Transrectal Ovum Pick up in Virgins: A Case Series Study

Original Article

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ABSTRACT

Objective: To evaluate the feasibility and safety of aspitating follicles for virgin seeking social oocyte cryopreservation through transrectal approach

Setting: Tertiary referral center

Design: Descriptive study

Participants & Methods: All virgins coming for oocyte cryopreservation were superstimulated by gonadotrophins and OPU was done after colon preparation through transrectal approach under antibiotic coverage.

Results: All cases were done smoothly without any complications and oocytes were retrieved successfully and only MII were frozen. Follow up showed no significant infection or subclinical infections.

Conclusion: Transrectal OPU is feasible and effective if strict precautions are taken. This is a suitable approach for virgins in Islamic countries to keep hymen integrity.

Key Words: Islamic countries, oocyte cryopreservation, virgins.

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INTRODUCTION

The hymen is a thin membrane located at the entrance of the vagina and in Islamic cultures its presence and condition signifies virginity which refers to the absence of former engagement in sexual intercourse[1]. Virginity is considered a sign of sexual purity in Islamic societies and represents the honor of a woman and her family[2,3].

Although oocyte cryopreservation was initially used as a fertility preservation strategy for medical indications, currently, it is increasingly used to circumvent age-related infertility. Social oocyte cryopreservation is increasing as women becoming more aware of this technology including virgins. This has resulted in increased demand on oocyte cryopreservation but the barrier of virginity remain a major obstacle for them to proceed with this option[4,5].

Transrectal ovum pick-up (TROP) is a specialized technique used primarily in veterinary reproductive medicine particularly in species such as cattle and rhinoceroses. This technique has been successfully applied in various species, demonstrating its versatility and effectiveness in reproductive technologies.

In the present study, we aimed to evaluate the feasibility and safety of aspirating follicles for virgins seeking social oocyte cryopreservation through transrectal approach

METHODOLOGY

The study was done between Feb 2022 and August 2024 at Ganna IVF center. Virgins coming for oocyte cryopreservation were recruited and the procedure was explained. Complete history talking and examination was done on initial visit. Basic investigations were all requested specifically CBC and CRP. In addition, all cases had basal hormonal profile assay (E2, TSH and prolactin, AMH). Controlled Ovarian hyperstimulation protocol has been performed as follows: long GnRH agonist protocol starting from midluteal. Phase by daily subcutaneous injection of triptoreline acetate (Decapeptyl 0.1mg, Ferring Pharmaceutical, Kid, Germany). Then on day 3 of next cycle ovarian hyperstimulation have been initiated by daily injection of HMG (Meriofert 150 lU/amp" IBSA, Switzerland"). The starting dose of gonadotropins. Have been prescribed, according to the age and; body built of the study subjects, then the dosage was accustomed. According to the ovarian responsiveness that have been assessed by E2 on day six of the cycle. According to the ovarian responsiveness, day after day transabdominal sonography have been conducted and at the moment

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when the leading follicle reaches 16mm, trans rectal sonography have been performed till the largest follicle reaches a diameter of >18mm. (Choriomon 10,000 lU/ amp. "IBSA, .Switzerland") have been administered for triggering ovulation Follow up was done one week after the procedure by repeating CBC and CRP and after one month by telephone call.

Preoperative preparation

All women were instructed to have clear liquid diet for 48 hours before the procedure and to do enemas every 12 hours to cleanse the bowel but to stay adequately hydrated as possible. Neomycin 3 million iu tablets were described 48 hrs before the procedure and finally an enema was done just before the procedure. Those who did not abide to these instructions were excluded from the study.

Transrectal Ovum pick up

34 hours after HCG injection, the transducer have been connected to the ultrasound system. The direction of the guide beam have been checked. The puncturing needle was connected to an aspiration apparatus attached by a Fixation ring to the front and rear ends of the vaginal transducer, thereby defining the direction of puncture corresponding to the guide beam on the ultrasound image then aspiration has been checked using test tubes. The uterus, both ovaries and iliac vessels was identified by the visualization in both planes. The distance between the rectum and the ovary was closed and evaluated (care was taken to prevent intestinal or vascular interposition). Needle was pushed forcefully to the center of the follicle (Aspiration pressure 100-140 mmHg). Oocyte denudation was then done and only MII oocytes were cryopreserved.

Antibiotic coverage

Ovum pick up was done under umbrella of antibiotics (Cefatriaxone 1gm and Flagyl vial) and on discharge all women were advised to take fourth generation antibiotics (Oxazolid 600 mg twice daily for five days). All women followed up after 5 days by CBC and CRP assay.

Statistics

Data was collected and analyzed those using SPSS (Statistical Package for the Social Science, version 17, IBM, and Armonk, New York) ,using the mean, standard error, student t- test, Paired t-test, Chi-square, Linear Correlation Coefficient.

Ethical consideration

The study was approved by the Local Ethics Committee for Research (GREC). All women were informed about the study and a detailed written informed consent was taken from all participants before being included in the study. All the participants' names will be hidden and replaced by code numbers to maintain privacy.

Results

The present study included 42 virgins coming for fertility preservation. Only one woman was excluded from the study as she did not do bowel preparation or any enema before the procedure. All other participants were successfully had transrectal ovum pick up and all had oocytes retrieved as the image resolution was clear and as if transvaginal sonography was done. (Table 1) shows the different characteristics of the included participants.

Table 1: Characteristics of the study group

Characteristics	Study group (n. = 100)	
	Mean ± Std. Dev.	Mini – Max
Age	34.74 ±3.34	26.0 - 38.0
BMI	29.09 ± 2.82	22.0 - 33.6
AMH	1.12 ± 0.86	0.3 – 1.4
Basal FSH	7.16 ± 1.36	5.0 - 11.8
Number of retrieved oocytes.	6.62 ± 1.57	4.0 - 10.0
Number of MII	4.7 ± 3.5	2.0 – 8.3
TLC	7.3 ± 2.4	5.2 – 9.5
CRP	11.8 ± 6.9	5.7 – 17.4

Std. Dev.: Standard deviation. Mini – Max: minimum - maximum

BMI: Body Mass Index

DISCUSSION

The present study is a unique one and can not be generalized allover the world as it is directly related to certain countries and cultures where hymen is considered important for virginity and not important to other cultures where hymen is considered a redundant piece of skin.

In addition, the present study was conducted prospectively and under strict criteria to ensure the feasibility and safety of this procedure. Some may argue that oocyte collection in virgins can be done by transabdominal approach using transvaginal probe[6]. However, this would require well stimulated ovary and lean women to allow for clear visualization and avoid injuring any viscera during introduction of the needle. These two prerequisites are not frequently met in women undergoing fertility preservation.

Others may claim feasibility of transvaginal approach in virgins using transrectal probe being thinner than transvaginal probe. While this claim seems achievable, while it is well known that the shape of the hymen ranges from single hole to fenestrated one which makes it is injury inevitable especially if manipulating the probe during ovum pickup to collect all oocytes.

The present study showed no adverse events in all cases which can be reassuring, however, one should keep in mind that strict precautions were taken in all cases and this should continue for all upcoming cases to avoid false send of safety and any minor possibility of infection which could be detrimental.

Similar finding were observed in another study where the authors used transrectal approach to take biopsy for diagnosis of pelvic tumours in women[7] and a recent similar study to us but included retrospective data was just published showing also the feasibility and safety of this technique[8].

CONCLUSION

In conclusion, transrectal ovum pick up in virgins coming for oocyte cryopreservation can be done under strict precautions.

CONFLICT OF INTERESTS

There are no conflicts of interest.

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