

Safety, Feasibility and Indications of Transabdominal Oocyte Pick-Up: Initial Experience

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ABSTRACT

Although the transvaginal route is the preferred method for the oocyte retrieval procedure, the transabdominal (TA) route may be preferred in certain conditions. In this opinion we presented our experience with TA oocyte pick-up in 101 patients across several different indications and assessed the safety of the procedure.

Keywords: Transabdominal Oocyte Pick-Up; Endometrioma; Fertility Preservation; Safety; Indications.

INTRODUCTION

The transvaginal route is the preferred method for the oocyte retrieval procedure.¹ However, the transabdominal (TA) approach may be preferred in certain conditions.² In this opinion, we aim to share our experience with TA oocyte pick-up (TA OPU), performed in 101 patients across several different indications as below.

PERIPUBERTAL CHILDREN (N = 12)

Transabdominal oocyte pick-up (TA OPU) procedure can be preferred over the transvaginal route for several reasons. First, a vaginal ultrasound probe may be too large for the immature vaginas of peripubertal girls. Second, the relatively small abdominal cavity and close proximity of enlarged stimulated ovaries to the abdominal skin may provide easy access and make the OPU procedure easier for the clinician. So far, the TA approach has been successfully used in paediatric patient populations for different indications ranging from cancer to mosaic Turner's syndrome.³

PRESENCE OF HUGE ENDOMETRIOMAS (N = 29)

Follicles cannot be adequately visualised or accessed by transvaginal ultrasound in some patients, due to the large size of a single endometrioma or the presence of multiple endometriomas filling the pelvic cavity. In these cases, the TA approach may be a viable alternative because it may allow clinicians to puncture the follicles without passing through or inadvertently rupturing endometriomas. This may, in turn, help increase the number of retrieved oocytes,

especially when low ovarian reserve/available ovulatory follicle numbers are a concern.

HISTORY OF REPETITIVE ABDOMINAL SURGERY (N = 2)

Ovaries may be displaced outside the pelvic region and therefore not visible on transvaginal ultrasound in patients with previous abdominal surgeries. Therefore, the transvaginal approach may fall too short to access the displaced ovaries.

WOMEN WITH OOPHOROPEXY (N = 1)

Similarly, ovaries transposed outside the pelvic cavity prior to pelvic radiation cannot be reached via transvaginal route. In a patient who had undergone oophoropexy prior to pelvic radiotherapy for colon cancer, TA OPU was performed instead of repeating surgery. In this 36-year-old patient with an anti-Mullerian hormone (AMH) level of 0.6 ng/mL, a total of four MII oocytes were retrieved over two separate cycles. Following two blastocyst transfers, a twin pregnancy and delivery were achieved.

WOMEN WHO DO NOT WANT TO LOSE THEIR VIRGINITY (N = 57)

When virginity is a concern for ethical or religious reasons, TA OPU can be offered as an alternative to the transvaginal route, as comparable outcomes have been reported in terms of the number of

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Table 1. Characteristics of women and their cycle outcomes.

	Peripubertal children (n = 12)	The presence of huge endometriomas (n = 29)	History of repetitive abdominal surgery (n = 2)	Women with oophorectomy (n = 1)	Women who do not want to lose their virginity (n = 57)
Age (years)	12.2 ± 2.8	28.7 ± 7.6	29	36	37.2 ± 6.1
AMH (ng/mL)	1.1 ± 0.9	2.2 ± 1.1	2.4	0.6	0.7 ± 0.5
Follicles ≥12 mm on trigger day (n)	5.7 ± 3.1	9.7 ± 5.7	10	3	4.7 ± 3.2
Oocytes retrieved (n)	5.1 ± 2.9	8.5 ± 5.1	8.5	3	3.9 ± 2.8
Mature oocytes frozen (n)	4.4 ± 2.1	7.8 ± 4.9	6.5	3	3.4 ± 2.6

Note: Data collected in repeated cycles were only presented from the results of the first cycle. The results were given as mean ± SD.

Abbreviations: AMH: Anti-Mullerian hormone; SD: Standard deviation.

Fig. 1. Transabdominal oocyte pick-up.



oocytes retrieved.^{4,5} Characteristics of all women who underwent TA OPU and their cycle outcomes are shown in Table 1.

OPU procedures were performed using a 17-gauge double-lumen oocyte retrieval needle (Cook Medical, Australia; Geotech Healthcare Products, Turkey) 36 hours after the trigger under intravenous anaesthesia (Fig. 1). A suction pressure pump adjusted to 120–150 mmHg was used. For all oocyte retrieval procedures, a standard transvaginal ultrasound probe (4–8 MHz vaginal probe) was utilised⁶ (Fig. 1).

Particular attention should be paid to the risk of needle blockage, especially in patients with truncal obesity. The bladder must be completely empty. Ultrasound alignment between the needle and the probe should be optimal at different angles and rotations. When moving between different follicles, the needle should be withdrawn to the level of the peritoneum and redirected accordingly without repeated skin punctures. Although no bowel or bladder injuries occurred in any of the procedures in our clinic, injury to the epigastric artery was observed in one patient; this was successfully managed with local compression without the need for surgical intervention.

In conclusion, TA OPU can be performed safely and successfully in selected patients with specific indications. In the majority of our patients, the procedures were carried out for fertility preservation. Cycle outcomes were comparable to those of transvaginal oocyte retrieval; however, more data are needed to evaluate pregnancy outcomes.

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