CASE REPORT

Spontaneous intrauterine pregnancy following salpingectomy for a unilateral hydrosalpinx

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The effect of salpingectomy for unilateral hydrosalpinx with a contralateral normal tube was evaluated in two infertile patients in which unilateral hydrosalpinx, visualized by vaginal ultrasound, was treated by unilateral salpingectomy as a preparatory step before IVF. Spontaneous pregnancy occurred in both patients while waiting to be enrolled in an IVF trial. In conclusion, unilateral salpingectomy for hydrosalpinx in the presence of a contralateral healthy tube could result in spontaneous pregnancy.

Key words: salpingectomy/spontaneous pregnancy/unilateral hydrosalpinx/vaginal ultrasound

Introduction

Very early in our IVF programme, we noticed that hydrosalpinges associated with fluid accumulation in the uterine cavity resulted in IVF failure (Mansour et al., 1991). In other larger studies, several investigators reported that the presence of hydrosalpinges negatively affects the outcome of IVF (Strandell et al., 1994). Kassabji et al. found that both unilateral and bilateral hydrosalpinges were associated with diminished fecundity following IVF (Kassabji et al., 1994). It has also been reported that the implantation rate in IVF is significantly improved after salpingectomy for hydrosalpinges (Vandromme et al., 1995).

The objective of this paper is to present two case reports of patients who became pregnant spontaneously after salpingectomy for a unilateral hydrosalpinx, which was detected by vaginal ultrasound.

Case Reports

Case 1

The patient was a 29-year-old woman, who presented with 4 years primary infertility. The semen count of the husband was normal. Hysterosalpingography showed a unilateral hydrosalpinx on the right side and the left tube was patent with free peritoneal spill. Vaginal ultrasound showed a right hydrosalpinx measuring 2×4 cm in diameter. The patient gave a history of appendectomy following acute abdomen and localized peritonitis, which could possibly explain the right-sided hydrosalpinx. She previously underwent three trials of ovarian stimulation and intrauterine insemination, but did not become pregnant. She was scheduled for an IVF trial, but as our policy during the past 2 years has been to council for salpingectomy of ultrasonically visible hydrosalpinges, right laparoscopic salpingectomy was performed. It was decided to start IVF 3 months later. The patient had a spontaneous pregnancy during the second cycle after salpingectomy and the pregnancy was uneventful and she delivered a healthy baby at 38 weeks.

Case 2

The patient was a 31-year-old woman, who presented with primary infertility for 4 years. Previous hysterosalpingography showed a unilateral hydrosalpinx. A laparoscopy report done in another centre described a unilateral large hydrosalpinx and mild peritoneal adhesions with an apparently normal contralateral tube.

The patient had one failed IVF trial in the same centre after transferring three good quality embryos. After evaluating her previous history, vaginal ultrasound revealed a large hydrosalpinx. The patient was counselled for a unilateral salpingectomy and a possible bilateral salpingectomy after evaluation of the contralateral tube during laparoscopy. Excision of the hydrosalpinx was done and the other tube looked healthy and patent; consequently, it was not removed. The patient was scheduled for IVF in our unit 4 months later. In her third cycle after salpingectomy the patient had a spontaneous pregnancy, which is ongoing.

Discussion

The presence of a unilateral hydrosalpinx together with a healthy contralateral tube is an uncommon condition. Tubal pathology resulting from ascending infection is usually bilateral. In one of our two patients, the hydrosalpinx followed acute appendicitis. Other possible causes of this condition include endometriosis and previous surgery in the adnexa.

The exact mechanisms by which the hydrosalpinx fluid has an adverse effect on implantation are not yet clearly understood.
The fluid passing to the uterine cavity can exert a mechanical effect (Mansour et al., 1991). Various substances such as cytokines, prostaglandins, leukotrienes and other compounds could be deleterious to intrauterine embryos and prevent implantation (Strandell et al., 1994).

