Complications of gynecological laparoscopic surgery

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Head of Department

Hysterectomy Masterclass
ESI Hamburg 17th to 18th April 2013
Complications:

Introducing the topic

Complications

How to avoid them ...

How to recognize them as early as possible ...

How to treat them adequately ...
### Complications laparoscopy studies

<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Bowel</td>
<td>n = 29.966</td>
<td>n = 32.205</td>
<td>n = 75.584</td>
</tr>
<tr>
<td>Urogenital</td>
<td>48 0,16%</td>
<td>24 0,07%</td>
<td>123 0,16%</td>
</tr>
<tr>
<td>Bleeding</td>
<td>39 0,13%</td>
<td>79 0,25%</td>
<td>93 0,12%</td>
</tr>
<tr>
<td>Other</td>
<td>45 0,15%</td>
<td>4 0,01%</td>
<td>88 0,12%</td>
</tr>
<tr>
<td></td>
<td>13 0,04%</td>
<td>23 0,07%</td>
<td>76 0,10%</td>
</tr>
<tr>
<td><strong>∑</strong></td>
<td>139 0,49%</td>
<td>130 0,41%</td>
<td>436 0,58%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowel</td>
<td>n = 1414</td>
<td>n = 116.169</td>
</tr>
<tr>
<td>Urogenital</td>
<td>3 0,21%</td>
<td>181 0,16%</td>
</tr>
<tr>
<td>Bleeding</td>
<td>6 0,42%</td>
<td>183 0,16%</td>
</tr>
<tr>
<td>Other</td>
<td>1 0,07%</td>
<td>89 0,08%</td>
</tr>
<tr>
<td></td>
<td>1 0,07%</td>
<td>361 0,30%</td>
</tr>
<tr>
<td><strong>∑</strong></td>
<td>11 0,78%</td>
<td>814 0,70%</td>
</tr>
</tbody>
</table>
### Complications

#### Statistics 2000 - 2012

<table>
<thead>
<tr>
<th>Cases of endoscopic surgery overall</th>
<th>23000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hysteroscopy</strong></td>
<td></td>
</tr>
<tr>
<td>Myomectomy</td>
<td>1400</td>
</tr>
<tr>
<td>Endometrial Ablation</td>
<td>1050</td>
</tr>
<tr>
<td>Uterine septum</td>
<td>230</td>
</tr>
<tr>
<td>other</td>
<td>950</td>
</tr>
<tr>
<td><strong>Laparoscopy</strong></td>
<td>13500</td>
</tr>
<tr>
<td>Myomectomy</td>
<td>3100</td>
</tr>
<tr>
<td>Adnexal surgery</td>
<td>3600</td>
</tr>
<tr>
<td><strong>Total laparoscopic hysterecomy</strong></td>
<td>2300</td>
</tr>
<tr>
<td><strong>Subtotal laparoscopic hysterecomy</strong></td>
<td>1050</td>
</tr>
<tr>
<td>major complications</td>
<td>&lt; 2,0%</td>
</tr>
<tr>
<td>conversions to laparotomy</td>
<td>&lt; 0,1%</td>
</tr>
<tr>
<td>Lymphonodectomy</td>
<td>250</td>
</tr>
</tbody>
</table>

Complication rate of 1,0% = 230 cases (20-25/year)
Complications

How to avoid them ...

How to recognize them as early as possible ...

How to treat them adequately ...
Complications: avoid complications (1)

The greatest complication is the missing or wrong indication for a surgical procedure
Complications: avoid complications (1)

Main reasons:

- Boldness or audaciousness
- Overestimation of one's own capabilities
- False estimation of the situation
- Lack of knowledge, skill and experience
- Untrained team or unity
- Insufficient or inadequate instruments
Main reasons:

Boldness or audaciousness
Overestimation of one’s own capabilities
False estimation of the situation
Lack of knowledge, skill and experience
Untrained team or unity
Insufficient or inadequate instruments
Complications:  
... due to (minimal) access

- Hernia +/- incarceration of the small intestine in the incision
- Injury of the bladder with the medial trocar
- Injury of the aorta with the Veress-needle
- Injury of the vena cava with the Veress-needle
- Injury of the large intestine with the Veress-needle
- Injury of the small intestine with Veress-needle
- Injury of the stomach with the Veress-needle
- Injury of the iliac artery with the lateral trocar
- Injury of the iliac vein with the lateral trocar
- Infection of the incisions
- Hernia +/- incarceration of the small intestine in incision
- Injury of the epigastric blood vessels with the lateral trocar
- Lesion due to the position: shoulder or cervical, thoracic, lumbar spine
- Lesion due to the position: ischiadic or femoral nerv
- Lesion due to the position: peroneus nerv
- Lesion due to the position: gluteal muscles
- CO₂-emphysema
- Infection of the incisions
- Hernia +/- incarceration of the small intestine in incision
Complications: ... due to the (laparoscopic) method

- Thermic lesion of the small intestine (unipolar cauterisation)
- Thermic lesion of the large intestine (unipolar cauterisation)
- Thermic lesion of the bladder wall (unipolar cauterisation)
- Injury of the bladder wall with instruments or manipulation
- Injuries of the iliac artery and vein with instruments or manipulation
- Thermic lesion of the rectum (unipolar cauterisation)
- Injury of the bladder wall with instruments or manipulation
- Injury of the uterus with the manipulator
- Injury of the small or large intestine with the morcellator
- CO₂-embolism
- Pulmonary embolism
- Hypoxic damage (Trendelenburg position)
- Hypothermia

