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Two-year studies of women with fertility problems following uterine septum hysteroscopic treatment

Congenital uterine malformations are the most frequent developmental abnormalities resulting from fusion and/or resorption in the midline of the Müllerian duct, in the first half of pregnancy. Their frequency is estimated to occur in approximately 3%–4% of women (1, 10) and according to some other authors even 10% (5), however, only less than half of the cases are clinically manifested; among all the women who suffer from reproductive problems, the majority of cases deal with the septum of the uterine cavity (7). The risk of first-trimester miscarriages in this group ranges from 28% to 77%, as it has been reported in different studies, and the distribution varied probably due to the different methods of patient selection, criteria for diagnostic modalities and the type of diagnostic test used, and the risk of some obstetrical complications has been reported to be as high as 90% (5). It has been reported that the basic reason for the repeated early pregnancy loss is the poor vascularity to the uterine septum mucosa, and it is associated also with preovulational abnormalities in endometrium (2), thus this may be one of the reasons for primary infertility in this group of patients.

In case of late pregnancy, uterine septa may be the cause of preterm labour and delivery, abnormal fetal presentation, improper uterine contractions or even dystocia (4).

It is well known that the surgical correction improves the chances for the term delivery and a successful reproductive outcome. Till the very recent times the only surgical procedure of choice was the transabdominal metroplasty. This operative technique was described for the first time by Strassman in 1907 and significantly modified by Tompkins in 1962. At present the abnormality connected with the septum of the uterine cavity is removed most frequently by hysteroscopic resection. During the first years this method was implemented, the laparoscopic assistance was used in order to minimise the risk of uterine perforation (6). The procedure is technically simple and associated with low morbidity (9). In order to remove the uterine septum microscissors and/or a loop electrodes are commonly used and recommended. The procedure should not be performed with the laser as uterine rupture during a subsequent pregnancy following this type of metroplasty has been reported and represents a potential complication (8).

MATERIAL AND METHODS

A group of 31 patients, diagnosed for *septa uterus* and subject to surgery from October 1995 to June 2000 in the Reproductive Medicine and Andrology Teaching Hospital, Medical University in Lublin, was analysed retrospectively. The patient ages ranged from 23 to 44 years, and the mean was 30.8 in this group. All of them were treated of infertility. In the examined group of 31 women, 15 patients never attempted pregnancy, 10 experienced from 1 to 3 spontaneous abortions, 3 miscarried 4

or 5 times, and 3 had from 1 to 4 preterm deliveries (Table 2). The patients were evaluated and classified for the procedure on the basis of hysterosalpingographic and/or transvaginal ultrasound examinations of the reproductive organs. The diagnosed septa reached no less than 50% of the uterine cavity and in two cases complete uterine septa were found. The patients were not administered preoperative GnRH analogues. All the procedures were performed in clinical conditions. The mean hospital stay was 24 hours. The patients were placed on perioperative prophylactic antibiotics in 1 dose and administered Second-Generation Cephalosporin. Simultaneous laparoscopy was performed, in all cases of doubt after the transvaginal ultrasound examinations, in order to confirm the uterine fundal configuration. This procedure was decisive in diagnosing the uterine septum or double uterus. Operative hysteroscopy was performed during the early follicular phase of the menstrual cycle, between the 6th to 9th day. Once the canal of the cervix had been dilated, an 8 mm rigid hysteroscope was inserted up to the height of the internal ostium of the uterus. The uterine cavity was distended with the solutions of sorbitol and mannitol. The pressure in the uterine cavity was kept at the level of 60–100 mm Hg. First the internal structure of the uterus was viewed and examined and then the hysteroscopic procedure was commenced. The septum was incised with a needle electrode in a cephalad direction, i.e. from internal os until uterine fundus. The length of incision was evaluated on the basis of an X-ray hysterogram and the distance from the uterine ostium of the uterine tube. Estrogen substitution was prescribed after surgery for one cycle (17-β in the dose of 4 mg/d) as a stimulator of endometrium cell migration to the area of the resected septum. After surgical correction of the septum a follow-up HSG was recommended and patients were referred to the examination in the subsequent cycle.

