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LAPAROSCOPIC OVARIAN ELECTROCAUTERIZATION (LEC)*

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ABSTRACT

Seventeen patients with polycystic ovarian disease (PCOD) were treated by laparoscopic ovarian electrocauterization (LEC). Ten were admitted to hospital for infertility, four for hirsutism, two for severe scalp hair loss, and one for abnormal uterine bleeding. Four of the patients were virgins. We had 50% (5 of 10) pregnancies and 88% (15 of 17) showing a decline in testosterone levels after this operation. 87% of the patients showed regularity in menstruation. 80% (8 of 10) of infertile patients ovulated after LEC. We think the use of LEC for the treatment of severe scalp hair loss and in virginal PCO patients are new ideas in our article. The rate of pelvic adhesion after LEC was 0% in our series. A 6-to-24 month follow-up showed that many of these patients had normal clinical and laboratory findings.

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INTRODUCTION

One of the common causes of hirsutism[1] and infertility is polycystic ovarian disease (PCOD). The classic treatment of this syndrome is medical (clomiphen citrate or human menopausal gonadotrophin)[2] or surgical (laparotomy, ovarian wedge resection[3]) therapy. However, there are some patients who do not respond to medical therapy or will show an adverse reaction to these drugs. It has also been shown that there is a 40% possibility of pelvic adhesion following laparotomy and ovarian wedge resection.[4] The laparoscopic method for treatment of this syndrome has been described by the use of electrocautery[5] or laser.[6] We treated 17 PCO patients by laparoscopic ovarian electrocauterization (LEC). In this study, we have extended the range of the indications for this operation and have looked for the long-term effect and the possibility of adhesion formation after this procedure.

MATERIALS AND METHODS

Seventeen patients who failed to respond to prolonged medical therapy participated in this study. Ten patients with infertility (all failed to respond to clomiphen citrate therapy), four with hirsutism, two with severe scalp hair loss and one with severe dysfunctional uterine bleeding due to glandular cystic hyperplasia of endometrium (who was also complaining of infertility). One of the patients was divorced and four were virgins. Fifteen our of 17 patients had abnormal menstruation. The average age of the patients was 23.6 (± 3.8) and the weight was 69.0 (± 10.6) kg. All these patients had elevated levels of testosterone, normal dehydroepiandrosterone sulfate (DHEA-S), and LH to FSH ratios more than two. We used the technique of Gjonnaess for LEC.[5] No medication was administered

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Table I. The resultsof follow-ups of the patients between 6-24 months

Monthly follow-up period	No of patients with normal testosterone / No of patients	No of patients with normal signs and symptoms / No of patients
Up to 12 months	12/12	11/12
Up to 18 months	6/7	5/7
Up to 24 months	2/4	3/4

other than one gram of ampicillin before the operation in all cases. All procedures were performed under general anesthesia. Postoperatively the patients were thoroughly examined clinically and evaluated by serum testosterone, progesterone, and basal body temperature (BBT) monitoring monthly. The patients had been followed-up between 6-24 months.

RESULTS

Aftersix months of follow-up, all of patients came to be visited by the authors in this period. Eight out of ten patients with infertility had regular ovulation without any medication. Five of them achieved pregnancy (four living children and one abortion), with four of the pregnancies occurring within 4 months after the procedure. Eight of 15 of the patients showed cessation of hirsutism. However, only one of the four patients operated on due to hirsutism mentioned the reduction of hair growth. One out of two virginal patients with severe scalp hair loss showed a reduction in such loss. The patient with endometrial hyperplasia still continued to have abnormal endometrial biopsy on two occasions. Fifteen out of 17 patients (88%) showed normal serum testosterone levels in monthly follow-ups. From the two patients with abnormal testosterone levels after operation, one was proved to have arrhenoblastoma in the left normal size ovary. This patient had several evaluations of serum testosterone levels before procedure and all the results were between 150 to 200 ng/dl. After LEC, the serum testosterone levels dropped promptly, but returned to the previous level after one week. Thirteen out of 15 patients (87%) with abnormal menstruation had regular menses after the procedure. Twelve out of 13 of these patients (92%) had normal menstruation within two months after the procedure.

The results of follow-up of the patients between 6-24 months after operation is shown in Table I. One of the two patients with abnormal testosterone levels after operation failed to return for follow-up after six months. One of the patients in the infertile group who did not conceive six months after the procedure, achieved pregnancy with clomiphen citrate therapy.

In seven of these patients we could examine the adnexa of the patients after LEC; three at the time of caesarian section, one at exploratory laparotomy, and three in second-look laparoscopy. There were no adhesion formations in these seven patients (grade 0).[7]

DISCUSSION

The rate of ovulation and pregnancy in our study is similar to previous results by laparoscopic operations[5-6] and also clomiphen citrate[8] therapy or classic ovarian wedge resection.[9] The most prominent effects of this treatment were in decreasing testosterone levels (88%) and correcting menstrual abnormalities (87%), respectively. Most of the correction of menstruation occurred very soon after operation (92% aftertwo months). Due to our experience with the patient who suffered from arrhenoblastoma of the ovary and because we usually do not perform biopsy at the time of LEC, we suggest this operation not be performed with testosterone evels more than 150 ng/dl. We also recommend that testosterone levels of the patients be routinely checked after LEC.

Very severe hair loss from the scalp is a rare complication of PCOD. Two patients in our study with this complaint were treated over a long period of time and failed to respond to any medical therapy. We think in this situation the LEC operation may be a means to help these patients.

Gjonnaess[5] recommended eight electrocautery holes to be made in each ovary. However, we think the number of these holes should depend upon the size of the ovaries.

The rate of adhesion formation after LEC has not been evaluated in a large number of patients. It seems that the possibility is very low in this operation (zero out of seven patients in this study).

In virginal patients,PCOD is a real problem. These young patients are usually apprehensive about the prolonged use of drugs and are concerned about the

side effects of the drugs regarding their future pregnancies. Some of them do not respond to any medical therapy and some show severe side effects. We think that the suggestion of the LEC method in these patients could be a solution and new idea. If the low rate of adhesion formation and prolonged effect of LEC can be shown in a larger group of patients, then this operation could be an alternative method of treatment for the virginal patients who show resistance to medical therapy.

With the results of our study, that show low level of adhesion formation in this operation, we can argue against the classic concept which recommends medical therapy in infertile PCO patients must be the first treatment and surgery the last one.[10] This is especially true if we remember that with LEC, we can evaluate the pelvis for other causes of infertility, avoidance of complications of prolonged drug therapy (especially HMG therapy) and also the expense and complications of classic laparotomy and ovarian wedge resection.

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