

Uterine Leiomyomas Surgery: Assessment of Five Years in the Gynecology Department of Hôpital du Mali

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Abstract

Uterine leiomyomas (myomas) are the most common benign tumors of the female genital tract. They affect 20% to 25% of women of childbearing age and are 3 to 9 times more common in black women. We initiated this study in order to report the socio-demographic aspects and the indications for leiomyomas surgery at Hôpital du Mali. This was a retro-prospective descriptive study, conducted in the gynecology department of Hôpital du Mali from January 1, 2015 to December 31, 2019. Any patients, regardless of their age, in whom a leiomyomas had been detected and surgically treated were included. We had collected 180 cases of surgery for leiomyomas out of 950 surgical procedures, with a frequency of 18.94%. The 36 - 45 age group represented 45% of our patients with an average age of 35 years. Nulligravida accounted for 48.9% and nulliparous (60%). The main reason for consultation was the desire to become pregnant (53.33%). A history of myomectomy was found out in 15.55% of patients. Pelvic ultrasound figured out 64.44% interstitial myomas. Myomectomy was performed in 88.88% of cases and hysterectomy in 11.12% of cases. Among our patients 39.37% had become pregnant. Operative complications were dominated by anemia 14.44%. Leiomyoma was the histological tissue found in all cases of myomectomy. The average duration of hospitalization was 3 days. **Conclusion:** Leiomyomas surgery is the first scheduled gynecological surgical activity. Laparotomy remains the primary route of entry. The indications are dominated by the desire for pregnancy.

Keywords

Uterine Leiomyomas, Surgery, Hôpital du Mali

1. Introduction

Myomas are common benign gynecologic tumors of the female genital tract. They affect 20% to 25% of women of childbearing age and are 3 to 9 times more common in black women than in white women [1]. They usually appear after the age of 30 [1] [2]. However, the pathogenesis remains unclear today. Their occurrence and growth are influenced by many factors including: estrogens, progestins, growth factors, angiogenesis, genetic predisposition, nulliparity, obesity and precocity of menarche [3] [4].

Leiomyomas are often asymptomatic, detected during a routine pelvic exam or during pelvic imaging. They can be developed by menometrorrhagia, heaviness, pelvic pain, a feeling of lumpiness. It may be a matter of infertility [5].

They are usually small in size, ranging from a few millimeters to several centimeters, often asymptomatic. Uterine leiomyomas can (UL) have larger dimensions that can reach several decimeters. Leiomyomas are now a real public health issue [5]. The excessive volume of certain fibroids, the delay in diagnosis and even the reluctance of certain patients to use conventional medicine lead to difficulty in the various methods of treatment [4]. However, the data from Mali are relatively few and we have therefore attempted here to characterize the surgery for myomas at the hospital in Mali. We believe that the data can be useful in practice and policy making in this area and can also be generalized to African countries.

We initiated this work in order to report the socio-demographic and therapeutic aspects of fibroids.

2. Methodology

This was a retro-prospective descriptive study of data collection. The study was carried out in the gynecology department of Hôpital du Mali from January 1, 2015 to December 31, 2019. Any patients in whom, leiomyomas had been detected and who had undergone surgery were included in our study. The variables studied were: socio-demographic (age, marital status, occupation), gynecology-obstetrics (parity, gestity), clinical (menstrual cycle disorders, pelvic pain, pelvic masses, desire for pregnancy), imaging (pelvic ultrasound), gynecological examination (vaginal examination, abdominal palpation, uterine height measurement), surgery data (operating time, type of anesthesia, type of surgery, preoperative and postoperative complications), preoperative biological assessment.

All of our patients had previously benefited from a gynecological consultation which also measured uterine height with a tape measure. This measurement was

evaluated in centimeters before surgery. The gynecological examination was supplemented by visual inspection techniques of the cervix using acetic acid speculum and Lugol (IVA/IVAL) as part of cervical cancer screening. Gonadotropin releasing hormone (GnRh) antagonists for the medical treatment of volumetric reduction of myomatous nuclei had been prescribed in some patients. All patients had received a pelvic ultrasound to assess the size and mapping of the myomas.

