

Virtual ultrasonographic hysteroscopy followed by conventional operative hysteroscopy, enabling pregnancy



Jan Tesarik, MD, PhD; Raquel Mendoza-Tesarik, PhD; Nicolas Mendoza, MD, PhD

Case Note

A 35-year-old woman presented with premature menopause and previous failure of oocyte donation; our pregnancy rate for this procedure is 80%. She had undergone, at another clinic, operative hysteroscopy intervention during which 2 polyps were removed. However, this last intervention was followed by inflammatory complications. We decided to perform virtual ultrasonographic hysteroscopy as a more patient-friendly procedure.

This intervention was performed by transvaginal ultrasonographic examination using “fly-through” technology (Fly Thru, Toshiba American Medical Systems, Tustin CA) enabling computerized 4-dimensional virtual reconstruction of the uterine cavity, without the need for physically entering the uterus. Her uterine cavity was slightly distended by injecting 10 mL of saline through a narrow soft balloon catheter fixed to the cervical canal. Immediately thereafter, images of the cavity were taken (Video 1). The whole procedure took <10 minutes. As compared to conventional saline-infusion sonography, fly-through technology makes it possible to minimize the volume of injected saline without compromising image quality. Image analysis showed a beamlike adhesion crossing the uterine cavity (Figure, A, and Video 1). Conventional hysteroscopy was thus performed 2 days later, under general anesthesia. The uterine adhesion was visualized (Figure, B) and removed (Figure, C). One month later, virtual ultrasonographic hysteroscopy was repeated to evaluate the result of the previous hysteroscopic surgery. The images showed complete disappearance of the intracavitary adhesion in its previous location (Figure, D, and Video 2). The patient thus prepared for transfer of her cryopreserved embryos, resulting from the previous oocyte donation attempt. After conventional uterine preparation protocol,¹ 2 embryos were transferred, resulting in an ongoing singleton pregnancy.

From the MARGen Clinic, Granada, Spain (all authors) and Department of Obstetrics and Gynecology, University of Granada, Granada, Spain (Dr N. Mendoza).

Received July 29, 2016; revised Sept. 4, 2016; accepted Sept. 7, 2016.

The authors report no conflict of interest.

Corresponding author: Jan Tesarik, MD, PhD. jtesarik@clinicamargen.com

Cite this article as: Tesarik J, Mendoza-Tesarik R, Mendoza N. Virtual ultrasonographic hysteroscopy followed by conventional operative hysteroscopy, enabling pregnancy. *Am J Obstet Gynecol* 2017;216:188.e1.

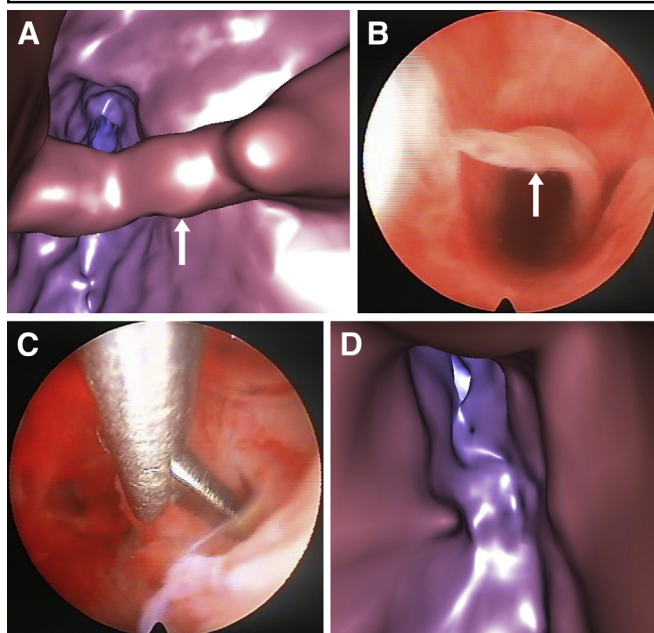
0002-9378

© 2016 The Author(s). Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>). <http://dx.doi.org/10.1016/j.ajog.2016.09.081>

 Click Video under article title in Contents at  ajog.org

FIGURE

Uterine cavity images by conventional and virtual hysteroscopy



A, Virtual and B, conventional hysteroscopy of uterine cavity showing beamlike intracavitary adhesion (arrow). C, Removal of adhesion by conventional hysteroscopy. D, Repeated virtual hysteroscopy of region from which intracavitary adhesion was removed.

Tesarik. Virtual and conventional hysteroscopy. *Am J Obstet Gynecol* 2017.

Comment

These observations show that virtual ultrasonographic hysteroscopy can be used as the first-line, patient-friendly method for detection of uterine cavity pathologies, followed, if necessary, by conventional operative hysteroscopy. The image quality is comparable with that obtained by computerized tomography and magnetic resonance imaging.² In a broader sense, this minimally invasive technique can be considered for examination of other body cavities, such as preovulatory ovarian follicles, embryonic sacs, urinary bladder, or large blood vessels. ■

REFERENCES

1. Tesarik J, Mendoza C, Greco E. Paternal effects acting during the first cell cycle of human preimplantation development after ICSI. *Hum Reprod* 2002;17:184-9.
2. Carrascosa P, Capuñay C, Vallejos J, et al. Two-dimensional and three-dimensional imaging of uterus and fallopian tubes in female infertility. *Fertil Steril* 2016;105:1403-20.