

Successful Pregnancy following Refusal of Laparoscopy but Acceptance of Hydrotubation-only Procedure in Woman with Bilateral Tubal Blockade

Onyinye Onyeka OKONKWO¹,
George Uchenna ELEJE²,
Chijioko ASOGWA³,
John E.N. OKONKWO⁴

Abstract

Background: Hydrotubation is the trans-cervical flushing of fluid through the fallopian tubes, commonly used in combination with laparoscopy for diagnostic purposes to determine the tubal patency in infertility investigation. Hydrotubation-only procedure can be done in women that refuse diagnostic laparoscopy.

Case Presentation: In this study, a case of 27-year-old nullipara was reported who presented to the Jeni Hospital, Enugu, Nigeria with a history of inability to conceive. Investigations done prior to presentation to this facility included a hormonal profile which was indicative of hyperprolactinaemia. She also came in with a hysterosalpingogram which showed left cornual tubal blockage. The right tube was very poorly outlined and ended blindly with no peritoneal spill. The husband's seminal analysis was well within normal limits. She refused consent for laparoscopy but not hydrotubation. Following multiple hydrotubation, she had successful pregnancy and subsequently achieved a live birth.

Conclusion: We report a case of pregnancy resulting from multiple hydrotubations. Two radiologists and a gynaecologist separately had discussed with this medical professional couple the result of the hysterosalpingography that showed bilateral tubal occlusion and they opted for hydrotubation-only with resultant live birth.

Keywords: Hydrotubation, hysterosalpingogram, Infertility, cornual blockage

1 JENO Hospital, No 23 Nnamdi Azikiwe Road Trans-Ekulu Enugu, Enugu State Nigeria

2 Department of Obstetrics and Gynecology, Faculty of Medicine, College of Health Sciences, Nnamdi Azikiwe University, Nnewi Campus, PMB 5025, Nnewi, South-east, Nigeria

3 Department of Public Health, University of Nigeria Teaching Hospital, Ituku-Ozalla Enugu Enugu State, Nigeria

4 Department of Obstetrics and gynecology, JENO Hospital, No 23 Nnamdi Azikiwe Road, Trans-Ekulu Enugu, Enugu State Nigeria

Corresponding Author:

ELEJE George Uchenna

Department of Obstetrics and Gynecology, Faculty of Medicine, College of Health Sciences, Nnamdi Azikiwe University, Nnewi Campus, PMB 5025, Nnewi, South-east, Nigeria

✉ georgel21@yahoo.com

Introduction

Hydrotubation is the trans-cervical flushing of fluid through the Fallopian tubes, commonly used in combination with laparoscopy for diagnostic purposes to determine the tubal patency in infertility investigation. A number of studies show that lipiodol hysterosalpingography significantly improved spontaneous pregnancy rate over a period of time [1,2]. Two randomized studies comparing lipiodol and water soluble flushing did not show any significant differences [3,4]. The mechanism of action of lipiodol is not established, but amorphous fallopian tubal debris identifiable on histological microscopy [5] may be mechanically removed. Nugent et al have suggested some unrecognized causes for the infertility [6]. Tubal infertility constitutes about 30-35% of causes of female infertility [7] and hydrotubation has been variously studied preoperatively, intra-operatively and

post operatively in order to optimize fertility in infertile women [7-9]. We report a case of pregnancy resulting from multiple hydrotubations. Two radiologists and a gynaecologist separately had discussed with this medical professional couple the result of the hysterosalpingography that showed bilateral tubal occlusion and they opted for hydrotubation only.

Case Presentation

Mrs. O.J, a 27-year-old nulliparous, laboratory technologist woman with inability to achieve conception for two years of marriage. She achieved menarche at 13 years. Her menstrual flow was normal in duration and flow, and was ovulatory as per the history. She had a single episode of itchy vaginal discharge and was treated for Candidiasis with Fluconazole. Her urinary and bowel habits were uneventful. She had a right breast lumpectomy

which was benign. She had been on cycles of clomiphene citrate and bromocriptine though stopped at time of presentation. There was no heat or cold intolerance. She had no contraception and her braziers were never tight. There was suckling of both breasts. She had no allergies and was one of eight children, five females and three males.

