

**Center for
minimal access
Surgery in Gynecology**

**Department of
Gynecology and Obstetrics**

**Krankenhaus Sachsenhausen
Frankfurt
Academic hospital of the
University of Frankfurt**



Complications and Management in gynecological endoscopic Surgery

Philipp-Andreas Hessler

**Laparoscopy Training Course
Harare Zimbabwe 14th - 18th March 201**



Complications

How to avoid them ...

**How to recognize them
as early as possible ...**

**How to treat them
adequately ...**



Cases of endoscopic surgery overall > 20000

Hysteroscopy 9000

Myomectomy 1200

Endometrial Ablation 900

Uterine septum 200

other 800

Laparoscopy 11000

Total laparoscopic hysterectomy 2200

Subtotal laparoscopic hysterectomy 800

Myomectomy 2500

Adnexas 3000

Lymphonodectomy 250



Complications:

... due to (minimal) access

Hernia +/- incarceration of the small intestine in the incision

CO₂-emphysema

Infection of the incisions

Infection of the incisions

Hernia +/- incarceration of the small intestine in incision

Injury of the small intestine with Veress-needle

Injury of the stomach with the Veress-needle

Injury of the large intestine with the Veress-needle

Injury of the aorta with the Veress-needle

Injury of the vena cava with the Veress-Needle

Injury of the epigastric blood vessels with the lateral trocar

Injury of the bladder with the medial trocar

Injury of the iliac artery with the lateral trocar

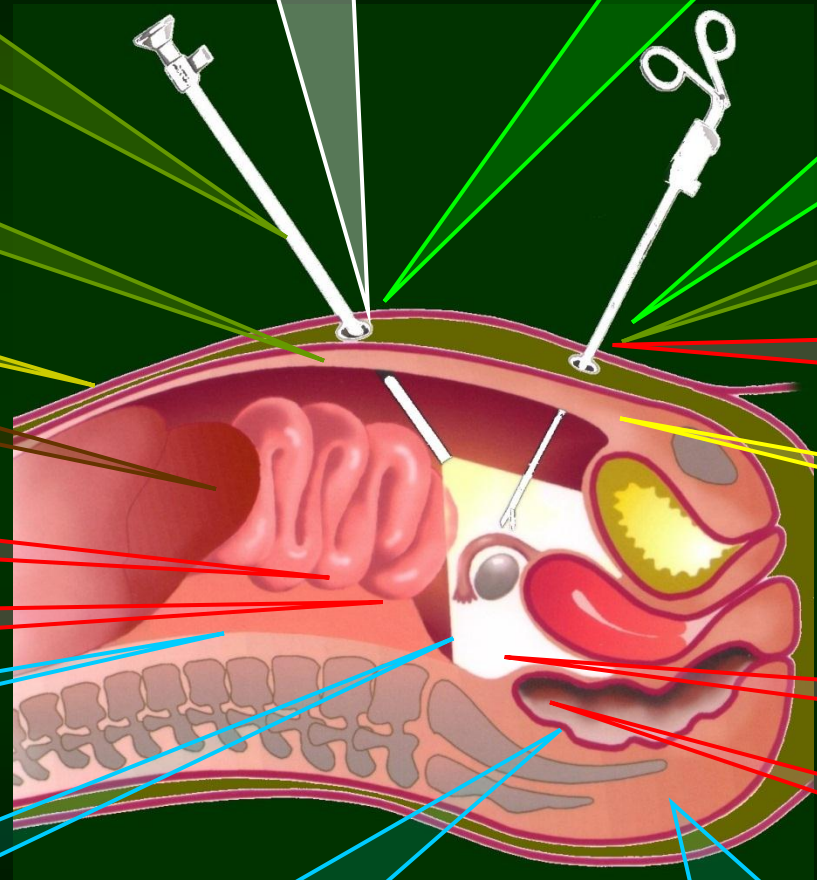
Injury of the iliac vein with the lateral trocar

Lesion due to the position: shoulder or cervical, thoracic, lumbar spine

Lesion due to the position: ischiadic or femoral nerv

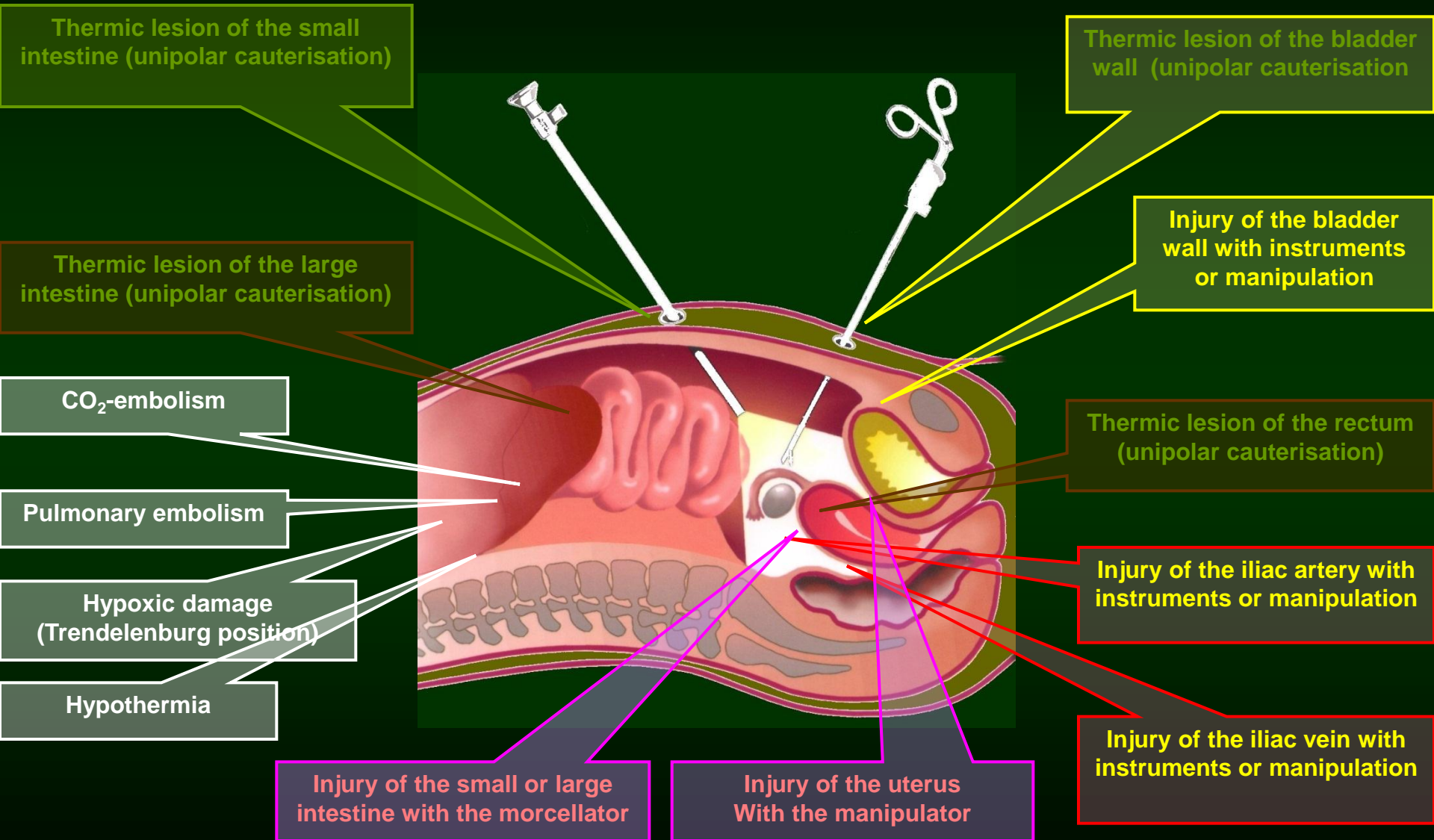
Lesion due to the position: peroneus nerv