Those who received GnRh treatment had undergone a second ultrasound as a comparison with the first. A preoperative biological assessment including: rhesus grouping, blood count, glycemia, creatinemia, coagulation assessment (times: bleeding, coagulation, cephalin kaolin), uricemia and retroviral serology.

Surgical decisions were made on the basis of: excessive uterine size, menometrorrhagia and desire for pregnancy. All the surgeries were performed by laparotomy, with sub-umbilical incisions, pfannenstiell or median type. A tourniquet was placed at the level of the uterine isthmus to minimize intraoperative bleeding.

The measurements of the myomatous nuclei and/or the uterus were evaluated postoperatively.

They were all seen in a pre-anesthetic consultation.

Our data was collected on an individual survey sheet, from patient files, the operative report register, and the anatomo-pathological result.

3. Results

We had collected 180 cases of surgery for leiomyoma out of 950 gynecological-obstetrical procedures, or a frequency of 18.94%. The 36 - 45 age group represented 45% of our patients. The mean age was 35 with extremes of 20 to 55. Nulligravida accounted 48.9% and nulliparous (60%). The main reasons for consultation were the desire to become pregnant (53.33%) and genital haemorrhage (35.55%). The history of myomectomy and familial fibroma concerned respectively 15.55% and 13.33% of our patients. Dysmenorrhoea was pointed out in 57.8% of patients. Among our patients 35.6% had had menarche at 15 years. The main topographies of myomas on ultrasound were: interstitial (64.44%), submucosal (23.88%), subserous (6.68%) and intracavitary (5%). Hysterosalpingography (HSG) was performed in 10.56% of patients and 49.44% had received GnRH hormone therapy for the volumetric reduction of myomas (**Table 1**). Polymyomectomy (PMM) was performed in 88.88% of cases (**Figure 1**) and hysterectomy in 11.12% of cases (**Figure 2**). This PMM was performed without opening the uterine cavity (65%); and brought back multiple nuclei (90%) and single in 10% of cases (**Figure 3**). The size of the post myomectomy nuclei was less than 6 cm in 52.5% of cases. Spinal anesthesia was performed (96.7%); and the incision was of the pfannenstiell type (88.9%) (**Figure 4**). The duration of the operation was two (2) hours in 79.5%. Blood transfusion concerned 12.22%. Operative complications were dominated by anemia (14.44%) and parietal

Table 1. Maternal characteristics.

Maternal characteristics	Number	Percentage
Age (average age: 35)		
- 25 - 35 years old	80	44.44
- 36 - 45 years old	81	45
- 46 - 55 years old	19	10.60
Gestivity		
- Nulligravida	88	48.9
- Primigravida	44	24.4
- Multigravida	48	26.7
Parity		
- Nulliparous	108	60
- Primiparous	36	20
- Multiparous	36	20
Reason for consultation		
- Desire for pregnancy	96	53.33
- Genital bleeding	64	35.55
- Pelvic mass/gravity	20	11.12
- Hormone therapy (GnRH antagonists)	89	49.44
- History of myomectomy	28	15.55
- Family history of fibroid	24	13.33
Hysterosalpingography		
- Yes	19	10.56
- No	161	89.44
Mapping of fibroids on ultrasound		
- Interstitial	116	64.44
- Submucosal	43	23.88
- Under serous	12	6.68
- Intra cavity	9	5

**Figure 1.** Polymyomectomy with preservation of the uterus.

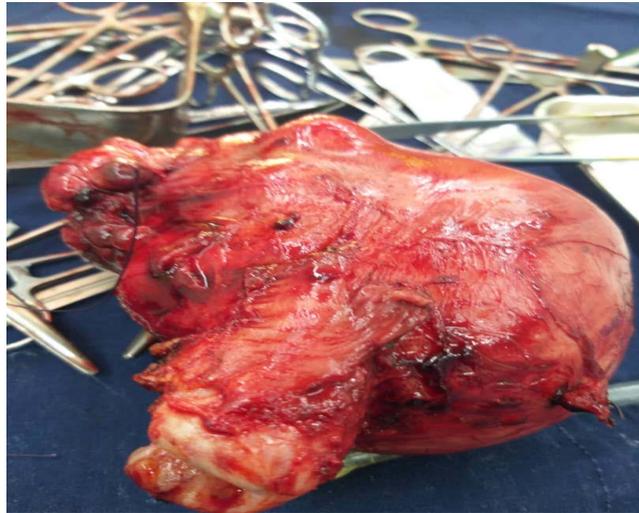


Figure 2. Total hysterectomy for polymyomatous uterus.

