The Evaluation of Reproductive Outcome of Septated Uterus Corrected by Hysteroscopic Metroplasty

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Results:
Between the patient age 35-21, 9 of 7/3 months of patient had delivered. The rest of the patients were infertile and had a history of miscarriage and infertility.

HSSP:
Measurements and descriptive results show that the pregnancy rate in these patients was higher than before the surgery.
Introduction
Congenital uterine anomalies, resulting from mullerian fusion defects, are the most common malformations of the reproductive system observed in 3-5% of the general population (1,2), but the frequency increases by 5 to 25% in women with recurrent miscarriages, late abortions and preterm deliveries (2,3,4,5). Uterine septum is the most common congenital anomaly with an incidence of 2-3% in general population (2). Its presentations are poor reproductive performance, including high incidence of first and second trimester abortion, preterm delivery (often as a result of premature rupture of the membrane), as well as abnormal fetal presentations and increased caesarean section rate (6-10). However, a group of patients with septate uteri may present with primary or secondary infertility, which is discovered only during the infertility work-up (11,12). The interference of a septated uterus with woman's fertility remains a controversial issue. (6,10) Hysteroscopic division of the uterine septum (metroplasty) is now the accepted treatment for such cases, despite the lack of good prospective randomized controlled trials and the small size of many reported series. A majority of these studies are retrospective and compare the reproductive outcome before and after metroplasty (1,13). Before the development of modern operative hysteroscopy, the accepted surgical technique was either removal (Strassmann or Jones) or section (Tompkins) of the septum (14,15). Nowadays, the septum can be effectively treated by operative hysteroscopy as a first therapeutic option. It has many advantages such as shorter operating and hospitalization periods, reduced risk of postoperative pelvic adhesions, and an increased rate of vaginal delivery (16-17). The aim of this study was to assess the achievement of pregnancy as well as the reproductive outcome after hysteroscopic septum resection in women with recurrent abortions or infertility.

Material and Methods
This descriptive study was performed at Rasul-e-Akram Hospital of Iran Medical University, Tehran. During the period From 2003 to 2004, 19 women (aged 21-35 years) with primary infertility or recurrent abortion and septate uterus of varying length (2-9 years), who agreed to undergo hysteroscopic metroplasty were studied. Women aged >35 years were excluded from the study to avoid the inclusion of subjects with age-related subfertility. Also women with pelvic lesion, such as endometriosis, that could adversely affect infertility were excluded. The trial was performed in accordance with the declaration of Helsinki.
In addition to a detailed history and through clinical examination, all of the patients, and their partners had complete infertility investigations, including sexually transmitted disease work-up, semen analysis, endocrine evaluation as necessary, assessment of ovulation, and hysterosalpingography (HSG). The initial diagnosis of septated uterus was made by HSG. Before laparoscopy and hysteroscopy, the process of the study and metroplasty was completely explained for the patients, and proper consent was obtained. Under general anesthesia, laparoscopy and hysteroscopy were performed simultaneously, and septum of uteri was resected by hysteroscopy. As it is mentioned, in all cases, the surgical procedures were performed under general anesthesia, in the early proliferative phase of the cycle.
The cervical canal was dilated to 9mm, and then a rigid hysteroscope (model A4830; Olympus) of the septum (14,15). Nowadays, the septum can be effectively treated by operative hysteroscopy as a first therapeutic option. It has many advantages such as shorter operating and hospitalization periods, reduced risk of postoperative pelvic adhesions, and an increased rate of vaginal delivery (16-17). The aim of this study was to assess the achievement of pregnancy as well as the reproductive outcome after hysteroscopic septum resection in women with recurrent abortions or infertility.
intervening obstruction. In cases of complete septate uterus, the uterine septum was removed, starting from the cervical part with scissors and followed by hysteroscopic resection of the intrauterine part. The patients did not have notable bleeding after procedures. The patients were seen on the first postoperative day and returned for a follow-up visit approximately 2 months later, for the assessment of surgical outcomes. This was accomplished with HSG. Demographic characteristics, physical examination, results of operation and follow up were collected and analyzed by descriptive statistics and SPSS 11.5.

Results
The study included 19 women aged ≤ 35 (between 21-34) years with a septate uterus and otherwise unexplained infertility or recurrent abortion, prospectively seen in the clinic. And the mean age of the patients was 28.13 (SD=3.39) years. Meanwhile the duration of infertility period among the patients differed from 2 to 14 years with the mean of 5.4 (SD=3.26) years. From the total number of 19 women who were enrolled in our study, 3(15.7%) had recurrent abortion, 2(10.5%) had ectopic pregnancy, 13(68.4%) had primary infertility and 1(5.2%) had delivered dead fetus before septum resection. All septa were removed and patients were followed up. Three patients were lost to follow-up and in seven cases the follow-up period was too short (less than three months after hysteroscopic metroplasty). Therefore, nine patients were followed up and six of them (66.6%) achieved a pregnancy within 3-12 months after their surgery. Mc donald cerclage was performed at 12-14 weeks of pregnancy. The mean follow-up period was 7.3 (SD=1.94) months and passing 14-38 weeks of their pregnancy period.

Of these 6 patients, 5(83.3%) had primary infertility for 3-9 years and 1(16.6%) of them had secondary infertility. By the way, they were treated by various assisted reproductive treatment before septum resection.