Lesion due to the position: gluteal muscles



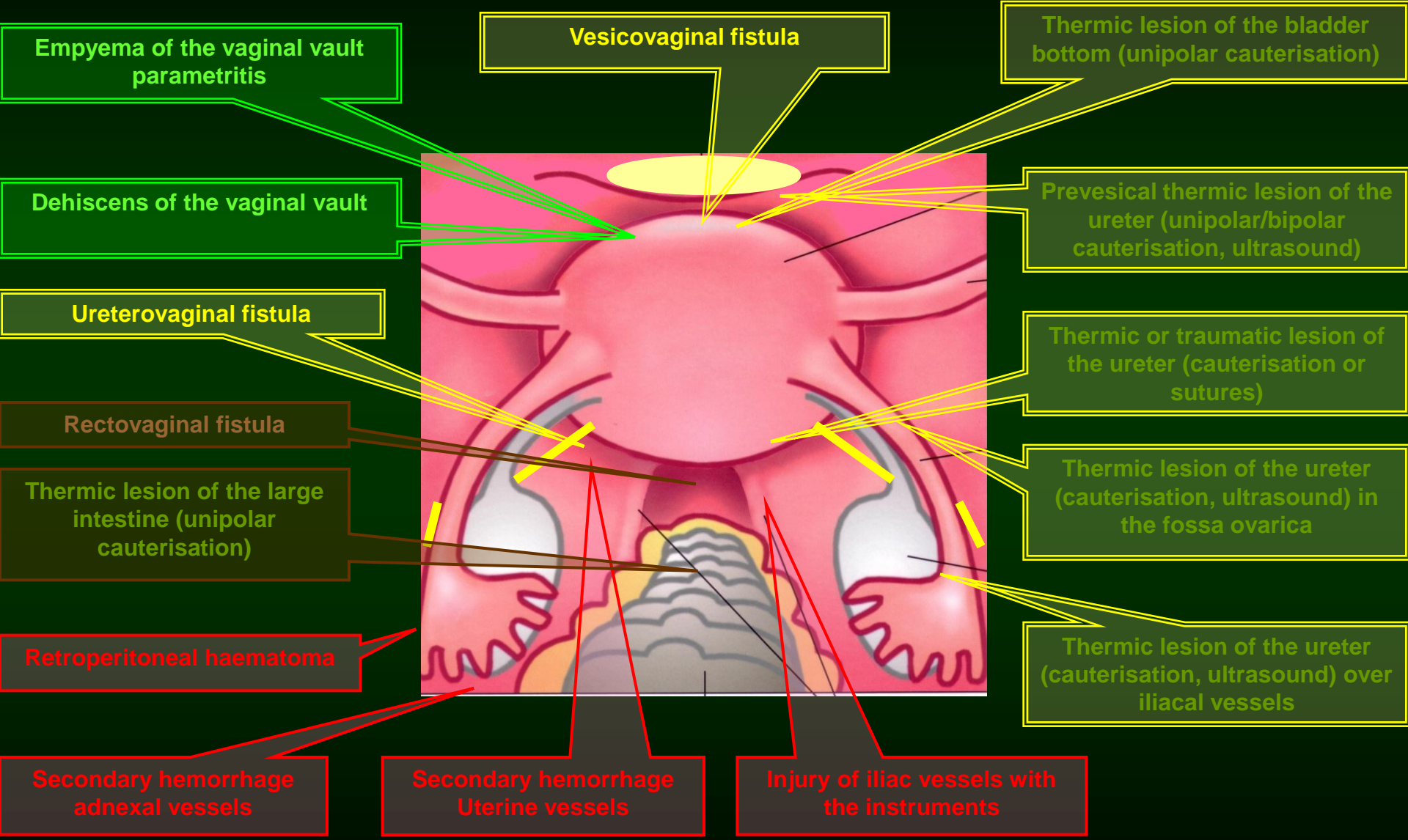
Complications:

... due to the (laparoscopic) method



Complications:

... due to hysterectomy itself



Complications

How to avoid them ...

**How to recognize them
as early as possible ...**

**How to treat them
adequately ...**



**The greatest complication is the
missing or wrong indication
for a surgical procedure**



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:

avoid complications (3)



Boldness or audaciousness



Complications:

avoid complications (4)



Overestimation of one's own capabilities



Complications:

avoid complications (5)



False estimation of the situation
(especially for our indian friends)



Complications:

avoid complications (6)



Lack of knowledge, skill and experience



Complications:

avoid complications (7)



Untrained team oder unity



Complications:

avoid complications (8)



insufficient or inadequate equipment

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



Injuries of the ureter:

