Complications

• Wrong Insufflation, problems with entry
• Organ injury
  – bladder
  – stomach
  – bowel
• Injury of the ureter
• Vessel-Injury
• Port-Hernia

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Entry Problems
Injury of stomach, bowel, vessels

Prevention:

• Stomach probe (correct position!)
• Stitch incision, especially for slim women not too deep (only in the skin level)
• Verres cannula direction os sacrum
• Palmarincision by expected. peri-
• Umbilical adhesions (exclusion of
• Splenomegaly per US)
• Open LSK (hernia risk)
• As a standard no significant difference between the "Hasson technique" and the closed technique
  – only for "risk patients"
• In England and Australia in the surgery. Guidelines recommended
• Optical Trocars

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Problems with entry
injury of vessels

Vena cava, Aorta, Iliacal vessels

- Blood exiting from the puncture instrument
- Blood pressure drop + tachycardia
- Dark protrusion of the retro peritoneum
- Blood in the abdomen without any other cause
- C02-embolism (decrease of end-expiratory CO2, decrease of O2 saturation due to reduced pulmonary blood flow)
- Lethality up to 28%


→ Immediate median longitudinal section, digital vascular compression, pinching of the defect, vessel suture with prolene; 100% O2-respiration and extreme head storage with CO2-embolism, possibly ZVK or pulmonary artery catheter with gas aspiration

Notice: gas hose + filter contain approx. 175ml of room air

wash out with CO2 before surgery begins to avoid air bubbles

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Problems with the entry

• Incorrect insufflation
  – Missing 2x snapping of the Veressnadel
  – No tympanic knocking in the upper abdomen
  – High insufflation pressure already at the beginning

• Procedure:
  – Needle retract → Pressure drop → position in the omentum, etc

• Expected Preperitoneal position
  – Leave needle and drain as much gas as possible (otherwise visibility problem)

• Pull out the needle and check for continuity

• If necessary, Open LSK or Palmar access
Problems with the entry

Bowel or stomach injury

- Injury with verres needle ➔ Antibiotics, postoperative supervision, if necessary z-suture
- Injury mit Trocar ➔ if the view is clear to the segment ➔ two layer suture with PDS 3-0 oder 4-0
  - Otherwise Laparotomie, Adhesiolysis, surgical suture

**Notice:** 15% of bowel injuries are not detected during LSK, 20% of patients die

  - Postoperative diagnosis is performed on average after 4.0-4.9 days

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Problems with entry
DarmverletzungBowel Injury

Good luck !!!
If in doubt, look up to the port!
Problems with entry Bowel injury

• Risk factors
  – History of Longitudinal incision laparotomy
  – Inflammatory bowel disease
  – History of peritonitis
  – Intestinal adhesions on the anterior abdominal wall

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Urological problems

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Bladder Injury

- Single-layer or two-layer suture with Vicryl 2-0,
- Tightness controlmit 300 ml NaCl (blue)
- 7—10 days catheter
• Think about Involvement in hydronephrosis

• Endometriosis of lig. Sacrouterinum> 3cm □

ureter involvement in 17.9%  
Kondo W et al; Retrocervical deep infiltrating endometriotic lesion larger than 30mm are associated with an increase rate of ureteral involvement. J Minim Invasive Gynecol 2013; 20: 100--103

– Ureterolys in 53,8—73,3%

– Complikationsrate 23—31,4%

Injury of Ureter

Prophylaxis:

- In unclear anatomy preparation of the retroperitoneum and presentation of the ureteral course
- Intrafascial preparation at TLH
- hohl manipulator
- Instruments with low thermal dispersion (Harmonic)
- Double J uretercatheter
  - In case of concern before secondary thermal lesion
  - Controversial; Alternatively wait and see
  - operation close to the trigonum
  - In case of urine

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Promontorium

A. iliaca communis dextra

Ureter

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Ureterlesion

Intraoperatively detected:
- Transvesical double J
- Reanastomosis with 4-5 PDS sutures 4-0

Postoperative symptoms:
- flank and back pain
- Abdominal pain
- Nausea and vomiting
- Fever, leukocytosis, hematuria

Kidney US, i.v. Urogram, cystoscopy with retrograde illustration

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Anastomose of Ureter bei suture
Darmverletzung

- Mechanically
  - Mostly visible during surgery
  - Supply two-layered suture with Vicryl or PDS 3-0
  - Alternatively, semicircular resection with stapler
  - Incidence 0.5% (all rectal or sigmoid lesions) in surgery because of mild or severe endometriosis

- By heat
  - Cave: Interval from several days to perforation possible

Colorectale Segementresction
No Laparotmy
Complete wall resection of the bowel
Injury Vessels of abdominal wall
### Vesselinjury

*Introduction of transperitoneal lymphadenectomy in a gynecologic oncology center: analysis of 650 laparoscopic pelvic and/or paraaortic transperitoneal lymphadenectomies*


650 Patientinnen; 7 Gefäßverletzungen

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Preparate and show Small vessel outlets and coagulate
- Bleeding can be avoided

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Porthernia

Review: Eventracion de los orificios de los trocares en cirugia laparoscopia Comajuncosas J. et al, Cirurgia espanola 2011 89 (2) 72–76

- Incidence 0.18-2.8% (incidence open surgery: 3-20%)
- 80% of trocar hernias in trocars > 10mm
- Risk factors:

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Prevention of Porthernia

- No cutting trocars
- Trocader diameter as small as possible
- Avoid the linea alba
- Favorable trocar position to avoid fascia stretching
- Fascia seam under view at trocars > 10mm
- Complete venting of the pneumoperitoneum before removal
- Opening of the trocar valve when pulling out (suction prevention)
- Detect and visibly detect any existing fascia gaps (especially periumbilical)

Trokare mit Klinge
Nicht drehen beim Stechen!!!
Vielen Dank für Ihre Aufmerksamkeit

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