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Successful Pregnancy after Transabdominal and Transvaginal Oocyte Retrieval in Polycystic Ovarian Disease Patient: A Case Report

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Case Report

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Abstract

Objective: To assess different routes of oocyte retrieval in patient with difficult approach of ovary through vaginal route during In Vitro Fertilization (IVF) cycle.

Methods: We reported a case of 28 years female with primary infertility with multiple IUI failures and one IVF failure with a less number of oocytes retrieved in previous IVF. IVF stimulation with Antagonist protocol was done followed by combined transabdominal and transvaginal egg retrieval with a vaginal ultrasound probe. Twelve oocytes were retrieved and nine good embryos were formed out of which two blastocyst embryos were transferred in the frozen embryo transfer cycle and seven embryos were frozen in two vials. Ultrasound was done after 2 weeks of positive beta HCG that showed intrauterine twin live pregnancy of 6 weeks.

Conclusion: Transabdominal oocyte retrieval with vaginal ultrasound probe is an effective and safe method to retrieve oocytes in patients whom ovaries are not accessible by vaginal route. It will show better oocyte retrieval rate followed by better embryo selection with more chances of pregnancy.

Keyword: Oocyte retrieval, Transabdominal, Transvaginal, in vitro fertilization.

Introduction

Assisted Reproductive Technology (ART) procedures like In Vitro Fertilization (IVF), Intracytoplasmic Sperm Injection (ICSI) are boon to the infertile couples enabling them to become parents and create families. Sometimes these procedures are difficult to perform because of abnormal anatomy, restricted access to operating area etc. In IVF, normally oocyte retrieval is done by vaginal route only but if ovary is not accessible by vaginal route, then oocyte retrieval has to be done by abdominal route [1]. We reported a case in which combined transabdominal and transvaginal egg retrieval was done in difficult approach of ovary through vaginal route and it showed better oocyte retrieval rate followed by better embryo selection with positive result.

Case Presentation

A 28 years old female came to our OPD with primary infertility. She had history three IUI failures and one IVF failure with a smaller number of oocytes retrieved in previous IVF cycle. Three cleavage embryos were

transferred but there were no frozen embryos for future use. Her body mass index was 29.4 kg/m^2. We had advised the hormonal profile and the ultrasound pelvis. Serum hormonal measurements were AMH: 13.9 ng/ml, prolactin: 15.1 ng/ml, thyroid stimulating: 2.8 pg/ml. Ultrasound showed bilateral bulky ovaries with polycystic pattern with normal sized uterus. The husband's semen analysis was normal. In view of the above diagnosis, we recommended self-egg IVF with frozen embryo transfer to the couple to avoid Ovarian Hyperstimulation Syndrome (OHSS).

As PCO was diagnosed, we stimulated the ovaries of patient with the recombinant human FSH 225 IU (rhFSH, Folisuge; Intas Pharmaceuticals Ltd, India). After six days of stimulation, transvaginal scan showed 14 good follicles of 14mm size in both ovaries. After that daily subcutaneous injection of GnRH antagonist, 0.25 mg Cetrorelix (Cetrotide acetate, Cetrolix-PFS; Intas Pharmaceuticals Ltd, India), was added. When follicles reached 18 mm, GnRH agonist 1 mg Inj. Leuprolide Acetate (Lupride, Inca Sun Pharmaceutical Industries Ltd.) was given as trigger to prevent OHSS.

Transvaginal oocyte aspiration of right ovary and transabdominal oocyte aspiration of left ovary (left ovary was too high and was not approachable through vaginal route) were performed before 36 h under short general anesthesia, under ultrasound guidance, using Cooks OPU needle and Cooks gamete buffer media. Abdominal oocyte retrieval was done with new needle with transvaginal probe guidance only. Multiple pricks were avoided to prevent intestinal injuries and infection. Twelve oocytes were retrieved which were fertilized in the laboratory in Cooks fertilization media. Embryos were further cultured in cleavage media. Nine good embryos (grade A) were formed which were frozen at cleavage stage in 3 vials.

Frozen embryo transfer preparation was started with GnRH agonist 0.6 mg Inj. Leuprolide Acetate (Lupride, Inca Sun Pharmaceutical Industries Ltd.)) and reduced to half dose (0.3 mg) on day 2 of next cycle along with addition of 6 mg estradiol valerate (Progynova, Zydus Cadila Healthcare Ltd., German Remedies) in divided doses. Transvaginal sonography for endometrial thickness was done on day 12 that was 9 mm. GnRH agonist injection was stopped and Tablet estradiol valerate was continued in the same dose. Natural micronized progesterone suppositories 200 mg (Susten, Sun Pharmaceutical Industries Ltd.)) twice daily were started after stopping Inj. Lupride. Three embryos were cultured in blastocyst media out of which two grade AA embryos were transferred. After 10 days of luteal support, beta HCG was done which came positive. Ultrasound was done after 2 weeks of beta HCG that showed intrauterine twin live pregnancy of 6 weeks.

Discussion

Oocyte retrieval is the invasive procedure of IVF which can be done under short general anesthesia or sedation. It is mostly done by transvaginal route using transvaginal ultrasound probe with needle guide attached to it [2]. The stimulated follicles in the ovary can be easily accessible by transvaginal route with better visualization and post operative recovery and minor complications. The needle has travel shorter distance to ovary from probe so it is a safe option of oocyte retrieval [3,4].

But in some cases, ovaries cannot be accessed by vaginal route as it is shifted above pelvic brim due to pelvic adhesions, enlargement of stimulated ovaries, obesity etc. In these cases, transabdominal oocyte retrieval needs to be performed to retrieve the oocytes and it is an effective and safer option than transvaginal oocyte retrieval [5,6]. It is not affecting the oocyte quality, fertilization rate or pregnancy rate. Rather if a smaller number of oocytes are retrieved in difficult cases, fewer transplantable embryos will be available. So cumulative pregnancy rate will be less [7].

In our case, one ovary was difficult to access due to obesity and due to enlargement caused by stimulation. Transabdominal approach of retrieval gained a greater number of oocytes followed by a greater number of good quality embryos and resulted in positive clinical pregnancy.

Conclusion

Transabdominal oocyte retrieval with vaginal ultrasound probe is an effective and safe method to retrieve oocytes in patients whom ovaries are not accessible by vaginal route.

Competing Interests: This is to certify that there is no conflict of interest regarding this publication.

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Attestation Statement

- Data regarding any of the subjects in the study has not been previously published unless specified.
- Data will be made available to the editors of the journal for review or query upon request.

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