Total Laparoscopic Hysterectomy
Technique and Results
Experience of Clermont-Ferrand
Revaz Botchorishvili, Arnaud Wattiez, Michel Canis, Jean Luc Pouly, Benoît Rabischong, Kris Jardon, Gérard Mage

The incidence is variable

- In the USA, 43% of patients who are 85 years have had an hysterectomy
- In Danemark, only 10.4% of the women have an hysterectomy during their life

The French situation (PMSI data)
Limitations for TLH

History

November 1989 - First laparoscopic radical hysterectomy in Clermont-Fd

1988: First laparoscopic hysterectomy: H. Reich

1989-94: Technical evolution and improvement of each step

1995 - Establishment of an operative manual

1995-2008: 250 cases every year
Actual operative technique

Equipment

- 1 Curved scissors
- 2 Grasping forceps
- 2 Bipolar forceps
- Monopolar capabilities
- Lavage-suction device
- 3 Needle holders
- 1 Knot pusher

Uterine manipulator:

- Screwed into the uterus
- Allow to mobilize the uterus in all directions
- Valves to expose the cul de sac
- System to avoid gas leakage

Bi polar forceps
Actual operative technique
1-5 Operative steps

- Coagulation and section of the round ligaments
- Opening of the anterior peritoneum of the broad ligaments
- Fenestration of the broad ligaments
- Bipolar control of the adnexal vessels
- Posterior peritoneum dissection
Actual operative technique
6-10 Operative steps

- Vesicovaginal dissection
- Uterine vessels dissection and coagulation
- Opening of the vagina
- Uterine extraction (+/- morcellation)
- Vaginal closure

Total Laparoscopic Hysterectomy
left round ligament

Start afar from the uterus!
Fenestration is mandatory!

Actual operative technique

left posterior peritoneum dissection

Total Laparoscopic Hysterectomy
Vesicovaginal dissection
Total Laparoscopic Hysterectomy
dissection and control of left uterine vessels

Total Laparoscopic Hysterectomy
dissection and control of right uterine vessels

Intrafascial and extrafascial Hysterectomy
Total Laparoscopic Hysterectomy
opening of the vagina

Total hysterectomy
vaginal closure
Total hysterectomy vaginal closure

SUPRA CERVICAL HYSTERECTOMY

Safety rules
Prevention of ureteral injury

Laparoscopic specificity:

- no retractors

- Mobilisation of the uterus:
  - Patiente positioning
  - Uterine manipulation

- Create a safe anatomical situation
  - Fenestration of the broad ligament
  - Bladder dissection, section of the pillars
  - Coagulation of uterine vessels in ascendant part
  - Intrafascial Hysterectomy
Pelvic ureter and laparoscopic hysterectomy left side

Safety rules
Prevention of hemorrhage

- Vessels treatment
  - Dissection
  - Knowledge of the hemostasis techniques
- At the end of the surgery
  - Check of the hemostasis (specially the uterine vessel if clips or sutures have been used and the IP ligaments in all cases)
  - Low pressure

Large Uterus Hysterectomy
Large Uterus Hysterectomy

Get it smaller!

Large Uterus Hysterectomy

Difficulties virtualisation
Large Uterus Hysterectomy

- Get it out
  - Laparoscopic morcellation
  - Hemisection with blade
  - Myomectomy
  - Vaginal morcellation

Large Uterus Hysterectomy morcellation

Large Uterus Hysterectomy extraction
Total laparoscopic hysterectomy for very enlarged uteri.

**RESULTS**

Total laparoscopic hysterectomies for benign diseases

1989-2003

2244 patients

Three periods

1989-95

1996-99

2000-03

<table>
<thead>
<tr>
<th>Uterus weight (g)</th>
<th>Mean ± SD</th>
<th>Range</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>UTU &gt;500</td>
<td>617.2 ± 177.8</td>
<td>500-1250</td>
<td>0.0001</td>
</tr>
<tr>
<td>UTU ³300</td>
<td>178.9 ± 66.7</td>
<td>80-300</td>
<td></td>
</tr>
</tbody>
</table>

Operation by:

- Expert Fellow
- No experience

Controlled uterine vessels:

- Bipolar coagulation
- Ligature/ligation

Uterine morcellation:

- Vaginal
- Laparoscopic cold knife
- Laparoscopic morcellator
- No need for morcellation

Operative time and recovery data in women with and without very enlarged uteri undergoing total laparoscopic hysterectomy.

