

Myomectomy over the age of forty

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Summary

Purpose of investigation: The aim of this study is to evaluate the fertility results of women who had myomectomy surgery in their forties for fertility preservation. **Materials and Methods:** All women who had myomectomy surgery in her forties were included in the study. Phone interviews were conducted and the patients were asked whether they had any pregnancy after myomectomy. **Results:** During the study period, 82 women had myomectomy surgery in this hospital. Sixty-nine patients had abdominal surgery for myomectomy and they were considered as women wishing to preserve childbearing capacity. Three of them achieved three pregnancies which all ended in miscarriage. **Conclusion:** The treatment of fibroids in women who desire future fertility is myomectomy, but once a woman reaches the age of 35, her fertility begins to decline and the success rates of IVF treatment for women over 40 using their own oocytes are low. All the data should be discussed with the patient who will have an abdominal surgery for uterine myoma.

Key words: Myoma uteri; Fibroid; Myomectomy; Ovarian aging.

Introduction

Uterine fibroids are the most common tumors in women and are almost always benign [1]. Myomectomy is the recommended treatment for symptomatic uterine fibroids when women wish to preserve their fertility. Additionally, the presence of uterus carries a symbolic meaning to many women who associate it with femininity and can experience diminished self-esteem if it is removed [2-5]. In fact, many women view the uterus as the regulator and controller of body's functions, a sexual organ, or a maintainer of youth and attractiveness [2-5]. For these reasons, many women might wish to avoid a hysterectomy, even during premenopausal years. On the other hand, over the age of forty, the most common reason for women to prefer myomectomy to hysterectomy is the desire to conserve future fertility. New advances in assisted reproductive techniques like oocyte donation now permit women in the later reproductive years to bear a child if the uterus is still intact. However, once a woman reaches the age of 35, her fertility begins to decline [6] and the success rates of IVF treatment for women over 40 using their own oocytes are low. So, the benefit of myomectomy in fifth decade in countries where oocyte donation is not legal (as it is in the present country) or for couples who do not accept oocyte donation morally, remains a matter of debate.

The aim of this study was to assess postoperative fertility rates and pregnancy outcomes of patients who had myomectomy surgery in their fifth decade in a single center between January 2013 and April 2016.

Materials and Methods

This study was conducted in Istanbul University, Istanbul Faculty of Medicine, Department of Obstetrics and Gynecology and obtained local ethical approval. All the patients were operated by the authors and uterine fibroids were confirmed by histology.

The authors reviewed the medical records of all patients who underwent myomectomy surgery in their forties between January 2013 and April 2016 in the present institution. Inclusion criteria were: being 40-49 years old, having had myomectomy surgery for any indication, having at least one-year follow-up information for pregnancy status, and acceptance to participate to the study. The data regarding age, gravidity, parity, medical and surgical history, information about the surgery, and clinical follow-up in early postoperative days were taken from medical records. Afterwards, phone interviews were conducted and verbal informed consent was obtained from each patient. The patients were asked whether they had any pregnancy after the myomectomy surgery and whether they experienced any other gynecologic problem that required surgery.

The information obtained for each patient was recorded on a proforma designed for the study. All data are entered to an Excel file. Analyses were carried out for descriptive statistics. Data are given as mean \pm standard deviation.

Results

During the study period, 82 women between 40-49 years of age had myomectomy surgery in this hospital. Mean age was 43.67 ± 5.06 (range 40-49) years. Majority of the patients were nulliparous [60 (73.17%)] and the mean parity of the parous women (n=22) was 1.64 ± 1.1 (range 1-5). The range of uterine size was 10-24 weeks. Thirteen patients underwent hysteroscopic myomectomy. Fifty-seven

patients underwent laparotomy, and 11 patients underwent laparoscopic myomectomy. One patient was scheduled to undergo laparoscopic myomectomy but necessitated a laparotomy conversion.

In all, 156 histologically confirmed myomas were removed from 75 women (mean 1.71 ± 1.27 , range 1-9) and seven patients had uterus myomatosis (several myomas were removed). Thirteen women (15.86%) required post-operation blood transfusion; in total, 22 units of packed red blood cells and 13 units of fresh frozen plasma were transfused. Three patients were transferred to the intensive care unit after surgery. Mean hospital stay was 2.63 ± 0.7 post-operatively (range 1-30) days.

The 69 patients who had abdominal surgery for myomectomy were considered as women wishing to preserve childbearing capacity. Sixty-one of 69 patients (88.41%) provided fertility and pregnancy outcome data. Follow-up period ranged from 12 to 54 (mean 26.47 ± 10) months. Thirteen patients were unmarried. Among 48 other women who actively attempted a pregnancy after surgery, two achieved spontaneous pregnancy. Seven patients proceeded with in-vitro fertilization treatment and had 14 cycles with their own oocytes. One of them achieved pregnancy. All three pregnancies ended in spontaneous abortion. The age of these three women were 40, 41, and 43 years. Among these 69 patients, five required another gynecologic surgery during follow-up period; these surgeries were hysteroscopic endometrial polyp removal, abdominal hysterectomy for cervical cancer Stage 1B1, and three underwent laparoscopic hysterectomy for abnormal uterine bleeding, breast cancer, and myoma uteri.

