

NATIONAL INSTITUTE FOR CLINICAL EXCELLENCE

INTERVENTIONAL PROCEDURES PROGRAMME

Interventional procedure overview of laparoscopic hysterectomy

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 hysterectomy (including total laparoscopic hysterectomy, laparoscopic assisted vaginal hysterectomy and laparoscopic supracervical hysterectomy).

SERNIP procedure number

55

Specialty society

Royal College of Obstetricians and Gynaecologists

Indication(s)

Hysterectomy is performed for a wide range of conditions, including uterine malignancy, and benign conditions, such as fibroids, heavy periods and pelvic pain, that have not responded to medical treatment. Conventional abdominal and vaginal hysterectomies are very common. In 2000/2001, about 38,000 abdominal hysterectomies and 9,000 vaginal hysterectomies were carried out in England (Source: Hospital Episode Statistics, Department of Health).

Summary of procedure

A conventional hysterectomy involves removing the uterus through an abdominal incision or through the vagina. The cervix may be removed along with the uterus (total hysterectomy) or it can be left in situ (subtotal or supracervical hysterectomy).

Hysterectomy may also be carried out using key-hole or laparoscopic surgery, where much smaller abdominal incisions are employed to access and detach the uterus. Different terms are used to describe the procedure (laparoscopic hysterectomy (LH), laparoscopic supracervical or subtotal hysterectomy (LSCH), total laparoscopic hysterectomy (TLH) and laparoscopic assisted vaginal hysterectomy (LAVH)), depending on the extent of surgery carried out via the laparoscope.

When carried out laparoscopically, hysterectomy is usually carried out under general anaesthesia. A manipulator is placed in the uterus via the vagina and a laparoscope is introduced through a small incision in or below the umbilicus. Two or three further small incisions are made in the lower abdomen, to provide access for additional surgical instruments. The remainder of the procedure varies according to the amount of surgery performed laparoscopically.

In TLH, all the procedure is performed by laparoscopic techniques. A haemostatic cutting device such as monopolar or bipolar diathermy scissors, stapling gun, Nd:YAG laser scalpel,

or harmonic scalpel is used to detach the uterus completely from surrounding and supporting structures including ligaments and blood vessels. The uterus is then removed through the vagina, or may be cut into small pieces, and removed through one of the abdominal ports.

With LH the upper uterine pedicles and uterine arteries are secured laparoscopically; the remainder of the uterus is freed and secured vaginally.

In LAVH, laparoscopic techniques are used only to separate the upper uterine pedicles, the laparoscopic portion of the operation being discontinued above the level of the uterine arteries. The division of the uterine arteries and final detachment of the uterus is completed through the vagina. This is currently the most common type of laparoscopic hysterectomy being performed.

If the hysterectomy is subtotal and the cervix is left in place, the epithelium lining the cervical canal may be left intact, or destroyed by cautery, cryotherapy or laser.

All the different types of laparoscopic hysterectomy allow the uterus to be removed and the pelvic organs to be viewed without the need for a large abdominal incision and its associated morbidity.

Literature review

Appraisal criteria

We included randomised controlled trials and non-randomised comparative studies, comparing laparoscopic hysterectomy versus abdominal or vaginal hysterectomy. To allow assessment of complication rates, we also included case series of laparoscopic hysterectomy.

List of studies included in the overview

This overview is based on eight studies, including three randomised controlled trials^{1,2,3}, two non-randomised comparative studies^{4,5}, and three large case series^{6,7,8}.

Two of the randomised controlled trials were reported by the same investigators, one compared laparoscopic hysterectomy with abdominal hysterectomy and the other compared laparoscopic hysterectomy with vaginal hysterectomy.^{1,2} Both of these trials considered all the types of laparoscopic hysterectomy together as a single group.

The literature search also identified a systematic review, which assessed the literature comparing laparoscopy-assisted vaginal hysterectomy with total abdominal hysterectomy and vaginal hysterectomy published between 1989 and 1995.⁹ This review is summarised in Table 2.