Discussion
The etiology of reproductive failure in patients with uterine anomalies has remained unclear. The mechanisms by which septate uteri cause early pregnancy loss and infertility have not been established. For that matter, the issue of whether the septate uterus is a cause of infertility remains controversial (1,18). However, it seems that in women with recurrent abortion, metroplasty significantly improves the subsequent reproductive outcome (1). Several mechanisms have been proposed to explain the adverse effect of a septate uterus on the course of pregnancy. The diminished size of uterine cavity as well as cervical incompetence have been suggested as possible etiological factors (2,10,19). However, according to the most widely accepted theory, the septum is thought to be consisted of fibroelastic tissue with inadequate vascularization and altered relations between myometrial and endometrial vessels, thus exerting a negative effect on fetal placentation (2,15,20). Contrary to this classical concept, Dabirashrafi, et al in their study in 1995 found significantly less connective tissue, a higher amount of muscle tissue, and more vessels in the septum. Thus, they suggested that pregnancy wastage is caused by poor decidualization and placentation, due to the reduced amounts of connective tissue, as well as by higher or uncoordinated contractility due to the increased muscle content (2).

In this study, the hysteroscopic resection of septum was accompanied by a significant improvement in pregnancy outcome. As it was mentioned, from the patients of this study with uterine septum and infertility, 6 out of 9 (66.6%) conceived after hysteroscopic metroplasty. All of them were treated with various assisted reproductive treatments. Significant improvement in the pregnancy outcome after hysteroscopic metroplasty was also described by other investigators (table 1).
Table 1: Productive outcomes of different studies after hysteroscopic metroplasty for the septate uterus in women with primary infertility

<table>
<thead>
<tr>
<th>Author</th>
<th>N</th>
<th>Hysteroscopic adjuncts</th>
<th>Live Births (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rock et al(22)</td>
<td>1</td>
<td>Balloon</td>
<td>1(100)</td>
</tr>
<tr>
<td>Vericellini et al(23)</td>
<td>10</td>
<td>-</td>
<td>4(40)</td>
</tr>
<tr>
<td>Fedele et al(13)</td>
<td>23</td>
<td>Scissors</td>
<td>13(56)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Resectoscope Laser</td>
<td></td>
</tr>
<tr>
<td>Daly et al (21)</td>
<td>2</td>
<td>Metal sound</td>
<td>1(50)</td>
</tr>
<tr>
<td>Romer and Lober(24)</td>
<td>6</td>
<td>Balloon</td>
<td>3(50)</td>
</tr>
<tr>
<td>Nagel(25)</td>
<td>9</td>
<td>Ultrasound</td>
<td>3(33)</td>
</tr>
<tr>
<td>Valle(26)</td>
<td>12</td>
<td>Catheter</td>
<td>10(83)</td>
</tr>
<tr>
<td>Donnez and Nisolle(27)</td>
<td>20</td>
<td>Scissors</td>
<td>17(85)</td>
</tr>
<tr>
<td>Current study</td>
<td>9</td>
<td>Scissors</td>
<td>6(66.6)</td>
</tr>
</tbody>
</table>

Furthermore, Daly, et al in 1989, reported that 7 out of 13 (53.8%) patients with infertility conceived after septum resection and Goldenberg, et al in 1995 have observed pregnancies after hysteroscopic metroplasty in 18 out of 34 (54%) patients with uterine septum and infertility.

Thus, chances of conception in this study seemed to be similar to those of the general infertile population either with or without septum resection. This may also be an indirect sign that uterine septum is not an infertility factor. However, the treatment had itself a beneficial effect on the pregnancy outcome in the study.

Conclusion

Hysteroscopic metroplasty is now the gold standard for management of a septate uterus. It seems that the hysteroscopic septum resection is accompanied by a significant improvement in the reproductive performance of the patients. Therefore, it is concluded that hysteroscopic metroplasty improves the performance of septated uterus, and should be considered as a valuable corrective approach for such patients.
Introduction: Congenital uterine anomalies resulting from mullerian fusion defects are the most common malformations of the reproductive system. The purpose of this study was to evaluate the reproductive outcome after hysteroscopic metroplasty in women with septated uterus who suffer from infertility or recurrent abortion.

Material and Methods: This descriptive study was performed during the period from 2003 to 2004 at Rasul-e-Akram Hospital of Iran Medical University. A total of 19 women (aged 21-35 years) with primary infertility or recurrent abortion and septate uterus underwent hysteroscopic septum resection. All septa were removed with a scissor at 90° and patients were followed up. The patients were seen on the first postoperative day and visited approximately 2 months later for assessment of surgical outcomes. This assessment was accomplished with hysterosalpingography (HSG). Statistical analysis was carried out using SPSS V. 11.5.

Results: The duration of infertility among the patients differed from 2 to 14 years with the mean of 5.4 (SD=3.26) years. The mean follow-up period for 9 women was 7.3 (SD=1.94) months and six of them (66.6%) conceived a pregnancy within 3-12 months after the surgery.

Conclusion: It seems that the hysteroscopic septum resection is accompanied by a significant improvement in the reproductive performance of women who suffer from infertility or recurrent abortion.

Keywords: Septated Uterus, Primary Infertility, Hysteroscopic Metroplasty, Recurrent Abortion

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