



Review Article

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# Desire of Pregnancy and Fertility after Myomectomy: about 76 Patients Operated at Ouakam Military Hospital (Dakar, Senegal) between 2009 and 2013



MM Niang\*, BN Sene Badji, B Diop, Y Wane and CT Cisse

Department of Gyneacology and Obstetrics, Institute of Social Hygiene, Sénégal

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\*Corresponding author: Mouhamadou Mansour, Department of Gyneacology and Obstetrics, Institute of Social Hygiene, Sénégal,

Email: mansniang@hotmail.com

## Summary

**Objective:** To evaluate fertility after myomectomy by laparotomy in Ouakam Military Hospital.

**Patients and methods:** This was a retrospective, descriptive and analytical patients who underwent myomectomy to Ouakam Military Hospital between 2009 and 2013 and who were subsequently tried to achieve pregnancy. The primary outcome was obtaining a pregnancy after myomectomy.

**Results:** Three hundred and forty five patients underwent myomectomy by laparotomy between 2009 and 2013. Patients were a mean age of 37.2 years with an average parity 1. The mean duration of follow-up after myomectomy was 26 months. One hundred - twenty patients (34.8%) were contacted again. Seventy - six (63.3%) have attempted to obtain a pregnancy. Dix - nine patients (25%) achieved a pregnancy. Pregnancies were achieved spontaneously. Most patients (89.5%) were delivered at term. Two patients (10.5%) had a miscarriage. Fertility after myomectomy is significantly correlated with patient age ( $p=0.042$ ), its parity ( $p = 0.004$ ) and fertility before myomectomy ( $p = 0.012$ ).

**Conclusion:** Advanced age ( $\geq 39$  years), nulliparity and infertility before myomectomy are factors of poor prognosis for obtaining a pregnancy after myomectomy by laparotomy.

**Keywords:** Fertility; Myomectomy; Pregnancy

## Introduction

Uterine fibroid is a benign proliferation of the myometrium. It affects 20 to 25% of women during the period of genital activity [1]. In Senegal, hospital studies found respectively 37.25% and 58.8% of gynecological surgeries [2,3].

The myoma - fertility relationship is still controversial. Apart from the existence of a true obstruction of the genital tract by endocavitary fibroid, theoretically the fibroid should not prevent conception if the other fertility conditions are normal. This controversy also concerns the impact of myomectomy on the subsequent fertility of women who have benefited from it. In this case, two questions arise: can the removal of myomas increase the fertility potential? Can myomectomy impair fertility, particularly through complications such as uterine adhesions [4,5].

In Senegal, to our knowledge, very little work has been done on this issue. Thus, we proposed to conduct this study whose objectives were to determine the epidemiological profile of patients, to identify the factors associated with fertility after myomectomy and to specify the pregnancy rate recorded after myomectomy.

## Patients and Methods

It is a descriptive and analytical retrospective study concerning a cohort of patients wishing to become pregnant after a laparotomy myomectomy between 2009 and 2013 at the Military Hospital of Ouakam. Patients were contacted by phone and reviewed in consultation. A questionnaire was prepared and completed during the interrogation after free and informed consent. The following parameters were analyzed: age, parity,

marital status, reasons for consultation, paraclinical aspects (hemogram, pelvic ultrasound, hysterosalpingography, vaginal sampling, spermogram), indications of myomectomy and fertility after myomectomy. The patients included were those who had a myomectomy during the study period and who were interested in pregnancy.

The data was recorded and analyzed using the Epi info version 6 software. The correlation examination and the significant risks that existed between the variables during the analysis were performed using adequacy and comparison tests. The Chi-square test was used for comparisons. The tests were significant as soon as the associated probability was less than 5%. We used the null hypothesis if  $\alpha$  was less than 0.05. If the null hypothesis was rejected, we proceeded to the analysis of the relation. Otherwise, the relationship was simply removed from the study.

## Results

### Characteristics of the patients

The patients were between 25 and 46 years old, with an average of 37.2 years. Twenty-six of them (34.2%) were over 39 years old. Parity ranged from 0 to 5, with an average of 1. Fifty-four patients were nulliparous (71.1%). They were married in 94.7% of cases.

**Table 1:** Distribution by indications (N = 76).

Indications	Number	Frequency (%)
Infertility	30	39,5
Disorders of the menstrual cycle	25	32,9
Pelvic pain	15	19,7
Abdominal-pelvic mass with compression signs	6	7,9
Total	76	100

### Fertility after myomectomy

Within an average of 18 months, 25% of patients (19/76) got a pregnancy. The majority of pregnancies (89.5%) evolved normally with term delivery. We also recorded 2 spontaneous abortions in the first trimester (10.5%). Sixteen patients (84.6%) delivered by caesarean section, including 69.2% of prophylactic caesareans. There were 3 vaginal deliveries (15.4%).

**Table 2:** Factors influencing fertility after myomectomy (N = 76).

Pregnancy Obtained	Pregnancy not Obtained	Total	p	
Age (years)				0,042
[25-29]	2 (40%)	3 (60%)	5	
[30-34]	6 (42,9%)	8 (57,1%)	14	
[35-39]	7 (22,6%)	24 (77,4%)	31	
> 39	4 (15,4%)	22 (84,6%)	26	
Parity				0,004
Nulliparous	8 (14,8%)	46 (85,2%)	54	
Primiparous	6 (54,6%)	5 (45,4%)	11	

### Reasons for consultation

They were dominated by cycle disorders such as menorrhagia, menometrorrhagia and infertility in 77%, 14.8% and 65.8% of cases, respectively. The duration of infertility ranged from 1 to 20 years, with an average of 6 years.

