Masaryk University School of Medicine
and Brno University Hospital
Department of Obstetrics and Gynecology
Head: doc. MUDr. Vít Weinberger, PhD.

Uterine tumors

Eliška Gazárková
Gynecology and Obstetrics

2020

Uterine tumors

- Tumors of the uterine **body**
- **Cervical** tumors

- Benign (leiomyoma, polyp)
- Malignant (sarcoma, endometrial cancer)

Uterine tumors

Benign tumors of the uterine body

- Leiomyoma
- Endometrial polyp

Uterine tumors

Leiomyoma

- Body (cervix, Fallopian tubes, ovary, vagina, vulva, ligament, GIT)
- 20-50% of women
- Most common diagnosis
- 35-45 years; after menopause occurs involution

Uterine tumors

Leiomyoma

- Classification according to localization:

Subkumosal (ev. nascent)
Intramurals
Subserous (ev. stopwatch)
Intraligamentous

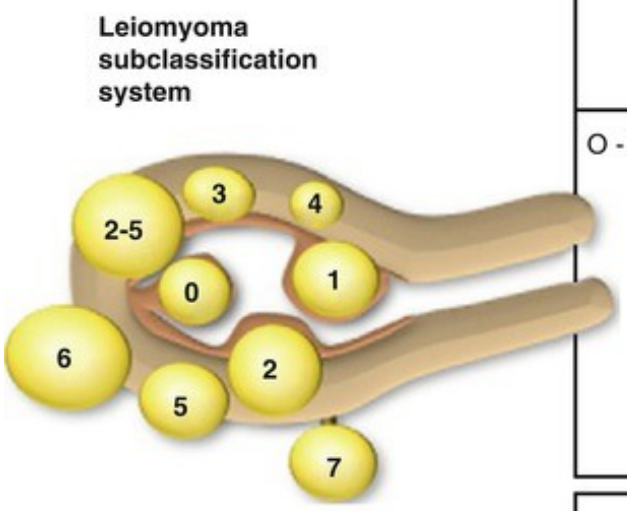
- Degenerative changes

Hyalinization, mukoid degeneration, cystic degeneation, kacification

Uterine tumors

Leiomyoma

- Classification according to localization:



SM - Submucosal	0	Pedunculated intracavitary
	1	<50% Intramural
	2	≥50% Intramural
O - Other	3	Contacts endometrium; 100% intramural
	4	Intramural
	5	Subserosal ≥50% intramural
	6	Subserosal <50% intramural
	7	Subserosal pedunculated
	8	Other (specify e.g. cervical, parasitic)

Hybrid leiomymas (impact both endometrium and serosa)	Two numbers are listed separated by a hyphen. By convention, the first refers to the relationship with the endometrium while the second refers to the relationship to the serosa. One example is below	
	2–5	Submucosal and subserosal, each with less then half the diameter in the endometrial and peritoneal cavities, respectively.

Uterine tumors

Leiomyoma

Symptomatology

- 60-90% asymptomatic
- Irregular uterine bleeding, hypermenorrhoea, anemization
- Lower abdominal pain
- Urinary symptoms (pressure on the bladder, urine retention)
- Obstipation
- Sterility / infertility

Uterine tumors

Leiomyoma

Etiology

- Hormonal dysregulation (hyperestrogenismus)
- Genetic causes
- Antropometric influences (BMI)

Diagnosis

- Palpation, gynecological examination
- Ultrasound
- Complementary methods – CT, MR
- Invasive methods – LSK, HSK
- Histology – final diagnosis

Uterine tumors

Leiomyoma

Therapy – conservative approach

- Elimination of the symptoms / myoma volume reduction
- Non steroid anflogistics
- HAK, depot gestogens – reduction of blood loss, dysmenorrhoea
- GnRh analogs – arteficial menopause – reduction of blood loss + myoma volume reduction

Uterine tumors

Leiomyoma

Therapy – sugical

- Myoma **enucleation** - laparotomic, laparoskopic, hysterosocpic
    - younger women, intrests in fertility
- **Hysterectomy** - abdominal, vaginal, laparoscopic
- (preoperative preparation – 3 month aplication of GnRh analogs)

