



Research Article

Volume 18 Issue 3 - February 2020  
DOI: 10.19080/JGWH.2020.18.555988

J Gynecol Women's Health

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# Laparoscopic Hysterectomy Assessment: A Multicenter Study in Dakar-Sénégal



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Submission: February 10, 2020; Published: February 24, 2020

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## Summary

**Objective:** to define the epidemiological and clinical profile, specify the operative data and evaluate the prognosis aspects of patients who have undergone laparoscopic hysterectomy at the Dakar University Hospital.

**Material and methods:** This was a multicentric, prospective and descriptive study conducted over a period of 3 years (1 January 2015-31 December 2017), within three [1-3] renowned Gynaecology-Obstetrics Services in the Dakar region. The parameters studied, recorded on a collection form prepared for this purpose, were represented by: the socio-demographic characteristics of the patients (age, geographical origin, marital status, parity), medical and surgical history, clinical data, surgical indication data, complications, duration of hospitalization and outcomes. The statistical analysis was performed using IBM Statistical Package of Social Science version 20 software for Windows [4].

**Result:** During the study period, 61 hysterectomies were performed by laparoscopy out of a total of 383 cases of hysterectomies, representing a frequency of 15.9% [5-9]. The epidemiological profile of the patients was that of a woman aged on average 51 years. Ten [10] patients (17.9%) had already had previous surgery. The indications were dominated by uterine myomatosis (35.1%) and benign endometrial pathology (28.3%). We had performed 68.9% total hysterectomy associated with bilateral adnexectomy. The average duration of the intervention was 132 minutes. The complications were represented by bleeding (6.6%) and suppurative colporrhaphy (2 cases). The average length of hospitalization was 3 days [11-20].

**Conclusion:** Laparoscopic hysterectomy is an intervention adapted to the management of utero-annexial benign lesions in our context. It is associated with low morbidity [21-30].

**Keywords:** Laparoscopic hysterectomy ; Indication ; Outcome ; Dakar

## Introduction

Nowaday, hysterectomy remains the most common surgical procedure for uterine and adnexal benign lesions [10,31-36]. In the early 1990s, laparoscopy attempted to become established in the field of hysterectomy with the first coelioscopic vaginal hysterectomy, performed by Harry Reich in 1989 [37,38]. For several reasons, more or less justified, such as the extended operating time and a lack of trained surgeons in this technic, laparoscopy has been slow to take hold [7]. Thus, as things stand at present, 60 to 70% of hysterectomy are still performed by laparotomy, 30 to 40% by vaginal route and 3 to 5% by laparoscopy [30]. After three years of practice, we considered it necessary to evaluate the practice of laparoscopic hysterectomy at the three [3] renowned center in the Dakar region.

## Patients and Methods

It was a prospective and descriptive study, running from January 2015 to December 2017, in 3 references centers in Dakar (National Hospital Center of Pikine, Philippe Maguilen Senghor Health Center and Military Hospital of Ouakam). All patients who received laparoscopic hysterectomy during the study period were included. They had all given their informed consent, and were all advised of the possibility of a conversion laparotomy. The main objective was to evaluate the practice of laparoscopic hysterectomy in order to determine their frequency, clinical aspects, to analyze indications, to evaluate surgical complications and to make recommendations to improve the quality of services [39,40].

We studied the socio-demographic characteristics of the patients (age, address, marital status, parity), medical and surgical history, clinical data, surgical indication, surgical intervention data, per-and post-operative complications, duration of intervention and hospitalization, and surgical outcomes. Computer data and statistical analysis were performed with IBM Statistical Package of Social Science (SPSS) version 20 software for Windows [41-45].

**Result**

During the study period, 61 laparoscopic hysterectomies were performed out of a total of 383 hysterectomy (15.9% of cases). The

average age of the patients was 51 years (with borders between 36 and 69 years). The average parity was 4 with a majority of multiparous (62.3% of cases), Table I. Only 17 patients (27.9%) had previous surgery; the majority (6.6%) had a myomectomy. The reasons for consultations were dominated by menstrual disorders such as menometrorrhagia (60.6%) and chronic pelvic pain (21.3%). Type 1 obesity was noted in four (4) patients (6.5%). In our series, the most frequent surgical indication was uterine myomatosis (35.1% of cases), followed by endometrial polyps and/or endometrial hypertrophies (28.3%), and cervical dysplasia (6.7%) [46,47] (Table 1).