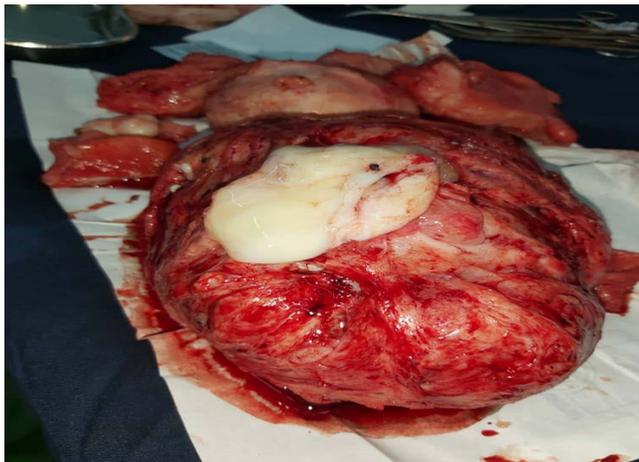


Figure 3. Single core myomectomy with omental adhesion.

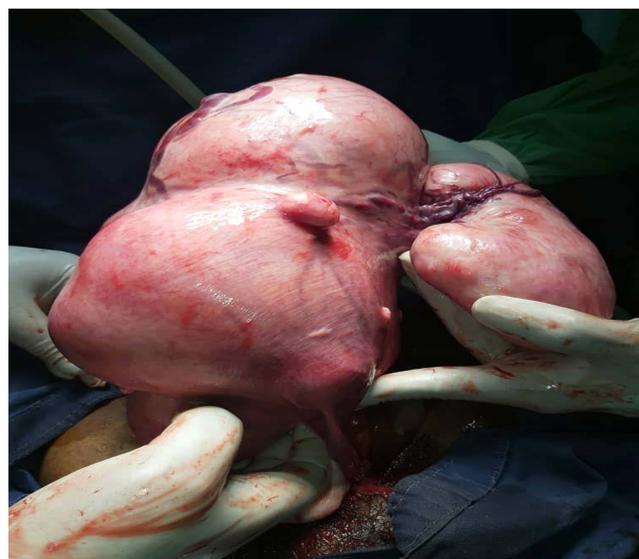


Figure 4. Globular uterus during surgery.

suppurations (3.33%) (**Table 2**). The histologic type was leiomyoma only. Among our patients (160/180) who underwent myomectomy, 63 had contracted pregnancy, *i.e.* a frequency of 39.37% (**Table 3**). Of the patients who had contracted a pregnancy, 88.88% had completed their pregnancies and 4.76% were premature births. They had all undergone a prophylactic cesarean section (**Table 4**). We had no known cases of placenta previa. The mean duration of hospital stay was 3 days.

Table 2. Surgical data.

Surgical data	Number	Percentage
Method of anesthesia		
- Spinal anesthesia	174	96.67
- General anesthesia	6	3.33
Type of procedure		
- Myomectomy	160	88.88
- Hysterectomy	20	11.12%
Type of incision		
- Pfannenstiel	160	88.9
- Median	20	11.1
Number of nuclei (n = 160)		
- Unique	16	10
- Multiple	144	90
Post myomectomy nuclei size (n = 160)		
<6 cm	84	52.5
≥6 cm	76	47.5
Cavity invasion (n = 160)		
Yes	56	35
No	104	65
Transfusion		
Yes	22	12.22
No	158	87.78
Postoperative complications		
Anemia	6	3.33

Table 3. Post-myomectomy pregnancy conception.

