

Role of Laparoscopic Electro Coagulation of Ovarian Surface (Leos) in PCOD and its Outcome

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Summary

One hundred & thirty one patients underwent laparoscopic electrocoagulation of ovarian surface (LEOS) during the period of January 1999 – January 2000, following which 7 patients conceived naturally and 21 became pregnant following ovulation induction with CC and intrauterine insemination (IUI). The Pregnancy outcome was 25.95%. Twenty three patients did not respond to CC stimulation and had to be subjected for down regulation – controlled ovarian hyperstimulation/ART.

Introduction

Polycystic ovarian disease is characterized by amenorrhoea, anovulation and obesity. These ovaries, after the initial response to clomiphene citrate, become refractory & respond only to controlled ovarian hyperstimulation. LH hyper secretion in these patients causes poor implantation site as well as unruptured follicle syndrome. Earlier, ovarian hyperstimulation with gonadotropins was the treatment of choice for such type of ovaries. Now we recommend such patients to undergo LEOS before they opt for an expensive and time consuming therapy like ovarian hyperstimulation followed by ART.

Materials and Methods

During January 1999 – January 2000, 131 patients underwent LEOS. The criteria for selection were

ovarian size of 3cm x 3cm or more, 15-20 subcapsular follicles with thick stroma and poor follicular response with clomiphene citrate (CC) stimulation.

The patients were divided into 4 age groups viz 20-25 years (n=38), 26-30 years (n=53), 31-35 years (n=36) and 36-40 years (n=4). Pre-operative workup included basal scan and relevant hormonal analysis. A complete seminal analysis was done for the male counterpart and the criteria for selection in this study was a sperm count of 20 millions and above and a motility of 40% and above.

Procedure

During this procedure, laparoscopy was performed with the triple puncture technique after creating pneumoperitoneum and the pelvic structures were visualized. The ovarian ligament was grasped, ovary held and unipolar coagulating current of 3.5 – 4

colts applied. The coagulating current penetrated to a depth of 2-4 mm and the diameter coagulated was around 3-5mm. The current was applied for 2-4 seconds and about 10-20 punctures were made on each ovarian surface depending upon the size of the ovary and the number of subcapsular cysts. After securing haemostasis, abdominal lavage was done and artificial ascites was created with 150ml of saline to reduce the formation of adnexal adhesions. We did not have any complication during or following the procedure.

The cycle was regularized following the procedure with a combination of estrogen and progesterone. On the second day of the next cycle, baseline scan and LH were determined, and if found normal, these patients were given ovulation induction with clomiphene citrate 200mg for 5 days from the 4th day of the menstrual cycle.

Follicular study was done from day 14 to monitor the follicular growth. When the dominant follicle reached a diameter of 2cm and above, surrogate LH was administered as HCG 10,000 IU. Two IUIs were carried out, one 24 hours and other 48 hours after the HCG. Luteal support was given in the form of pure progesterone 100 mg twice daily for 10 days.

Results and Discussions

One hundred & thirty one patients underwent LFOS, CC induction, follicular study, timed IUI and luteal support and the results were as follows:

1. Seven (5.3%) patients conceived naturally within 11 months. (Table I)
2. Twenty one (17.21%) patients became pregnant following IUI within nine months. (Table I)
3. Twenty-three patients who did not respond to CC induction and four patients with persistent high LH were taken up for down regulation, controlled hyperstimulation and ART. None of them developed ovarian hyperstimulation syndrome while 3 (22.2%) became pregnant.
4. Sixty-eight (51.9%) patients are being followed up.
5. Eight (6.1%) patients did not report for follow up.

Table I

Pregnancy Outcome and Nature of Conception

Total number of patients	131
Total pregnancy rate	4 (2.5%)
Natural conception	7 (5.3%)
IUI	21 (17.2%)

Bilateral ovarian wedge resection (BOWR) introduced by Stein & Levanthal (1955) was the only treatment available prior to medical induction of ovulation. This method was abandoned because of high incidence of post-operative adhesions and laproscopic techniques using laser beams or monopolar current on the ovaries were introduced. This helped to normalize ovarian functions and reduce serum androgen levels. The other advantages were decreased risk of postoperative adhesions, minimal morbidity and normal of OHSS or multiple pregnancy. We could achieve 23% pregnancy rate LFOS.

LFOS is not a treatment of choice in hirsutism, multiple cystic ovaries and those not interested in fertility.

Conclusion

LFOS was found to be efficient and an easy to perform method in treating patients with PCOS suffering from anovulatory infertility. This procedure reduced the elevated serum androgen levels thereby normalizing the cycles. It avoids the risk of OHSS. LFOS is cost effective, gives excellent pregnancy outcome, and should be used before advising ART for PCOD.

References

1. Stein HF and Levanthal MH. Am J Obstet Gynecol 29: 181; 1955.