

Hydrosalpinx as an unusual complication of office hysteroscopy: case report

A. Demiroglu¹, M.D.; S. Guven², M.D.; G. Bozdag³, M.D.; T. Gurgan³, M.D.

¹Women's Health Clinic, Infertility and IVF Center, Ankara

²Department of Obstetrics and Gynecology, Faculty of Medicine, Karadeniz Technical University, Trabzon

³Department of Obstetrics and Gynecology, Faculty of Medicine, Hacettepe University, Ankara (Turkey)

Summary

Some complications of hysteroscopy have been reported with increasing practice of the procedure both for diagnostic and operative procedures. However, complications associated with office hysteroscopy (HS) have not been well documented. A 35-year-old woman was accepted at our center for a second IVF cycle. She had had a history of primary infertility for nine years and no presumptive factors as a cause of infertility had been documented. Office hysteroscopy revealed a regular endocervix, endometrial cavity and bilateral internal tubal ostia. The patient was evaluated by pelvic examination (without any evidence of pelvic inflammatory disease) and transvaginal ultrasonography one month after the office HS for routine evaluation before the IVF cycle. There was an image compatible with left hydrosalpinx (6 mm in diameter) in her ultrasonographic examination that had not been detected before by the same physician using the same ultrasound equipment. Following an informative consultation with the patient, laparoscopy was performed and left hydrosalpinx was diagnosed. Salpingectomy was then carried out. The diagnosis of hydrosalpinx was confirmed by histological examination. To the best of our knowledge this is the first report of hydrosalpinx possibly caused by an office HS procedure.

Key words: Hydrosalpinx; Office hysteroscopy; Infertility; Complication.

Introduction

A hysteroscope is a thin, telescope-like or fiberoptic device inserted into the uterus via the vagina and cervix that enables direct visualization of the endometrial cavity and tubal ostia. Since it enables direct visualization of the endometrium, hysteroscopy (HS) is the gold standard for evaluation of the endometrial cavity. As a new technique office HS can be performed without general anesthesia in an ambulatory setting with low cost, minimal morbidity and inconvenience to patients. Some diagnosed lesions can be operated on easily using different equipment introduced through the operative channel of the hysteroscopy [1]. However, treatment of benign endometrial pathologies by way of office HS can have a positive effect on pregnancy rates during in-vitro fertilization cycles [2].

Complications of the hysteroscopy procedure are rare. In a systematic review of 25,409 diagnostic procedures, only eight serious complications were reported (five perforations, 1 infection, 1 angular crisis, and 1 hypocalcemic crisis) [3]. However some complications associated with office HS are case-specific. In our case for example hydrosalpinx was reported following office HS.

Case Report

A 35-year-old woman was accepted at our center for a second IVF cycle in 2004. She had had three unsuccessful intrauterine insemination cycles and one IVF trial in 2000 but she did not achieve pregnancy. She had had a history of primary infertility for nine years and no presumptive factors as a cause of infertility had been documented. In 1996, diagnostic laparoscopy and hysterosalpingography revealed normal findings.

In her current history, hormonal analyses at the early follicular phase yielded the following data: FSH = 4.3 IU/l, LH = 2.5 IU/l, E₂ = 152 pg/ml. Transvaginal ultrasonography (US) revealed nothing significant. The parameters of semen analysis were normal. Office HS was performed using a 2.9 mm diameter rigid scope (Karl Storz, Tuttlingen, Germany) for evaluation of the intrauterine cavity (there was no further evaluation after the first IVF cycle or diagnostic laparoscopy). The vagina was cleaned with povidone iodine before the procedure as per clinical policy. Hysteroscopic findings were normal with a regular endocervix, endometrial cavity and bilateral internal tubal ostia.

The patient was evaluated by pelvic examination (without any evidence of pelvic inflammatory disease) and transvaginal US (General Electric, LOGIQ 500-Pro Series) one month after office HS for routine evaluation before the IVF cycle. There was an image compatible with left hydrosalpinx (around 6 mm in diameter) in the US examination that was not detected before by the same physician using the same ultrasound equipment. The finding was reviewed with another ultrasonographer. Following an informative consultation with the patient, laparoscopy was performed and left hydrosalpinx was diagnosed. Salpingectomy was performed due to the known association with hydrosalpinx and poor infertility prognosis. Consequently, a diagnosis of hydrosalpinx was confirmed both by the operative procedure and histological examination.

