



# SHOULD DIAGNOSTIC HYSTEROSCOPY BE A ROUTINE PROCEDURE DURING DIAGNOSTIC LAPAROSCOPY IN INFERTILE WOMEN?

ZULFO GODINJAK\*, EDIN IDRIZBEGOVIĆ

Obstetrics and Gynaecology Clinic, University of Sarajevo Clinics Centre,  
Bolnička 10, 71000 Sarajevo, Bosnia and Herzegovina

\* Corresponding author

## ABSTRACT

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. Pelvic adhesions were revealed in 40 (11,11%), and myomas in 42 (11,65%) out of that 31 (8,6%) were revealed by laparoscopy and 11 (3,05%) by hysteroscopy. Endometrial polyps were revealed in 26 (7,22%) and Syndrome Asherman in 3 (0,83%) of patients. Uterine anomaly was found in 19 (5,27%) of cases and out of that septate uterus in 7 (37,15%), bicornuate uterus in 5 (26,31%), arcuate uterus in 4 (21,26%) and uterus unicornu cum cornu rudimentario in 3 (15,27%) of uterine anomalies. Endometriosis was found in 51 (14,16%), dermoid cysts in 8 (2,22%) and in 16 (4,44%) functional cysts of patients. Also, Fitz-Hugh-Curtis syndrome was revealed in 23 (6,11%) of our patients.

Laparoscopy and hysteroscopy play very important role as diagnostic tools in the infertile women. Combined diagnostic simultaneous laparoscopy and hysteroscopy should be performed in all infertile patients before the treatment.

KEY WORDS: laparoscopy, hysteroscopy, infertility

## INTRODUCTION

Laparoscopy and hysteroscopy are diagnostic and therapeutic procedures. If pathology is discovered, it can often be treated immediately. Generally, diagnostic laparoscopy and hysteroscopy are not a part of the initial infertility evaluation. Diagnostic laparoscopy is normally a standard procedure performed as the final test in the infertility work up before progressing to infertility treatment. There has been a growing tendency to bypass diagnostic laparoscopy and hysteroscopy after normal hysterosalpingogram and instead of starting direct infertility treatment. A number of reports have shown that laparoscopy is an effective procedure for diagnosis and treatment of long-term infertility. Laparoscopy has been suggested as a mandatory step to preclude the existence of peritubal adhesions and endometriosis as the causes of infertility (1). Also, diagnostic hysteroscopy is a very important method for investigation of the reasons of female infertility. Anyhow, one can rarely expect to find the definite underlying reason for infertility. Diagnostic hysteroscopy should be included routinely in the work-up of invasive examinations for infertile patients (2). We consider combined laparoscopy and hysteroscopy to be one of the most important procedures in the evaluation of female infertility.

## MATERIALS AND METHODS

We have done a retrospective study on 360 patients who underwent laparoscopy and hysteroscopy during investigation for primary and secondary infertility. Laparoscopies and hysteroscopies were conducted between January 2003 and January 2007 in Obstetrics and Gynaecology Clinic in Sarajevo. Before laparoscopy and hysteroscopy women had satisfied criteria: hormonal tests, cervical smears, ultrasound report, test for Chlamydia antibody and semen analysis of the husband. This procedure was carried out on the follicular phase of the menstrual cycle under general anesthesia. At laparoscopy and dye studies performed with methyl blue. The mean duration of infertility was 6,3 years, and mean age at the time of procedure was 31 years, range 23-42 years. Forty six of the 360 women who were underwent combined laparoscopy and hysteroscopy had previous laparotomy (Section Cesarean, appendectomy, after injuries in abdomen, cystectomy, myomectomy and salpingectomy).

## RESULTS

In total 360 infertile women underwent simultaneous

combined laparoscopy and hysteroscopy as a part of routine infertility evaluation. Bilateral tubal patency was demonstrated in 312 (86,67%) patients. Bilateral tubes were blocked in 18 (5%) and unilateral tubal occlusion had 30 (8,33%) of patients. Our study revealed myomas in 42 (11,65%), out of that 11 (3,05%) by hysteroscopy and 31 (8,6%) by laparoscopy. Endometrial polyps were revealed in 26 (7,22%) and Syndrome Asherman in 3 (0,83%) of patients. Out of 360 patients who underwent laparoscopy and hysteroscopy for infertility uterine anomaly was revealed in 19 (5,27%) of cases. Septate uterus were revealed in 7 (37,15%) patients, bicornuate uterus in 5 (26,31%), arcuate uterus in 4 (21,26%), and uterus unicornu cum cornu rudimentary in 3 (5,28%) of uterine anomaly. Among 360 women that were studied, 51 (14,16%) were found to have endometriosis, 8 (2,22%) dermoid cysts, and 16 (4,44%) functional cysts. Pelvic adhesions were found to be the sole infertility factor in 40 (11,11%) of our patients. Pelvic pathology was confirmed by laparoscopy in 194 (53,86%) of our cases. Also, Fitz-Hugh-Curtis syndrome was revealed in 23 (6,11%) patients.

