

Long-Term Follow-Up of a Controlled Trial of Laser Laparoscopy for Pelvic Pain

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ABSTRACT

Background and Objectives: The purpose of this study was to assess the long-term efficacy of laparoscopic laser surgery in the treatment of painful pelvic endometriosis.

Methods: We conducted a long-term follow-up of 56 patients who had participated in a randomized, double-blind controlled study at a tertiary referral center for the laparoscopic treatment of endometriosis. The patients had pelvic pain, minimal-to-moderate endometriosis, and underwent laser laparoscopy. We asked patients whether they had now achieved satisfactory symptom relief or whether they had received any further medical intervention for their endometriosis. The main outcome measure was continued symptom relief after treatment and subsequent medical history.

Results: Of the original 56 patients, we were able to contact 38 (67.9%). The mean (range) time since operation was 73 months. Painful symptoms had recurred in 28/38 (73.7%) patients at some point since their operation. The median (range) time for recurrence was 19.7 (5-60) months. At the time of follow-up, satisfactory symptom relief was reported in 21/38 (55.3%) patients. The remaining 17/38 (44.7%) patients continued to experience painful symptoms, and eight eventually had a hysterectomy.

Conclusions: This study suggests that operative laparoscopy can have long-term benefits for the majority of women with pelvic pain due to endometriosis, but because of the small numbers, this study lacks the power to demonstrate this conclusively.

Key Words: Endometriosis, Pelvic pain, Long-term follow-up, Laser laparoscopy.

INTRODUCTION

In 1994, the results of the first and only double-blind randomized controlled trial¹ to assess pain relief following laparoscopic laser ablation of endometriosis stages I – III (r-AFS classification)² was published. The purpose of our report is to describe the long-term (> 6 years) follow-up data on the patients in the original study who underwent laser laparoscopy.

Endometriosis is a common and debilitating disorder that diminishes the quality of women's lives in their reproductive years. Women with endometriosis are initially referred to the gynecologist because of pelvic pain that is often associated with subfertility. The long-term effects of this condition have profound consequences for the sexual, social, and professional aspects of their lives.

In studies where endometriosis remains untreated for up to 12 months, the disease progresses or remains static in approximately two thirds of women.³⁻⁶ Therefore, the long-term effectiveness of therapy is of enormous importance to women who suffer from this condition. The evidence suggests that despite medical therapy⁷⁻¹⁰ endometriosis is a recurrent disease. Recurrence of painful symptoms after conservative surgical therapy also happens,^{6,11,12} but the rates are lower than for medical therapies. Furthermore, the prolonged use of medical therapy is limited by the side effect profile of drugs and by the fact that the drugs are contraceptive. Therefore, conservative surgical procedures should theoretically offer better long-term symptom relief without these side effects.

This is potentially of enormous significance to women who suffer from this condition, and to verify this hypothesis, it was felt that it was important to follow-up the women who underwent laser laparoscopy in the original randomized double-blind controlled trial.

MATERIALS AND METHODS

The original study population had been recruited from women seen in the gynecology outpatient clinic who had been diagnosed as having endometriosis on previous laparoscopy or who had pain symptoms suggestive

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of endometriosis. The women were neither pregnant nor lactating, were aged between 18 and 45 years, and had not received any treatment for endometriosis during the previous six months. Unfortunately, some of the women after they completed the six-month follow-up of the original trial took an oral contraceptive pill for contraception rather than pain relief, and because this will often suppress symptoms of endometriosis,¹³ they had to be excluded from the long-term follow-up. Between March 1990 and February 1993, 74 women presenting with pelvic pain and found to have endometriosis in revised AFS stages 1-111 were recruited. At the time of laparoscopy, treatment was allocated randomly (computer-generated randomization sequence) to laser surgery or expectant management.

Laser treatment included vaporization of all visible endometriotic implants, adhesiolysis, and uterine nerve transection with the CO₂ laser (Sharplan Laser Industries, Tel Aviv, Israel), and a triple-puncture technique as described previously¹² was used.

Expectant management involved only aspiration of any serosanguinous fluid from the pouch of Douglas to allow full inspection of the pelvis. All patients received three skin incisions and were unaware of the treatment allocated.

Patients were followed up at three and six months by an independent observer who was also unaware of the treatment allocated. Patients were asked to complete a visual analogue score at each visit and were asked to give a subjective assessment of their pain. After the six-month visit, the randomization code was broken, and if the patient had received expectant management, a second-look laparoscopy with laser treatment was offered. Efficacy was based on changes in the symptoms of dysmenorrhea, dyspareunia, and pelvic pain reported subjectively, and by visual analogue score.