All performed surgical procedures were analysed in retrospective studies. Data for the analysis were collected from clinical records and documentation, operative reports and follow-up telephone interviews of patients, who were duly informed about the investigation aim, and the nature of publication process. All of the interviewed patients gave their informed consent to be included in the analysis.

Two attempts were made to contact the patients for follow-up interview by telephone, at one-year and two-year intervals following the surgical procedure. Three patients of 34 were not interviewed because they changed their places of residence and thus their cases were excluded from the analytical studies. Patient ages ranged from 23 to 44 years (mean 30.8).

RESULTS

Prior to the uterine septum resections the study group participants reported 42 pregnancies, 33 miscarriages (78.6%) and 9 preterm deliveries (21.4%) and none of the pregnancies resulted in a viable neonate, for a 0% of successful obstetrical outcome rate (Table 1). After metroplasty 18 patients reported pregnancies, including 7 miscarriages (38.9%), 4 preterm deliveries (22.2%) and 7 term deliveries (38.9%). These eighteen pregnancies resulted in 10 vital neonates (Table 2), including two children of twin pregnancy, for a 55.6% successful pregnancy outcome rate. Half of all pregnancies were delivered by Caesarean section. Three out of seven patients who had not attempted pregnancy before the hysteroscopic treatment, had term deliveries and one of them had a full-term twin pregnancy. No surgical complications were encountered and neither uterine muscle perforations, coagulation disorders, nor haemorrhage occurred; no patient required blood transfusion.

Table 1. Course of pregnancies: before and after surgery

Description	Before surgery		After surgery	
	in numbers	%	in numbers	%
Pregnancies in total	42	100.0	18	100.0
Miscarriages (spontaneous abortions) in total	33	78.6	7	38.9
Preterm deliveries in total	9	21.4	4	22.2
Deliveries after 36 weeks' gestation in total	0	0.0	7	38.9
Live births in total	0	0.0	10	55.6

Table 2. Obstetric history: before and after surgery

Before hysteroscopy:	Number of women	After hysteroscopy	Number of women
No obstetric history (no pregnancies attempted)	15	No pregnancies attempted	10
		Miscarriages (from 1 to 3)	2
		Term deliveries	3*
Miscarriages from 1 to 3 (spontaneous abortions)	10	No pregnancies attempted	4
		Miscarriages (from 1 to 3)	1
		Preterm deliveries (at 26 week – stillbirth)	1
		Full-term deliveries	4
Miscarriages from 4 to 5 (spontaneous abortions)	3	Miscarriages (from 1 to 3)	1
		Preterm deliveries (live births – viable neonates)	1**
Preterm deliveries from 1 to 3	2	No pregnancies attempted	1
		Preterm deliveries (live births – viable neonates)	1
Preterm deliveries – 4 times	1	Preterm deliveries (stillbirths – no children)	1

* Including one patient with one miscarriage who delivered a twin pregnancy in full term

** Postoperatively one patient had one miscarriage and one preterm delivery with the live birth and the child develops properly (upon a two-year observation period she had another preterm delivery with a live birth and the child develops properly)

DISCUSSION

Preoperatively, none of the participants of the study group had offspring, thus the obstetrical outcome rate was 0%. After surgical correction of the uterine cavity architecture, 10 children were born and now they develop properly, for a 55.6% successful obstetrical outcome rate. These results clearly indicate that the hysteroscopic correction of uterine septum is an efficient and useful technique. These results are comparable to those reported by other researchers. In their review Hassiakos et al. (3) analysed 285 hysteroscopic metroplasties and the live birth rate postoperatively was about 78%, which contrasted with about 90% pregnancy wastage rate preoperatively. In our studies the preoperative delivery rate exceeded slightly 21% (all of them being preterm deliveries) and the postoperative rate reached 61.1% (when more than half of them were carried for over 36 weeks). Hickock (5) presented very similar results and in his report the delivery rate increased from 22.6% before the operative correction of the septum to 81.8% postoperatively, and the spontaneous abortion rate decreased more than three times. In our studies the miscarriage rate decrease almost twice.

