Successful twin pregnancy in a patient with complete uterine septum corrected during cesarean section

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Objective: To describe a successful in vitro fertilization (IVF) twin pregnancy in a patient with complete uterine septum who underwent partial correction during cesarean section.
Design: Case report.
Setting: An IVF unit at a university hospital.
Patient(s): A 29-year-old female patient with complete uterine septum undergoing IVF-intracytoplasmic sperm injection.
Intervention(s): In vitro fertilization-intracytoplasmic sperm injection with single embryo transfer to each uterine cavity.
Main Outcome Measure(s): Pregnancy course and outcome.
Result(s): Both transferred embryos underwent implantation, resulting in twin pregnancy with a single embryo in each hemi-uterus. Cesarean section was performed at 34 weeks' gestation. Two healthy neonates were born. Resection of the uterine septum by electrocauterization was attempted during cesarean section. Diagnostic hysteroscopy performed 6 months later demonstrated the presence of the uterine septum reaching approximately 40% of the cavity.
Conclusion(s): Whether prophylactic metroplasty should be performed in patients with uterine septae without prior history of miscarriage or pregnancy complications is still under debate. Successful implantation and fetal development might occur without prior metroplasty, as described in our case report. Metroplasty during cesarean section might be only partly successful because part of the septum might be confined in the stretched gravid uterus. (Fertil Steril® 2006;85:494.e11–14. ©2006 by American Society for Reproductive Medicine.)

Key Words: IVF, embryo transfer, uterine septum, metroplasty, müllerian anomaly

Müllerian duct anomalies have been estimated to occur in 0.1%–3% of women (1, 2), and the incidence is believed to be 1:200 to 1:600 in childbearing women (3–5). Most studies report that 15%–25% of patients with congenital uterine anomalies have fertility problems (6, 7). Many investigators, however, believe that fertility problems in patients with müllerian duct anomalies are mainly associated with reproductive failure and recurrent miscarriage but not a decreased ability to conceive. Thus, the patient presenting with primary infertility and a müllerian duct anomaly represents a clinical dilemma and challenge.

We report on a young female patient with primary infertility attributed primarily to male factor, in whom a complete uterine septum was diagnosed. After failure to achieve pregnancy by ovulation induction and IUI, the patient was referred to our in vitro fertilization (IVF) service. After her initial evaluation, we were faced with the dilemma of whether to perform hysteroscopic metroplasty before treatment or to proceed directly with IVF.

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CASE REPORT

A 29-year-old woman presented to our IVF clinic after 2.5 years of primary infertility. Her past medical history was nonremarkable. The patient had regular menstrual cycles of 28 days' duration. Bimanual pelvic examination was normal. Per speculum, the vagina appeared normal, and two cervical orifices were noted, separated by a fibrous band 0.3 cm in diameter. Hysterosalpingogram was performed by simultaneous injection of contrast media into both cervical openings and revealed two uterine cavities with bilateral patent tubes.

To discriminate between a septate and bicornuate uterus, a three-dimensional ultrasound examination was carried out, which clearly demonstrated a long and thin uterine septum ending at the cervix level. The outer uterine contour at the fundal region appeared normal and uninterrupted (Fig. 1A). The diagnosis of a complete uterine septum (American Fertility Society Class Va [8]) was thus established. Diagnostic hysteroscopy revealed two symmetrical uterine cavities with a single tubal ostium in each cavity. The midline septum appeared fibrous and somewhat different from the rest of the cavity. Results of ultrasound evaluation of the upper urinary tract were normal.

Further evaluation revealed normal basal hormone testing (follicle-stimulating hormone [FSH] 5.5 IU/L; luteinizing