In the original trial,¹ the randomization code was broken at the six-month follow-up visit, and 63 women (32 laser and 31 expectant) had completed the study. Laser laparoscopy resulted in statistically significant pain relief in 20 of 32 women (62.5%) compared with expectant management in 7 of 31 women (22.6%). The patients were reviewed again at one year (6). Laser laparoscopy was shown to be an effective treatment for pelvic pain associated with minimal-to-moderate endometriosis in 90% of patients who responded to the treatment initially.

Of the 74 women who entered the original study, 63 (32 laser and 31 expectant) completed the study to the six-month follow-up visit. When the randomization code was broken, 24 patients in the expectant group went on to have a laser laparoscopy, and seven had no further surgical treatment.

Therefore, 56 of the original cohort of patients were treated by laser laparoscopy, and these patients are the subjects of this follow-up report. An attempt was made to contact all 56 women by phone or letter. The patients were then asked if they had now achieved satisfactory symptom relief, or if they had received any further medical intervention for their endometriosis. The women's responses were recorded by the original independent observer (research nurse).

RESULTS (Figure 1)

We were able to contact 38 (67.9%) of the original 56 study participants. The remaining 25 (44.6%) patients

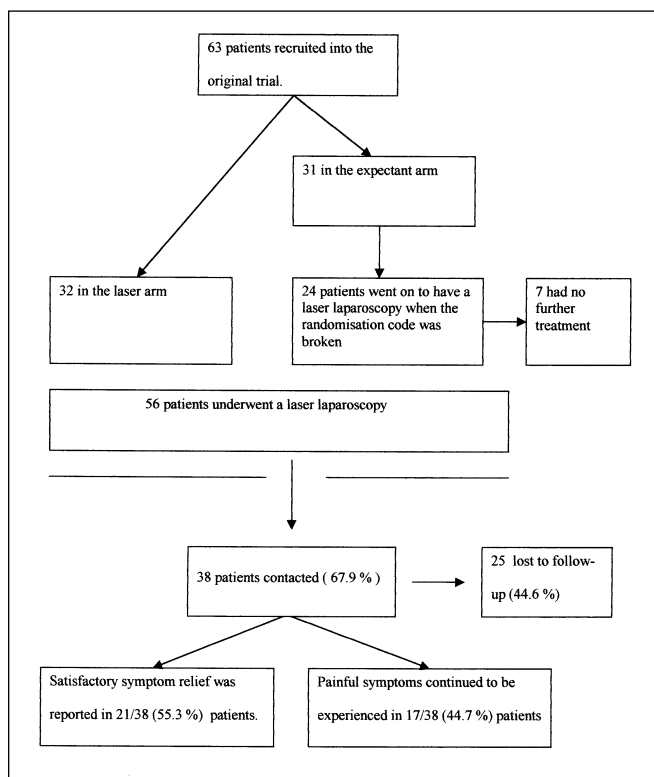


Figure 1. Long-term follow-up results on patients who underwent laser laparoscopy in the treatment of pelvic pain associated with minimal-to-moderate endometriosis.

were lost to follow-up after three years. The mean (range) time since operation was 73 months. The mean age (range) of patients now was 37 (27-50) compared with 27 (19-41) years at the time of surgery. Painful symptoms had recurred in 28/38 (73.7%) patients at some point since their operation. The median (range) time for recurrence was 19.7 (5-60) months. At the time of follow-up, satisfactory symptom relief had occurred in 21/38 (55.3%) patients. One woman was menopausal, seven were leading pain-free lives and had had no need of further intervention. Two women had had hysterectomies, and endometriosis was found at operation. Repeat laser laparoscopies to treat new endometriosis was performed in eight patients. Medical therapy was being used successfully to control mild symptoms in three patients. Of the remaining 17/38 (44.7%) patients, who continued to experience painful symptoms, 11 had undergone further surgery on one or more occasions. Eight of these women had eventually had a hysterectomy and were noted to have a normal pelvis at operation.

Repeat laser laparoscopies to treat new endometriosis was performed in two patients. A further two women were receiving psychiatric care, with medication for pain, and one was in an assisted living program. Medical therapy was being used to control severe symptoms in two patients. One patient complained of pain but was not being treated for it.

DISCUSSION

This study is unique because it followed up the largest single group of untreated patients with continuing pain symptoms to have the natural history of their disease documented at second-look laparoscopy. It showed that if left untreated, painful endometriosis is a dynamic disease that may remain static (42% of patients), but may also progress (29% of patients) or diminish (29% of patients). This has also been demonstrated in captive baboons assessed by serial laparoscopy.¹⁴ Other studies that have reported the course of endometriosis left untreated or included a placebo group compared with medical therapies,^{3,4,15} support the view that endometriosis is a dynamic disease. Therefore, the majority of patients are not going to get better if left untreated, and they require some form of therapy.

