

# Salpingectomy improves outcome in the presence of a unilateral hydrosalpinx in a donor oocyte recipient: A case report

D. G. Kiefer<sup>1</sup>, B.A.; J. H. Check<sup>2</sup>, M.D., Ph.D.

<sup>1</sup>The Pennsylvania State College of Medicine, The Milton S. Hershey Medical Center, Hershey, Pennsylvania (USA)

<sup>2</sup>The University of Medicine and Dentistry of New Jersey, Robert Wood Johnson Medical School at Camden,

Cooper Hospital/University Medical Center, Department of Obstetrics and Gynecology,

Division of Reproductive Endocrinology & Infertility, Camden, New Jersey (USA)

## Summary

**Purpose:** To determine if unilateral salpingectomy for hydrosalpinx can improve fecundity in a woman with many cycles of failure to conceive despite the fertilization of donor oocytes and subsequent embryo transfer.

**Methods:** Salpingectomy performed after failure to conceive despite IVF-ET with the patient's own oocytes (n=5) or transfer of donor embryos (n=2) or embryo transfer cycles as a donor oocyte recipient (n=5).

**Results:** The patient conceived three of four times following salpingectomy. Transfer of four frozen-thawed donor embryos and two frozen-thawed embryos of her own led to a successful delivery. In one of two cycles as a donor oocyte recipient she had a successful delivery and subsequently, the transfer of cryopreserved/thawed embryos from a previous donor oocyte cycle led to a chemical pregnancy.

**Conclusion:** Unilateral hydrosalpinx can be a cause of recalcitrant failure to conceive despite assisted reproductive technology. Salpingectomy can restore fecundity.

**Key words:** Hydrosalpinx; Fecundity; Salpingectomy; Oocyte recipient.

## Introduction

There have been numerous reports in the literature regarding the negative effects of a hydrosalpinx on fecundity following in vitro fertilization-embryo transfer (IVF-ET). Most of these reports involved bilateral hydrosalpinges [1-7]. Several studies have demonstrated that salpingectomy for bilateral hydrosalpinges improves pregnancy rates following IVF-ET [8-12] including two prospective studies [13, 14].

There are fewer studies involving the unilateral hydrosalpinx. Kassabji *et al.* [12] found that both unilateral and bilateral hydrosalpinges were associated with diminished fecundity following IVF-ET. Two other studies found that unilateral salpingectomy improves pregnancy rates in women with previous failures following IVF-ET [15, 16].

However, not all authors agree that the hydrosalpinx reduces fecundity [17, 18]. Furthermore some authors support the concept that bilateral hydrosalpinges reduce fecundity but that the unilateral hydrosalpinx does not cause infertility [19].

The case presented herein clearly supports the studies suggesting that the unilateral hydrosalpinx can be a cause of recalcitrant failure to conceive despite multiple embryo transfer cycles. Furthermore, unilateral salpingectomy can restore fertility potential after embryo transfer.

## Case Report

A 38-year-old nulligravida woman presented for evaluation of infertility. Her medical history was significant for a ruptured appendix at the age of 16. A right oophorectomy for an ovarian cyst was performed at a later date. On ultrasound, the patient was found to have a right hydrosalpinx. She was also found to have bilateral tubal occlusions on hysterosalpingogram, which were attributed to previous pelvic inflammatory disease.

She underwent a total of 16 IVF cycles at our center. The first five cycles she was stimulated and retrieved her own eggs. The number of oocytes retrieved varied from four to eight and she had three to five embryos transferred each cycle. In her sixth and seventh cycles, she was an oocyte recipient and in her eighth cycle she received donor embryos. In her ninth cycle she had IVF-ET and transferred two fresh embryos which were fertilized with her own oocytes along with two frozen-thawed donor embryos. Her tenth and eleventh cycles were also donor oocyte recipient cycles. Her twelfth cycle was a frozen transfer of embryos from a previous oocyte recipient cycle. None of these cycles achieved a pregnancy and all of the oocytes were fertilized with donor sperm.

After 12 failed cycles, she was advised, based on new literature, that the hydrosalpinx be removed. The patient agreed to have a unilateral salpingectomy. Shortly after the salpingectomy, at the age of 42, she underwent donor embryo transfer. Four donor embryos were transferred along with two of her own frozen-thawed embryos from a previous cycle. She became pregnant and delivered a female with Vatter syndrome. Unfortunately, this child died at 18 months secondary to respiratory failure as a result of a respiratory infection.

She returned to our office at the age of 46. She received oral estradiol, progesterone, and heparin support and conceived on

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her second donor oocyte cycle. ICSI was performed, secondary to male factor, using her husband's frozen sperm. Forty eggs were retrieved from the donor, 20 of which were given to this patient. Fifteen eggs were mature, two were immature, two were abnormal and one was atretic. A total of 12 embryos were obtained following ICSI. Four were transferred, five were cryopreserved, and three were discarded due to abnormalities. With this pregnancy, she delivered a healthy girl who is alive and well. She has since returned to our office, now age 48. Again she was given estradiol/progesterone and the remaining five frozen embryos were thawed. Three embryos survived and were transferred. This transfer resulted in a chemical pregnancy which unfortunately did not attain viability.

### Discussion

Though the possibility exists that achieving these last three pregnancies were fortuitous, the data more strongly suggest that the unilateral salpingectomy played a great role in their conception. Prior to surgery, she failed to conceive in 12 cycles (seven of which were with donor oocytes or embryos). Following salpingectomy, she conceived in three of four cycles.

The case described herein is the most convincing report to date demonstrating that a unilateral hydrosalpinx can impair conception, even following IVF. In addition, this report shows that subsequent salpingectomy can markedly improve fecundity. This is the first case which shows that even the usually high pregnancy rate following transfer of embryos from donor eggs can be adversely influenced by the presence of a unilateral hydrosalpinx and that fecundity can be restored by salpingectomy.

Until a prospective study of unilateral hydrosalpinx and subsequent salpingectomy is performed, the treating physician will need to depend on anecdotal cases (e.g., the one presented herein) to help make the decision as to whether to perform salpingectomy or not.

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Address reprint requests to:  
**JEROME H. CHECK, M.D., Ph.D.**  
 7447 Old York Rd.  
 Melrose Park, PA 19027