

ROLE OF COMBINED DIAGNOSTIC LAPAROSCOPY AND SIMULTANEOUS DIAGNOSTIC HYSTEROSCOPY FOR EVALUATION OF FEMALE SUBFERTILITY FACTORS

SAJIDA PARVEEN, MAJIDAH KHANAM

ABSTRACT

Objective To find out the role of combined diagnostic laparoscopy and simultaneous diagnostic hysteroscopy in evaluation of female infertility.

Study design Descriptive study.

Place & Duration of study Star General Hospital from January 2009 to December 2009.

Methodology Patients were selected from infertility clinic for female factor evaluation by diagnostic laparoscopy and simultaneous diagnostic hysteroscopy. Dye studies as well as observation of pelvic and intrauterine cavity was done under general anaesthesia during laparoscopy and hysteroscopy.

Results A total of 62 women underwent combined diagnostic laparoscopy and simultaneous diagnostic hysteroscopy. Age ranged from 25 years to 38 years and a mean age was 28.4 years. Bilateral tubal patency was demonstrated in 40 (64.5%) patients. Bilateral tubal blockage found in 10 (16.12%) and unilateral tubal occlusion was present in 12 (19.3%) cases. Myomas were found in 4 (6.45%), three found on laparoscopy and one at hysteroscopy. Endometrial polyps were revealed in 6 (9.6%) and Asherman syndrome in 2(3.2%) patients on diagnostic hysteroscopy. Uterine anomalies were found in 8 (12.9%) patients including arcuate uterus in 4 (6.45%), septate in 2 (3.2%), bicornuate and uterine didelphys in one each. Of total, 5 (8.0%) were found to have endometriosis, 12 (19.35%) had polycystic disease of ovary (PCOD), and 3 (4.8%) had functional cyst of ovary. Pelvic adhesions were found in 7 (11.2%) patients. As a whole pelvic pathologies were confirmed in 52 (83.8%) patients and intrauterine pathology in 17 (27.4%) by simultaneous diagnostic hysteroscopy and laparoscopy.

Conclusion In investigating the causes of female infertility a combined diagnostic laparoscopy and hysteroscopy provides best approach to diagnose the pathologies.

Key words Laparoscopy, Hysteroscopy, Infertility.

INTRODUCTION:

Around 60 to 80 million people all over the world suffer from infertility.¹ The prevalence of infertility in rural and

urban areas is 5.3% and 6.8% respectively.² Female factors were more common (57.5%) in central part of Iran.² The prevalence of infertility in Pakistan is 21.9%.³ In Pakistan, most of the patients usually go to *Hakeems* and *Dias* for treatment of infertility which leads to further worsening and delay in proper management.⁴ In this situation the role of new and advanced methods like laparoscopy and hysteroscopy for evaluation of infertile women needs to be established in order to get benefit of these procedures. Generally, diagnostic laparoscopy and hysteroscopy are not a part

Correspondence:

Dr. Sajida Parveen
Baqai Institute of Reproduction and
Developmental Sciences
Gynecology & Obstetrics Department
Baqai Medical University, Karachi
E Mail: safemother@yahoo.com

of initial infertility evaluation.⁵

A number of reports have shown that diagnostic laparoscopy and diagnostic hysteroscopy are effective procedures for evaluation of long term infertility.⁶ In infertile couples laparoscopy reveals abnormal findings in 21.68% of cases after normal hysterosalpingography.⁷ Also, diagnostic hysteroscopy is a very important method for investigation of the reasons of female infertility.⁸ In this study a combined diagnostic laparoscopy and simultaneous diagnostic hysteroscopy was done in cases of female infertility in order to document the role of this approach.

