

NATIONAL INSTITUTE FOR CLINICAL EXCELLENCE
INTERVENTIONAL PROCEDURES PROGRAMME

**Interventional procedure overview of
laparoscopic laser myomectomy**

Introduction

This overview has been prepared to assist members of IPAC advise on the safety and efficacy of an interventional procedure previously reviewed by SERNIP. It is based on a rapid survey of published literature, review of the procedure by Specialist Advisors and review of the content of the SERNIP file. It should not be regarded as a definitive assessment of the procedure.

Procedure name

Laparoscopic laser myomectomy

SERNIP procedure number

168

Specialty society

Royal College of Obstetricians and Gynaecologists

Indication(s)

Uterine fibroids (leiomyomas).

Fibroids are benign tumours of the uterine muscle. They are very common. They may cause heavy menstrual bleeding (menorrhagia) and reduced fertility. As they are sensitive to oestrogen, they grow during the reproductive years and when a woman takes hormone replacement therapy.

Summary of procedure

Hysterectomy is the traditional treatment for women with fibroids whose symptoms have not resolved with medical treatment. Minimally invasive procedures such as laparoscopic myomectomy may lead to shorter recovery times, and preserve fertility.

Laparoscopic myomectomy is the destruction of fibroids via a laparoscope passed through a small incision in the abdomen and then through the wall of the uterus. The fibroids may be destroyed with a laser or electrocautery. This overview examines the evidence of safety and efficacy of laparoscopic laser myomectomy only.

Literature review

Appraisal criteria

We included studies of laparoscopic laser myomectomy for women with symptomatic fibroids.

List of studies found

We found one systematic review of treatments for fibroids (search date 2000).¹ It found no randomised controlled trials of laparoscopic laser myomectomy. It included four case series of laparoscopic laser myomectomy. We found two additional case series.

The systematic review concluded that there was insufficient evidence to allow direct comparison of the risks and benefits of myomectomy versus hysterectomy, and that data were limited on the effect of myomectomy on long term symptomatic relief. The review did not examine the relative benefits and harms of laser versus electrosurgical laparoscopic myomectomy.

The table describes the three largest case series (two of which were included in the review).^{2,3,4} The annex lists references to smaller studies.

We also found one study in Russian. From the English abstract, it is not clear whether the study meets our inclusion criteria. The annex provides the reference to this paper.

Summary of key efficacy and safety findings

Authors, location, date, patients	Key efficacy findings	Key safety findings	Key reliability and validity issues
<p>Chapman²</p> <p>Case series London, UK Published 1998</p> <p>293 women; age range 23 to 60; all had laparoscopic laser treatment plus an unspecified number of women with myomas encroaching upon the uterine cavity also had laser treatment via the hysteroscope</p> <p>Follow up 6 months to 6 years</p>	<p>In 276 women with menstrual symptoms:</p> <ul style="list-style-type: none"> No menstrual problems: 89% <p>In 156 women with low abdominal pain or period pain:</p> <ul style="list-style-type: none"> No pain problems: 85% 	<p>Not reported</p>	<p>Uncontrolled case series</p> <p>Included in the systematic review¹</p> <p>All women had laparoscopic laser myomectomy, but unspecified number additional treatment with hysteroscopic laser myomectomy</p> <p>Outcome assessment not described</p>
<p>Goldfarb³</p> <p>Case series New Jersey, USA Published 1992</p> <p>75 women; aged 35 to 50; none wishing to preserve fertility</p> <p>Follow up 6 to 14 months</p>	<p>No symptom efficacy outcomes</p> <p>Reduction in myoma size on ultrasound</p>	<p>'No serious complications'</p>	<p>Uncontrolled case series</p> <p>No clinical outcomes</p> <p>Short follow up</p>
<p>Nisolle⁴</p> <p>Case series Brussels, Belgium 1989 to 1991</p> <p>48 women; aged over 40; large or multiple intramural fibroids; none wishing to preserve fertility</p> <p>Follow up 1 year</p>	<p>No symptom efficacy outcomes</p> <p>Reduction in myoma size on ultrasound</p>	<p>Bleeding: none Bladder or bowel injury: none Infection: none</p> <p>Bowel adhesions: all 7 women who had repeat laparoscopy</p>	<p>Uncontrolled case series</p> <p>Included in the systematic review¹</p> <p>No clinical outcomes</p> <p>Short follow up</p>

Validity and generalisability of the studies

All the studies were done in settings applicable to the UK.

The first case series was large.² However, an unspecified number of participants also received hysteroscopic laser myomectomy, so results may not be generalisable to women receiving laparoscopic laser myomectomy alone. The study described symptom outcomes, but it was not clear how these outcomes were assessed. The authors provided no data on complications.

The other two reports provided no data on symptom outcomes, only on the size of fibroids.^{3,4} Follow up was short in both studies.

Bazian comments

None.

Specialist advisor's opinion / advisors' opinions

Specialist advice was sought from the Royal College of Obstetricians and Gynaecologists

The Specialist Advisors commented that:

- The indications for performing this procedure are poorly defined
- Specialist laparoscopic surgical skills are required, as is laser safety training.

Issues for consideration by IPAC

None other than those discussed above.

References

1. Agency for Healthcare Research and Quality. Management of Uterine Fibroids Evidence Report/Technology Assessment Number 34. AHRQ Publication No. 01-E052. July 2001
2. Chapman R. New therapeutic technique for treatment of uterine leiomyomas using laser-induced interstitial thermotherapy (LITT) by a minimally invasive method. *Lasers Surg Med* 1998; 22: 171-178.
3. Goldfarb HA. Nd:YAG laser laparoscopic coagulation of symptomatic myomas. *J Reprod Med* 1992; 37: 636-638.
4. Nisolle M, Smets M, Malvaux V, Anaf V, Donnez J. Laparoscopic myolysis with the Nd:YAG laser. *J Gynecol Surg* 1993; 9: 95-99.

Annex: References to smaller case series

Reference	Number of study participants
Daniell JF, Kurtz BR, Taylor SN. Laparoscopic myomectomy using the argon beam coagulator. <i>J Gynecol Surg</i> 1993; 9: 207-212.	14
Daniell J. Argon beam coagulator for laparoscopic myomectomy <i>Gynaecol Endosc</i> 1995; 4: 219-2	32 – may include women included in Daniell 1993
Phillips DR, Milim SJ, Nathanson HG, Haselkorn JS. Experience with laparoscopic leiomyoma coagulation and concomitant operative hysteroscopy. <i>J Am Assoc Gynecol Laparosc</i> 1997; 4: 425-433	167 in all but only 10 had laser treatment
Kiselev SI, Seliverstov AA, Murashko AV. The surgical treatment of patients with uterine myoma by using endoscopic methods and laser technics. [Russian] <i>Akusherstvo i Ginekologija</i> 1995; 12-15	120

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February 2003