hazard zones

1. Crossing of the ureter with the ovarian vessels

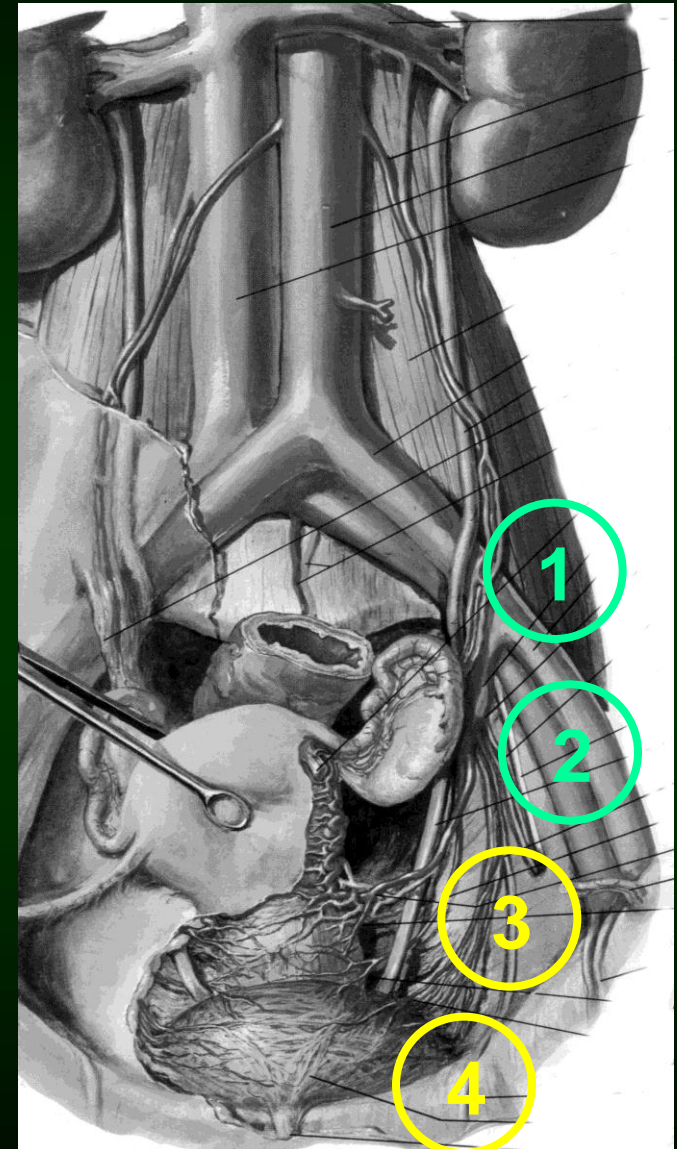
2. Fossa ovarica

3. Crossing of the ureter with the uterine vessels

4. Prevesical part of the ureter

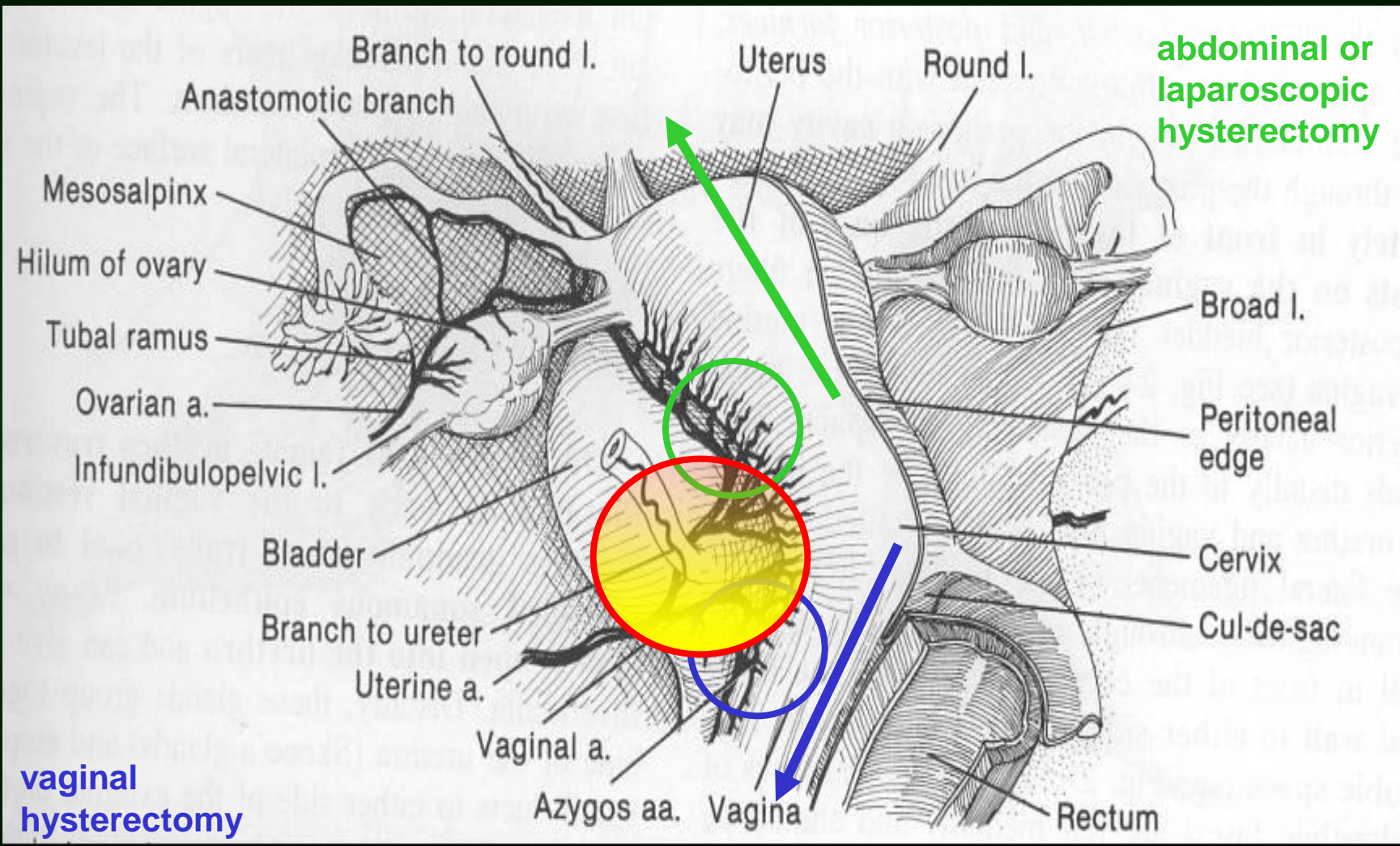
1. + 2. Surgery on the adnexa (post hysterectomy), endometriosis, adnexal mass