Pregnancy conception	Number	Percentage
Yes	63	39.37
No	97	60.63
Total	160	100

Table 4. The fate of post-myomectomy pregnancies.

the future of pregnancy	Effective	Percentage	
full term	56	88.88	
Abortion	3	4.76	
ectopic pregnancy	1	1.59	
prematurity	newborn alive	1	1.59
	full term	2	3.18
Total	63	100	

4. Discussions

The limitations of our study were: the loss of vision in some patients and the lack of laparoscopic equipment for the myomectomy.

1) Frequency: During the study period, we collected 180 cases of surgery for leiomyoma out of 950 gynecologic-obstetric procedures, with a frequency of 18.94%. Our data were higher than the 13.56% of Ahmadou *et al.* [6] at the National Hospital of Point G/Mali; but clearly lower than those reported by ABD Koffi [7] in Abidjan (53.65%).

2) Age: The mean age of our patients was 35 years old. Our data were comparable with those of Rakotomahenina H [8] in Bordeaux/France and Bang Ntamack JA [9] in Gabon who respectively reported a mean age of 35 and 34.9 years. They were less than the 37.5 years reported by ABD Koffi [7].

3) The main reasons for consultations were the desire to become pregnant (53.33%) and menometrorrhagia (35.55%). Nourelhouda C [10] mainly reported menometrorrhagia (35%) and pelvic pain (24.98%). ABD Koffi [7] reported menometrorrhagia (52.6%), pelvic pain mass (31.8%) and infertility (15.6%). In the series of Ahmadou C [6], desire for a child (75.85%), followed by pelvic pain (21.34%) and bleeding (2.81%) were the main reasons for consultations. We do not have all the data on the fate of all the patients operated on, due to loss of sight after myomectomy.

4) The antecedents: The nulligravida concerned 48.9% of our patients. Our figures were higher than those reported by Ahmadou C [6] (38.76%) and Bang Ntamack JA (33.5%) [9].

Nulliparity was 60% of our patients and multiparity 20%. Our data were different from those of Nourelhouda C [10] who reported 37.83% of nulliparous and 26.57% of multiparous. In the series of ABD Koffi [7] and Rakotomahenina H [8], nulliparity concerned 70.4% and 36% of patients respectively. This distribution according to parity revealed an increase in this type of pathology in nulliparous women.

5) The history of myomectomy affected 15.55% of patients. This rate was higher than 8.43% of Ahmadou [6] in Bamako and 3.71% of Nourelhouda C [10] in Algeria.

We found out a family history of leiomyoma in 13.33% of our patients and 86.67% had no information on this issue. In our series, 35.6% of the patients had

had menarche at 15 years whereas in the study of Nourelhouda C [10] it was 12 years old in 60.3% of patients. The early menarche was a risk factor for leiomyoma in the study of Nourelhouda C [10].

6) Hormone therapy: GnRH antagonists had been administered in 49.44% of our patients before surgery, as part of the volumetric reduction of myomas. The use of GnRH analogues for 3 to 4 months before a leiomyoma surgery reduces the volume of the uterus and the size of the fibroids [11]. The use of GnRH analogues preoperatively will reduce the volume of myomas, genital hemorrhages and operative bleeding [11] [12]. In our study, we found that there is little bleeding during the operation for patients who received this hormone therapy.

7) Data from para-clinical examinations: All our patients had at least one ultrasound report. The main locations of myomas on pelvic ultrasound were: interstitial (64.44%), submucosal (23.88%) subserous (6.68%) and intracavitary (5%). Our data were different from those of Nourelhouda C [10] who reported: subserous (43%), submucosal (34%) and intramural (23%) myomas. Bang Ntamack JA [9] reported interstitial (34.7%), submucosal (26.7%) and intramural (19.8%) myomas. In the study by Rakotomahenina H [8], the locations were: intramural (42%), submucosal (39%) submucosal (19%). HSG has been requested in a situation of desire for pregnancy to assess the patency of the tubes and the shape of the uterine cavity. The presence of a submucosal or interstitial myoma, a fortiori, deforming the uterine cavity, would have a deleterious effect on the conception of a pregnancy and its course in the intrauterine. However, only 10.56% of our patients had undergone HSG. Our figures are lower than those of Ahmadou C [6] who reported that 49% of his patients. This difference can be explained by the fact, that the majority of our patients had painful prejudices about HSG, on the one hand and on the other hand the continuous genital hemorrhages.