The annex gives the references to additional randomised controlled trials, non-randomised studies and case series including 200 or more women that are not described in the table.

Table 1. Summary of key efficacy and safety findings

| Authors, location, date, patients | Key efficacy findings | Key safety findings | Key reliability and validity issues |
|---|---|---|---|
| <p>Garry^{1,2} Randomised controlled trial UK and South Africa 1996 to 2000</p> <p>876 women:</p> <ul style="list-style-type: none"> • 292 abdominal hysterectomy; mean age 41 years • 584 laparoscopic hysterectomy; mean age 42 years <p>Follow up: 12 months</p> <p>Exclusion criteria: confirmed or suspected malignant disease of any part of the genital tract, second- or third-degree uterine prolapse, uterine mass > 12 week pregnancy, associated medical illness precluding laparoscopic surgery, bladder or other pelvic support surgery required, patients deemed unsuitable for randomisation by the consultant, patients refusing consent for the trial.</p> | <p>Median operating time:</p> <ul style="list-style-type: none"> • Abdominal: 50 minutes • Laparoscopic: 84 minutes <p>Median length of hospital stay:</p> <ul style="list-style-type: none"> • Abdominal: 4 days • Laparoscopic: 3 days <p>SF-12 physical component summary at baseline (a high score represents a better quality of life):</p> <ul style="list-style-type: none"> • Abdominal: 45.6 • Laparoscopic: 44.9 <p>SF-12 physical component summary at 6 weeks (a high score represents a better quality of life):</p> <ul style="list-style-type: none"> • Abdominal: 41.7 • Laparoscopic: 46.8, p < 0.001 <p>SF-12 physical component summary at 1 year (a high score represents a better quality of life):</p> <ul style="list-style-type: none"> • Abdominal: 52.7 • Laparoscopic: 53.6, p = 0.32 | <p>Abdominal hysterectomy:</p> <ul style="list-style-type: none"> • Major haemorrhage: 2.4% (7/292) • Bowel injury: 1.0% (3/292) • Bladder injury: 1.0% (3/292) • Pulmonary embolus: 0.7% (2/292) • Return to theatre: 0.3% (1/292) • Wound dehiscence: 0.3% (1/292) • Major haematoma: 0.7% (2/292) • At least 1 major complication: 6.2% (18/292), p = 0.02 • At least 1 minor complication: 27.1% (79/292), p = 0.55 • Mean pain score = 4.0, p < 0.05 <p>Laparoscopic hysterectomy:</p> <ul style="list-style-type: none"> • Major haemorrhage: 4.6% (27/584) • Bowel injury: 0.2% (1/584) • Ureteric injury: 0.9% (5/584) • Bladder injury: 2.1% (12/584) • Pulmonary embolus: 0.2% (1/584) • Major anaesthesia problems: 0.9% (5/584) • Unintended laparotomy: 3.9% (23/584) • Return to theatre: 0.5% (3/584) • Wound dehiscence: 0.2% (1/584) • Major haematoma: 0.7% (4/584) • At least 1 major complication: 11.1% (65/584), p = 0.02 • At least 1 minor complication: 25.2% (147/584), p = 0.55 • Mean pain score = 3.4, p < 0.05 | <p>Randomisation fully described.</p> <p>Losses to follow-up at one year:</p> <ul style="list-style-type: none"> ▪ Abdominal: 36% (104 /292) women ▪ Laparoscopic: 28% (166/584) women <p>Quality of life questionnaires received at 1 year:</p> <ul style="list-style-type: none"> ▪ Abdominal: 68% (188/275) women ▪ Laparoscopic: 75% (418/558) women <p>Analysis by intention to treat.</p> <p>The true difference between the major complication rates could lie between 0.9 and 9.1%.</p> <p>Most of the laparoscopic procedures were of the LAVH type.</p> |