Uterine tumors

Corporal polyp

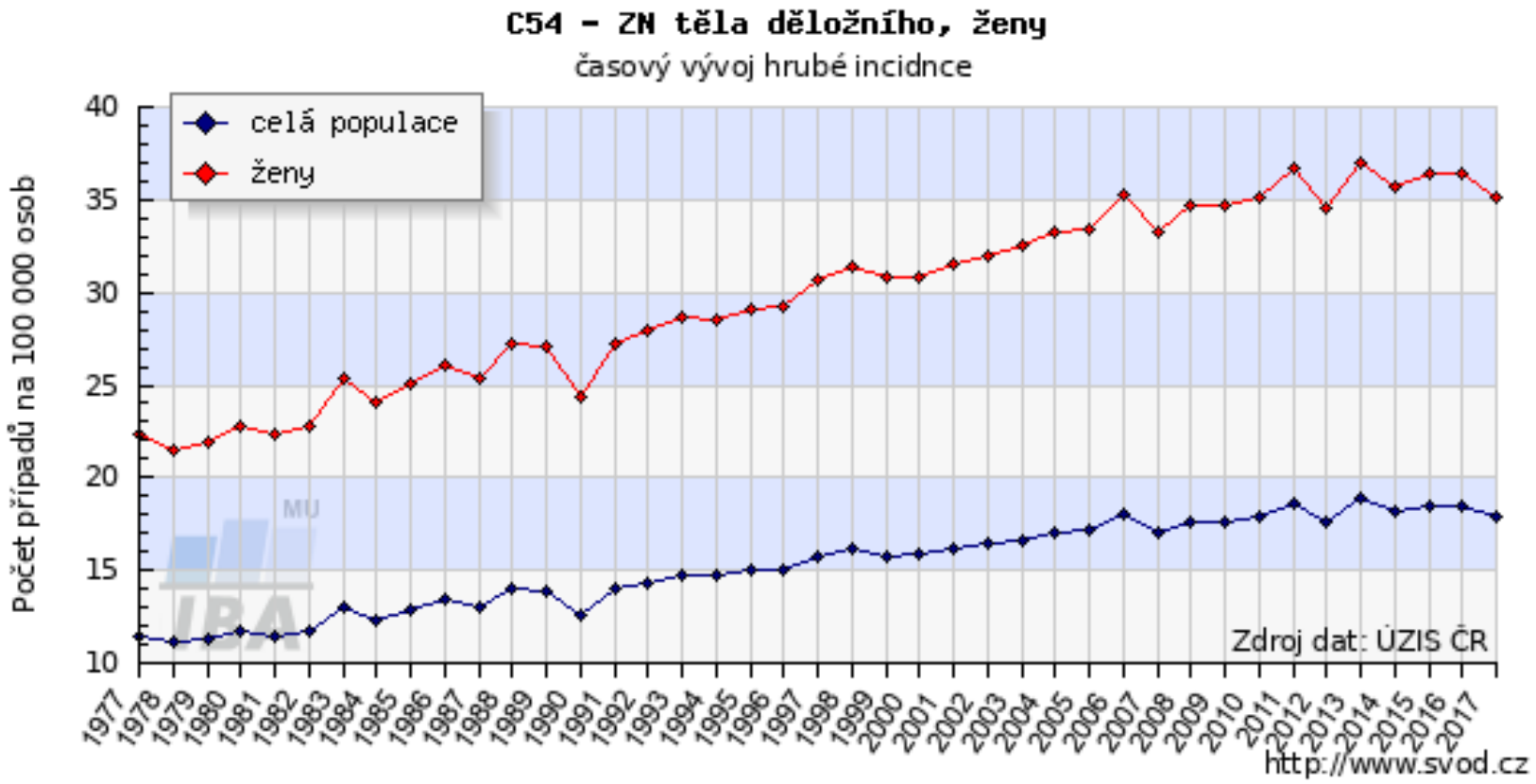
- Grows out of the pars basalis
- Most frequent localisation – uterine fundus
- Hyperplastic, atrofic, functional
- Mostly asymptomatic X irregular uterine bleeding, pain
- Dignosis: ultrasound, hysteroscopy
- Therapy: surgical – curretage, HSK