3. + 4. Hysterectomy



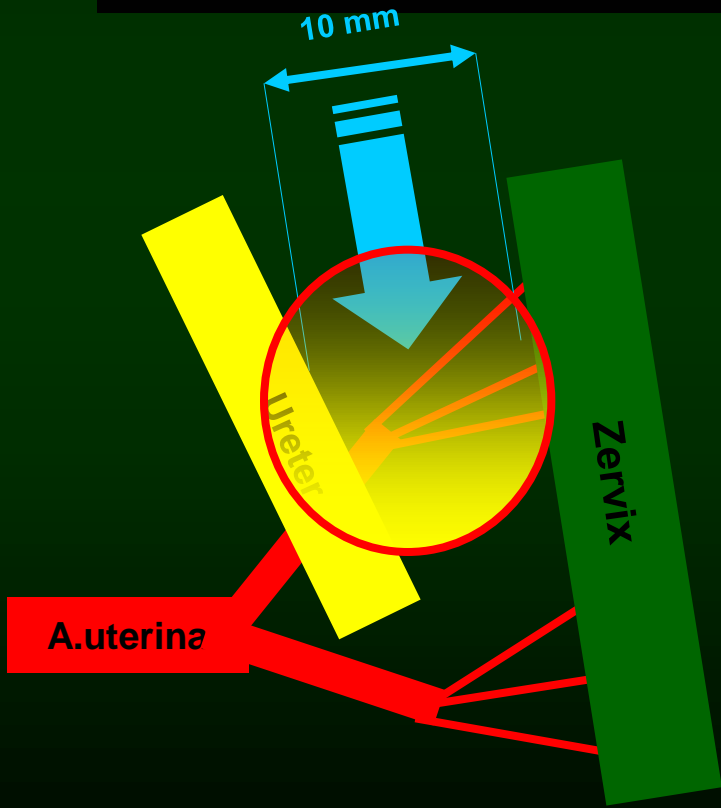
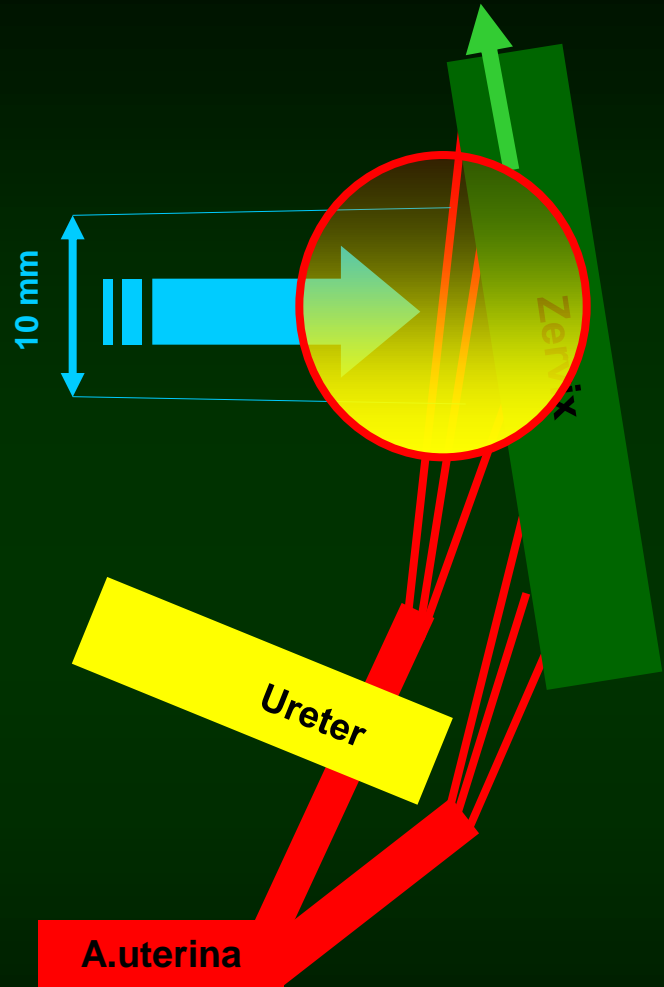
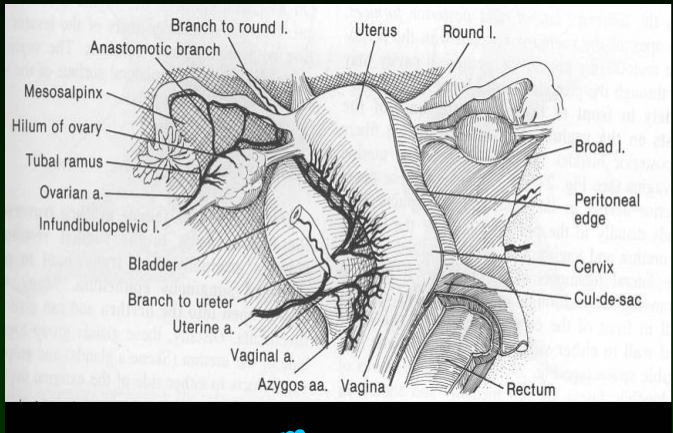
Injuries of the ureter:

effect of traction on the uterus



Injuries of the ureter:

