Reproductive outcomes after hysteroscopic metroplasty for uterine septum

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Summary

Purpose of Investigation: To evaluate reproductive outcome after hysteroscopic metroplasty. *Methods:* We analyzed the reproductive outcome of 30 patients with different degrees of septate uterus undergoing hysteroscopic metroplasty. In all cases the procedure was performed by resectoscope. *Results:* The patients had a total 74 pregnancies before metroplasty. Of these, ten (14%) were carried to term, six (8%) ended in preterm delivery, and 58 (78%) ended in spontaneous abortion. At least one year following hysteroscopic metroplasty a total of 20 pregnancies occurred. Of these, 11 (55%) were carried to term, two (10%) ended in preterm delivery, seven (35%) ended in spontaneous abortion. *Conclusion:* Correction of uterine septum significantly improves the prognosis of the pregnancies in patients with a history of severe obstetric problems. These results are similar to the results reported in the literature. Our data analysis suggests that hysteroscopic metroplasty for uterine septum improves pregnancy outcome of patients who come to us with a desire to conceive.

Key words: Septate uterus; Hysteroscopy; Metroplasty.

Introduction

Because of the wide variation in clinical presentation and differences in the diagnostic criteria and techniques used for diagnosis, the reported prevalence of Mullerian anomalies has ranged from 0.16% to 10% [1]. It is 2-3% in fertile women, 3% in infertile women, 5-10% in women with recurrent miscarriages and more than 25% in women with late miscarriages and preterm deliveries [2]. Uterine septum is the most common type of Mullerian canal defect, with an incidence of 34.9% [3]. This condition is the result of partial or incomplete failure of the resorption of the uterovaginal septum after fusion of the paramesonephric ducts other they are generally associated with impaired reproductive performance such as recurrent pregnancy loss and preterm births [4, 5]. Prevalence of septa in women with recurrent spontaneous pregnancy loss ranges from 26% to 94% [1]. Hysteroscopic metroplasty seems to be the most effective approach for patients who have obstetric problems in the history [6, 7].

Materials and Methods

This was a retrospective study comprising 30 women who came to us with a desire to conceive, and who were diagnosed with different degrees of septate uterus at the Department of Obstetrics and Gynecology of Ege University Education and Research Hospital during 2003-2008. The mean age was 34 years (range was 23-45 years). In all cases the procedure was performed by resectoscope and monopolar energy modality. Surgical sections were applied under general anesthesia in the first part of the cycle. the cervix was dilated to 10 mm by Hegar bougies and a rigid hysteroscope was introduced, mounted with a 26F gauge resectoscope (Storz, Tuttlingen, Germany). The uterine cavity was distended with a non-conductive, hyposmolar solution of mannitol 0.54%. Total septal resection was completed with the first application. No medication was used preoperatively. No patient required treatment after surgery.

Results

We achieved sufficient results at the first hysteroscopy in all patients. All of uterine septa were totally resected without complications such as fluid overload syndrome and uterine perforation. The mean period of follow-up was 12 + 36 months after metroplasty.

Patients had a total of 74 pregnancies before metroplasty. Of these, ten (14%) were carried to term, six (8%) ended in preterm delivery, and 58 (78%) ended in spontaneous abortion. At least one year of follow-up after hysteroscopic metroplasty occurred with a total of 20 spontaneous pregnancies. Prognosis of pregnancy improved dramatically following the procedure. Of these, 11 (55%) were carried to term, two (10%) ended in preterm delivery, and seven (35%) ended in spontaneous abortion (Table 1).

Table 1. — *Reproductive outcome before and after the procedure in the study groups*.