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Complications: ... due to hysterectomy itself

- Empyema of the vaginal vault parametritis
- Dehiscens of the vaginal vault
- Vesicovaginal fistula
- Ureterovaginal fistula
- Rectovaginal fistula
- Secondary hemorrhage adnexal vessels
- Secondary hemorrhage uterine vessels
- Injury of iliac vessels with the instruments
- Prevesical thermic lesion of the ureter (unipolar/bipolar cauterisation, ultrasound)
- Thermic lesion of the large intestine (unipolar cauterisation)
- Thermic lesion of the bladder bottom (unipolar cauterisation)
- Thermic lesion of the ureter (cauterisation or sutures)
- Thermic lesion of the ureter (cauterisation, ultrasound) in the fossa ovarica
- Thermic lesion of the ureter (cauterisation, ultrasound) over iliacal vessels
- Retroperitoneal haematoma
- Rectovaginal fistula
Injuries of the ureter:

1. Crossing of the ureter with the ovarian vessels
2. Fossa ovarica
3. Crossing of the ureter with the uterine vessels
4. Prevesical part of the ureter

1. + 2. Surgery on the adnexa (post hysterectomy), endometriosis, adnexal mass
3. + 4. Hysterectomy
Injuries of the ureter: effect of traction on the uterus

- Abdominal or laparoscopic hysterectomy
- Vaginal hysterectomy
Injuries of the ureter: effect of the upwards uterus traction

A.uterina

10 mm

Zervix

Ureter

A.uterina

10 mm
Injuries of the ureter: effect of the downwards uterus traction
Injuries of the ureter:

Effect of the failing uterus traction

Hazards of a (blind) bipolar coagulation

A.uterina

10 mm

Zervix

Ureter
Learning curve

TLH + uterus weight

Uterine weight (gramm)
n = 500

major complications
minor complications
Learning curve

TLH surgery duration

Duration of surgery (min)  
$n = 500$  

- major complications
- minor complications
<table>
<thead>
<tr>
<th>Complication</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bladder lesion</td>
<td>Re-operation 2 days later (laparoscopy), bladder catheter 7 days</td>
</tr>
<tr>
<td>Vesicovaginal fistula</td>
<td>Re-operation 9 days later (laparoscopy), bladder catheter 10 days</td>
</tr>
<tr>
<td>Ureterovaginal fistula</td>
<td>Conservative treatment 17 days later (pigtail)</td>
</tr>
<tr>
<td>Stricture of ureter (vaginal vault)</td>
<td>Re-operation 4 days later (laparoscopy) decompression</td>
</tr>
<tr>
<td>Prevesical hematoma</td>
<td>Re-operation 2 days later (laparoscopy)</td>
</tr>
<tr>
<td>Prevesical hematoma</td>
<td>Re-operation 2 days later (laparoscopy) + 2x blood transfusion</td>
</tr>
<tr>
<td>Abdominal wall hematoma (trocar)</td>
<td>Re-operation 3 days later</td>
</tr>
<tr>
<td>Hemorrhage</td>
<td>Re-operation 1 day later (laparoscopy)</td>
</tr>
<tr>
<td>Tubo ovarian abscess</td>
<td>Re-operation 17 days later (laparoscopy)</td>
</tr>
<tr>
<td>Adhesions with pain</td>
<td>Re-operation 7 weeks later (laparoscopy – adhesiolyse)</td>
</tr>
<tr>
<td>Abscess vaginal vault</td>
<td>Re-operation 7 days later (laparoscopy – appendectomy)</td>
</tr>
<tr>
<td>Purulent peritonitis (Salmonella)</td>
<td>Re-operation 2 days later (laparotomy) no bowel lesion</td>
</tr>
<tr>
<td>Dehiscence vaginal vault</td>
<td>Re-operation 3 Weeks later</td>
</tr>
<tr>
<td>Vaginal tear</td>
<td>Re-operation 2 hours later</td>
</tr>
<tr>
<td>Vaginal tear</td>
<td>Re-operation 1 day later + 3x blood transfusion</td>
</tr>
</tbody>
</table>
Complications

How to avoid them ...

How to recognize them as early as possible ...

How to treat them adequately ...
Drainage

... as many and
... as big as necessary
Complications:

Drainage

URINE

BLOOD

Secretion
(small intestine)

Faeces
(large intestine)
Complications

How to avoid them ...

How to recognize them as early as possible ...

How to treat them adequately ...
How Cars are Recovered in Ireland

The Murphy's Law Story

Or

How to Compound a Catastrophe
“Hey Paddy, we’ve got dis here car ta pull out.”
“Shamus, we're pullin' it up now.”
“Here Paddy, what happens if da crane can’t hold it?”
“Shamus me lad, don’t you even tink about dat happening.”
“Hoy Paddy, oi didn’t even tink it, oh shoit!”
“Shamus, moi boy, go get a bigga crane.”
“Aloight, Paddy.”
“Ah Shamus, dis bigga crane is doin’ da job well.”
“Dat it is Paddy, dat it is.”
“Now for da first crane Shamus, up it cooms.”
"What's happening Paddy, what's happening."
"Oh f*#k Shamus, we've got ta get an even bigga crane!"
Thank you for your attention!