Surrogate pregnancy in a patient who underwent radical hysterectomy and bilateral transposition of ovaries

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Objective: To evaluate IVF-surrogate pregnancy in a patient with ovarian transposition after radical hysterectomy for carcinoma of the cervix.

Design: Case report.

Setting: A maternity hospital in Tel Aviv that is a major tertiary care and referral center.

Patient(s): A 29-year-old woman who underwent Wertheim’s hysterectomy for carcinoma of the uterine cervix and ovarian transposition before total pelvic irradiation.

Intervention(s): Standard IVF treatment, transabdominal oocyte retrieval, and transfer to surrogate mother.

Main Outcome Measure(s): Outcome of IVF cycle.

Result(s): A twin pregnancy in the first cycle.

Conclusion(s): This is the second reported case of controlled ovarian stimulation and oocyte retrieval performed on a transposed ovary. (Fertil Steril 2003;79:1229–30. ©2003 by American Society for Reproductive Medicine.)

Key Words: Ovarian transposition, surrogate pregnancy, IVF, hysterectomy

Transposition of ovaries is common practice in young women undergoing radical hysterectomy or pelvic irradiation for cervical cancer. The aim of the procedure is to preserve hormonal function and fertility potential (1). Unfortunately, ovarian transposition preserves ovarian function in only 50% of patients undergoing pelvic radiotherapy after radical hysterectomy (2).

Several studies have reported fertility preservation and subsequent IVF surrogate pregnancy after ovary stimulation of hysterectomized patients. Recently Giacalone et al. (3) reported the first case of pregnancy in a surrogate mother after stimulation of a transposed ovary before irradiation and chemotherapy for squamous cell carcinoma of the uterine cervix.

We report a successful surrogate pregnancy after radical hysterectomy and ovarian transposition.
The patient and her partner initiated recruitment for a host-mother and were assisted in their search by a local association. According to Israeli law, the host-mother should be unmarried and should be mentally and physically healthy. The woman who was selected as a host-mother was 36 years of age.

Ovulation induction in the commissioning mother was synchronized with endometrial preparation in the host-mother. The long protocol of pituitary desensitization was started in the luteal phase of the host’s menstrual cycle using intranasal administration of nafarelin acetate (Synarel; Searle, High Wycombe, UK) b.i.d. Administration of 2 mg (t.i.d.) of E2 valerate (Progynova; Schering Health Care Ltd., West Sussex, UK) to the host-mother began on the same day that controlled ovarian stimulation of the commissioning mother was initiated.

The long protocol of pituitary down-regulation in the commissioning mother was started in the luteal phase, as documented by E2 and P levels. Four ampules of Menogon (Ferring GmbH, Kiel, Germany) were administered after down-regulation was achieved. An injection of 10,000 IU of hCG (Chorigon; Teva Pharmaceutical Industries Ltd., Netanya, Israel) was administered when three follicles measured 18–20 mm.

On day of hCG administration, E2 was 991 pmol/L, and P, 1.9 nmol/L. Thirty-six hours later, three oocytes were retrieved transabdominally. Vaginal administration of a micronized P (200 mg t.i.d.; Utrogestan; Besins International Laboratories, Paris, France) was added to the drug regimen of the host-mother from the day of oocyte retrieval. Forty-eight hours after retrieval, three embryos were transferred, and 12 days later, serum hCG was positive. An ultrasound determined twin pregnancy in two separate sacs. Hormone replacement therapy (HRT) in the host-mother was continued until 12 weeks of gestation. Embryo transfer was performed on February 22, 2002, and the course of pregnancy to date has been uneventful.

**DISCUSSION**

Gestational surrogacy is the only therapeutic option for women who have had a hysterectomy. To minimize the effects of pelvic radiotherapy, it is worth considering transposition of the ovaries. The overall pregnancy rate of a surrogate gestational cycle is approximately 24% (4).

According to Fenney et al. (2), lateral ovarian transposition preserves ovarian function in only 50% of patients undergoing pelvic radiotherapy. Ovarian function depends on the dose of radiotherapy, associated chemotherapy, and age of the patient. In our patient, both ovaries were transposed to the ipsilateral iliac fossa, and they were functioning 6 years later.

Recently Giacalone et al. (3) reported a case of ovulation induction and oocyte retrieval performed on a transposed unilateral ovary. Our patient underwent radical hysterectomy, and both ovaries were transposed. Postoperative radiotherapy was initiated.

The patients ovaries showed low response to ovarian stimulation. Only three oocytes were retrieved, despite daily administration of 4 ampules of Menogon. This low response may be attributed to either reduced blood flow, effects of radiotherapy, or both. Fenney et al. (2) found that ovarian conservation at time of radical hysterectomy is beneficial in nonirradiated patients. Only 2.9% of patients who underwent lateral ovarian transposition without postoperative pelvic radiotherapy experienced menopausal symptoms, compared with 50% in patients who received postoperative pelvic radiation.

Should assisted reproductive techniques be recommended earlier? This of course depends on the stage and the treatment of the primary disease and on the general health condition of the patient and her marital status.

We believe that ovarian transposition should be recommended to young women who want to preserve fertility. It is advantageous in cases of pelvic radiotherapy without chemotherapy.

**References**