## DISCUSSION

Infertility is defined as a failure to achieve pregnancy within a year of regular unprotected intercourse. Intracavitary pathology includes submucous leiomyomas and endometrial polyps. Those pathologies often result in abnormal uterine bleeding, infertility or both. Congenital anomalies of the female reproductive system are associated with higher rate of infertility. Diagnostic hysteroscopy offers a reliable evaluation of the uterine cavity and subsequent detection of intrauterine disease (3). Complication rates of diagnostic hysteroscopy are low as of 0,012% (4). Incidence of uterine congenital anomalies is not accurately known. Discrepancy is a result of inaccurate diagnostic methods, lack of uniform system of classification and many of them are asymptomatic. Mean prevalence of uterine malformation in general population and in the population of fertile women is approximately 4,3%, in infertile patients approximately 3,5% and in patients with recurrent pregnancy losses approximately 13% (5). The incidence of uterine anomaly is 7,6% (6). Our study had shown that the incidence of uterine anomaly was 5,27%. Septate uterus is the most common uterine anomaly with a mean incidence is approximately 35%, followed by bicornuate uterus approximately 25% and arcuate uterus approximately 20% (5). Our results show septate uterus in 37,15%, bicornuate

uterus in 26,31% , unicornu uterus cum cornu rudimentario in 15,28% and arcuate uterus in 21,26% of uterine anomaly in infertile patients. Reliable diagnosis of the septate uterus depends on accurate assessment of the uterine fundal contour (7). Anomalies of the uterus are considered to be one of the reasons for infertility in women, and for this reason we believe diagnostic hysteroscopy is fundamental in screening for infertility (6). In infertile patients about 20% of hysteroscopic examinations show some grade of intrauterine abnormalities (2). With the view of the low complication rates, minimal time requirement, and a negligible effect on the post-operative course, hysteroscopy could be performed on all infertile patients undergoing diagnostic laparoscopy. The hysteroscopy showed a normal cavity in 88% cases, giving a false negative rate of 12% for hysterosalpingography (8). Routine diagnostic hysteroscopy should be a part of an infertility work up in primary and secondary infertility. Laparoscopy was helpful in making a decision to go to assisted reproductive technology particularly when infertility had been of long duration and in older women (9). Our results at laparoscopy and dye studies performed with methyl blue, presented bilateral tubal patency in 312 (86,67%), bilateral tubal block in 18 (5%) and unilateral tubal block in 30 (8,33%) of patients. At laparoscopy bilateral tubal patency was demonstrated in 86%, but 3% had bilateral tubal blocked tubas and 11% patients had unilateral tubal occlusion (10). Laparoscopy very often revealed pelvic pathology as endometriosis, pelvic and periadnexal adhesions that resulted in change of treatment decision. Our study revealed pelvic adhesions in 40 (11,11%). Women whose basic infertility survey revealed no abnormalities, laparoscopy confirmed in overall 57,7% of patients evidence of pelvic disease (11). Cundiff et al. also showed that pelvic pathology was found in 56% of patients who under-

Pelvic pathology	Number and percentage of patients
Endometriosis	51 (14,16%)
Pelvic adhesions	40 (11,11%)
Bilateral tubal block	18 (5,0%)
Unilateral tubal block	30 (8,33%)
Dermoid cysts	8 (2,22%)
Functional cysts	16 (4,44%)
Uterine myomas	31 (8,6%)
Total: 194 (53,86%)	

TABLE 1. Pelvic pathology revealed by laparoscopy

went laparoscopy and recommended that laparoscopy be carried out after a normal hysterosalpingography if pregnancy had not occurred within one year because of high incidence of pelvic pathology (12). Pelvic endometriosis was the most common pathology accounting for 27,7% of all pelvic disease (11). Our study revealed pelvic endometriosis in 14,16%, dermoid cysts in 2,22% and functional cysts in 4,44% of patients. In our study, pelvic pathology by laparoscopy was confirmed in 194 (53,86%) of our cases (Table 1). In many cases, evidence of perihepatitis and adhesions between liver and anterior abdominal wall or diaphragm could be confirmed only by laparoscopy. Fitz-Hugh-Curtis syndrome presents in 16,8% in infertility patients (13). Our study revealed Fitz-Hugh-Curtis syndrome in 23 (6,11%) of patients. Therefore, laparoscopy should be carried out in all patients to look for a tubal or pelvic cause of infertility when all other examinations performed were normal. In 336 patients who underwent hysteroscopy intrauterine finding were endometrial polyps in 56 and submucosal myoma in 26 patients (14). Our study revealed myomas in 3,05% by hysteroscopy and 8,6% on laparoscopy. We found endometrial polyps in 7,22% of infertile patients. Hysteroscopy could be performed on all infertile patients undergoing diagnostic laparoscopy (8). It is very important to perform combined simultaneous diagnostic laparoscopy and hysteroscopy in all infertile women.

## CONCLUSION

From the results of our study, we conclude that diagnostic methods are very important for investigation of the causes of female infertility. In the view of low complications rates, minimal time requirement and negligible effect on the post operative course, combined diagnostic simultaneous laparoscopy and hysteroscopy should be performed in all infertile patients before treatment.

Many diagnostic tests for female infertility only have screening value and the gold standards are laparoscopy and hysteroscopy.

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