In the Cissé et al study, postoperative morbidity was 1.4% [6]. In our series, the morbidity follows in most cases (N = 30) to emergency procedures, as reported by Cissé et al [7]. These complications may be specific to the intervention (digestive fistula, postoperative peritonitis) as in our study. Sometimes the complications are related to laparoscopy and may be minimal in subcutaneous emphysema, found in 2 cases, or more severe (air embolism, pneumothorax ...) as revealed elsewhere [8, 9]. Eviscerations and dislocations on 10 mm orifice exist and may require re-intervention, particularly in the case of strangulation [10]. Postoperative flanges and adhesions appear to be more rare after laparoscopy [9, 11]. The parietal suppurations represent 35.3% (N = 15) of our postoperative complications. It is essentially suppuration on the trocar site (N = 11) following cholecystectomy (N = 3) and appendectomy (N = 8). In western series, these infections are very rare (less than 1%) and often follow an appendectomy [12, 13, 14]. Inoculation of the trocar orifice during extraction of the parts (appendix or gallbladder) is the main mechanism of occurrence of these suppurations [3]. They can cause parietal cellulitis or eventration [12, 13, 14]. Peritonitis (postoperative and persistent) and digestive fistulas account for 25.5% (N = 11) of our postoperative morbidity. The majority of cases follow a suture release or ileal anastomosis (N = 5). These complications are therefore rather related to gestures than to the laparoscopic approach [15, 16]. In our study, the overall mortality of 1.9% is comparable to that found in the series of literature which vary between 0% and 4.4% [9, 17, 18, 19, 20, 21]. This mortality is related, in our case, with post-operative complications related to the pathology, to the quality of surgery, rather than to laparoscopy (duodenal suture release of an ulcer perforation and ileal suture release resection anastomosis for ileal wound after a flange section under laparoscopy). On the other hand, in the literature, laparoscopy is rarely the cause of death outside of a particular pre-existing site. This terrain, usually detected pre-operatively, may contraindicate the use of laparoscopy [3, 10]. Recently, several authors claim the involvement of the surgeon's experience in the occurrence of intraoperative incidents and postoperative complications in laparoscopic surgery [2]. They argue that the reduction of intraoperative incidents could neglect the morbidity and mortality rate of laparoscopy [2]. This prevention requires high-performance instrumentation, careful and graduated training of surgeons, identification of risk phases during laparoscopic procedures (especially during trocar installation, manipulation of dilated loops, dissection in adherent zones), perfect control of the physiopathological consequences of insufflation, the humility of the surgeon who has to learn how to convert and the constant monitoring post-operatively to detect

complications.

**Table 1:** Incidence of Postoperative Complications

Gestures	Effective gestures	Incidence of postoperative complications
Cholecystectomy	483 (57.3%)	7 (0.8%)
Vagotomy + gastric drainage	132 (15.6%)	7 (0.8%)
Heller seromyotomy	36 (4.2%)	1 (0.1%)
Perforated ulcer suture	36 (4.2%)	7 (0.8%)
Appendectomy	117 (13.9%)	14 (1.8%)
Section of postoperative flanges	38 (4.8%)	7 (0.8%)
TOTAL	842 (100%)	43 (5.1%)

**Table 2:** Nature of postoperative complications

Nature of complications	Effective	Percentage
Wall Suppuration	15	35.3
Postoperative Peritonitis	7	16.2
Deep Suppuration	6	13.9
Persistent Peritonitis	4	9.3
Digestive Fistula	3	6.9
Subcutaneous Emphysema	2	4.6
Ileus Reflex	2	4.6
Free Evisceration Septic	1	2.3
Persistence of Dysphagia	1	2.3
Eventration	1	2.3
TOTAL	43	100

**Table 3:** Nature of post-operatives Complications according the gesture

gestures.	Complications	Effective	Percentage (%)
<b>Cholecystectomy</b>	Parietal suppuration	3	6.9
	Ileus reflex	1	2.3
	Septic free evisceration	1	2.3
<b>Heller's Seromyotomy</b>	Persistent dysphagia	1	2.3
	Persistence of stenosis	1	2.3
<b>Vagotomy and Pyloroplasty</b>	Digestive fistula	3	6.9
	Subcutaneous emphysema Parietal	2	4.9
<b>Vagotomy and Gastroentero-Anastomosis</b>	suppuration	1	2.3
	TOTAL	13	30,2

**Table 4:** Postoperative complications in emergency

Gestures	Nature of complications	Effectives	Percentage (%)
<b>Appendectomy</b>	Deep Suppuration	4	9.3
	Persistent Peritonitis	2	4.6
	Iléus reflexe	1	2.3
<b>Flange section</b>	Deep suppuration	8	18.6
	Postoperative peritonitis	6	13.9
	eventration	1	2.3
<b>Perforated ulcer suture</b>	Persistent peritonitis	2	4.6
	Postoperative peritonitis	1	2.3
	Wall Suppuration	3	9.6

<b>Exploratory coelioscopy (occlusive syndrome)</b>	Deep suppuration	1	2.3
	Deep suppuration	1	2.3
	TOTAL	30	69.8

**Table 5:** Distribution of complications according to the classification of Dindo and Clavien

Grade	Effectives	Percentage (%)
Grade I	23	53.4%
Grade II	1	2.3
Grade IIIa	17	39.7
Grade V	2	4.6
TOTAL	43	100

**Table 6:** Management of postoperative complications of laparoscopy

Postoperative complications	Management
<b>Wall Suppuration</b>	Local care + antibiotics (n = 15)
Deep suppuration	Laparotomy (toilet and drainage: n = 2)
Ileus reflex	Antibiotherapy (n = 4)
Septic free evisceration	Medical treatment (= 2)
Persistence of dysphagia after Heller seromyotomy	Toilet + local point closure (n = 1)
Persistence of pyloric stenosis after pyloroplasty	Complementary seromyotomy (n = 1)
Post-GEA digestive fistulas	Gastroenteroanastomosis (GEA) (n = 1)
Subcutaneous emphysema	Rehabilitation of GEA (n = 3)
Postoperative peritonitis by relapse of bulbar suture	Surveillance (n = 2)
Persistent peritonitis after appendectomy	Resumption of suture + epiplooplasty / laparotomy (n = 3)
Postoperative peritonitis by anastomosis of intestinal anastomosis	Toilet + laparotomy drainage (n = 2)
Medial sub-umbilical eventration	Toilet + laparotomy drainage (n = 2)
	Cure by prosthesis (n = 1)

## CONCLUSION

The increasing technical possibilities make it possible to consider more laparoscopic video interventions. Technical innovation increases the feasibility of this surgery. The question is whether innovation and progress are synonymous in this area. Numerous benefits such as reduced wall trauma and risk of sepsis, reduction of postoperative pain and ileus, and improved esthetic outcomes have contributed to a rapid expansion of laparoscopy. In addition, the respect of the anatomy, the efficient vision and the reduction of the postoperative flanges contributed to make the laparoscopy a first line of choice for the abdominopelvic surgery. But these positive aspects in no way exclude the risk of occurrence of intraoperative incidents that may cause significant non-negligible postoperative morbidity.

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