Uterine tumors

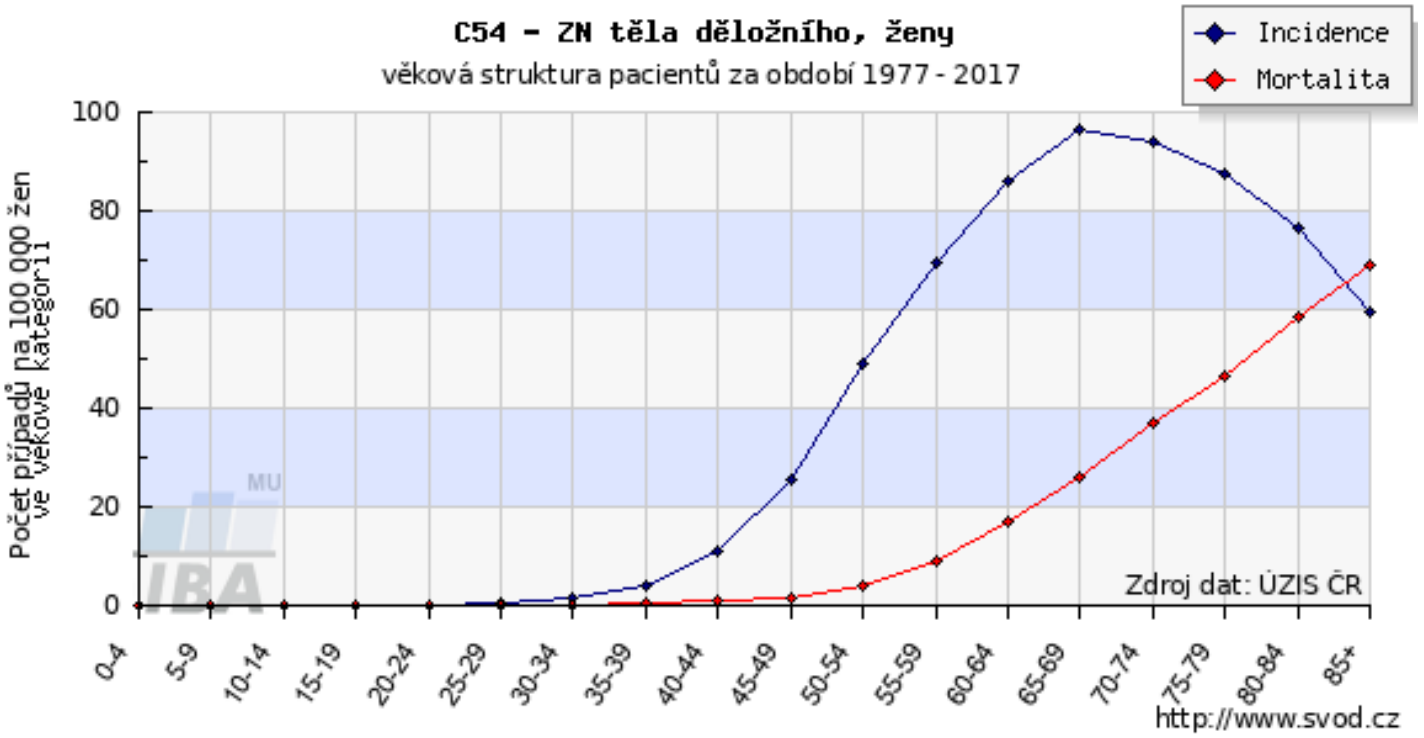
Malignant tumors of the uterine body – uterine cancer – endometrial carcinoma

- 3.-4. most common malignancy in the world (breast, colorectal, lung)
- the most common gynecological malignancy in developed coutries
- absence of screening (ultrasound, hysteroscopy, cytology)
- relatively good prognosis, 75 - 88% of patients in IA a IB stages survive more than 5 years following diagnosis
- low incidence in African countries
- two times higher incidence in white race