**Table 1:** Characteristics of patients who have had a laparoscopic hysterectomy at the University Hospital of Dakar.

Patient Characteristics	Parameters			
Age	51,15 ± 8,25 years			
Weight	77,3 ± 11,23 Kg			
parity	Nulliparous 6 (9,8%)	Primiparous 4 (6,6%)	Pauciparous 13 (21,3%)	Multiparous 38 (62,3%)
Type of hysterectomy (AAGL Classification)	Type II 90,2%		Type IV 9,8%	

A uterine cannulation using a hysterometer moored to a Pozzi clamp was the most common (73%). The pneumoperitoneum was performed using the Veress needle in 71% of cases (43 patients), open laparoscopy was performed in 29% of cases (18 patients). The trocar sites were preferably at the umbilical, the right and the left iliac fossa. As a surgical procedure, we performed a total hysterectomy with bilateral adnexectomy in 68.9% of cases (42 patients). The associated gestures were represented by a first adhesiolysis and a first myomectomy. Pelvic lymph node dissection and subvesical plication were also performed in the same patient whose surgical indication was stage 1b squamous cell carcinoma of the cervix. A case of laparoconversion was observed after failure of the pneumoperitoneum installation. For all patients, a total hysterectomy was completely performed by laparoscopy. In our series, according to the classification of the American Association of Gynecological Endoscopy, laparoscopic hysterectomy were type IV in 9.8% of cases and type II in 90.2% of cases.

Colporrhaphy was performed, for the majority of our patients (90.2%), by the vaginal route. A control of the hemostasis of the various uterine pedicles was carried out by laparoscopy for all patients. The average duration of the intervention was 132 minutes. In our series, four [4] intraoperative complications were observed. They were all related to a difficulty in hemostasis of the uterine pedicle (6.6% of patients). The postoperative outcomes were simple in almost all patients (93%). We had observed:

- a) four (4) cases of anemia (6.5%) of haemorrhagic origin related to difficulties in intraoperative haemostasis

of the uterine pedicles. These patients all received a blood transfusion

- b) two (2) cases of suppuration with dropping colporrhaphy (3.2% in cases) whose treatment was antibiotic therapy and a resumption of colporrhaphy at day 8 post antibiotic therapy (Table 2).

**Table 2:** Distribution of patients by surgical indications (laparoscopic hysterectomy series at Dakar University Hospital between 2015 and 2017, N=61).

Operative Indication	Effective	Frequency (%)
Uterine myomatosis/ endometriomas/ adenomyosis/ dermoid ovarian cyst	27	44,2
Endometrial pathology	22	36
Cervical dysplasia	3	4,1
Uterine prolapse	3	4,1
Choriocarcinoma	3	4,1
CPPs rebellious to treatment	2	2,7
Squamous cell carcinoma of the cervix stage 1b1	1	1,3
TOTAL	61	100,0

**Discussion**

**Frequency**

Hysterectomy is the most common gynaecological intervention performed on women with an annual incidence of 60,000 cases in France, 100,000 in England and 600,000 in the United States [11,33,42]. There was an increase in the use of the laparoscopic route from 0.3 to 9.9% and a decrease in

the use of the conventional laparotomy route from 73.6 to 63.0%. There has been no significant change in the frequency of the vaginal route (26.1% on average), which remains an uncommon approach among Anglo-Saxons [47]. In our series, laparoscopic hysterectomy was performed in 15.9% of cases. It would be too early to attempt a comparison with the number of laparoscopic hysterectomies performed by Western teams where this activity is currently routine.

However, our squad is satisfactory compared to the African series [4]. Currently, a large part of hysterectomy can be performed by laparoscopy. This technique would benefit from being developed and popularized in our underdeveloped context, given the advantages of laparoscopy over laparotomy [18,34].

### Age

The age criterion does not play a role in the choice of the laparoscopic approach. The age range varies according to the series from 42 to 60 years [5,16]. It can be practiced at any age. The average age of the patients in our series was 51 years, it is similar to that reported by several authors [3,16,43].

### Surgical history

In 27.8% of cases, patients had a history of pelvic surgery dominated by myomectomy. The history of cesarean section is not a contraindication to this route [40]. Assistance with laparoscopy remains important in the event of a history of surgery that can compensate for secondary adhesions making uterine extraction and uterine detachment difficult [6,17,26,32].

### Indications for laparoscopic hysterectomy

Most of the series reported in the literature show that the symptomatic fibromatous uterus is the main indication for laparoscopic hysterectomy. We also find cervical dysplasia and organic pathology of the ovary [14,16,33,40].