	Before metroplasty	After metroplasty
Pregnancies	74	20
Abortion	58 (78%)	7 (35%)
Preterm deliveries	6 (8%)	2(10%)
Term deliveries	10 (14%)	11 (55%)

Discussion

There is no study that compares outcomes of treated and nontreated patients in the literature reporting hysteroscopic metroplasty. It may be because performing hysteroscopic metroplasty for uterine septum is a safe and

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Table 2. — *Reproductive outcomes before and after metroplasty in the selected study groups.*

		Cararach *et al.* [20] (n: 62)	Daly *et al.* [6] (n: 55)	Valle *et al.* [16] (n: 115)	Perino *et al.* [18] (n: 27)	Pabuccu *et al.* [19] (n: 49)	Fedele *et al.* [7]	Israel and March (n: 57)	Grimbizis *et al.* [3] (n: 57)
Before metroplasty	Miscarriages	160 (91%)	130 (87%)	258 (86%)	24 (89%)	96 (89%)	> 139	212 (88%)	69 (90.1%)
	Preterm deliveries	11 (6%)	13 (9%)	28 (9%)	3 (11%)	11 (10%)	NR	21 (9%)	2 (2.6%)
	Term deliveries	5 (3%)	7 (5%)	13 (4%)	0	1 (1%)	NR	7 (3%)	5 (6.6%)
After metroplasty	Miscarriages	12 (29%)	15 (20%)	12 (12%)	1 (7%)	2 (4.5%)	10 (16%)	8 (14%)	11 (25.6%)
	Preterm deliveries	0	5 (7%)	7 (7%)	0	2 (4.5%)	10 (16%)	4 (7%)	2 (4.6%)
	Term deliveries	29 (71%)	55 (73%)	84 (81%)	14 (93%)	40 (91%)	45 (69%)	44 (79%)	30 (69.8%)

effective procedure for achieving a normal uterine cavity [7-15]. Any complications that occurred in our study group resemble those reported by other authors [10, 11, 16].

Uterine septa have generally been associated with poor obstetric outcomes. Reasons for complications may be reduced vascularization or altered relationships between the myometrial and endometrial vessels for first trimester abortion and decreased volume of the uterine cavity for second trimester abortion [17]. In many wade case series, the rate of spontaneous abortion and preterm delivery ranged from 86.3-91% and 6-9.4% in these woman, respectively [5, 6, 16]. Improvement of obstetrical prognosis after this prosedure has been shown by numerous studies [3, 5-7, 14-16, 18-20].

Also important for visualization is a thin endometrial lining, which may be achieved either by performing the procedure in the early follicular phase or by following pharmacologic suppression of the endometrial lining. Options include GnRH agonists or gonadal steroids such as danazol, oral progestins, or continuous combination oral contraceptives [21]. GnRH agonists are more expensive and may make the procedure more difficult by reducing uterine size [22].

In our study, we did not perform insertion of an intrauterine device with the aim of reducing the formation of adhesions after metroplasty. However, some patients received estrogen therapy. The benefit of this application is controversial at present [6, 16, 23-25]. Moreover, intrauterine adhesions after hysteroscopic metroplasty are a rare finding and usually filmy [4].

Most authors have suggested a postprocedural evaluation of the endometrial cavity for possible septal remnants [3]. A fundal notch smaller than 1 cm does not seem to reduce the reproductive performance [26]. Hysterosalpingogram, ultrasound or second-look hysteroscopy can be used for this purpose [10]. If ultrasound can be applied, it is better to perform it in the secretory phase of the cycle after surgery [21].

The rate of conception in infertile women is much lower, and does not seem to be influenced by metroplasty [10]. Its performance may also be required in infertile patients and in women desiring pregnancy to minimize the risk of future gestational failure [21].

Conclusion

The correction of uterine septum significantly improves the prognosis of pregnancies in patients with a history of severe obstetrical problems (Table 2). Recently, this procedure has also been shown to be minimally invasive and have a short hospitalization time [6, 8]. These results are similar to the results reported in the literature [3, 5-7, 14-16, 18-20]. Our data analyses suggest that hysteroscopic metroplasty for uterine septum improves pregnancy outcome of patients who wish to conceive in the future.

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