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Discussion

Some complications of HS have been reported with increasing practice both for diagnostic and operative procedures like fluid overload, uterine perforation and post-operative infection [1, 4]. The risk of endometritis has been found to be as low as 0.01% following HS [5]. On the other hand, definitive endometritis was questionable due to absence of vaginal or cervical culture of the kind of bacterial infection in that report [5].

There has been little information published on the predictors of complications for hysteroscopic surgery despite its increasing use. Preoperative evaluation of the patient is very important due to the complications from the procedure. For example, the diagnosis and treatment of cervicovaginal infections should be performed before office HS because this procedure is being performed without using a speculum and cleaning procedures.

We have presented a case of hydrosalpinx occurring after office HS. Infection may be a risk factor but in our case there was no suspicious infection of the cervix, vagina or endometrium before the procedure. On the other hand, as this patient had had no previous tubal surgery, accumulation of distention medium during the office HS may have triggered the formation of hydrosalpinx or the procedure may have precipitated the initiation of subclinical pelvic inflammatory disease.

Hydrosalpinx has a negative effect on assisted reproduction by decreasing pregnancy and implantation rates compared with control groups [6]. Embryotoxic hydrosalpingeal fluid and poor endometrial receptivity have been demonstrated in the presence of hydrosalpinx [7]. It is now common to advocate that patients with hydrosalpinx, especially visible on US, undergo salpingectomy before IVF [8]. Therefore, salpingectomy was recommended in order to improve the pregnancy rate in our case.

To the best of our knowledge, this is the first report of hydrosalpinx possibly caused by an office HS procedure. In addition, it may be concluded that, all clinicians should keep in mind that office HS may cause hydrosalpinx and preventing HS complications starts by raising awareness of the risks and precautions.

References

- [1] Bettocchi S., Nappi L., Ceci O., Selvaggi L.: "Office hysteroscopy". *Obstet. Gynecol. Clin. North. Am.*, 2004, 31, 641.
- [2] Demiol A., Gurgan T.: "Effect of treatment of intrauterine pathologies with office hysteroscopy in patients with recurrent IVF failure". *Reprod. Biomed. Online*, 2004, 8, 590.
- [3] Clark T.J., Voit D., Gupta J.K., Hyde C., Song F., Khan K.S.: "Accuracy of hysteroscopy in the diagnosis of endometrial cancer and hyperplasia: a systematic quantitative review". *JAMA*, 2002, 288, 1610.
- [4] Bradley L.D.: "Complications in hysteroscopy: prevention, treatment and legal risk". *Curr. Opin. Obstet. Gynecol.*, 2002, 14, 409.
- [5] Aydeniz B., Gruber I.V., Schauf B., Kurek R., Meyer A., Wallwiener D.: "A multicenter survey of complications associated with 21,676 operative hysteroscopies". *Eur. J. Obstet. Gynecol. Reprod. Biol.*, 2002, 104, 160.
- [6] Zeyneloglu H.B., Arici A., Olive D.L.: "Adverse effects of hydrosalpinx on pregnancy rates after in vitro fertilization-embryo transfer". *Fertil. Steril.*, 1998, 70, 492.
- [7] Nackley A.C., Muasher S.J.: "The significance of hydrosalpinx in in vitro fertilization". *Fertil. Steril.*, 1998, 69, 373.
- [8] Strandell A., Lindhard A., Waldenstrom U., Thorburn J., Janson P.O., Hamberger L.: "Hydrosalpinx and IVF outcome: a prospective, randomized multicentre trial in Scandinavia on salpingectomy prior to IVF". *Hum. Reprod.*, 1999, 14, 2762.

Address reprint requests to:

S. GUVEN, M.D.

Mahmut Esat Bozkurt Caddesi No. 69/2
Oncebeci, Ankara (Turkey)