METHODOLOGY:

This descriptive study was conducted at Star General Hospital from January 2009 to December 2009. Patients were selected from infertility clinic for evaluation. Selection criteria was women with primary or secondary infertility of age less than 40 years, suspected pelvic cause of infertility or unexplained infertility and normal semen parameters of husbands. Exclusion criteria was medical disorders which are contraindication for general anaesthesia or laparoscopy. Before the procedure, apart from complete history and detailed examination, complete blood examination, urine analysis, random blood sugar, Pap smear, hepatitis and hormonal profile and transvaginal ultrasound were performed. The procedure was carried out in the follicular phase of menstrual cycle under general anaesthesia. Dye studies were performed with methylene blue and diagnostic hysteroscopy was carried out in lithotomy position with normal saline.

RESULTS:

A total 62 women underwent simultaneous combined diagnostic laparoscopy and hysteroscopy. Age ranged from 25 years to 38 years and a mean age was 28.4 years. Bilateral tubal patency was demonstrated in 40 (64.5%) patients. Bilateral tubes were blocked in 10 (16.12%) and unilateral tubal occlusion was seen in 12 (19.3%). Myomas were seen in 4 (6.45%) cases three at laparoscopy and one on hysteroscopy.

Endometrial polyps were revealed in 6 (9.6%) and Asherman syndrome found in 2(3.2%) patients on diagnostic hysteroscopy. Uterine anomalies were revealed in 8 (12.9%) patients including arcuate uterus in 4 (6.45%), septate uterus in 2(3.2%), bicornuate uterus in one and uterine didelphys in one. Five women had endometriosis, 12 (19.35%) had PCOD, and 3 (4.8%) had functional cyst of ovary. Pelvic adhesions were found in 7 (11.2%) patients. As a whole pelvic pathologies were confirmed in 52 (83.8%) patients and intrauterine pathology in 17 (27.4%) by this approach.

DISCUSSION:

Globally the incidence of infertility is increasing. Regarding female factor infertility congenital anomalies of reproductive system are associated with high rate of infertility.⁹ Diagnostic hysteroscopy offers a reliable evaluation of the uterine cavity and subsequent detection of intrauterine disease. Mean prevalence of uterine malformation in general population and in the population of fertile women is 4.3 % and in infertile patients is approximately 3.5%.⁹ The incidence of uterine anomaly is 7.6%.¹⁰ Our results show arcuate uterus in 6.4%, septate uterus in 3.2%, bicornuate uterus in 1.6% and uterine didelphys in 1.6% in infertile patients. Reliable diagnosis of septate uterus depends upon accurate assessment of uterine fundal contour.¹¹

Our study revealed endometrial polyp in 9.6% and Asherman syndrome in 3.2% by hysteroscopy in infertile patients. In infertile patients about 20% of hysteroscopic examinations show some grade of intrauterine abnormalities.⁸ The hysteroscopy showed a normal cavity in 88% cases, giving a false negative rate of 12% for hysterosalpingography.¹² Complication rate of diagnostic hysteroscopy is low (0.012%).¹³

Diagnostic laparoscopy is the standard means of diagnosing the tubal pathology, peritoneal factors, endometriosis and intra abdominal causes of infertility. Not only does this help in identification of unsuspected pelvic pathology but also contributes to decision making of infertility treatment. Our results at laparoscopy and dye studies presented bilateral tubal patency in 40 (64.5%) and bilateral tubal block in 10 (16.2%) cases. In one study at laparoscopy bilateral tubal patency was demonstrated in 86% but 3% had bilateral blocked tubes and 11% had unilateral tubal occlusion.¹⁴

Laparoscopy often reveals pelvic pathology as endometriosis, PCOD, pelvic and peri adenexal adhesions that result in change of treatment. In this study pelvic adhesions were found in 7 (11.2%) patients. Pelvic adhesions distorting the tubes were found in 5(16.6%) women who presented with infertility in a study.¹⁵ Although exact prevalence of endometriosis in general population of reproductive age is not known, it is believed to be in the range of 3-10%.¹⁶ Our study revealed pelvic endometriosis in 8% , functional ovarian cyst in 4.8 % and PCOD in 19.35% patients. In British literature PCOD is the most common endocrine disorder depending upon the criteria used.¹⁷

