CARBON DIOXIDE LASER LAPAROSCOPY IN TREATMENT OF INFERTILITY AND DISORDERS ASSOCIATED WITH PELVIC PAIN

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Seventy-five patients, from December 1984 to December 1985, received carbon dioxide (CO_2) laser laparoscopy for infertility and pelvic pain. The chief complaint of 55 patients was pelvic pain, and for 20 patients, either primary or secondary infertility. The most common findings were endometriosis (84 percent) and pelvic adhesions (35 percent).

This paper gives the incidence of multiple diagnostic findings and the use of CO_2 laser laparoscopy. The results indicate that with the availability of the CO_2 laser laparoscope a significant number of patients can be treated for endometriosis, pelvic adhesions, salpingitis, and other disorders, preventing the need for future surgical procedures or medical therapy.

The laparoscope is a valuable clinical tool that has changed the practice of gynecology. It can confirm a clinical impression, establish a definite diagnosis, follow the course of a disease, and modify therapy. Certain operative procedures (tubal sterilization, ovarian cyst aspiration, or biopsy of intraperitoneal structures) can be accomplished through the laparoscope.[1] With the advent of the CO_2 laser laparoscope, however, all of the above-mentioned procedures are improved, particularly the operative and treatment capabilities. It is now possible to perform certain procedures that formerly required laparotomy.[2]

The purpose of this paper is to present the diagnostic findings of 75 patients who were evaluated for pelvic pain and infertility, and to demonstrate the versatility of the CO_2 laser laparoscope as it relates to the treatment of common gynecologic disorders, which oftentimes prevents the need for future surgical procedures and/or medical therapy.[3]

METHODS

Seventy-five patients, from December 1984 to December 1985, received CO_2 laser diagnostic laparoscopy for pelvic pain and infertility. The chief complaint of 55 patients (73 percent) was pelvic pain, and for 20 (27 percent) patients, either primary or secondary infertility. The ages of the patients with pelvic pain ranged from 16 to 50 years, with a mean age of 30.5 years. The ages of the infertility patients ranged from 24 to 37 years with a mean age of 31.7 years. The parity of the infertility group ranged from 0 to 4, with a mean of 0.6.

The Eder Laser Laparoscope, along with a VHS videotape system, was used in all cases. The single-puncture technique was used in nearly all instances,

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and the double-puncture technique was used rarely. The triple puncture technique was not used.

RESULTS

Endometriosis (84 percent) and pelvic adhesions (35 percent) were the most common findings at laparoscopy. Eighteen of the 20 patients evaluated for infertility were noted to have endometriosis, and two had salpingitis. Additional findings were as follows: pelvic adhesions, leiomyomata uteri, polycystic ovaries, perihepatic adhesions, and torsive ovaries (Table 1). Nineteen of these patients received laser laparoscopy vaporization of endometrial implants and/or pelvic adhesions. One patient received laser laparoscopy neosalpingostomy. Other procedures that the infertility patients received included laser-modified wedge resection of the ovaries, salpingolysis, myomectomy, and ovarian cystectomy (Table 2).

Forty-seven of the 55 patients evaluated for pelvic pain had endometriosis (86 percent). Other findings included leiomyomata uteri, salpingitis, pelvic adhesions, ovarian cysts, parovarian cyst, ectopic pregnancy, appendicitis, perihepatic adhesions, polycystic ovaries, and leiomyomata peritonalis disseminata (Table 3). The most common procedure for this group was laser laparoscopy vaporization of endometrial implants and/or pelvic adhesions (50 patients). Collateral laser procedures were myomectomy, salpingolysis, laser-modified wedge resection of the ovaries, and ovarian cystectomy (Table 4).

TABLE 1. CARBON DIOXIDE LASER LAPAROSCOPY FINDINGS AND NUMBER OF PROCEDURES IN THE INFERTILITY GROUP (n = 20)

Laparoscopy Finding	Number of Procedures		
	Primary (No.)	Secondary (No.)	Tertiary (No.)
Endometriosis (AFS)			
Stage I	6	0	0
Stage II	5	2	0
Stage III	0	0	0
Stage IV	7	0	0
Fibroids	0	8	0
Salpingitis	2	0	0
Pelvic adhesions	0	7	3
Polycystic ovaries	0	1	0
Perihepatic adhesions	0	0	1
Torsive ovaries	0	1	0

TABLE 2. TYPE AND NUMBER OF PROCEDURES USED IN THE INFERTILITY GROUP

Procedure	Primary (No.)	Secondary (No.)	Tertiary (No.)
Laser vaporization			
Implants/defects	18	1	0
Pelvic adhesions	1	5	5
Myomectomy	0	3	0
Salpingolysis	0	6	0
Neosalpingostomy	1	0	0
Laser-modified wedge resection of ovaries	0	1	0

DISCUSSION

Infertility and pelvic pain are common complaints that warrant evaluation, and oftentimes necessitate scrutiny by laparoscopy.[4–6] As this paper demonstrates, more than one disorder may be identified at evaluation. The most prevalent disorders were: endometriosis (84 percent) and pelvic adhesions (35 percent), followed by leiomyomata uteri (32 percent) and salpingitis (12 percent).[7] Thus, one should expect that the most utilized laser laparoscopy operative procedures were the laser vaporizations of endometrial implants, defects, and adhesions.[2]

TABLE 3. CARBON DIOXIDE LASER LAPAROSCOPY FINDINGS AND NUMBER OF PROCEDURES IN THE PELVIC PAIN GROUP

Finding	Primary (No.)	Secondary (No.)	Tertiary (No.)
Endometriosis (AFS)			
Stage I	10	2	0
Stage II	17	1	0
Stage III	7	0	0
Stage IV	9	1	0
Fibroids	2	12	2
Salpingitis	3	4	0
Pelvic adhesions	1	9	5
Polycystic ovaries	0	2	0
Ovarian cyst	2	2	0
Parovarian cyst	1	0	0
Ectopic pregnancy	1	0	0
Appendicitis	1	0	0
Leiomyomata peritonalis disseminata	1	0	0
Perihepatic adhesions	0	1	2

TABLE 4. TYPE AND NUMBER OF PROCEDURES USED IN THE PELVIC PAIN GROUP

Procedure	Primary (No.)	Secondary (No.)	Tertiary (No.)
Laser vaporization			
Implants/defects	47	3	0
Pelvic adhesions	4	16	1
Myomectomy	1	5	0
Salpingolysis	1	0	0
Laser-modified wedge resection of ovaries	0	2	0
Ovarian cystectomy	2	2	0

The CO_2 laser laparoscope permits certain operative procedures that were previously not possible or considered unsafe when using other techniques such as cautery and scissors.[8] Now, the possibilities are unlimited, and due to an occasional diagnostic surprise, having such an instrument available at laparoscopy can be extremely rewarding.[9] In many instances it is now possible to render treatment immediately, decreasing costs by preventing laparotomy,[10] hospitalization, and time lost from work. The number of patients who might have otherwise needed laparotomy, along with a summary of the indications, precautions, complications, techniques, and pregnancy rates are under study.

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