| Authors, location, date, patients | Key efficacy findings | Key safety findings | Key reliability and validity issues |
|---|---|---|---|
| <p>Garry^{1,2} Randomised controlled trial UK and South Africa 1996 to 2000</p> <p>504 women:</p> <ul style="list-style-type: none"> • 168 vaginal hysterectomy; mean age 41 years • 336 laparoscopic hysterectomy; mean age 42 years <p>Follow up: 12 months</p> <p>Exclusion criteria: confirmed or suspected malignant disease of any part of the genital tract, second- or third-degree uterine prolapse, uterine mass > 12 week pregnancy, associated medical illness precluding laparoscopic surgery, bladder or other pelvic support surgery required, patients deemed unsuitable for randomisation by the consultant, patients refusing consent for the trial.</p> | <p>Median operating time:</p> <ul style="list-style-type: none"> • Vaginal: 39 minutes • Laparoscopic: 72 minutes <p>Median length of hospital stay:</p> <ul style="list-style-type: none"> • Vaginal: 3 days • Laparoscopic: 3 days <p>SF-12 physical component summary at baseline (a high score represents a better quality of life):</p> <ul style="list-style-type: none"> • Vaginal: 47.0 • Laparoscopic: 47.4 <p>SF-12 physical component summary at 6 weeks (a high score represents a better quality of life):</p> <ul style="list-style-type: none"> • Vaginal: 46.3 • Laparoscopic: 46.2, p = 0.94 <p>SF-12 physical component summary at 1 year (a high score represents a better quality of life):</p> <ul style="list-style-type: none"> • Vaginal: 53.7 • Laparoscopic: 54.6, p = 0.32 | <p>Vaginal hysterectomy:</p> <ul style="list-style-type: none"> • Major haemorrhage: 2.9% (5/168) • Bowel injury: 0% (0/168) • Ureteric injury: 0% (0/168) • Bladder injury: 1.2% (2/168) • Unintended laparotomy: 4.2% (7/168) • Major haematoma: 1.2% (2/168) • At least one major complication: 9.5% (16/168), p = 0.92 • At least one minor complication: 27.9% (47/168), p = 0.24 <p>Laparoscopic hysterectomy:</p> <ul style="list-style-type: none"> • Major haemorrhage: 5.1% (17/336) • Bowel injury: 0% (0/336) • Ureteric injury: 0.3% (1/336) • Bladder injury: 0.9% (3/336) • Pulmonary embolus: 0.6% (2/336) • Major anaesthesia problems: 0.6% (2/336) • Unintended laparotomy: 2.7% (9/336) • Return to theatre: 0.3% (1/336) • Wound dehiscence: 0.3% (1/336) • Major haematoma: 2.1% (7/336) • At least one major complication: 9.8% (33/336), p = 0.92 • At least one minor complication: 23.2% (78/336), p = 0.24 | <p>Randomisation fully described.</p> <p>Losses to follow-up at one year:</p> <ul style="list-style-type: none"> ▪ Vaginal: 33% (55/168) women ▪ Laparoscopic: 35% (118/336) women <p>Quality of life questionnaires received at 1 year:</p> <ul style="list-style-type: none"> ▪ Vaginal: 71% (113/159) women ▪ Laparoscopic: 69% (218/318) women <p>Analysis by intention to treat.</p> <p>Trial was underpowered to detect a difference in complication rates.</p> <p>Most of the laparoscopic procedures were of the LAVH type.</p> |