### Paraclinical aspects

Anemia was noted in 11 patients (14.5%). There were 8 moderate anemias (53.3%), 2 severe anemias (14.3%) and mild anemia (6.8%). Pelvic ultrasound performed before myomectomy found type 4 (44.7%) and type 5 (60.5%) or 6 (60.5%) fibroids. Hysterosalpingography was performed in 18 patients (23.7%) with 10 normal results (55.7%). We also noted 3 bilateral tubal obstructions, 4 left tubal obstructions and one right tubal obstruction.

Vaginal sampling was performed in 18 patients (23.7%) with 12 positive results (66.7%). These were Gardnerella vaginalis and Candida albicans infections.

### Indications of myomectomy

A patient could have several indications but only the main indication was retained. They are summarized in Table 1.

### Factors influencing fertility after myomectomy

We performed a bivariate analysis to determine the factors that influence fertility after myomectomy. Thus, nulliparity ( $p = 0.004$ ), patient age ( $p = 0.042$ ) and fertility before myomectomy ( $p = 0.012$ ) had a negative impact on fertility after myomectomy (Table 2).

Multiparous	5 (45,4%)	6 (54,6%)	11	
Prior infertility				0,012
Yes	8 (16%)	42 (84%)	50	
No	11 (42,3%)	15 (57,7%)	26	

## Discussion

### Characteristics of the patients

Our patients were between 25 and 36 years old, with an average of 37 years. This age is comparable to the average age of occurrence of fibroids found in the Wathie series [3]. The average age of fibroid onset, its rate of growth over time, and its single or multiple character remain controversial [6,7]. Parity ranged from 0 to 5, with an average of 1. Nulliparous and primiparous women accounted for 80% of our sample. Lumbiganon [8] found that with more than 5 deliveries, the risk decreases with OR = 0.21 (95%, CI = 0.12-0.35). According to Parazzini [9], the late age of the last pregnancy decreases the risk with OR = 0.5 (0.3-0.8). Thus, pregnancy is a protective factor, as is the high number of gestation [10]. The predominance of nulliparas confirms the role of the estrogen in the genesis of uterine fibroids through exposure to prolonged hyperestrogeny. Our results confirm the hypothesis of Lumbiganon [8] who argues that the risk reduction of uterine fibroids is linked to parity and that this risk decreases with the number of pregnancies.

### Pregnancy after myomectomy

During the study period, 76 patients (63.3%) had a desire of pregnancy. Within an average of 18 months, 19 of them (25%) were pregnant. The majority of pregnancies (68.4%) had evolved normally with term delivery. We also had 2 spontaneous abortions in the first trimester (10.5%) and 4 pregnancies were still in progress (21.1%). Caesarean section was the most common mode of delivery (84.6%). It was most often programmed (69.2%). We recorded 15.4% of births by natural ways. In the Roux study [11], 13% of pregnancies and 6% of miscarriages were found. This difference results from the fact that the size of the Roux series [11] was 15 patients; thus, the result of the statistical analyzes must be interpreted carefully because of the limited size of its sample. The impact of myomas on fertility can be evaluated by comparing women with myoma to women free from any fibromatous pathology consulting for a desire for pregnancy, or by comparing the results of myomectomy and abstention in patients with a desire for pregnancy. A single prospective study comparing a population of 106 infertile women with myomas to a population of 106 infertile women without myoma found a significantly decreased design rate in the presence of myomas (11% versus 25%,  $p = 0.02$ ) [12]. The size, number and location of myomas have not been specified in this study but it allows demonstrating the responsibility of myomas on fertility in case of spontaneous procreation (NP4).

### Factors influencing fertility after myomectomy

In our series, fertility after myomectomy was significantly influenced by the age of the patient ( $p = 0.042$ ). In patients

over 39, the pregnancy rate after myomectomy was only 15.4% compared with 42.9% between 30 and 34 years ( $p = 0.042$ ). Most patients over 39 years old (80%) did not have pregnancy after myomectomy. In women, fertility decreases with age; this decrease is especially marked after 30 years and accelerates between 35 and 40 years, so that fertility is almost zero at 45 years. The main mechanism is the quantitative and qualitative alteration of the ovarian reserve, which accelerates after 38 years old [11]. Similarly, it is noted in the literature that the rate of miscarriage increases with age: 15% at 30, 20% at 37 and 27% at 42 [11]. In our study, we recorded an abortion rate of 10.5%, or 2 out of 19 patients. They were 38 and 40 years old. In the Roux study [11], all the patients who were able to obtain a pregnancy had already given birth before the myomectomy, against 57.9% in our study. Probably, nulliparity is a factor of bad prognosis; because the nulliparous group had more infertile patients, 78% of cases of infertility. Infertility before myomectomy is a factor of poor prognosis for the subsequent pregnancy. In our series, infertility was present in 50 patients (65.8%). It was most often primary infertility (60%). The duration of infertility ranged from 1 to 20 years, with an average of 6 years. In these patients, only 8 (16%) were able to get pregnant after the myomectomy. The role of myomas in infertility is not clear. The prevalence of myomas appears to be greater in the population of infertile women [11]. The prevalence of myomas at routine second trimester screening ultrasonography is 2.7%; while it reaches 12.6% in infertile women managed in vitro fertilization (IVF) [11]. The explanation that could be given to this result is that infertility would probably be multifactorial. Thus, the only myomectomy would not be enough to restore fertility. This brings us to the question of the relevance of a myomectomy for infertility. Thus, in these patients, if a myomectomy is decided, it would be necessary to first make a complete assessment of fertility for the purpose of detecting the other associated factors. It would also be helpful to inform patients that myomectomy alone is rarely enough to restore fertility.

## Conclusion

The myomectomy - infertility relationship is still controversial. The results of our study do not allow us to decide one way or the other. In order to have more arguments, a multi-center study would be needed to investigate infertile women who have been fully explored.

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