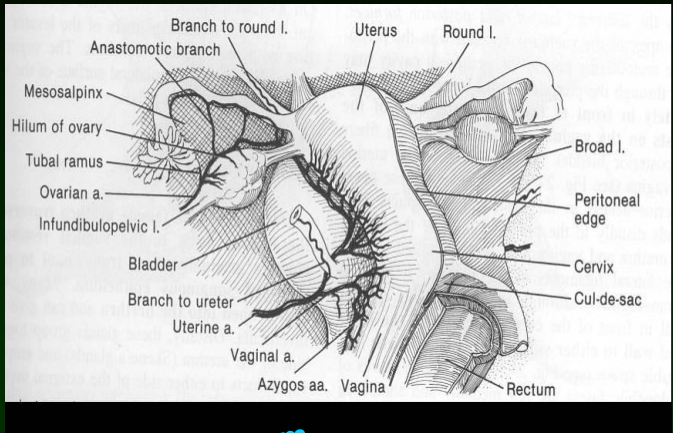
effect of the upwards uterus traction



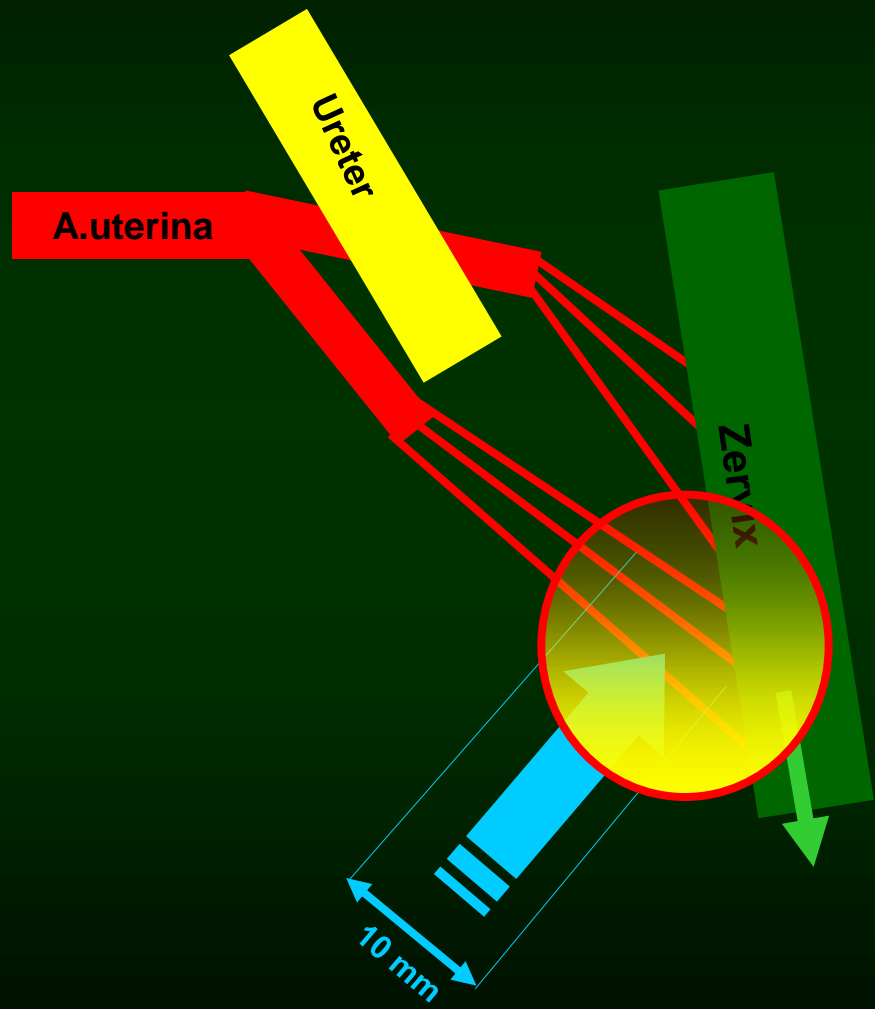
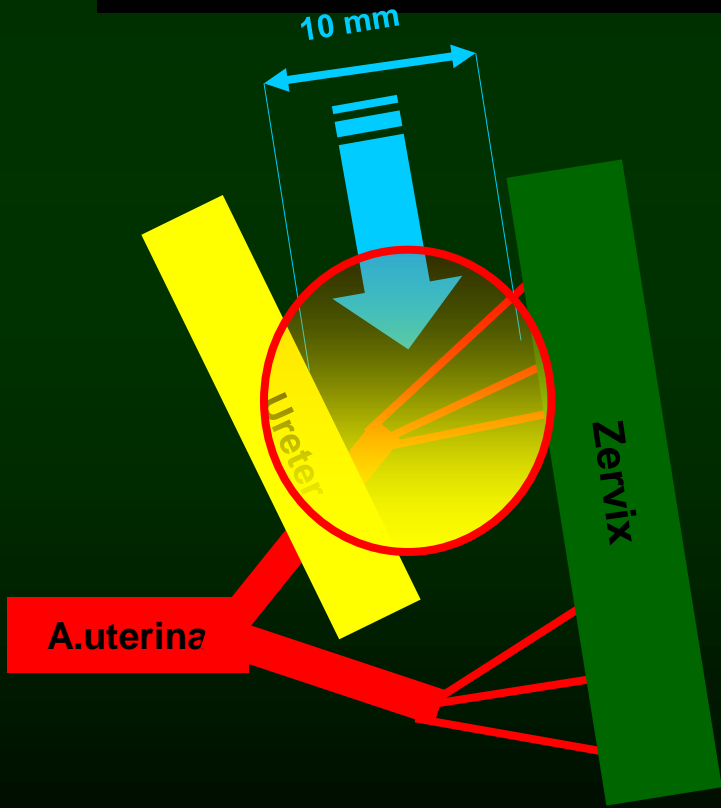
abdominal or laparoscopic hysterectomy



Injuries of the ureter: effect of the downwards uterus traction

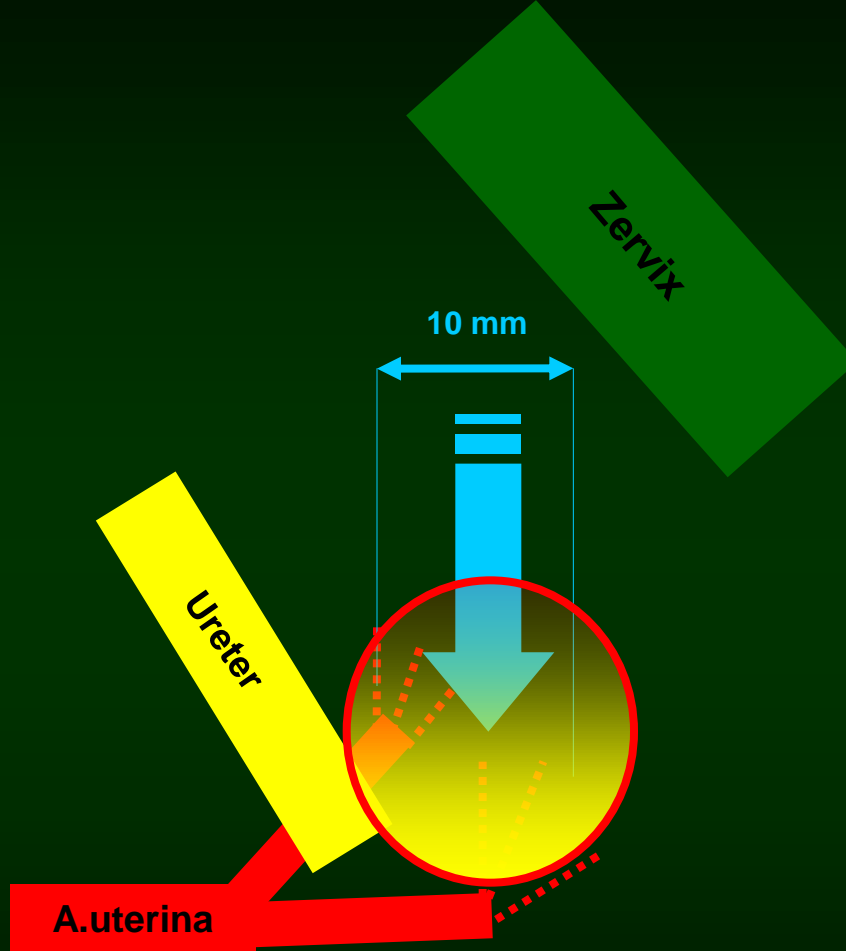
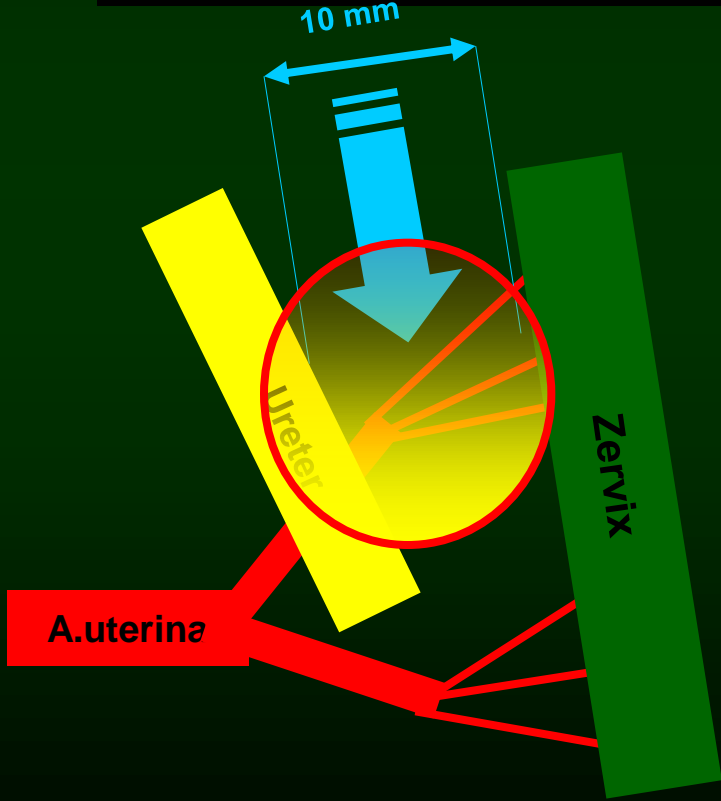
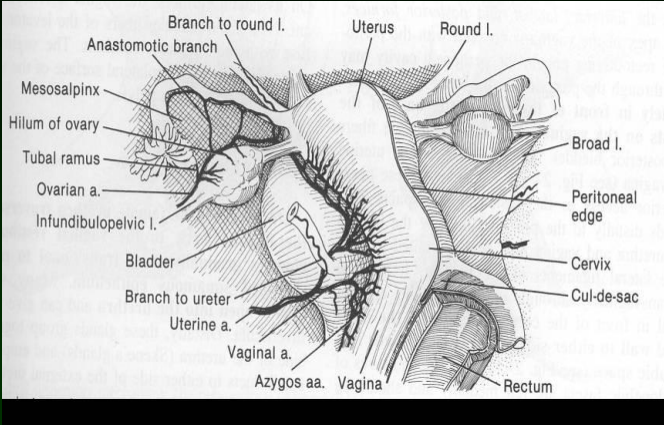