### Realization of the pneumoperitoneum

There was no accident at the realization of pneumoperitoneum in our series. On the other hand, in the literature, Jansen and al [24] report an accident rate of 0.24% for the installation of pneumoperitoneum. Hashizume and et al. [22], Chapron and et al. [8], Dubuisson and et al. [13] reported rates of 0.88%, 0.14% and 0.12% respectively.

### Surgical action performed

In our series 68.9% of total hysterectomy with bilateral adnexectomy was performed. This rate is explained by the prevalence of menopausal patients in our series. The impact of adnexectomies after hysterectomy has not been rigorously investigated. Farquhar suggested that ovarian removal at the time of hysterectomy in women (mean age 40 years) was associated with

a significant alteration in the frequency of sexual intercourse [15]. Garry confirmed both sexual activity and self-image were altered in patients whose ovaries were removed before age 45 [19]. After this age, there were no longer any obvious disadvantages to the quality of life and sexual activity associated with oophorectomy [20].

Only one laparoconversion was observed in our series consistent with the work of Sesti and et al. [41] who did not have any cases of conversion to laparotomy. In Richardson's study [40], however, laparoconversion was necessary in five (5) patients due to either massive bleeding or multiple adhesions. Mankinen [29] and Wattiez [45] estimate this risk of laparoconversion at 3%.

Severe adhesions, uterine volume, excessive intraoperative bleeding, the occurrence of a digestive or bladder wound are often advanced to explain conversions [1,25,44]. Only one publication highlights a higher conversion risk for obese patients [27]. Studies on learning curves [1,28,45] show that the operator's experience reduces this conversion risk. Knowledge of these risk factors had two major interests, namely informing patients and identifying technically difficult situations.

### Type of laparoscopic hysterectomy

According to the classification of the American Association of Gynecological Endoscopy [35], in our series, laparoscopic hysterectomy was of type IV (9.8%) and type II (90.2% of cases). This rate is similar to Richardson's, which reports 93.9% laparoscopic hysterectomy compared to 6.1% pure laparoscopic hysterectomy [40].

In the authors' experience [3], complete laparoscopic hysterectomy is unlikely, as a combination of vaginal and laparoscopic approaches should be used to perform everything that is simple along each route, that is to say adnexal pedicles by laparoscopy, and treatment of uterine pedicles and opening of the vagina through the vaginal route.

### Duration of the intervention

In our series, the average duration of the intervention was 132min. The operating time is clearly longer than that of vaginal hysterectomy, even for operators with significant experience: 75min for Härkki-Sirén [21] and 110min for Ikhenia [23].

### Per and post-operative complications

The results of this study show a success rate of 93.4%. On the other hand, four (4) preoperative complications were observed of a haemorrhagic nature, that is to say a rate of 6.6%; this rate is stackable [45] to that found by Fatima Zahra [16]. However, Amirikia [2] and Martin [32] found a haemorrhage rate of 2.6% and 4.1% respectively. The postoperative outcomes were

simple for 93% of patients, joining the rates found by Davis [12] and Fatima Zahra [16]. Hysterectomy can be associated with major complications. More than a third of all procedures have at least one complication [45], but most of them are minor and inconsequential. However, in studies of sufficient size, between 2% and 5% of patients have severe bleeding and between 2 and 10 out of 1000 patients have ureteral lesions [32].

The overall mortality rate for hysterectomy in benign indications is about 0.4 per 1000 cases [31]. Wingo and et al. [46] in 1985 found higher abdominal mortality (2.7/10,000 for vaginal hysterectomies and 8.6/10,000 for abdominal hysterectomies). Rempen [39] did not observe any deaths for the vaginal route with laparoscopic assistance (0/2 275), which is also observed in our series.

### Length of hospitalization

The average length of hospitalization for our patients was 3 days. The reduction in hospitalization time improves bed occupancy, reduces the cost of the procedure and reduces the risk of nosocomial infections [9], thereby relieving our hospital facilities and patients.

### Conclusion

Laparoscopic hysterectomy is feasible and useful in our health and academic environment. Of course, it does not claim to replace either abdominal hysterectomy or vaginal hysterectomy. Its didactic interest in learning surgical techniques and anatomy is relevant in our university hospital environment where socio-cultural and financial constraints prevent us from obtaining sufficient logistics for practical work. This intervention requires a strong experience of surgeons through continuous training, animal model training and tutoring. A local maintenance team is essential to ensure maximum and permanent availability of the equipment.

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DOI: [10.19080/JGWH.2020.18.555988](https://doi.org/10.19080/JGWH.2020.18.555988)

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