<table>
<thead>
<tr>
<th></th>
<th>Operative time (min)</th>
<th>Hemoglobin drop (g/dl)</th>
<th>Oral analgesia (mg)</th>
<th>Opioid (mg)</th>
<th>Gas and stool# (d)</th>
<th>Hospital stay (d)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>UTU &gt;500 (n=34)</td>
<td>159 ± 59.3</td>
<td>1.8 ± 0.5</td>
<td>57.7 ± 18.4</td>
<td>23.2 ± 4.9</td>
<td>1.4 ± 0.5</td>
<td>3.6 ± 1.1</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>UTU ³300 (n=68)</td>
<td>100 ± 36.7</td>
<td>1.3 ± 0.8</td>
<td>62.5 ± 37.2</td>
<td>25.8 ± 12.9</td>
<td>1.5 ± 0.6</td>
<td>3.5 ± 0.9</td>
<td>0.0001</td>
</tr>
</tbody>
</table>


Total laparoscopic hysterectomy for very enlarged uteri.

### Global results

<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>TLH/all hysterectomies (%)</strong></td>
<td>68</td>
<td>94</td>
<td>93</td>
</tr>
<tr>
<td><strong>Number of surgeons</strong></td>
<td>2</td>
<td>18</td>
<td>27</td>
</tr>
<tr>
<td><strong>Major complications (%)</strong></td>
<td>5.6</td>
<td>1.2</td>
<td>1.6</td>
</tr>
<tr>
<td><strong>Conversion in laparotomy (%)</strong></td>
<td>4.7</td>
<td>1.4</td>
<td>1.8</td>
</tr>
<tr>
<td><strong>Mean uterine weight (g)</strong></td>
<td>179.5</td>
<td>292</td>
<td>249</td>
</tr>
<tr>
<td></td>
<td>(40-980)</td>
<td>(40-1500)</td>
<td></td>
</tr>
<tr>
<td><strong>Mean surgery (min)</strong></td>
<td>115</td>
<td>90</td>
<td>92</td>
</tr>
</tbody>
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* p < 0.005

### Major complications

<table>
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<tr>
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<tbody>
<tr>
<td><strong>Blood transfusion</strong></td>
<td>15 (2.2%)</td>
<td>1 (0.1%)*</td>
<td>0</td>
</tr>
<tr>
<td><strong>Major vessel injury</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Urinary tract injury</strong></td>
<td>16 (2.3%)</td>
<td>9 (0.9)*</td>
<td>6 (1%)</td>
</tr>
<tr>
<td><strong>Bladder laceration</strong></td>
<td>11 (1.6%)</td>
<td>6 (0.6%)</td>
<td>3 (0.5%)</td>
</tr>
<tr>
<td><strong>Ureter injury</strong></td>
<td>4 (0.6%)</td>
<td>2 (0.2%)</td>
<td>2 (0.3%)</td>
</tr>
<tr>
<td><strong>Vesicovag. fistula</strong></td>
<td>1 (0.1%)</td>
<td>1 (0.1%)</td>
<td>1 (0.1%)</td>
</tr>
<tr>
<td><strong>Bowel injury</strong></td>
<td>1 (0.1%)</td>
<td>0</td>
<td>2 (0.3%)</td>
</tr>
<tr>
<td><strong>Neurologic injury</strong></td>
<td>1 (0.1%)</td>
<td>0</td>
<td>1 (0.1%)</td>
</tr>
<tr>
<td><strong>Thromboembolism</strong></td>
<td>2 (0.3%)</td>
<td>2 (0.2%)</td>
<td>0</td>
</tr>
</tbody>
</table>

* P<0.05

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### When is Laparotomy Needed in Hysterectomy for Benign Uterine Disease?

Michel Canis, MD, PhD,*, Rezv Ketchabaw, MD, Caterina Ang, MD.

Benedicta Rebwich, MD, Ks Jeden, MD, Arniad Waffiez, MD, and Girtel Mage, MD

**ABSTRACT**

**Study Objective:** We sought to study laparotomy conversion and initial and complication rates among patients with symptoms not responding to laparoscopic or vaginal hysterectomy methods.

**Design:** A retrospective cohort study.

**Setting:** University hospital.

**Patients:** A consecutive series of 695 patients operated on between January 1, 2000, and December 31, 2000, was analyzed.

**Interventions:** Laparoscopic hysterectomy was attempted in all cases, and if the procedure was not feasible, laparotomy was performed.

**Measurements and Main Results:** Overall, 5.2% of patients underwent laparotomy. In 27.9% of patients, hysterectomy was attempted, but conversion to laparotomy was necessary in 15.9% of cases.

**Conclusion:** Laparoscopic hysterectomy is a feasible and safe procedure, with a low conversion rate and a low complication rate.
Total laparoscopic hysterectomy is:

- Effective, safe, and reproducible
- Easier than hysterectomy by laparotomy
- Conceivable in ambulatory approach for simple indications
- Essential to the development and the training in laparoscopic surgery