vaginal hysterectomy



Injuries of the ureter:

effect of the failing uterus traction



Hazards of a (blind) bipolar coagulation

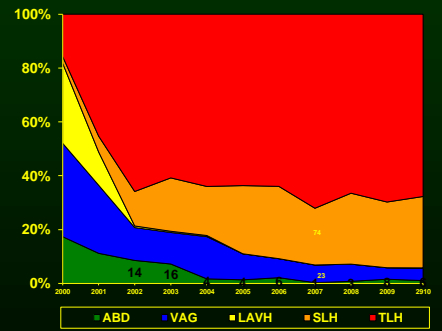
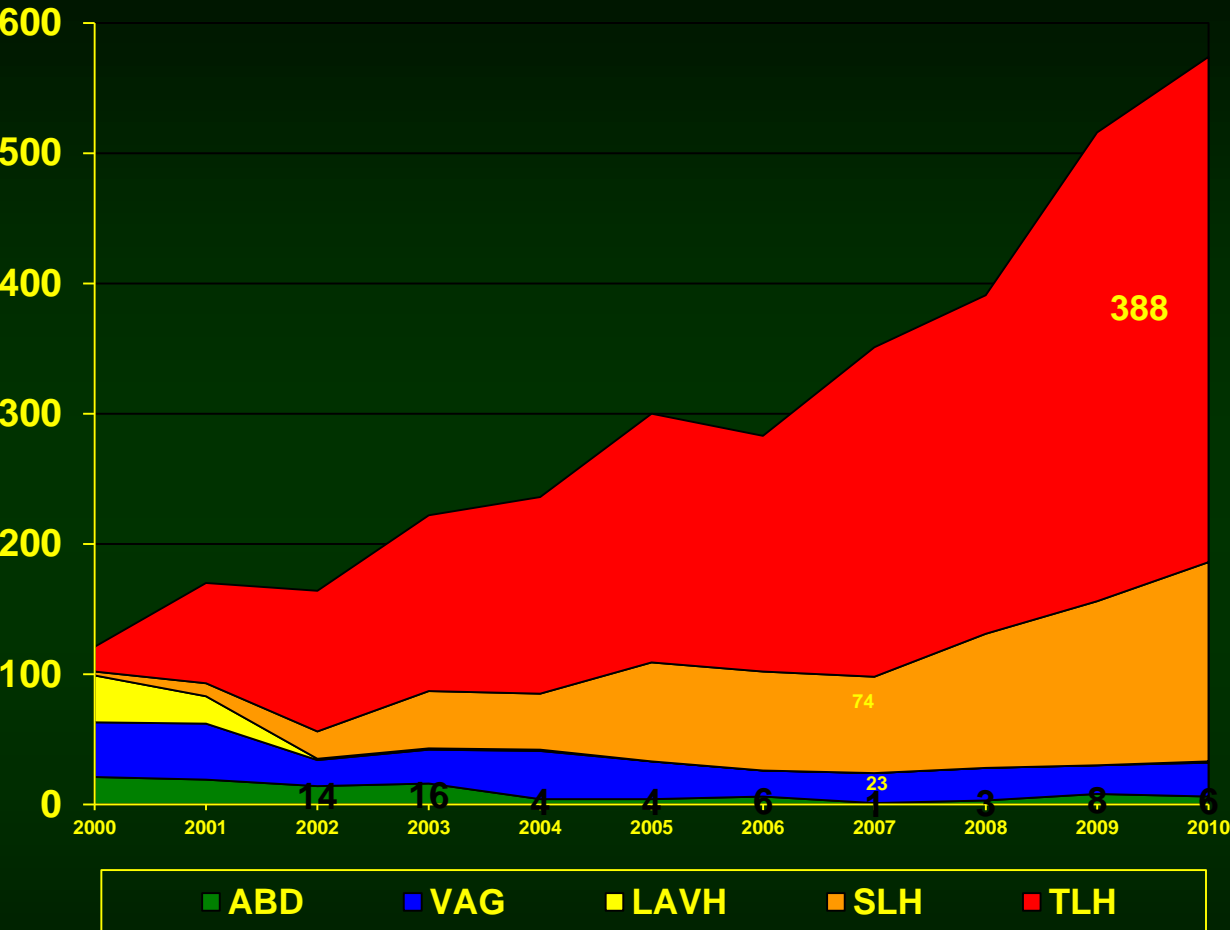