| Authors, location, date, patients | Key efficacy findings | Key safety findings | Key reliability and validity issues |
|--|---|--|---|
| <p>Lumsden³</p> <p>Randomised controlled trial Scotland Date not stated, published 2000</p> <p>190 women with benign gynaecological conditions:</p> <ul style="list-style-type: none"> • 95 laparoscopic assisted vaginal hysterectomy (LAVH); mean age 41 years • 95 total abdominal hysterectomy (TAH): mean age 43 years <p>Follow up: 12 months</p> | <p>Mean operating time:</p> <ul style="list-style-type: none"> • LAVH: 81.9 minutes • TAH: 47.3 minutes <p>p < 0.05</p> <p>Mean hospital stay:</p> <ul style="list-style-type: none"> • LAVH: 4.0 days • TAH: 5.7 days <p>p < 0.05</p> <p>Operation fulfilling expectation:</p> <ul style="list-style-type: none"> • LAVH: 69.4% (59/95) • TAH: 77.8% (63/81) <p>p = 0.28</p> <p>There were no significant differences in the changes in women's valuations of health state after surgery compared with before surgery (based on the Euroqol Health Questionnaire visual analogue scale).</p> | <p>LAVH:</p> <ul style="list-style-type: none"> • Haemorrhage (requiring transfusion): 2.1% (2/95) • Urinary tract damage: 1.0% (1/95) • Pulmonary embolus: 1.0% (1/95) • Severe infection (ITU admission): 1.0% (1/95) • Pyrexia: 4.2% (4/95) • Positive urine culture: 4.2% (4/95) • Chest infection: 0% (0/95) • Wound infection: 1.0% (1/95) • Erythema wound: 3.2% (3/95) • Readmission: 6.3% (6/95) • Conversion to TAH due to per-operative difficulty: 3.2% (3/95) <p>TAH:</p> <ul style="list-style-type: none"> • Haemorrhage (requiring transfusion): 0% (0/95) • Urinary tract damage: 1.0% (1/95) • Pulmonary embolus: 0% (0/95) • Severe infection (ITU admission): 0% (0/95) • Pyrexia: 3.2% (3/95) • Positive urine culture: 6.3% (6/95) • Chest infection: 4.2% (4/95) • Wound infection: 4.2% (4/95) • Erythema wound: 9.5% (9/95) • Readmission: 8.4% (8/95) | <p>Randomisation described.</p> <p>10 additional women were recruited to the study; 7 did not attend for operation and the case records were lost for 3.</p> <p>Analysis by intention to treat.</p> <p>Women's evaluation of health state was measured using the Euroqol Health questionnaire.</p> <p>Response rate for Euroqol Health Questionnaire was 78%, 64% and 47% at 1, 6 and 12 months respectively.</p> <p>Trial was underpowered to detect a difference in complication rates.</p> |