Our study revealed myomas in 4.8 % patients on laparoscopy. The incidence of myoma in women with infertility without any obvious cause of infertility is estimated to be 1-2.4%.¹⁸ Thus diagnostic laparoscopy is the standard means of diagnosing the tubal pathology,

peritoneal factors, endometriosis and other intra abdominal causes of infertility. The incidence of postoperative complications with laparoscopy is very low.¹⁹

With the view of low complication rates, minimal time requirement and a negligible effect on post operative course, hysteroscopy could be performed on all infertile patients undergoing diagnostic laparoscopy. Routine diagnostic laparoscopy should be a part of infertility work up in primary and secondary infertility.⁶ As a whole pelvic pathology were confirmed in 52 (83.8%) patients and intrauterine pathology in 17 (27.4%) by simultaneous diagnostic hysteroscopy. As this study was performed on infertile population so frequency of intrauterine and pelvic pathology were higher in our study.

CONCLUSIONS:

It is concluded that while investigating the causes of female infertility combined simultaneous diagnostic laparoscopy and hysteroscopy should be performed in all infertile patients before treatment. Many diagnostic tests for female infertility have screening value but the gold standards are laparoscopy and simultaneous hysteroscopy.

REFERENCES:

1. Mahmoud F. Reproductive health: a global overview. *Early Hum Dev* 1992;29:35-42.
2. Aflatoonian A, Syed Hassani SM, Tabibnejad N. The epidemiological and etiological aspects of infertility in Yazd province of Iran. *IJRM* 2009;7:117-12.
3. UNFPA. Pakistan population assessment. Government of Pakistan. 2003.
4. Talib W, Ikram M, Hafeez M, Saeed M . Infertile female; Laparoscopic evaluation. *Professional Med J* 2007;14:562-66.
5. Godinjak Z, Idrizbegovic E. Should diagnostic hysteroscopy be a routine procedure during diagnostic laparoscopy in infertile women? *JBMS* 2008;8:44-47.
6. Fartum M, Laufer N, Simon A. Investigations of infertile couple: Should diagnostic laparoscopy be performed after normal hysterosalpingography in treating infertility suspected to be of unknown origin ? *Hum Reprod* 2002;17:1-3.
7. Sandra J, Tanahatoc GA , Cornelis B , Lamal K. Investigations of the infertile couple: Should diagnostic laparoscopy be performed in the infertility work up program in patients under going intrauterine insemination. *Hum Reprod* 2003;18:8-11.
8. Hucke J, De Bruyme T, Balan P. Hysteroscopy in infertility – diagnosis and treatment including falloscopy. *Gynecol Obstet* 2000;20:13 –20.
9. Grimbizis GF, Camus M, Tarlatzis BC, Bonits JN, Devroey P. Clinical implications of uterine malformations and hysteroscopic treatment results. *Hum Reprod* 2001;7:161-74.
10. Brusco G F, Arena S, Angelini A. The role of diagnostic hysteroscopy in infertile women. *Minerva Gynecol* 2001;53 :313-19.
11. Homer HA, Li TC, Cooke ID. The septate uterus:a review of management and reproductive outcome. *Fertil Steril* 2000;73:1-14.
12. Hourvitz A, Ledee H , Gervaise A, Fernandez H, Frydman R, Olivennes F. Should diagnostic hysteroscopy be a routine procedure during diagnostic laparoscopy in women with normal hysterosalpingography ? *Reprod Biomed* 2002;4:256-60.
13. Jansen FW, Vredevooged CB, Van Uzlen K, Hermans J, Trimbos JB, Trimbos Kemper TC. Complications of hysteroscopy: a prospective, multicoated study. *Obstet Gynecol* 2000;96:266-70.
14. Kearney R, Skinner J, Turner MJ. An audit of patients investigated by laparoscopy and dye for infertility. *J Obstet Gynecol* 2001;21:396-98.
15. Iftikhar R. Outcome of laparoscopy in chronic pelvic pain. *J Surg Pak* 2008;13:155-58.
16. Itdsa JS, Rock JA. Endometriosis in Linde TE (Editor) *Operative gynaecology* Lippincot Williams Wilkins 2003;9:595-38.
17. Darne FJ. PCOS in Oxford Handbook of Obstetrics and Gynecology by Arulkmran S, Symond J, Fowlie (Editors) Oxford University press 2004;1: 541-57.
18. Moody J. Uterine surgery - Fertility Clinical guidelines. Assessment and treatment for

