Fertility outcomes following myomectomy in infertile patients at our centre: a retrospective analysis

Nidhi Goyal*, K. Jayakrishnan

Department of Infertility and Reproductive Medicine, KJK Hospital and Fertility Research Centre, Thiruvananthapuram, Kerala, India

Received: 01 May 2020
Accepted: 13 May 2020

*Correspondence:
Dr. Nidhi Goyal,
E-mail: nidhi.goyal67@gmail.com

ABSTRACT

Background: Fibroids have been known to cause infertility due to multiple factors. However, the role of myomectomy in patients with intramural and subserosal fibroids has been a topic of debate. This study evaluates outcomes following myomectomy in patients seeking treatment for infertility at study centre.

Methods: This was hospital-based retrospective study which evaluated 92 infertile patients who took treatment for infertility.

Results: A total 41.3% patients conceived within one year of myomectomy. Pregnancy rates were better in patients with intramural combined with submucous fibroids, age between 30 and 35 years, size of largest fibroid between 3 and 6 cm and when number of fibroids were between 3 and 6 and conception was maximum after ovulation induction.

Conclusions: Pregnancy rates after myomectomy are better in young patients with large fibroids. Active management for infertility needs to be done after myomectomy.

Keywords: Fibroid, Infertility, Myomectomy, Pregnancy

INTRODUCTION

Fibroids are the most common benign tumors of women in reproductive age group. 5-10% of infertile women may have fibroids, however fibroids being the sole cause of infertility occurs in 1-2.4% of cases.1,2 Fibroids have been known to cause infertility due to physical factors, altered uterine contractility and chronic inflammatory reaction.3-7 Submucous fibroids decrease fertility and removal increases fertility rates. Subserosal fibroids do not affect fertility but removing them increases fertility rate. Intramural fibroids may slightly decrease fertility, but removal does not increase fertility.8 The size of fibroid also plays a major role. Studies have shown that women with fibroids larger than 4 cm have poorer prognosis even after removal.9 Myomectomy is recommended for patients with unexplained infertility in the presence of fibroid. This study evaluates the fertility rates of infertile patients who were taking active treatment for infertility after undergoing myomectomy.

METHODS

The study was a hospital-based retrospective study carried out at KJK Hospital and Fertility Research Centre, Trivandrum. 92 patients seeking treatment for infertility from September 2015 to March 2018, and diagnosed to have fibroid uterus were included. There was a time interval of 6 months between diagnosis of fibroid and myomectomy, and during this interval patient took active treatment for infertility, including natural and ovulation induction cycles or Intrauterine Insemination (IUI). Each patient had a follow-up period of 1 year. Following myomectomy, 2-3 cycles of ovulation induction followed by 3-4 cycles of intrauterine insemination were given. If the patient did not conceive,
in-vitro fertilization (IVF) was done for the patient. The exclusion criteria included age greater than 38 years, patients with polycystic ovarian syndrome, moderate and severe endometriosis, adenomyosis, poor ovarian reserve, dense adhesions, male factor, gross tubal pathology, negative chromopertubation test on laparoscopy, previous history of myomectomy, medical conditions that may contribute to infertility, congenital uterine anomalies and patients lost in follow-up.

**Statistical analysis**

Data was collected and statistical analysis was done using SPSS IBM 23.0.0.0.

**RESULTS**

Majority of the study population (44.6%) was between 30 and 35 years of age, had primary infertility (66.3%) and suffered from infertility for 2-5 years (Table 1).

**Table 1: Demographic characteristics of the study population.**

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>N (%)</th>
<th>Infertility duration (years)</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;25 years</td>
<td>6 (6.5)</td>
<td>&lt;2 years</td>
<td>3 (3.3)%</td>
</tr>
<tr>
<td>25-29 years</td>
<td>24 (26.1)</td>
<td>2-5 years</td>
<td>71 (77.2)%</td>
</tr>
<tr>
<td>30-35 years</td>
<td>41 (44.6)</td>
<td>≥5 years</td>
<td>18 (19.6)%</td>
</tr>
<tr>
<td>≥35 years</td>
<td>21 (22.8)</td>
<td>Mean±SD 4.2±2.03</td>
<td>Mean±SD 31.2±4.03</td>
</tr>
</tbody>
</table>

**Table 2: Outcomes following myomectomy in relation to type of fibroid.**

<table>
<thead>
<tr>
<th>Type of fibroid</th>
<th>Total subjects</th>
<th>Conceived</th>
<th>Live birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMF only</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>IMF only</td>
<td>24</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>SSF only</td>
<td>12</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>IMF + SMF</td>
<td>4</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>IMF + SSF</td>
<td>43</td>
<td>21</td>
<td>18</td>
</tr>
<tr>
<td>SMF + SSF</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>IMF+SMF+SSF</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>92</td>
<td>38</td>
<td>32</td>
</tr>
<tr>
<td>p value</td>
<td>0.294</td>
<td>0.432</td>
<td></td>
</tr>
</tbody>
</table>

A total 19.6% of the patients had distortion of the cavity and cavity was entered in 21 (22.8%) patients. 85.7% had laparoscopic myomectomy, 4.3% had hysteroscopic resection, 8 (8.7%) had combined laparoscopic and hysteroscopic resection and in 1 patient laparoscopy was converted to laparotomy. Other finding noted were adhesions, minimal and mild endometriosis, pelvic inflammatory disease, and hydrosalpinx. Major other factors such as dense adhesions and moderate and severe endometriosis were already excluded. 38 patients (41.3%) conceived within one year of myomectomy (Figure 1) of which 32 resulted in live birth. Whereas, the conception rate of patients who conceived spontaneously at study centre within 1 year of diagnosis of infertility was 23.4%. 28 had term live birth and 4 delivered before 37 weeks. There was no incidence of uterine rupture. The outcome
was better in patients who were between 30 and 35 years of age and had infertility for 2 to 5 years of age (Figure 2, 3). Outcome was also better in patients who had intramural fibroid along with submucous fibroids (Table 2), largest size of fibroid between 3 and 6 cm and when the number of fibroids was between 3 and 6 (Figure 4, 5). Majority of the patients conceived after ovulation induction and only 7.9% conceived spontaneously.

who have undergone myomectomy. However, the incidence in this case was nil due to better monitoring and patients were taken for elective cesarean in case there was a history of cavity opening at the time of surgery.

Pregnancy rate was 75% in patients with intramural and submucous fibroid combine and 25% in submucous fibroids alone. This is contrary to some other studies where subserosal fibroids alone had better pregnancy rates. This can be attributed to smaller study population and other confounding factors which cannot be ruled out. Larger fibroids between 3 and 6 cm and multiple fibroids had better pregnancy rates which is in accordance with other studies. Majority of patients conceived after ovulation induction which shows that active management of infertility is required after myomectomy. However, randomized controlled studies on a larger scale are required to come to conclusions in Indian population.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES


Cite this article as: Goyal N, Jayakrishnan K. Fertility outcomes following myomectomy in infertile patients at our centre: a retrospective analysis. Int J Reprod Contracept Obstet Gynecol 2020;9:2249-52.