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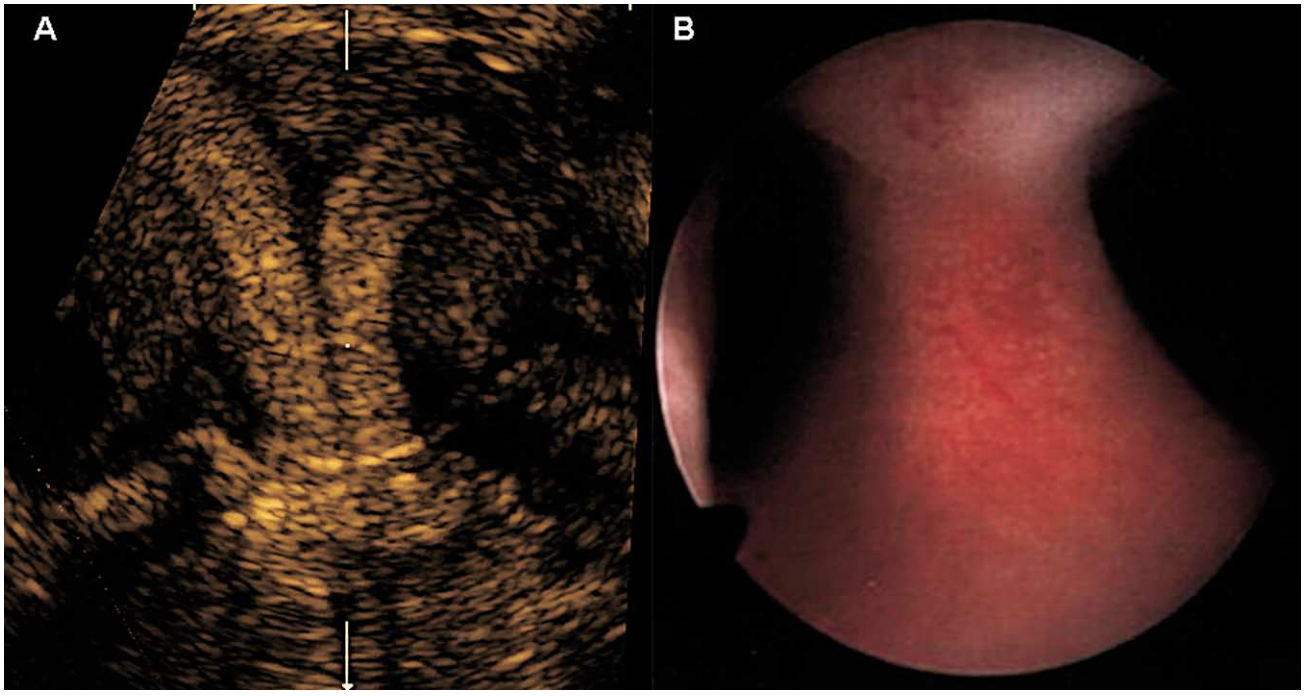
FIGURE 1

(**A**) Three-dimensional ultrasound longitudinal view of the uterus, demonstrating a complete uterine septum. (**B**) Hysteroscopic view of the uterus, demonstrating a uterine septum reaching approximately 40% of the uterine cavity.



Weissman. Twin pregnancy and complete uterine septum. Fertil Steril 2006.

hormone [LH] 3.9 IU/L) and spontaneous ovulation documented by ultrasound monitoring and midluteal P levels. Semen analysis revealed variable concentrations, ranging 5–43 $\times$ 10^6/mL, 30%–70% progressive motility, and 6% normal forms by Kruger's strict criteria. The presumptive diagnosis was thus mild to moderate male factor infertility.

During the preceding year the couple had intensive infertility therapy, consisting of three cycles of intrauterine insemination (IUI) in a natural cycle, three in clomiphene citrate–stimulated cycles, and three gonadotropin-based IUI cycles, all without conception. Inseminations were directed to the uterine cavity at the side of the lead follicles.

Because the patient had never experienced pregnancy loss, it was decided to begin IVF treatment without metroplasty. The patient's IVF cycle consisted of a long gonadotropin-releasing hormone (GnRH) agonist protocol (Decapeptyl 0.1 mg; Ferring, Malmö, Sweden) with follicular start and a daily recombinant FSH dose of 187.5 IU (Gonal F; Serono, Geneva, Switzerland). Eighteen oocytes were retrieved and 12 fertilized by intracytoplasmic sperm injection. Two good-quality embryos were transferred and five cryopreserved. The embryo transfer (ET) procedure was guided by ultrasound. A single embryo was transferred to each uterine cavity, with the hope that one only would implant. Nevertheless, a twin pregnancy was established.

Pregnancy course was uneventful until 25 weeks' gestation. Subsequently, it was complicated by premature contractions and progressive shortening of both cervices without dilatation. The patient was treated with bed rest, oral nifedipine (Pressolat; Agis, Yeruham, Israel) and two courses of betamethasone (Celestone Chronodose; Schering-Plough, Kenilworth, NJ) injections to enhance fetal lung maturity.

At 34 weeks' gestation, the patient presented with premature rupture of membranes and regular uterine contractions. The presenting fetus was in breech presentation, with a foot bulging into the vagina through a 2-cm cervical dilatation. An emergency cesarean section was performed. Both fetuses were delivered successfully: the first was a female in breech presentation with a birth weight of 1,680 g, and the second twin was a male presenting in vertex with a birth weight of 2,035 g. Both newborns had normal Apgar scores and umbilical artery PH. Their postnatal course was uneventful.

The uterine septum was clearly identified during cesarean section. Two distinct uterine cavities were separated by 5 mm (lower and midportion) to 20 mm (fundal portion) of intervening fibrous tissue, and two cervical canals were noted. Under directed visualization, the uterine septum was resected by electrocauterization, including the cervical portion of the septum.