Investigations done prior to presentation to this facility included a hormonal profile which was indicative of hyperprolactinaemia. She also came in with a hysterosalpingogram which showed left cornual tubal blockage. The right tube was very poorly outlined and ended blindly with no peritoneal spill. The husband's seminalysis was well within normal limits.

Her vital signs were within normal limits. There was no receding of the hair or visual field loss. She perceived odour normally. There was galactorrhoea but no chest lesions were found. The abdomen revealed no abnormality. She had normal female escutcheon. Apart from vague suprapubic tenderness, the pelvic examination was very unremarkable.

Culture and semen analysis were ordered for the husband; and for the wife, urine analysis, culture and sensitivity, and complete blood count. These were essentially normal. Ultrasound showed uterine dimensions of 6.85x4.61x3.19 cm. No fibroids were seen. A diagnosis of tubal factor primary infertility was made.

She was counselled for laparoscopy and intra-operative hydrotubation. For an undisclosed reason she refused any form of open and minimal access surgery. The offer was discussed fully and she maintained her decision. Being a laboratory technologist and the husband a medical doctor, we gave in to their decision and embarked only on hydrotubation.

During each cycle she was given clomiphene citrate 100 mg daily for 5 days, from the 3rd day of her cycle. Hydrotubation under ketamine general anaesthesia was scheduled on the 9-10th day of her cycle. She was given some coital advice after each episode.

In the first hydrotubation done, there was much reflux of the solution (normal saline, antibiotics and hyaluronic acid). In the two follow up hydrotubations (done under ketamine hydrochloride) there was less reflux and reduced resistance. She was not seen for the next appointment but appeared after twelve weeks of missing her period.

Ultrasound showed a viable, fourteen week singleton pregnancy with fundal placenta, normal liquor volume, active limbs and body movements. Her antenatal period was uneventful. She had spontaneous vaginal delivery of a female baby with APGAR score of 8 in the first minute and 10 in 5 minutes. The baby weighed 3.26 kg.

Discussion

Up-to-date hydrotubation has been generally considered a complimentary procedure to reproductive surgery. However, it has been applied in combination with various treatments or singly in the treatment of tubal infertility. In randomized studies [7,10,11], hydrotubation significantly improved the pregnancy rate when applied a day prior to intra-uterine insemination (the first option for patients with unexplained infertility) as compared with no hydrotubation. Adesiyun et al. [12] also concluded in their study of 257 patients in a low resource setting that therapeutic hydrotubation may be beneficial especially in patients with incomplete tubal occlusion (bilateral fimbrial adhesions) and as part of treatment for unexplained infertility. Our patient, after discussions with two radiologists, a gynaecologist and a family physician, opted for therapeutic hydrotubation. An informed consent was obtained hence, after the initial one; the subsequent hydrotubations were done under transient anaesthesia.

Patient selection in the combined or therapeutic hydrotubation is of essence. Shi-en et al. in a retrospective study introduced a new classification system for pregnancy prognosis of tubal factor infertility [13]. Based on the nature of adhesions, tubal patency, morphology and fimbrial structure the patients were classified as mild (0-7 points), moderate (8-15 points) and severe (more than 16 points). This is a center where laparoscopic salpingoplasty and hydrotubation; hysteroscopic-laparoscopic salpingoplasty and hydrotubation and laparoscopic hydrotubation were used to improve the tubal infertility score. In a low resource setting where facility or technology is lacking, use of hysterosalpingography and therapeutic hydrotubation may suffice to improve the fertility score as in our patient. Hydrotubation is not without its complications if done blindly with undue force. In a randomized study for hydrotubation versus no hydrotubation before intrauterine insemination in unexplained infertility [14], there was no significant difference in the ongoing pregnancy rate between the hydrotubation and no hydrotubation groups. The procedure for hydrotubation was easy, safe with minimal discomfort in a minority of patients. In the three surgical approaches: (laparoscopic salpingoplasty and hydrotubation; hysteroscopic-laparoscopic salpingoplasty and hydrotubation; and laparoscopic hydrotubation) tubal factor infertility scores were decreased to a similar extent [15,16]. Based on the relationships between the preoperative tubal factor infertility scores and prognosis, post operative pregnancy outcomes in mild tubal factor infertility patients were higher than those of moderate and severe tubal factor patients [13]. Discrepancies between scores and prognosis could be due to differences in surgeons' skills including hydrotubation skills. Our patient was morbidly fearful of any discomfort hence the transient anaesthesia. A randomized study with selected similar patients is on-going.