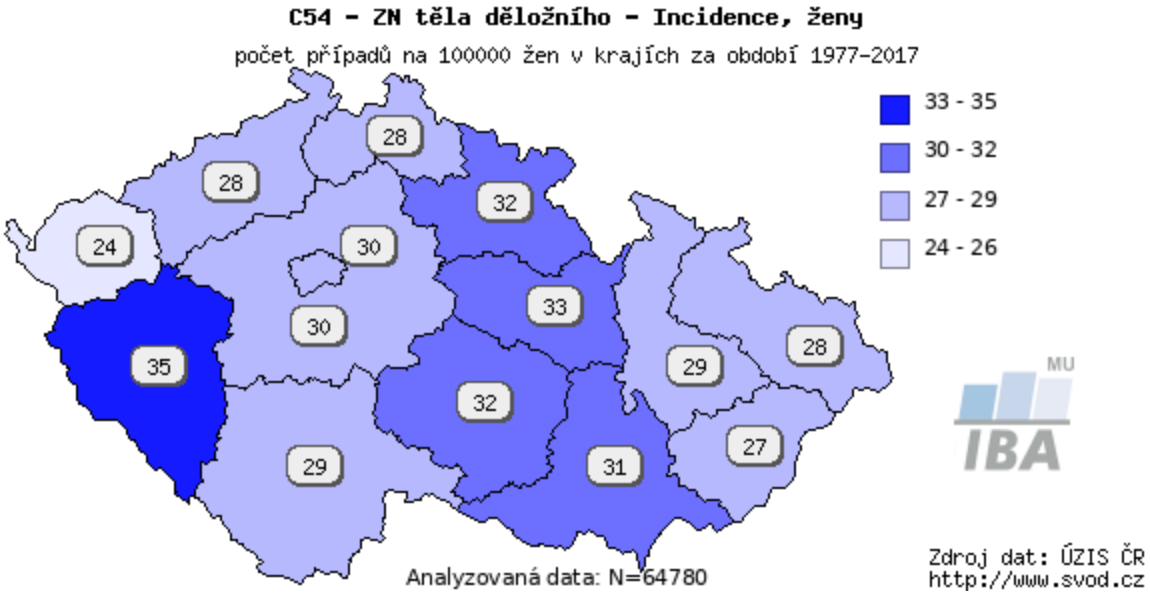
Uterine cancer



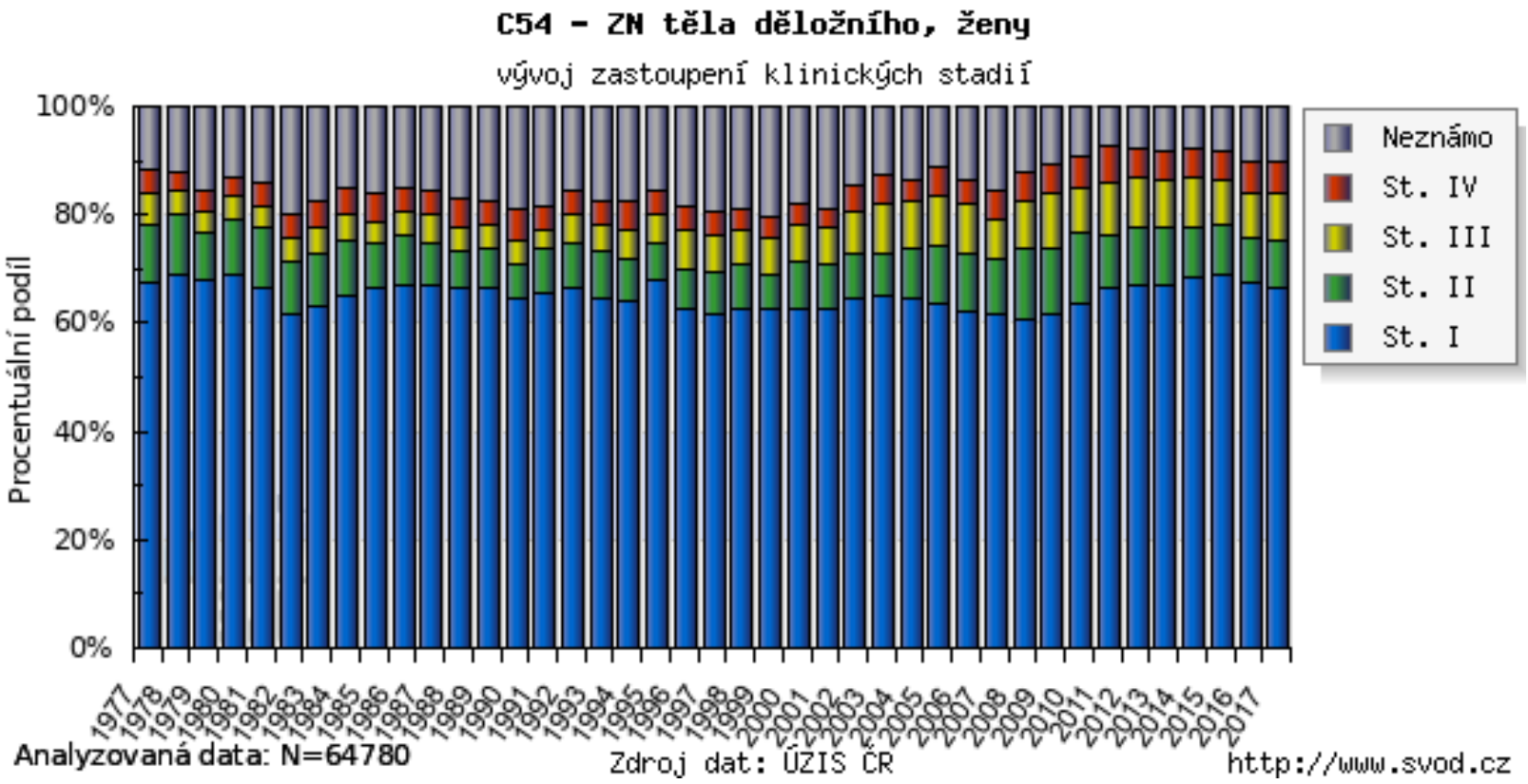
Uterine cancer



Uterine cancer



Uterine cancer



Histologic types of uterine tumors

Epithelial tumors (98%)

- endometrioid adenocarcinoma (squamous component., viloglandular comp., secreting, sertoliform, microglandular) (78-80%)
- mucinous (1-9%)
- clear cell (2%)
- uterine papillary serous (<10%)
- spinocelular (<1%)
- Neuroendocrine Carcinoma of the Endometrium (NECa): LG -carcinoid, HG –small cell and large cell neuroendocrine carcinoma
- mixed (**I.+ II. type**)
- *malignant mixed müllerian tumor: carcinosarcoma*

Mesenchymal tumors

- leiomyosarcoma
- endometrial stromal sarcoma (low i high grade)
- undifferentiated uterine sarcoma (high grade)
- Rare types (rhabdomyosarcoma…)

Etiopathogenesis

Type I

- 80 - 85 % off all cases
- based on endometrial hyperplasia
- the most common somatic abnormalities: microsatellite instability (asociated with Lynch syndrome), mutation: PTEN, PIK3CA, PIK3R1, K-ras, β-catenin (squamouse differentiation of endometrial carcinoma)
- typical histologic types: low grade endometrial carcinoma, mucinous adenocarcinoma
- better prognosis

Type II

- 15-20 % of all cases
- unclear ethiopatogenesis, frequently appeared on a background of an atrophic endometrium, not connected with hyperestrinism and endometrial hyperplasia, absence of risk factors typical for I. Type, in most cases hormonaly independent (ER-, PR-)
- worse prognosis than I type, older patients (60 y.o. and older)
- the most frequent somatic abnormalitie: mutation in p53, chromosomal instability, approximately 25% HER-2 amplification
- ussaul histological types: serous carcinoma, high grade endometrioid carcinoma , clear cell