Video 2

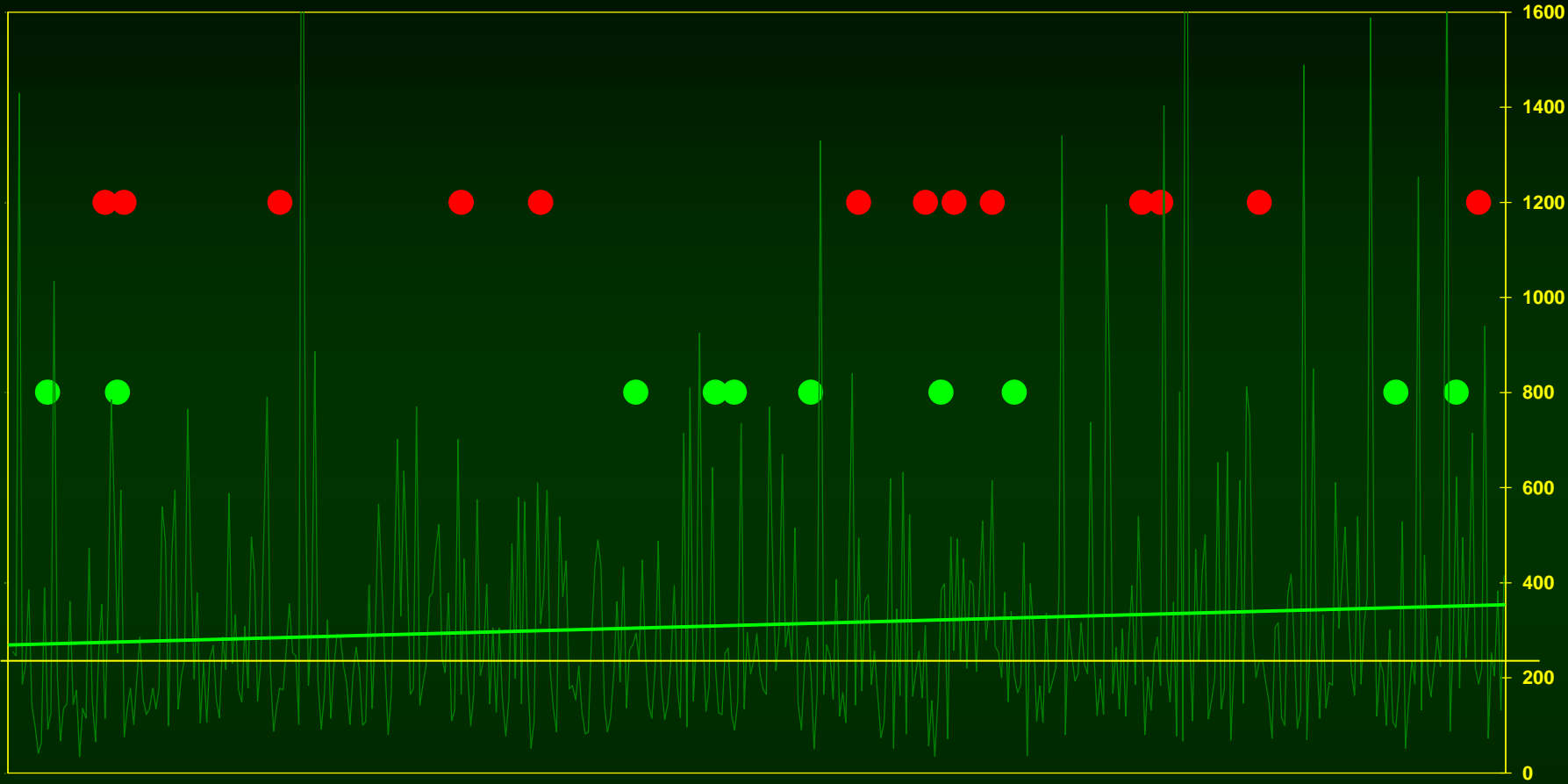
**The distance between
ureter
and
cervix**



Hysterectomy 2000 - 2011



Learning curve total laparoscopic hysterectomy (TLH)



Uterine weight (gramm)

n = 500

12/2006 – 5/2009

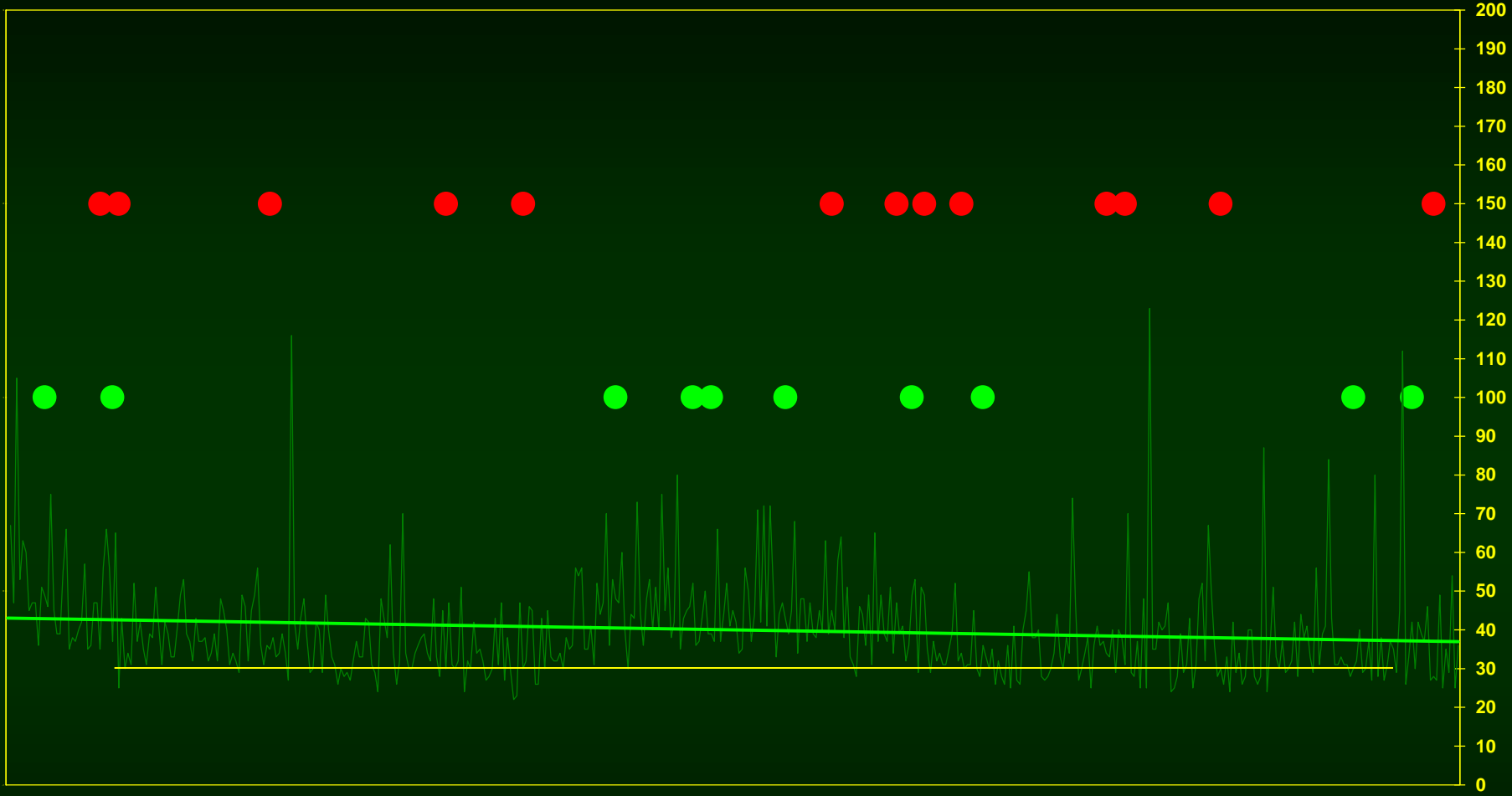


● major complications

● Minor complications



Learning curve total laparoscopic hysterectomy (TLH)