References

- 1 Johnson, N.P., Kwok, R., Stewart, A.W., Sathianathan, M., Hadden, W.E., et al. Lipiodol fertility enhancement: two year follow-up of a randomized trial suggests a transient benefit in endometriosis, but a sustained benefit in unexplained infertility. *Hum Reprod* 2007; 22: 2857-2862.
- 2 Luttjeboer, F., Harada, T., Hughes, E., Johnson, N., Lilford, R., et al. Tubal flushing for subfertility, *Cochrane Database Syst. Rev* 2007; 18: CD003718
- 3 Alper, M.M., Gamer, P.R., Spence, J.E., Quarrington, A.M. Pregnancy rates after hysterosalpingography with oil-and water-soluble contrast media. *Obstet Gynecol* 1986; 38: 6-9.
- 4 Rasssmussen, F., Lindequist, S., Larsen, C., Justesen P. Therapeutic effect of hysterosalpingography: oil versus water –soluble contrast media – a randomized prospective study. *Radiology* 1991; 179: 75-78.
- 5 Watson, A., Vandekerckhove, P., Lilford, R., Vail, A., Brosens, I., et al. A meta-analysis of the therapeutic role of oil soluble contrast media at hysterosalpingography: a surprising result? *Fertil Steril* 1994; 61: 470-477.
- 6 Nugent, D., Watson, A.J., Killick, S.R., Balen, A.H., Rutherford, A.J. A randomized controlled trial of tubal flushing with lipiodol for unexplained infertility. *Fertil Steril* 2002; 77: 173-175.
- 7 Aboulghar, M.A., Mourad, L.M., Al-Inany, H.G., Aboulghar, M.M., Mansour, R.T., et al. Prospective randomized study for hydrotubation versus no hydrotubation before intra-uterine insemination in unexplained infertility. *Reproductive Biomed* 2010; 20(4): 543-546.
- 8 Zhengyu, L., Jin, L., Wenjiao, M., Dan, Z., Xiao, Y., et al. Intra-operative hydrotubation improves fertility of women with distal tubal occlusion after reproductive surgery. *Arch. Gynecol Obstet* 2013; 287: 83-89.
- 9 Hu, C., Chen, Y., Hou, H., Chen, X., Kong, X., et al. Analysis of reoperation for infertility women with tubal pregnancy after conservative surgery. *Zhonghua Yi Xue Za Zhi* 2014; 94: 848-851.
- 10 Edelstam, G., Sjosten, A., Bjuresten, K.E.k.I., Wanggren, K. A new rapid and effective method for treatment of unexplained infertility. *Hum Reprod* 2008; 23: 852-856.
- 11 Aboulghar, M.A., Mansour, R.T., Serour, G.I., Amin, Y., Abbas, A.M., et al. Ovarian superstimulation and intrauterine insemination for the treatment of unexplained infertility. *Fertil Steril* 1993; 60: 303-306.
- 12 Adesiyun, A.G., Cole, B., Ogwuche, P. Hydrotubation in the management of female infertility: outcome in low resource settings. *East Afr Med J* 2009; 86: 31-36.
- 13 Zou, S.E., Jin, Y., Ko, Y.L., Zhu, J. A new classification system for pregnancy prognosis of tubal factor infertility. *Int J Clin Exp Med* 2014; 7: 1410-1416.
- 14 Mohamed, A., Aboulghar, L.M., Mourad, H.G., Al-Inany, M.A., Mansour, R.T., et al. Prospective randomized study for hydrotubation versus no hydrotubation before intrauterine insemination in unexplained infertility. *Reproductive Biomedicine Online* 2010; 20(4): 543 – 546.
- 15 Mossa, B., Patella, A., Ebano, V., Pacifici, E., Mossa, S., et al. Microsurgery versus laparoscopy in distal tubal obstruction hysterosalpingographically investigated. *Clin Exp Obstet Gynecol* 2005; 32: 169-171.
- 16 Ahmad, G., Watson, A.J., Metwally, M. Laparoscopy or laparotomy for distal tubal surgery? A meta-analysis. *Hum Fertil* 2007; 10: 43-47.