

# An Audit of 100 cases of Diagnostic Laparoscopy for Infertility

SAMINA ASGHAR, HURRIAT AFZAL, REHANA AYUB, UZMA NAZ

## ABSTRACT

**Objective:** The aim of this study is to critically analyze the routine use of diagnostic laparoscopy in infertile women and to see the effects of LOD(laparoscopic ovarian drilling) on ovulation induction in clomiphene resistant cases.

**Design:** An observational study (an ongoing study)

**Place and duration of study:** Sir Ganga Ram Hospital, from January 2007 to June 2009; 18 months study.

**Patients and methods:** All patients who underwent diagnostic laparoscopy for Infertility in Gynae III during the study period were included. Data was collected from the laparoscopic findings and by reviewing their clinical records. Patients were followed for a period of 18 months for ovulation induction or till they conceived.

**Results:** 100 patients underwent diagnostic laparoscopy for infertility in Gynae unit III during the period, January 2007 to June 2009. The age range of patients was 28+/- 4 years. The duration of infertility was 4years (2—15years).All patients gave history of medical treatment with clomiphene or gonadotropins. 20 patients (20%) were diagnosed as PCOD. 25 cases (25%) had mild to moderate endometriosis and 30cases(30%) with pelvic inflammatory disease , 25 patients (25%)had strictly normal laparoscopic findings. LOD was done in 45 patients . 100%(45 patients) ovulated and 91.% ( cases) conceived at 18 months. 22 patients (48.8%) delivered one month back and one more patient is due after one month making pregnancy rate of 48.8% which is comparable to 50% pregnancy rate in previous studies<sup>2,4</sup>

**Key words:** Infertility, diagnostic laparoscopy, audit

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## INTRODUCTION

Laparoscopy is a surgical procedure that involves insertion of a narrow telescope like instrument through a small incision in the belly button. This allows visualisation of the abdominal and pelvic organs including uterus, fallopian tubes and ovaries. This procedure re allows us to determine whether there are any defects such as scarring,endometriosis,fibroid tumors and other abnormalities of the uterus,fallopian tubes and ovaries. If any defects are found they can sometimes be corrected with operative laparoscopy in the same setting. Laparoscopy was part of standard female infertility workup until the mid 1990's.Fertility clinics are doing far less diagnostic laparoscopy today due to major advances in IVF technologies and the resulting increase in the IVF success rate. The aim of this study is to critically analyze the routine use of diagnostic laparoscopy for infertility workup and to see the effects of ovarian diathermy on infertility.

## PATIENTS AND METHODS:

All patients presenting to Gynae unit III with infertility were included in the study. Their clinical records were

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*Department of Obstetric & Gynaecology, Fatima Jinnah Medical College/Sir Ganga Ram Hospital, Lahore*

*Correspondence to Dr. Samina Asghar, Assistant Professor 03064471406*

maintained. A detailed history was taken including the duration of infertility, the age of both partners, age of menarche, menstrual cycle, frequency of coitus, health and occupation of partner, any previous surgeries and infections including tuberculosis and sexually transmitted diseases. Detailed examination of both partners was carried out, all investigations so far including semen analysis report, hysterosalpingogram, pelvic ultrasound, FSH, LH, TSH, Prolactin level and other hormone assays if done. Record of treatment received so far including ovulation induction by clomiphene citrate or gonadotropins was retrieved and findings grecorded on a specially designed performa. The patients were than counselled for diagnostic laparoscopy and consent was taken for therapy if possible in the same setting(LOD)

## RESULTS

100 patients underwent diagnostic laparoscopy for investigation of infertility in the study period. All of these patients had normal semen analysis and hysterosalpingograms. Out of these, 20 patients were diagnosed to have PCOD, 25cases(25%) had mild to moderate endometriosis and 30 patients(30%) had peritubal adhesions and pelvic inflammatory disease. 25 patients (25%) had strictly normal laparoscopic findings. Of the 20 patients diagnosed as PCOD all

had atleast 3 cycles of ovulation induction with clomiphene citrate and 12 patients had history of induction with gonadotrophins also. 16 patients (80%) had ovulatory PCOD and 4 cases (20%) were anovulatory. PCOD as evidenced by basal body temperature, midluteal phase serum progesterone and ovulation tracking with TVS. LOD was done in 45 patients (20 patients with PCOD and 25 patients with normal findings). 41 out of 45 patients (91.1%) ovulated within 6-9 months of followup and 31 cases(68.8%) conceived during the same period. These results are comparable to Cochrane review 1995. Of the 28 patients that conceived, 12 patients ended up in first trimester inspite of luteal phase support which was given to all patients, making carry home baby rate of 35.5%(16 patients). The patients with endometriosis had laparotomy and removal of endometrioma.