people with fertility problems. NCC for WCH. Published by RCOG Press Clinical guidelines 2004;1:72.

19. Popovic H, Sulovic D. Laparoscopic treatment of adenexal sterility. Clin Obstet Gynecol 2005;32:31-4.

Laparoscopy is considered the Gold Standard for diagnosing tubal and peritoneal disease. HSG and Laparoscopy are not alternative, but complimentary to each other but hysterolaparoscopy is more informative and operative intervention can be done in the same sitting. The aim of the present study is to assess the combined diagnostic approach of HSG and DHL in the evaluation of female infertility both primary and secondary and to identify the incidence of the various pathological conditions in the female reproductive tract leading to infertility and to study the advantages of diagnostic hysterolaparoscopy over hysterosalpingography. Diagnostic hysterolaparoscopy in evaluation of female infertility in a Rural Medical College. Article. Jan 2016. The aim of this study was to clarify the role of simultaneous combined diagnostic approach using laparoscopy and hysteroscopy in the evaluation of female infertility. In a retrospective study, 360 infertile women underwent complete fertility evaluation. All the patients were examined by simultaneous combined laparoscopy and hysteroscopy as a part of the routine infertility evaluation. Laparoscopy and hysteroscopy were successful in 360 patients. Bilateral tubes were blocked in 18 (5%) and unilateral tubal occlusion were in 30 (8,33%) of patients. The evaluation of adhesions in clinical studies is extremely difficult, as it requires a second-look laparoscopy or laparotomy and, even then, it is less accurate than a necropsy (Gutt et al., 2004). (3) Controlled clinical trials of adhesion prevention in humans have been performed only on limited procedures (mostly infertility-related procedures) but not in more extensive gynaecological interventions (e.g. gynaecological oncology surgery). First of all, laparoscopy with its minimal access to the abdominal cavity reduces the amplitude of peritoneal injury, which seems to play a pivotal role in the pathophysiology of adhesion formation. 382. More-over, studies pertaining to the role of brinolytic agents on the pre-vention of adhesion after gynaecological laparoscopic surgery are still missing. 60. Parveen S, Khanam M (2010) Role of Combined Diagnostic Laparoscopy and Simultaneous Diagnostic Hysteroscopy for Evaluation of Female Subfertility Factors. Journal of Surgery Pakistan 15(1): 1-4. 009. Parveen S, Khanam M. Role of combined diagnostic laparoscopy and simultaneous diagnostic hysteroscopy for evaluation of female sub fertility factors. J Surg Pak. 2010;15(1):44-7. Abdelazim IA, Elezz AA. Complimentary roles of hysteroscopy and saline infusion hysterosonography in uterine cavity assessment before in vitro fertilization. Asian Pac J Reprod. 2012;1(1):1316. Nayak KP, Mahapatra CP, Mallick JJ, Swain S, Mitra S, Sahoo J. Role of diagnostic hysterolaparoscopy in the evaluation of infertility: A retrospective study of 300 patients J Hum Reprod Sci.2012;6(1):32-34. Shetty KS, Shetty H, Rai S. Laparoscopic evaluation of tubal factor in cases of infertility. Int J Reprod Contracept Obstet Gynecol.2013;2(3):410-3.