Discussion

A myomectomy can be performed in a number of ways, depending on the location and number of fibroids, and the experience and preference of the surgeon. Submucosal fibroids are treated with hysteroscopy. Removal of intramural or subserosal fibroids requires laparoscopy or laparotomy. When abdominal surgery is required for fibroids, myomectomy is the preferred procedure for women who wish to become pregnant. The patients who do not desire future pregnancy and who require abdominal surgery for myoma may also request hysterectomy because myomas tend to recur and other gynecologic problems arising from uterus may occur later in their life.

When a woman older than 40 years of age and who require abdominal surgery for the treatment of uterine myoma chooses myomectomy, it indicates that she chooses to preserve her childbearing capacity. In this study, there were 69 patients in this situation; all of them had abdominal surgery for myomectomy during the study period in the present university hospital. Three of them had pregnancies during follow-up period; unfortunately all of them ended in miscarriage.

Table 1. — Preliminary United States' national 2014 IVF outcomes per age category, as reported by Society of Society for Assisted Reproductive Technology.

	Patient age (years)				
	<35	36-37	38-40	41-42	>42
Cycle starts (n)	40,805	21,137	20,274	10,870	8514
Live births (%)	42.6	33.9	22.3	12.0	3.6
(CI)	(42.1-43.1)	(33.3-34.5)	(21.7-22.9)	(11.4-12.6)	(3.8-4.4)

Reproduction at older ages is becoming a matter of concern for healthcare professionals. The decline in ovarian function toward the later part of the reproductive age is well known. Broekmans *et al.* investigated natural fertility rates and showed that women will deliver their last child at age 41, with a range of 23 to 51 years[7]. In addition to natural fertility, assisted reproductive technology success (except with oocyte donation) also declines by age; it is significantly lower for women in their late 30s and 40s [8]. Reported IVF outcome data clearly shows this fact (Table 1) [9]. Declines in oocyte yields and oocyte quality are the primary reasons for deteriorating natural fertility success and IVF outcomes with advancing female age [9]. The reason is that oocyte quality determines most embryo quality and embryo quality determines most pregnancy and live birth chances [9]. Unfortunately, the only effective treatment for ovarian aging is oocyte donation [8].

IVF treatment with donor oocytes has become an increasingly important option for fertility patients. The benefits of oocyte donation in assisting reproduction of women who are unable to produce their own oocytes are clear; however, it also involves ethical, social, religious, psychological, and medical issues [10]. First, being oocyte donor is not harmless. "Young" women with "young" oocytes are paid for the donation; high financial incentives may provide pressure which hampers ability to make clear decisions. In addition, oocyte donors are in general healthy persons who normally will not use plenty of drugs or undergo surgical procedures but they do as well. The debate is included in the question why harm a healthy person without any benefit for herself? Second, the use of donor sperm, donor oocytes, or a gestational carrier (surrogate), also called *third party reproduction*, is not allowed in some countries. Finally, concerning religions, the question is whether third parity is morally permissible, which has not yet been solved for Catholic, Islamic, and Jewish theologians.

The question remains how to treat uterine myoma in women over the age of 40 in countries where oocyte donation is not legal or when the couple will never accept it? The answer is obvious; myomectomy forms the mainstay of conservative surgical treatment for uterine fibroids because assisted reproductive technologies may aid some couples. Nevertheless, the decline in fertility rates with increasing

age and the fact that women reach sterility many years before the complete cessation of menses, should be discussed with the patient. Hysterectomy may sometimes be an option.

Concerning miscarriages, the risk of spontaneous abortion also increases with age [8]. Studies have shown that the rate of oocyte aneuploidy increases with age [11]. The rate of aneuploidy increases to 30% at the age of 40, to 40% at the age of 43 [11]. Cumulative damage to the oocyte with age and decreasing quality of granulosa cells might be other mechanisms that cause spontaneous abortion [12]. In this cohort, all of the three pregnancies ended in spontaneous abortion.

Conclusion

Myomectomy is the recommended treatment of uterine fibroids in women aged 40 years and above with infertility and those that wish to become pregnant. However once a woman reaches the age of 35, her fertility begins to decline and the success rates of IVF treatment for women over 40 using their own oocytes are low. All the data should be discussed with the patient who will undergo an abdominal surgery for uterine myoma. If there is no need for further fertility preservation, hysterectomy can be offered to some patients.

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