Table: Pregnancy rate after LOD

Duration of treatment	No. of Pts. Treated	%age
3months	18	40
6months	22	48
9months	27	60
12months	33	73
18months	41	91

## DISCUSSION

About 20% of all patients diagnosed with PCOD and infertility, will not ovulate after ovulation induction with clomiphene citrate<sup>1</sup>. Even today, the effective treatment of clomiphene resistant PCOD remains a challenge for the medical profession. More than 20 years ago, Gjonnaess in 1994<sup>2</sup> described laproscopic diathermy of ovarian capsule in clomiphene resistant PCOD patients resulted in an ovulation rate of 92% and a pregnancy rate of 69% respectively. In a recent Cochrane review<sup>3</sup> the efficacy of LOD by diathermy or laser in clomiphene resistant PCOD has been compared to gonadotrophin treatment based on a total of 15 RCTs. There was no evidence of difference in livebirth rate or ongoing pregnancy rate between LOD and the gonadotropins. However, the multiple pregnancy rates were lower with LOD than with gonadotropins<sup>5,12</sup>.

Disadvantages of LOD procedure include the risks related to laparoscopic surgery<sup>6</sup>, the need for general anesthesia, the possible risk of thermal damage to adjacent organs and ovarian adhesion formation, and the lack of knowledge concerning the possible negative long term effects of this procedure on ovarian reproductive function<sup>7</sup>. Moreover it has been pointed out that the effects observed are

usually temporary and the signs and symptoms of PCOD may return within months following the LOD<sup>8</sup>.

Advantages of LOD include the opportunity to treat concomitant pelvic pathology such as peritubal adhesions and endometriosis that can be associated with female infertility<sup>9</sup>. Furthermore during the same procedure tubal patency can be tested and hysteroscopy can be performed as part of the infertility work-up. We performed diagnostic laparoscopy and LOD in 45 patients after three failed cycles of ovulation induction treatment with clomiphene citrate. There was no evidence of ovulation detected by ovulation tracking by Transvaginal ultrasound in these 20% patients with PCOD. The husband semen analysis report was normal in all of these patients.

The patients diagnosed as PCOD and unknown cause were treated with LOD in the same setting. The patients were treated with diathermy of ovarian cysts, one patient did not give consent to treatment. 4-6 punctures were made in the ovarian capsule or cyst wall on either ovary<sup>10</sup>. Patient was discharged on the same day. She was followed for the next cycles for ovulation by TVS(Transvaginal sonography). 100% (45 cases) of these patients ovulated, 70% (28cases) conceived within 6-9 months<sup>11,12</sup> without any further treatment. One of our patients did not conceive at 9 months of follow up although she has ovulated in all 9 cycles.

The prevalence of endometriosis in infertile population (20-68%) is higher than that in the general female population of reproductive age<sup>13</sup> Mahmood and Templeton,1991. Although the association between minimal and mild endometriosis and infertility may be incidental, many sound arguments have been presented to support that the relationship between endometriosis and infertility is causal<sup>11</sup>. Now we are inducing ovulation with Letrizole, the results are better than clomiphene<sup>6</sup>.

In summary, the position of diagnostic laparoscopy in setting of ovulation induction is at present is not clear due to the lack of sound scientific evidence provided by good quality studies. The routine use of diagnostic laparoscopy to evaluate all cases of infertility cannot be advocated, but laparoscopy can offer the opportunity to assess tuboperitoneal status, to treat pelvic pathology that may limit conception and to perform LOD. Laparoscopic ovarian diathermy is a good option when compared with gonadotropin treatment in clomiphene citrate resistant PCOS patient, but counselling should be offered with regards to the unknown long term effect of this procedure on the ovarian function.

## CONCLUSION

Diagnostic laparoscopy after several failed cycles of ovulation induction enables the detection of a significant proportion of pelvic pathology (mild to moderate endometriosis and peritubal adhesions) amenable to treatment. Laparoscopic ovarian diathermy in clomiphene resistant PCOD increases ovulation and pregnancy rate but more studies are required to substantiate this effect.

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