The evidence from randomized controlled trials for the medical and surgical management of endometriosis has recently been reviewed.¹⁶ No trials of medical or surgical

therapy have been reported following patients beyond 12 months, so it is necessary to examine medical and surgical cohort studies to determine the long-term outcome following therapy.

Medical cohort studies extending to five years have reported a recurrence rate of 50% with danazol and GnRH analogues.^{7,8} On the other hand, surgical cohort studies using life-table analysis have reported a recurrence rate of 20% in patients treated by laparoscopic excision of endometriotic deposits.¹¹ A retrospective five-year longitudinal follow-up study of patients with all r-AFS stages of endometriosis showed that up to 70% of women remained pain free following laser laparoscopy.¹² Unfortunately, this study along with many other studies published in the late 1980s suffered from all the defects inherent in any retrospective study especially when evaluating a highly subjective symptom like pelvic pain. This finding was supported by a 10-year follow-up study of patients with endometriomas (r-AFS stage IV endometriosis), which showed that up to 74% of women remained pain free following laser laparoscopy.¹⁷ With these studies in mind, we examined the long-term outcome of a cohort of patients who underwent laser laparoscopy in the original trial.

Because the mean time since operation was 73 months, it is not surprising that only 38 (67.9%) of the 56 patients could be contacted. Six (18.8%) other patients were lost to follow-up. The work patterns of modern society produce an increasingly mobile population. This makes a long-term follow-up report such as this difficult, and the results need to be interpreted with these limitations in mind. Because the number of patients followed-up was small in comparison with the original number, it was felt that it was not worthwhile to analyze the patients in terms of who initially did or did not respond to therapy at the six-month stage. The small numbers of patients involved also precluded analysis of the data in terms of life-tables. The small numbers also decrease the statistical power of the study. It is, therefore, difficult to draw conclusive results. Only a small difference existed in the proportion of patients who had symptomatic relief following surgery, 21/38 (55.3%) compared with patients who continue to have painful symptoms 17/38 (44.7%). This difference is not statistically significant.

The mean age (range) of patients now was 37 (27-50) compared with 27 (19-41) years at the time of surgery. It is important to note that the majority of women who

were contacted were not in the menopausal age group, because this would be expected to relieve women with endometriosis of their painful symptoms. Only one woman who was contacted had undergone menopause, and she was, not surprisingly, pain free.

At the 12-month follow-up visit, 31 women in the laser treated group were reviewed, and one was lost to follow-up. Of the 31 women, 20 were pain free (64.5%). This long-term follow-up study has shown that painful symptoms had recurred in 21/38 (55.3%) patients at some point since their operation. A wide range of time intervals existed for recurrence of painful symptoms, which in some cases extended up to 60 months.

At the time of long-term follow-up, satisfactory symptom relief was reported in 21/38 (55.3%) patients, and this is similar to results previously reported from this unit where symptomatic pain relief of 70% to 74% was achieved.^{12,6}

However, one woman was menopausal, eight women had required repeat laser laparoscopies to treat new endometriosis, and analgesia was being used successfully to control mild symptoms in three patients. Two women underwent a hysterectomy, and endometriosis was found at the time of operation. It could be argued that the original laparoscopic surgery had not been successful in these women, but conservative surgery is aimed at relieving symptoms and not curing the condition, and it had achieved this as far as these patients were concerned. The remaining 17/38 (44.7%) patients continued to experience painful symptoms.

No attempt was made to separately assess symptoms of dysmenorrhea, dyspareunia, or other nonmenstrual pain. We merely recorded the patient's interpretation of whether her symptoms had improved, remained the same, or deteriorated since the laser treatment.

Of the 17/38 (44.7%) patients, who continued to experience painful symptoms, 11 had undergone further surgery on one or more occasions. Eight eventually had a hysterectomy. Five were found to have a completely normal pelvis when they underwent hysterectomy, and three had pelvic adhesions. At histological examination of the excised tissue, seven had no evidence of endometriosis or adenomyosis, and one patient had a small single focus of adenomyosis. Hysterectomy did not relieve the pain of five of these patients, and the painful pelvic symptoms were eventually attributed to other causes in these women, including psychiatric diagnoses.

A further two women were receiving psychiatric care, with medication for pain. Whether the pain was the source of the mental illness or the mental illness influenced the perception of pain is open to speculation. One woman was in an assisted living program and, therefore, not on medication specifically for pain relief at that time, although she still required strong analgesia. A further two women were regularly using analgesia for severe pain.

CONCLUSION

Even though painful symptoms frequently return after laser laparoscopy, this study suggests that operative laparoscopy can have long-term benefits for the majority of women with pelvic pain due to endometriosis, but because of the small numbers, the study lacks the power to demonstrate this conclusively. A proportion of patients who continue to experience painful symptoms, do so despite a pelvic clearance and no evidence of endometriosis.

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