Duration of surgery (min)

n = 500

12/2006 – 5/2009



● major complications

● Minor complications



„Major complications“ of total laparoscopic hysterectomy (1)

Genitourinary tract	4/500	0,8%	(0,7%)*
Secondary hemorrhage	4/500	0,8%	(0,6%)*
Infection	4/500	0,8%	
Bowel lesion	0/500	0,0%	(0,2%)*
Other	3/500	0,6%	
Total	15/500	3,0 %	(4,1%)*

*) Quality management gynecological surgery region of Hessen 2008

Postoperative complications requiring re-operation



„Minor complications“ of total laparoscopic hysterectomy

Genitourinary tract	1/500	0,2 %
Hemorrhage	2/500	0,4 %
Infection	3/500	0,6 %
Lesion (bladder)	2/500	0,4 %
Summe	8/500	1,6 %

**Intraoperative lesions and postoperative complications
not requiring re-operation**



„Major complications“ of total laparoscopic hysterectomy (2)

Bladder lesion

Vesicovaginal fistula

Ureterovaginal fistula

Stricture of ureter (vaginal vault)

Re-operation 2 days later (LSK), bladder catheter 7 days

Re-operation 9 days later (LSK), bladder catheter 10 days

Conservative treatment 17 days later (pigtail)

Re-operation 4 days later (LSK) decompression

Prevesical hematoma

Prevesical hematoma

Abdominal wall hematoma (trocar)

Hemorrhage

Re-operation 2 days later (LSK)

Re-operation 2 days later (LSK) + 2x blood transfusion

Re-operation 3 days later

Re-operation 1 day later (LSK)

Tubo ovarian abscess

Adhesions with pain

Abscess vaginal vault

Purulent peritonitis (Salmonella)

Re-operation 17 days later (LSK)

Re-operation 7 weeks later (LSK – adhesiolysis)

Re-operation 7 days later (LSK – appendectomy)

Re-operation 2 days later (Laparotomy) no bowel lesion

Dehiscence vaginal vault

Vaginal tear

Vaginal tear

Re-operation 3 Weeks later

Re-operation 2 hours later

Re-operation 1 day later + 3x blood transfusion



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



URINE

BLOOD

Secretion
(small intestine)

Faeces
(large intestine)

Complications

How to avoid them ...

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Video 3

Laparoscopic management of complications



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."
"Alroight, 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 !**



**Thank you
for your
attention !**



**Thank you
for your
attention !**



Complications - acute symptoms

< 24 h

sharp lesion, open cavity or great vessel
(knife, scissors)

complete ligation or occlusion (hernia)
retroperitoneal vessel injury

Bladder abdominal fluid > 1-2 l (palpation, ultrasound)
no pain, urinary dysfunction, hematuria
urine loss via drainage or incisions (creatinine)

?

Ureter abdominal fluid > 1-2 l (palp, ultrasound)
no urinary dysfunction (unilateral)
urine loss via drainage or incisions (creatinine)

unilateral back pain (renal bed)
hydronephrosis (ultrasound)
fever, preileus

Small Intestine abdominal pain, subileus, distended abdomen
greenish yellow loss via drainage (bilirubin)

abdominal cramps, nausea, vomiting
partial ileus (x-ray!)

Large Intestine abdominal pain, subileus, distended abdomen
greenish yellow loss via drainage (bilirubin)

?

Bleeding abdominal fluid > 1-2 l (palp, ultrasound)
anämie, hemorrhagic shock

retroperitoneal injury major vessels
(mortality)



	partially open cavity (mechanical trauma)	partial ligation or occlusion (hernia) lesion small vessel
Bladder	urinary phlegmon, (abdominal wall and genital region) abdominal tension or rigidity, fever secondary peritonitis, urosepsis	perivesical hematoma) pain, dysuria, microhematuria
Ureter	periurethral edema, consecutive hydronephrosis, fever, subileus	unilateral back pain (renal bed) hydronephrosis (ultrasound) fever, preileus
Small Intestine	abdomal pain, ileus, distended abdomen severe (chemical) peritonitis	abdominal cramps, nausea, vomiting partial ileus (x-ray!)
Large Intestine	abdomal pain, ileus, distended abdomen severe septical peritonitis, sepsis (mortality)	abdominal cramps, nausea, vomiting complete ileus (x-ray!), local
Bleeding	retroperitoneal injury major vessels	Hematoma Douglas cavity



Complications - delayed symptoms

3 - 6 days

thermic lesion (monopolar, bipolar, ultrasound)

incarcerated hernia, adhesions, infection

Bladder urinary phlegmon, (abdominal wall and genital region)
secondary peritonitis, urosepsis

dysurie, cramps (trocar associated)

Ureter unilateral back pain (renal bed)
periurethral edema, consecutive hydro-nephrosis, fever, subileus

pyelonephritis

Small Intestine abdominal pain, ileus, distended abdomen
severe (chemical) peritonitis

abdominal cramps, nausea, vomiting
partial ileus (x-ray!)

Large Intestine abdominal pain, ileus, distended abdomen
severe septical peritonitis, sepsis (mortality)

abdominal cramps, nausea, vomiting
complete ileus (x-ray!), local

Post-op Infection Douglas pouch abscess
urinary infection
pyelonephritis
septical peritonitis (vagina?)



Complications - delayed symptoms

2 - 6 weeks

thermic lesion (monopolar, bipolar, ultrasound)

incarcerated hernia, adhesions, infection

Bladder urinary phlegmon, (abdominal wall and genital region)
secondary peritonitis, urosepsis

dysuria, cramps (trocar associated)

Ureter unilateral back pain (renal bed)
periurethral edema, consecutive hydro-nephrosis, fever, subileus

pyelonephritis

Small Intestine abdominal pain, ileus, distended abdomen
severe (chemical) peritonitis

abdominal cramps, nausea, vomiting
partial ileus (x-ray!)

Large Intestine abdominal pain, ileus, distended abdomen
severe septical peritonitis, sepsis (mortality)

abdominal cramps, nausea, vomiting
complete ileus (x-ray!), local

Post-op Infection Douglas pouch abscess
urinary infection
pyelonephritis
septical peritonitis (vagina?)