8) Surgical data: PMM was performed in 88.88% of our patients and hysterectomy in 11.12% of cases. Our data were different from those of Nourelhouda C [10] who reported 71.82% myomectomy and 28.18 hysterectomy. In the study of ABD Koffi [7], myomectomy affected 70.4% of patients and hysterectomy 29.6%. Our PMMs were performed in 65% of cases without invasion of the uterine cavity. This rate was higher than 42% in the series by Rakotomahenina H [8].

Of the 160 patients who underwent myomectomy, 90% had multiple nuclei. Nourelhouda C [10] and Rakotomahenina H [8] reported multiple nuclei respectively in 63.46% and 31% of cases. Regarding the size of the myomas, 52.5% were less than 6 cm in our series. Our figures are higher than those of Rakotomahenina H [8] (34%) but lower than those of Nourelhouda C [10] (70.99%).

There are hysteroscopic, laparoscopic and vaginal routes. We report that all of our interventions were performed by laparotomy as in the studies of ABD Koffi [7], Nourelhouda C [10] and H. Foulot [13] in France. However, in the series of E Daraï [14], all myomectomies were performed laparoscopically. Doumbia Y [15] had used the laparoscopic route in 65.2% of patients, laparotomy 33.3% and

the vaginal route 1.5%.

The incision was pfannenstiel in 88.9% of our patients. Our data were comparable to those of ABD Koffi [7], Rakotomahenina H [8] and Nourelhouda C [10] where the pfannenstiel and median incisions were the most used. In the Ojabo AO series [16], all incisions were pfannenstiel.

9) Anesthesia: Spinal anesthesia affected 96.7% of patients, unlike the study of E Darai [14]; who had performed general anesthesia because of the laparoscopic route.

The mean duration of the operation was two (2) hours (79.5%); as well as the study by ABD Koffi [7].

10) Complications and postoperative care: blood loss had been minimized according to our findings, by placing a tourniquet at the isthmus. This technique made it possible to reduce bleeding during the extraction of the nuclei, thus limiting blood transfusions, which were 12.22%. Operative complications were dominated by anemia (14.44%) and parietal suppurations (3.33%). The average duration of hospitalization was 3 days; the same observation was made by ABD Koffi [7]. Leiomyoma was the histological tissue found in all of our patients. Our results can be compared to those of the other authors.

11) Conception of post-myomectomy pregnancy: We had recorded 39.37% of cases of post-myomectomy pregnancy. Among our patients (60/63 or 95.23%) who had contracted pregnancy post myomectomies were caesarized. We had collected three (3) cases of spontaneous abortion and one case of ectopic pregnancy having undergone laparotomy.

Our data were similar to those of Rakotomahenina H [8] (38.8%) and lower than that of Bang Ntamack JA [9] (21.8%). G Legendre [17] affirmed that the pregnancy rates were similar in the event of myomectomy by laparotomy and laparoscopy.

Current data have not provided new scientific findings; however, the description of area-specific data can be useful in future practice and also in the development of health policies.

5. Conclusion

Leiomyoma surgery is the first gynecological surgical activity scheduled at Hôpital du Mali. Laparotomy remains the primary route of entry because of the size and high number of myomatous nuclei. The indications are dominated by the desire for pregnancy and genital hemorrhages. It would be necessary to develop an awareness project and early detection of leiomyoma, in order to reduce the rate of surgical treatment and female infertility.

Author Approval

All authors agree to the submission of this article.

Consent

For this work we received the consent of the patient; that of the department head

and the director of the Hôpital du Mali.

Conflicts of Interest

The authors have declared no conflicts of interest.

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