When evaluating the operative method, a group of patients who did not conceive in spite of the surgical procedure, should not be disregarded. In our report there were 10 such women, which stands for almost 32.2% of all the participants. This result corresponds to those reported by other researchers. And thus Hickok (5) presented a group of 36 patients out of whom 8 had not conceived postoperatively and one who though had become pregnant, miscarried in the first trimester. This group represents 25% of all the patients examined and treated. To assess accurately such a high number of failures, the complexity of the infertility problem should be considered, because infertility is in many cases due to numerous co-existing factors, and an uterine septum is only one of them. And in such a case the removal of the septum does not have an impact on significant improvement of fertility and term delivery.

CONCLUSION

The analysis of the therapeutic outcomes of the endoscopic uterine septum correction supports the opinion that the operative procedure significantly increases the number of term deliveries.

REFERENCES

1. Ashton D. et al.: The incidence of asymptomatic uterine anomalies in women undergoing transcervical tubal sterilisation. Obstet. Gynecol., 72, 28, 1998.
2. Fedele L. et al.: Metroplastic hysteroscopy and infertility. Fertil. Steril., 59, 768, 1993.
3. Hassiakos D. K., Zourlas P. A.: Transcervical division of uterine septa. Obst. Gynecol. Surv., 45, 165, 1990.
4. Heinonen P. K. et al.: Reproductive performance of women with uterine abnormalities. An evaluation of 182 cases. Acta Obstet. Gynecol. Scand., 61, 157, 1982.
5. Hickok L. R.: Hysteroscopic treatment of the uterine septum: A clinician's experience. Am. J. Obstet. Gynecol., 182, 6, 1414, 2000.
6. Homer H.: The septate uterus: review of management and reproductive outcome. Fertil. Steril., 72, 1, 2000.
7. Kupesic S., Kurjak A.: Three-dimensional ultrasound and power Doppler for the diagnosis of septate uterus. In: A. Kurjak, S. Kupesic: Clinical Application of 3D Sonography, Parthenon Publishing, London, 77, 2000.

8. Lobaugh M. L. et al.: Uterine rupture during pregnancy in a patient with a history of hysteroscopic metroplasty. Obstet. Gynecol., 83, 5, part 2, 838, 1994.
9. Rock John A. et al.: Hysteroscopic metroplasty of the Class Va uterus with preservation of the cervical septum. Fertil. Steril., 75, 5, 942, 1999.
10. Sorensen S.: Estimated prevalence of mullerian anomalies. Acta Obstet. Gynecol. Scand., 67, 441, 1998.

SUMMARY

The aim of the study was an evaluation of the effectiveness of uterine septum surgical treatment in women with fertility disturbances. Retrospective analysis of two-year observation of obstetric histories of women who were subjected to hysteroscopic treatment of the uterine abnormalities was performed. The analysis of the therapeutic outcomes of the endoscopic uterine septum correction supports the opinion that the operative procedure significantly increases the number of term deliveries.

Dwuletni okres obserwacji klinicznej kobiet z zaburzeniami płodności po hysteroskopowym leczeniu przegrody macicy

Celem badania była ocena efektywności operacyjnego leczenia przegród macicy u kobiet z zaburzeniami płodności. Dokonano retrospektywnej dwuletniej obserwacji historii położniczej kobiet poddanych hysteroskopowej operacji wady macicy. Oceniono liczbę ciąż i liczbę dzieci w ich wyniku. Wyniki sugerują, że endoskopowa korekta wad macicy znacząco zwiększa liczbę ciąż donoszonych.