

# Process of oocyte release and capture in the human

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## Introduction

In transvaginal hydrolaparoscopy (THL), access to the pelvis is gained through a needle-puncture technique of the pouch of Douglas with the patient in a dorsal lithotomy position [1, 2]. As distension medium, a continuous flow of pre-warmed solution of Ringer lactate is used during the entire procedure. The watery distension medium keeps the organs afloat. The major advantage of the transvaginal access procedure is the possibility of inspection of the tubo-ovarian structures in their natural position without manipulation. Performed midcycle, it offers the possibility to inspect the events at the moment of ovulation [3].

## Case report

A 25-year-old patient came to see us because of primary infertility for 2 years. There was no history of previous interventions and, at clinical examination and vaginal ultrasound, there were no clinical abnormalities. Patient had regular cycles of 28 days and no dysmenorrhoea.

As part of the fertility investigation, a THL was scheduled at midcycle. The patient was asked to monitor her cycle by using daily urinary LH assays starting on day 11 of the cycle. The LH assay was positive on the morning of the 13th day of the cycle, and an appointment for THL was made for 6.30 p.m. on the same day for further exploration. A vaginal ultrasound examination showed the presence of a 20-mm follicle in the left ovary.

The THL was performed under local anaesthesia. The patient was conscious and could follow the entire procedure.

The ovulation stigma was identified on the caudal pole of the left ovary. The fimbriae were in close contact embracing the caudal pole of the ovary. Due to vasocongestion, the fimbrial vessels were engorged and the fimbrial ends erected. In a pulsatile way, they were sweeping the surface of the ovulation ostium. At closer inspection, a mucinous structure was seen protruding from the ovulation ostium and stretched between the fimbrial ends and the ostium. The pulsatile movements of the fimbriae, synchronous with the patient's heartbeat, slowly pulled the cumulus–oocyte complex free from the ostium of the ruptured follicle. During the observation, follicular fluid could be seen leaking from the ostium. The total duration of the observation lasted for 15 min.

## Conclusion

The technique of THL allowed us, for the first time, to record the events at the moment of oocyte release in humans. Our observation shows that the release of the cumulus oophorus is a slow process and is assisted by the pulsating fimbrial activity.

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## References

1. Gordts S, Campo R, Rombauts L, Brosens I (1998) Transvaginal hydroparoscopy as an outpatient procedure for infertility investigation. *Hum Reprod* 13:99–103
2. Campo R, Gordts S, Rombauts L, Brosens I (1998) Transvaginal hydroparoscopy: a possible office procedure? *Clin N Am* 10:161–176
3. Gordts S, Campo R, Rombauts L, Brosens I (1998) Endoscopic visualisation of the process of fimbrial ovum retrieval in the human. *Hum Reprod* 13:1424–1428

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