

Does Hydrosalpinx Aspiration Hold any Role in Modern ART?

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Abstract

Background: Hydrosalpinx presence has been shown to affect outcomes of assisted reproductive technology (ART). Due to impaired pregnancy outcomes owing to presence of hydrosalpinx it becomes prudent to remove hydrosalpinx before embryo transfer but sometimes patient characteristics do not allow standard surgeries like laparoscopic salpingectomy possible. Should such patients be denied of embryo transfers or shall be given a chance for pregnancy by using other simpler means? Hydrosalpinx aspiration is one of those simpler procedures which give patients with higher surgical risks especially those with higher suspicion of dense adhesions, a chance to conceive without exposing them for another difficult surgery.

Case presentation: A case of 38-year-old nulligravida with primary infertility with history of pelvic surgery presented with left hydrosalpinx which was managed by hydrosalpinx aspiration followed by embryo transfer.

Conclusion: Hydrosalpinx aspiration can be an option for patients with higher surgical risks in whom standard treatment for hydrosalpinges like laparoscopic salpingectomy appears risky.

Keywords: Hydrosalpinx; Aspiration; Embryo Transfer; Laparoscopic Salpingectomy

Abbreviations

ART: Assisted Reproductive Technology and RCT: Randomized Controlled Trials.

Introduction

Presence of hydrosalpinges have shown to be deleterious for ART outcomes and several RCTs have shown the role of hydrosalpinx removal prior to embryo transfer. Various methods have been used for removal of hydrosalpinges. Various treatments have been tried to treat hydrosalpinges before proceeding on with ART which range from salpingectomy, salpingotomy, tubal clipping, tubal occlusion, hydrosalpinx aspiration and hydrosalpinx sclerotherapy [1]. Laparoscopic salpingectomy has come out to be the standard treatment for hydrosalpinx removal.

Laparoscopic removal can particularly be challenging for the patients with multiple prior surgeries or in patients in whom suspicion for dense adhesions is there. Patients with history of pelvic tuberculosis, previous abdominal surgeries, history of pelvic inflammatory disease, endometriosis or inflammatory bowel disease are particularly at high risk. Such patients run risk of bowel or bladder damage if another surgery is performed.

Ultrasound guided hydrosalpinx aspiration can be one of the procedures which can help patients with higher surgical risks. Since there are higher chances of re-accumulation of hydrosalpinx fluid, the time when procedure should be performed is of utmost importance. Various studies have shown removal of fluid at the time of oocyte retrieval to be effective. Similarly, if patient is planned for frozen embryo

transfer cycle, the time period immediately before start of progesterone can be taken as a point for hydrosalpinx fluid aspiration procedure to be done.

We here discuss a case of huge hydrosalpinx in a patient who conceived after hydrosalpinx aspiration.

Case Report

A 38-year-old nulligravida with primary infertility presented to our hospital after 5 years of married life. Patient had regular menstrual cycle. No significant medical history identified. History of open myomectomy for fibroid uterus done 2 years back records of which were not available with the patient.

Her hormonal profile showed: FSH=8.4mIU/ml, LH=5.8mIU/ml, Prolactin=28.4ng/ml and AMH=0.9ng/ml. Male partner was 40-year-old with normozoospermia.

Transvaginal pelvic ultrasound showed retroverted uterus and ovaries with 3 and 4 antral follicle count on right and left side respectively. There was evidence of large hydrosalpinx (80x30mm) in left adnexa.

Patient was planned for laparoscopic tubal disconnection proceed ART in view of decreased ovarian reserves to which she agreed. Laparoscopy was done in next cycle which showed dense adhesions of bowel loops with posterior uterine wall. Fallopian tubes could not be identified due to dense adhesions of bowel with pelvic organs. Procedure was terminated and patient was counselled post operatively for hydrosalpinx aspiration during oocyte retrieval. Controlled ovarian stimulation using Flexible Antagonist protocol was followed. She received Recombinant-FSH (Folisurge 150 IU, Intas pharmaceuticals) and Recombinant LH (Luveris 75 IU, Merck Serono) for 11 days. Antagonist (Cetrorelix-Cetrofirst, Gufic biosciences) was started by day 6 of stimulation and continued till the day of trigger. Final triggering was achieved by recombinant human chorionic gonadotropin 250 mcg (Ovitrelle, Merck, London, UK). Oocyte retrieval was performed and 6 oocytes (5 metaphase II, 1 metaphase I) were aspirated.

Hydrosalpinx aspiration was deferred in view of raised progesterone levels (1.6 ng/ml) and hence inability to do the fresh transfer. The procedure went uneventful. The patient was discharged in satisfactory condition four hours later.

