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ARTICLE

Comparison of ultrasound-guided endometrial polypectomy carried out on the oocyte retrieval day and the first day of ovarian stimulation in IVF–ICSI cycles

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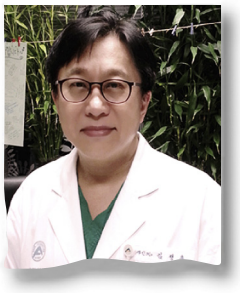

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Abstract In this retrospective cohort study, the effect of endometrial polypectomy carried out on the day of oocyte retrieval and on the first day of ovarian stimulation in patients with a large (≥10 mm) endometrial polyp undergoing IVF and intracytoplasmic sperm injection (ICSI) was investigated and compared. A total of 74 eligible IVF–ICSI cycles in 74 women who underwent endometrial polypectomy on either the day of oocyte pick-up (late polypectomy group, 39 cycles) or the first day of ovarian stimulation (early polypectomy group, 35 cycles) between January 2007 and July 2012 were included in this study. Patient characteristics between early and late polypectomy groups were similar. Total dose and days of recombinant human FSH administered, numbers of retrieved oocytes, mature oocytes, fertilized oocytes, grade 1 or 2 embryos and embryos transferred between the two groups were also similar, as was clinical pregnancy rate per cycle, embryo implantation rate and spontaneous abortion rate between the two groups. Therefore, endometrial polypectomy on the day of oocyte retrieval could be a more patient-friendly option for patients with a large endometrial polyp undergoing IVF–ICSI.

KEYWORDS: endometrial polyp, endometrial polypectomy, infertility, IVF

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Introduction

Endometrial polyps are benign and often asymptomatic, and can be a risk factor for infertility in women. These polyps are incidentally diagnosed during routine check-ups or just before preliminary evaluations for infertility. The incidence of endometrial polyps also vary widely, and little is known about their true prevalence in infertile patients (Silberstein et al., 2006). Endometrial polyps develop as a result of proliferation of the stromal and endocrine cells of the endometrium, and could be a cause of disruption of implantation. Their size and location may substantially affect embryo implantation. The mechanism, however, of how they can adversely affect infertility is not fully understood. One randomized controlled trial showed that hysteroscopic polypectomy before intrauterine insemination improves pregnancy rate (Pérez-Medina et al., 2005), and four non-randomized controlled studies have reported that a polypectomy may improve spontaneous pregnancy rates (Shokeir et al., 2004; Spiewankiewicz et al., 2003; Stamatellos et al., 2008; Taylor and Gomel, 2008; Varasteh et al., 1999). Unlike the above suggestions, several studies have suggested that an endometrial polyps less than 2 cm in size seems to have no effect on IVF outcome (Isikoglu et al., 2006; Lass et al., 1999; Taylor and Gomel, 2008).

A definite consensus on the management of endometrial polyps in infertile patients during ovarian stimulation has not yet been reached. Furthermore, it is still controversial whether endometrial polyps found during ovarian stimulation should be removed during an IVF cycle. In one earlier case report, six patients with endometrial polyps (measuring <2 cm) who had a hysteroscopic polypectomy preceding oocyte retrieval, had a 50% (3/6) pregnancy rate, suggesting that polypectomy preceding embryo transfer in the same cycle may not be dangerous (Batioglu and Kaymak, 2005). On the basis of this study, we speculated that polypectomy before embryo transfer in IVF cycles may not affect the outcome of IVF and polypectomy just after oocyte retrieval can relieve the distress caused by repetitive invasive procedures. Studies on the optimal timing of polypectomy during IVF procedures were limited. Therefore, this present study aimed to evaluate the effect of endometrial polypectomy carried out just after oocyte retrieval on IVF outcomes, compared with polypectomy carried out on the first day of ovarian stimulation in infertile patients with a large (≥10 mm) endometrial polyp undergoing IVF–ICSI.

Materials and methods

A total of 74 eligible IVF–ICSI cycles in 74 women who underwent endometrial polypectomy on either the day of oocyte retrieval (late polypectomy group, 39 cycles) or the first day of ovarian stimulation (early polypectomy group, 35 cycles) between January 2007 and July 2012 were included in this retrospective cohort study. Patients under the age of 41 years who had endometrial polyp with a mean diameter of 10 mm or more were selected for the study. The timing of polypectomy was according to patient choice following a full explanation of the procedure. All IVF–ICSI treatment and endometrial polypectomy were carried out in a university-based infertility clinic of the Asan Medical Center, Seoul, South Korea. If patients underwent two or more cycles of IVF–ICSI during the study period, charts corresponding to the first IVF–ICSI cycle were reviewed, and data of other IVF–ICSI cycles except the first cycle were excluded from this analysis. The institutional review board of the University of Ulsan, College of Medicine, Asan Medical Center, approved the study on 4 July 2014 (reference number S2014-0907-0001).

Endometrial polyps were detected by transvaginal ultrasonography (ProSound SSD-3500SV; Aloka, Tokyo, Japan) by a single experienced researcher. The hyperechogenic endometrial mass was measured in three different planes, and the average diameter and location were recorded. Endometrial polypectomy was precisely carried out using a transcervical sharp curette either immediately after ovum retrieval or on the first day of ovarian stimulation under the transabdominal ultrasound guidance. This procedure was carried out as gently as possible. Only patients who had endometrial polyps that were pathologically confirmed were included in this study. Patients were excluded if they had any significant pelvic pathology such as hydrosalpinx, uterine anomaly, endometriosis and fibroids with uterine cavity distortion.

Only IVF–ICSI cycles in which a GnRH multiple-dose protocol (MDP) was used for ovarian stimulation were selected. Ovarian stimulation was started using 150–250 IU of recombinant human FSH (Gonal-FR, Merck Serono SA, Geneva, Switzerland) from the third day of the menstrual cycle after establishing ovarian and uterine quiescence using transvaginal ultrasound. The recombinant human FSH dose was adjusted according to the ovarian response every 3–4 days. When the mean diameter of the lead follicle reached 13–14 mm, the GnRH antagonist cetrorelix (Cetrotide; Merck Serono SA) at a dose of 0.25 mg/day was started, and continued daily up to the day of injection of 250 μg recombinant HCG (Ovidrel; Merck Serono SA). Transvaginal ultrasound-guided oocyte retrieval was carried out 36 h after HCG injection, and embryos were transferred into the uterus on the third day after oocyte retrieval. For luteal support, 90 mg vaginal progesterone (Crinone gel 8%; Merck Serono SA) was administered from the day of oocyte retrieval. The serum levels of beta-HCG were measured 11 days after embryo transfer.

Primary efficacy end-point was the embryo implantation rate. Secondary efficacy variables included total dose and days of rhFSH administered, the numbers of oocyte retrieved, fertilized oocytes and good-quality embryos, clinical pregnancy rate per cycle, and spontaneous abortion rate. Clinical pregnancy was defined as the presence of a gestational sac by transvaginal ultrasonography, whereas spontaneous abortion rate per clinical pregnancy was defined as the proportion of patients who failed to continue development before 20 weeks of gestation in all clinical pregnancies. The mean value was expressed as the mean ± standard deviation (SD). A Student's t-test was used to compare the mean values. Chi-squared test and Fisher's exact test were used for the comparisons of proportions. SPSS statistical package for Windows, version 18.0 (SPSS Inc, Chicago, IL) was used for all analyses. $P < 0.05$ was considered statistically significant.