Shelton et al. observed the effects of salpingectomy in patients with hydrosalpinx who had failed IVF and demonstrated a significant improvement in pregnancy rate after unilateral or bilateral salpingectomy for hydrosalpinx (Shelton et al., 1996).

In a retrospective study, Wainer et al. reported that only bilateral and not unilateral hydrosalpinges appear to have a significant effect on the pregnancy rate after IVF (Wainer et al., 1997). They did not recommend salpingectomy for unilateral hydrosalpinges. However, the diagnosis of hydrosalpinx was based only on hysterosalpingography and/or laparoscopy. Ultrasound was used only during ovarian stimulation to visualize, but not to measure, tubal dilation. The authors did not mention in the results or the discussion section any information about the effect of ultrasonically detected unilateral or bilateral hydrosalpinges on the outcome of IVF. In a well-designed large prospective multicentre randomized study, Strandell et al. showed that salpingectomy significantly improved the delivery rates after IVF for hydrosalpinges, which are detected by vaginal ultrasound, and in particular bilateral cases (Strandell et al., 1999). The authors also reported two spontaneous pregnancies after unilateral salpingectomy. However, one woman with a unilateral hydrosalpinx also conceived in the non-intervention group.

Choe and Check were the first to report on two patients who became pregnant spontaneously after unilateral salpingectomy for hydrosalpinx (Choe and Check, 1999). Both patients had failed IVF trials and repeated ovarian stimulation/intratubal insemination before the unilateral salpingectomy was performed.

In a case report, Kiefer and Check reported that a patient failed to conceive in 12 cycles of IVF, including seven with donor oocytes or embryos (Kiefer and Check, 2001). Following unilateral salpingectomy for hydrosalpinx, their patient conceived in three of four trials. She had two deliveries and one chemical pregnancy. The authors concluded that the data strongly suggest that the unilateral salpingectomy played a great role in this conception, and that transfer of embryos from donor oocytes can be adversely influenced by the presence of unilateral hydrosalpinx.

In our report, salpingectomy was performed for the two patients as a preparatory step before IVF. It has become our policy to counsel all patients with hydrosalpinges visualized by vaginal US for salpingectomy prior to IVF.

Other options, such as transvaginal aspiration of hydrosalpinges at the time of oocyte retrieval, may improve the pregnancy rate (Van Voorhis et al., 1998). Distal neosalpingostomy (Murray et al., 1998), which has shown some improvement in the pregnancy rate in IVF, may also be used. However, it may increase the risk of ectopic pregnancy, and the hydrosalpinx may re-accumulate. This procedure is an option for the patient who is reluctant to lose her tubes.

It is possible that salpingectomy prevented the harmful effect of the hydrosalpinx, allowing normal implantation of embryos reaching the uterine cavity from the contralateral side.

The diagnosis of unilateral hydrosalpinx and a patent contralateral tube is usually done by hysterosalpingography. In this situation, it is not possible to assess the morphology of the patent tube and the presence or absence of peritubal adhesions, the condition of endotubal mucosa, or signs of chronic pelvic peritonitis on the side of the patent tube. The condition of the contralateral tube is best assessed by laparoscopy, which will confirm or exclude that the pathological lesion is localized to one side of the pelvis and affecting only one tube. Salpingoscopy could also be performed to assess the integrity of tubal mucosa (Puttemans and Brosens, 1996).

During diagnostic laparoscopy, performed to evaluate the condition of the contralateral tube, laparoscopic salpingectomy for hydrosalpinx could be performed in the same sitting. Patients who may benefit from unilateral salpingectomy, with or without IVF should be properly counselled for possible salpingectomy before performing diagnostic laparoscopy and detailed consent should be signed.

The data from this report suggest that unilateral salpingectomy for hydrosalpinx in the presence of a contralateral healthy tube could result in spontaneous pregnancy. In this clinical situation, it would be a reasonable step to wait for some cycles after unilateral salpingectomy and possibly to try a few cycles of controlled ovarian stimulation and intratubal insemination before resorting to IVF.

**Note added at proof**

A healthy baby has been delivered.

**References**


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