| Authors, location, date, patients | Key efficacy findings | Key safety findings | Key reliability and validity issues |
|--|---|--|---|
| <p>Mäkinen⁴</p> <p>Non-randomised controlled study Finland 1996</p> <p>10110 women with benign gynaecological conditions:</p> <ul style="list-style-type: none"> • 5875 abdominal hysterectomy; mean age 48.8 years • 1801 vaginal hysterectomy; mean age 58.6 years • 2434 laparoscopic hysterectomy; mean age 47.0 years | <p>Mean operating time:</p> <ul style="list-style-type: none"> • abdominal: 86.1 minutes • vaginal: 87.7 minutes • laparoscopic: 124 minutes <p>p < 0.0001 for laparoscopic compared to abdominal</p> <p>Mean hospital stay:</p> <ul style="list-style-type: none"> • abdominal: 6.0 days • vaginal: 5.9 days • laparoscopic: 3.4 days <p>p < 0.0001 for laparoscopic compared to abdominal</p> <p>Mean convalescence period:</p> <ul style="list-style-type: none"> • abdominal: 34.4 days • vaginal: 34.0 days • laparoscopic: 21.5 days <p>p < 0.0001 for laparoscopic compared to abdominal</p> | <p>Mean estimated blood loss:</p> <ul style="list-style-type: none"> • abdominal: 305.1 mls, • vaginal: 342.3 mls • laparoscopic: 261.9 mls <p>p<0.0001 for laparoscopic compared to abdominal</p> <p>Abdominal:</p> <ul style="list-style-type: none"> • Ureter injury: 0.2% • Bladder injury: 0.5% • Bowel injury: 0.2% • Infection: 10.5% • Haemorrhage: 4.0% • Thromboembolism: 0.2% • Death: 0.02% <p>Vaginal</p> <ul style="list-style-type: none"> • Ureter injury: 0% • Bladder injury: 0.2% • Bowel injury: 0.5%, p<0.05 • Infection: 13.0%, p<0.01 • Haemorrhage: 4.6% • Thromboembolism: 0.2% • Death: 0.06% <p>Laparoscopic</p> <ul style="list-style-type: none"> • Ureter injury: 1.1%, p<0.0001 • Bladder injury: 1.3%, p<0.0001 • Bowel injury: 0.4% • Infection: 9.0% • Haemorrhage: 4.7% • Thromboembolism: 0.3% • Death: 0.04% <p>p values of vaginal and laparoscopic groups are compared to the abdominal group.</p> | <p>Prospective study.</p> <p>Unselected cases (the authors believe that data were collected on all hysterectomies performed in Finland for benign indications during 1996).</p> <p>Patients in the vaginal hysterectomy group were significantly older than those in the abdominal and laparoscopy groups (p<0.001).</p> <p>Operations were performed by >100 operators from 58 hospitals.</p> <p>11.6% of the abdominal hysterectomies and 2.1% of the laparoscopic hysterectomies were subtotal.</p> <p>Surgeons who had performed >30 laparoscopic hysterectomies had a significantly lower rate of bladder, ureter and bowel complications in comparison with the less experienced colleagues.</p> |

| Authors, location, date, patients | Key efficacy findings | Key safety findings | Key reliability and validity issues |
|--|--|--|---|
| <p>Shen⁵</p> <p>Non-randomised controlled study Taiwan Date not stated, published 2003</p> <p>296 women:</p> <ul style="list-style-type: none"> • 150 laparoscopic-assisted vaginal hysterectomy (LAVH); mean age 46 years • 146 total abdominal hysterectomy (TAH): mean age 46 years <p>Mean follow up: 8 years</p> | <p>Mean operating time:</p> <ul style="list-style-type: none"> • LAVH: 152.2 minutes • TAH: 96.5 minutes <p>p = 0.014</p> <p>Mean hospital stay:</p> <ul style="list-style-type: none"> • LAVH: 3.3 days • TAH: 5.2 days <p>p = 0.027</p> <p>Convalescence time:</p> <ul style="list-style-type: none"> • LAVH: 9.1 days • TAH: 19.5 days <p>p = 0.005</p> | <p>Mean estimated blood loss:</p> <ul style="list-style-type: none"> • LAVH: 216.3 mls • TAH: 302.8 mls <p>p=0.038</p> <p>LAVH:</p> <ul style="list-style-type: none"> • Conversion to TAH: 2% (3/150) • Bladder injury: 1.3% (2/150) • Bowel injury: 0.7% (1/150) <p>TAH:</p> <ul style="list-style-type: none"> • Bladder injury: 0.7% (1/146) <p>At 8-year follow-up:</p> <p>LAVH:</p> <ul style="list-style-type: none"> • Vaginal vault prolapse: 1.3% (2/150) • Cystocele: 30.0% (45/150) • Rectocele: 12.7% (19/150) • Enterocele: 2.0% (3/150) • Cuff granulation: 4.0% (6/150) • Postcoital spotting: 3.3% (5/150) <p>TAH:</p> <ul style="list-style-type: none"> • Vaginal vault prolapse: 0.7% (1/146) • Cystocele: 28.1% (41/146) • Rectocele: 10.9% (16/146) • Enterocele: 2.1% (3/146) • Cuff granulation: 6.8% (10/146) • Postcoital spotting: 5.5% (8/146) | <p>Retrospective study.</p> <p>Long-term follow-up.</p> <p>No losses to follow-up described.</p> <p>Authors emphasise that the surgeon should be closely monitored by an experienced laparoscopist during the learning phase.</p> <p>Some women in this trial may also be included in the case series reported by Shen et al.</p> |

