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 Gynecology and Obstetrics, Institute of Social Hygiene, Sénégal

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*Corresponding author: Mouhamadou Mansour, Department of Gynecology 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 (≥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 α 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.

**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.

**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%).

**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).

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**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          |

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

| Pregnancy Obtained | Pregnancy not Obtained | Total | p    |
|--------------------|------------------------|-------|------|
| Age (years)        |                        |       |      |
| [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   |
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 multicenter study would be needed to investigate infertile women who have been fully explored.

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