Risk factors

Type I:

- women at age 55 and above (the risk of cancer increases with age)
- obesity (BMI □ 30incresing risk 3-4x)
- early menarche, late menopause, nulliparity, anovulation, polycystic ovary syndrome, long-term tamoxifen use
- hypertension
- diabetes mellitus
- Genetic risk factors: approx. **5 %** of endometrial carcinoma cases are hereditary
  - The manifestation of cancer is 10-20 years earlier thant in non-hereditary (sporadic) forms
  - In case of **Lynch** syndrome II (HNPCC = Hereditary nonpolyposis colorectal cancer) – the risk of endometrial cancer is 30-60 %
  - Endometrial cancer is typically manifested prior to colorectal carcinoma

Type II:

- uncertain ethiopatogenesis

Protective factors

- multiparity RR 0,5 (after 1st. delivery only 50% risk compared to nulliparous women)
- vegetarian lifestyle, sufficient intake of vitamin A and C
- combined oral contraceptive use more than 5 years RR 0,5 (lasting effect for 10-15 years)
- smoking RR 0,5-0,7
- IUS (intrauterine system) – Mirena, RR 0,6
- physical activity

Endometrial hyperplasia – risk of carcinoma progression

- simplex endometrial hyperplasia……1 %
- complex endometrial hyperplasia ……3 %

precancerous condition

- simplex atypical endometrial hyperplasia …….. 8 %
- complex atypical endometrial hyperplasia……...29-40 %

- serous intraepithelial carcinoma (serous and clear cell carcinoma type II)

TNM	*FIGO stages*	*Surgical-pathologic findings*
TX		Primary tumor cannot be assessed
T0		No evidence of primary tumor
Tis*		Carcinoma in situ (preinvasive carcinoma)
T1	I	Tumor confined to corpus uteri
T1a	IA	Tumor limited to endometrium or invades less than one half of the myometrium
T1b	IB	Tumor invades one half or more of the myometrium
T2	II	Tumor invades stromal connective tissue of the cervix but does not extend beyond uterus**
T3a	IIIA	Tumor involves serosa and/or adnexa (direct extension or metastasis)
T3b	IIIB	Vaginal involvement (direct extension or metastasis) or parametrial involvement
	IIIC	Metastases to pelvic and/or para-aortic lymph nodes
	IV	Tumor invades bladder mucosa and/or bowel mucosa, and/or distant metastases
T4	IVA	Tumor invades bladder mucosa and/or bowel mucosa (bullous edema is not sufficient to classify a tumor as T4)
M0		No distant metastasis
M1	IVB	Distant metastasis (includes metastasis to inguinal lymph nodes, intraperitoneal disease, or lung, liver, or bone metastases; it excludes metastasis to para-aortic lymph nodes, vagina, pelvic serosa, or adnexa)

Prognostic factors

- stage of disease (FIGO, TNM)
- quality of surgical treatement

Negative prognostic factors:

- lymph node metastatic lesion (quantity, size), extrauterine spread, the depth of myometrial invasion, cervical invasion, tumor size greater then 2cm, invasion in lymphatic vessels
- L1CAM positivity, loss of ER, PR, mutations in the p53
- Histological type: typ II (a 5 year surveillance 58 % in comparison to 83 % in type I)
- Other negative prognostics factors: age of 60 and above, radiotherapy for the primary treatment

Positive prognostic factors:

- Progesteron receptors positivity (type I), significant lymfoplasmocellular infiltration

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Prognostic factors

- According to known prognostic factors, it is possible to divide stadium I to 3 categories with different therapeutic approach (ESGO, ESMO guidelines).