| Authors, location, date, patients | Key efficacy findings | Key safety findings | Key reliability and validity issues |
|--|-----------------------|---|--|
| <p>Shen⁶</p> <p>Case series Taiwan 1992 to 2002</p> <p>Laparoscopic-assisted vaginal hysterectomy</p> <p>2702 women</p> <p>Mean age: 45.5 years</p> | <p>Not reported.</p> | <p>Bladder injury: 0.4% (11/2702) Ureter injury: 0.2% (4/2702) Bowel injury: 0.4% (11/2702) Vessel injury: 0.1% (2/2702) Stump bleeding: 0.1% (2/2702) Ileus: 0.1% (2/2702) Abscess: 0.1% (2/2702)</p> <p>Complication rate by experience of surgeon</p> <p>Bladder injury:</p> <ul style="list-style-type: none"> • Experienced = 0.2% (3/2053) • Inexperienced = 1.2% (8/649) <p>p = 0.001</p> <p>Ureter injury:</p> <ul style="list-style-type: none"> • Experienced = 0.05% (1/2053) • Inexperienced = 0.5% (3/649) <p>p = 0.045</p> <p>Bowel injury:</p> <ul style="list-style-type: none"> • Experienced = 0.2% (3/2053) • Inexperienced = 1.2% (8/649) <p>p = 0.001</p> | <p>Retrospective study.</p> <p>Study focused on major complications.</p> <p>76% (2053/2702) procedures were carried out by qualified instructors of the Taiwan Association of Obstetric and Gynecologic Endoscopists.</p> <p>Increased experience by surgeons was associated with a significant drop in the number of major complications.</p> |

| Authors, location, date, patients | Key efficacy findings | Key safety findings | Key reliability and validity issues |
|---|--|---|---|
| <p>Ben-Hur⁷</p> <p>Case series UK 1992 to 1996</p> <p>Laparoscopic hysterectomy</p> <p>1648 women</p> <p>Mean age: 46 years</p> | <p>Mean operating time: 36 minutes</p> <p>Mean hospital stay: 36 hours</p> <p>Mean return to work: 3 weeks</p> | <p>Vascular injury: 0.6% (9/1648)</p> <p>Haemorrhage requiring transfusion: 0.3% (5/1648)</p> <p>Bladder injury: 0.1% (1/1648)</p> <p>Bowel injury: 0.1% (1/1648)</p> | <p>Retrospective study.</p> <p>Consecutive patients.</p> <p>All the complications occurred in the first 2 years of the study. No complications occurred in the last 3 years of the study.</p> |
| <p>Wattiez⁸</p> <p>Case series France 1989 to 1999</p> <p>Total laparoscopic hysterectomy</p> <p>1647 women with benign gynaecological conditions</p> <p>695 treated 1989 to 1995, median age 47 952 treated 1996 to 1999, median age 50 years</p> | <p>Not reported</p> | <p>Conversion to laparotomy: 8%</p> <p>Re-operation: 1%</p> <p>Excessive haemorrhage: 0.6%</p> <p>Blood transfusion: 1%</p> <p>Urinary tract injury: 2%</p> <p>Bladder laceration: 1%</p> <p>Ureter injury: 0.2%</p> <p>Vesico-vaginal fistula: 0.1%</p> <p>Bowel injury: 0.1%</p> <p>Bowel obstruction: 0.1%</p> <p>Neurologic injury: 0.2%</p> <p>Thrombo-embolism: 0.2%</p> <p>Abdominal wall haematoma: 1%</p> <p>Vaginal cuff haematoma: 0.4%</p> <p>Abdominal wall infection: 0.1%</p> <p>Vaginal cuff infection: 0.2%</p> <p>Pyrexia: 1.1%</p> <p>Complications rates fell between 1989 to 1995 and 1996 to 1999</p> | <p>Large uncontrolled case series</p> <p>Authors state that a 'new uterine manipulator' was introduced in 1996 to prevent complications</p> |