Patient was planned for frozen embryo transfer. Hydrosalpinx was seen measuring 71x65mm (Figure 1). Hydrosalpinx aspiration was performed under ultrasound guidance on the day of start of progesterone. 80 ml of amber colored fluid was obtained. Embryo transfer was done with 2 good quality

blastocysts (4AA).

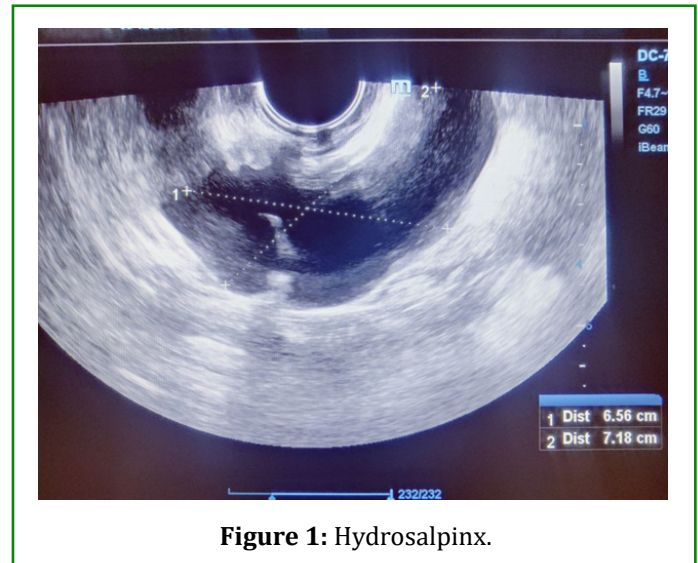


Figure 1: Hydrosalpinx.

Fourteen days post embryo transfer bHCG was done for pregnancy confirmation which came out to be 1456 mIU/ml. Ultrasound done at 6 weeks of gestation showed single intrauterine live pregnancy. Adnexa was screened for any re-accumulation of hydrosalpinx fluid. Patient has an ongoing pregnancy of 20 weeks with no complications.

Discussion

Hydrosalpinges have remained a cause for impaired pregnancy outcomes following assisted reproductive technologies. Higher chances of recurrent implantation failure or spontaneous abortions have been seen if they are not removed before embryo transfer. A prospective, randomized multicentre trial in Scandinavia on salpingectomy prior to IVF showed 3.5 fold increased delivery rate in patients who underwent salpingectomy when compared to controls [2].

An old study by voorhis, et al. [3] found role of hydrosalpinges aspiration at the time of oocyte retrieval. They found improved pregnancy rates post aspiration and considered it as an acceptable alternative to salpingectomy.

Hammadih, et al. [4] conducted a RCT in women who are identified to have hydrosalpinges during controlled ovarian stimulation during IVF and found that aspiration of hydrosalpinges during oocyte collection may be effective in improving pregnancy rates.

Another RCT conducted by Fouda, et al. [5] compared the efficacy of ultrasound guided aspiration of hydrosalpinx fluid at the time of oocyte retrieval with salpingectomy in the management of patients with ultrasound visible hydrosalpinx undergoing IVF-ET. They found that the implantation,

clinical pregnancy and ongoing pregnancy rates were higher in the subgroup of patients with no re-accumulation of hydrosalpinx fluid compared with the subgroup of patients with rapid re-accumulation of hydrosalpinx fluid.

A study done by Zang, et al. [6] showed role of ultrasound sclerotherapy on women with hydrosalpinx. Zang et al concluded that ultrasound sclerotherapy could improve the outcomes of in vitro fertilization embryo transfer by improving the blood flow of the uterine arcuate artery.

Variety of tubal occlusive procedures have been tried including laparoscopic tubal clipping using Filshie clip or Hulkae Clemens clip. Hysteroscopic tubal occlusive procedures with placement of using microinserts like Essure have been tried but withdrawn due to complications like perforation and insert migration [7].

It has been proven that presence of hydrosalpinges adversely affect the pregnancy outcomes and they must be removed before embryo transfer and across various studies laparoscopic salpingectomy has come out to be the standard procedure for hydrosalpinges removal. But various studies have shown acceptable pregnancy rates with hydrosalpinx aspiration especially in patients with higher surgical risks. We presented this case due to higher surgical risks in our patient which made laparoscopic tubal disconnection risky for her and how hydrosalpinx aspiration was the only method available to improve her conception chances.

Conclusion

Hydrosalpinx aspiration can be an option for patients with higher surgical risks in whom standard treatment for hydrosalpinges like laparoscopic salpingectomy appears risky. It gives these patients an opportunity to have a pregnancy, chances of which are decreased in presence of huge hydrosalpinges.

Ethical Approval

Not applicable

Declaration of Patient Consent

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

Conflicts of Interests

There are no conflicts of interest

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Nil

Availability of Data and Materials

Data supporting their findings can be found in the references provided.

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