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).\textsuperscript{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).\textsuperscript{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

<table>
<thead>
<tr>
<th>Authors, location, date, patients</th>
<th>Key efficacy findings</th>
<th>Key safety findings</th>
<th>Key reliability and validity issues</th>
</tr>
</thead>
</table>
| Chapman²                          | In 276 women with menstrual symptoms:  
  • No menstrual problems: 89%  
In 156 women with low abdominal pain or period pain:  
• No pain problems: 85% | Not reported | Uncontrolled case series |
| Case series                       |                       |                     | Included in the systematic review¹ |
| London, UK                        |                       |                     | All women had laparoscopic laser myomectomy, but unspecified number additional treatment with hysteroscopic laser myomectomy |
| Published 1998                    |                       |                     | Outcome assessment not described |
| 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 | | | |
| Follow up 6 months to 6 years     |                       |                     | |
| Goldfarb³                         | No symptom efficacy outcomes  
Reduction in myoma size on ultrasound | ‘No serious complications’ | Uncontrolled case series |
| Case series                       |                       |                     | No clinical outcomes |
| New Jersey, USA                   |                       |                     | Short follow up |
| Published 1992                    |                       |                     | |
| 75 women; aged 35 to 50; none wishing to preserve fertility | | | |
| Follow up 6 to 14 months          |                       |                     | |
| Nissolle⁴                         | No symptom efficacy outcomes  
Reduction in myoma size on ultrasound | bleeding: none  
Bladder or bowel injury: none  
Infection: none  
Bowel adhesions: all 7 women who had repeat laparoscopy | Uncontrolled case series |
| Case series                       |                       |                     | Included in the systematic review¹ |
| Brussels, Belgium                 |                       |                     | No clinical outcomes |
| 1989 to 1991                      |                       |                     | Short follow up |
| 48 women; aged over 40; large or multiple intramural fibroids; none wishing to preserve fertility | | | |
| Follow up 1 year                  |                       |                     | |
Validity and generalisability of the studies
All the studies were done in settings applicable to the UK.

The first case series was large. 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. 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


Annex: References to smaller case series

<table>
<thead>
<tr>
<th>Reference</th>
<th>Number of study participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daniell J. Argon beam coagulator for laparoscopic myomectomy Gynaecol Endosc 1995; 4: 219-2</td>
<td>32 – may include women included in Daniell 1993</td>
</tr>
</tbody>
</table>

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