Table 2. Summary of systematic review comparing laparoscopy-assisted vaginal hysterectomy with abdominal and vaginal hysterectomy

| Authors, location, date, patients | Key efficacy findings | Key safety findings | Key reliability and validity issues |
|--|---|---|---|
| <p>Meikle⁹</p> <p>Systematic review.</p> <p>Reports published from 1989 to 1995.</p> <p>34 reports on laparoscopy-assisted vaginal hysterectomy included in analysis.</p> <p>5420 women:</p> <ul style="list-style-type: none"> • 3112 laparoscopic assisted vaginal hysterectomy (LAVH); mean age 45 years • 1618 total abdominal hysterectomy (TAH): mean age 42 years • 690 vaginal hysterectomy; mean age not stated | <p>Mean operating time:</p> <ul style="list-style-type: none"> • LAVH: 115 minutes • TAH: 87 minutes <p>p < 0.001</p> <p>Mean hospital stay:</p> <ul style="list-style-type: none"> • LAVH: 49 hours • TAH: 79 hours <p>p < 0.001</p> <p>Time to return to work (based on four reports with comparison data):</p> <ul style="list-style-type: none"> • LAVH: 2 to 6 weeks • TAH: 5 to 9 weeks | <p>LAVH:</p> <ul style="list-style-type: none"> • Bladder injury: 1.7% (39/2273) • Bowel injury: 0.4% (10/2273) • Fistula: 0.04% (1/2273) • Ureter injury: 0.3% (6/2273) • Pulmonary embolus: 0.2% (4/2273) • Sepsis: 0% (0/2273) • Transfusion: 1.4% (43/3112) <p>TAH:</p> <ul style="list-style-type: none"> • Bladder injury: 0% (0/434) • Bowel injury: 0% (0/434) • Fistula: 0% (0/434) • Ureter injury: 0% (0/434) • Pulmonary embolus: 0% (0/434) • Sepsis: 0.5% (2/434) • Transfusion: 2.7% (43/1618) | <p>Search was restricted to English language articles.</p> <p>Different studies reported different indications.</p> <p>Many of the studies were small.</p> <p>Only 2 studies included in the analysis were randomised controlled trials.</p> <p>28 studies were retrospective.</p> <p>Some authors disregarded the preoperative size of the uterus whereas others excluded women with larger uteri.</p> <p>The laparoscopic procedure varied between studies.</p> |

Validity and generalisability of the studies

All studies were carried out in settings appropriate to the UK.

Some studies refer specifically to different kinds of laparoscopic hysterectomy, the most common being laparoscopic assisted vaginal hysterectomy, whereas others include all laparoscopic and laparoscopically assisted hysterectomy as a single entity.

The case series we describe in the table are large, so provide useful information on the incidence of complications.

Several studies comment that there is a steep learning curve and that the rate of complications is lower for more experienced surgeons.

Bazian comments

In early studies the laparoscopic procedure was limited to women with relatively small uterine size (< 14 to 16 weeks gestation). However, surgeons are now carrying out laparoscopic hysterectomy in women with much larger uteri.

We found many large case series of laparoscopic hysterectomy that are listed in the annex.

Specialist advisor's opinion / advisors' opinions

Specialist advice was sought from consultants who have been nominated or ratified by their Specialist Society or Royal College.

- Laparoscopic assisted vaginal hysterectomy is established practice and no longer new.
- One Specialist Advisor stated that there were concerns relating to the use of laparoscopic hysterectomy in the treatment of gynaecological cancer.
- The main safety concern is the potential risk of urinary tract damage.
- Training is an important issue.

Issues for consideration by IPAC

None other than those above.

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| Reference | Number of participants |
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Bazian Ltd
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