- **Low risk**: stage IA, grade 1-2, type I (endometrioid)
- **Intermediate risk:** stage IA, grade 3, type I (endometrioid)
- stage IB, grade 1-2, type I (endometrioid)
- **Hish risk:** stage IB, grade 3, type I (endometrioid)
- non-endometrioid types

In relation to extensiveness of surgery

- **Low risk**
- **High risk**

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Low risk type

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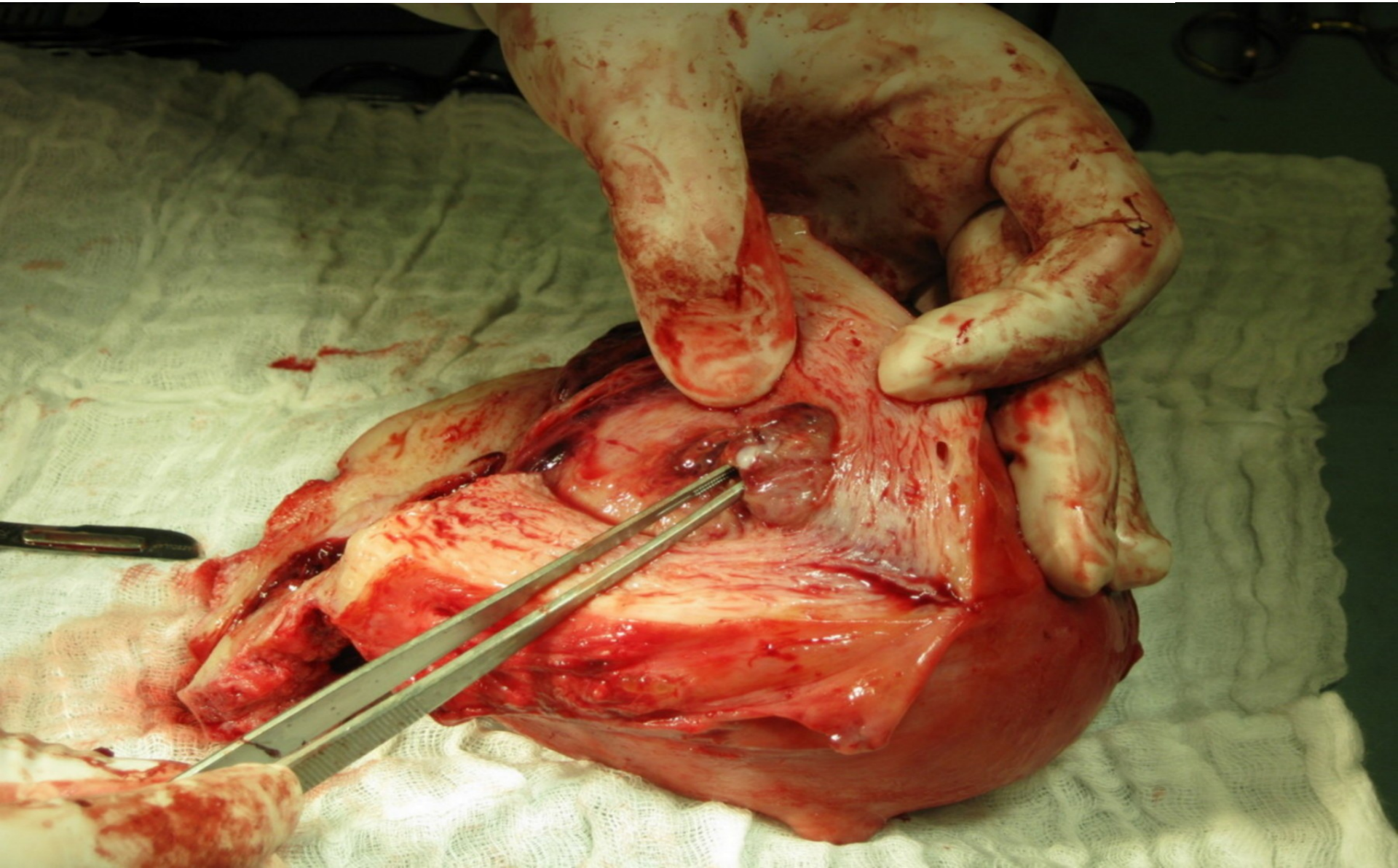

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High risk type

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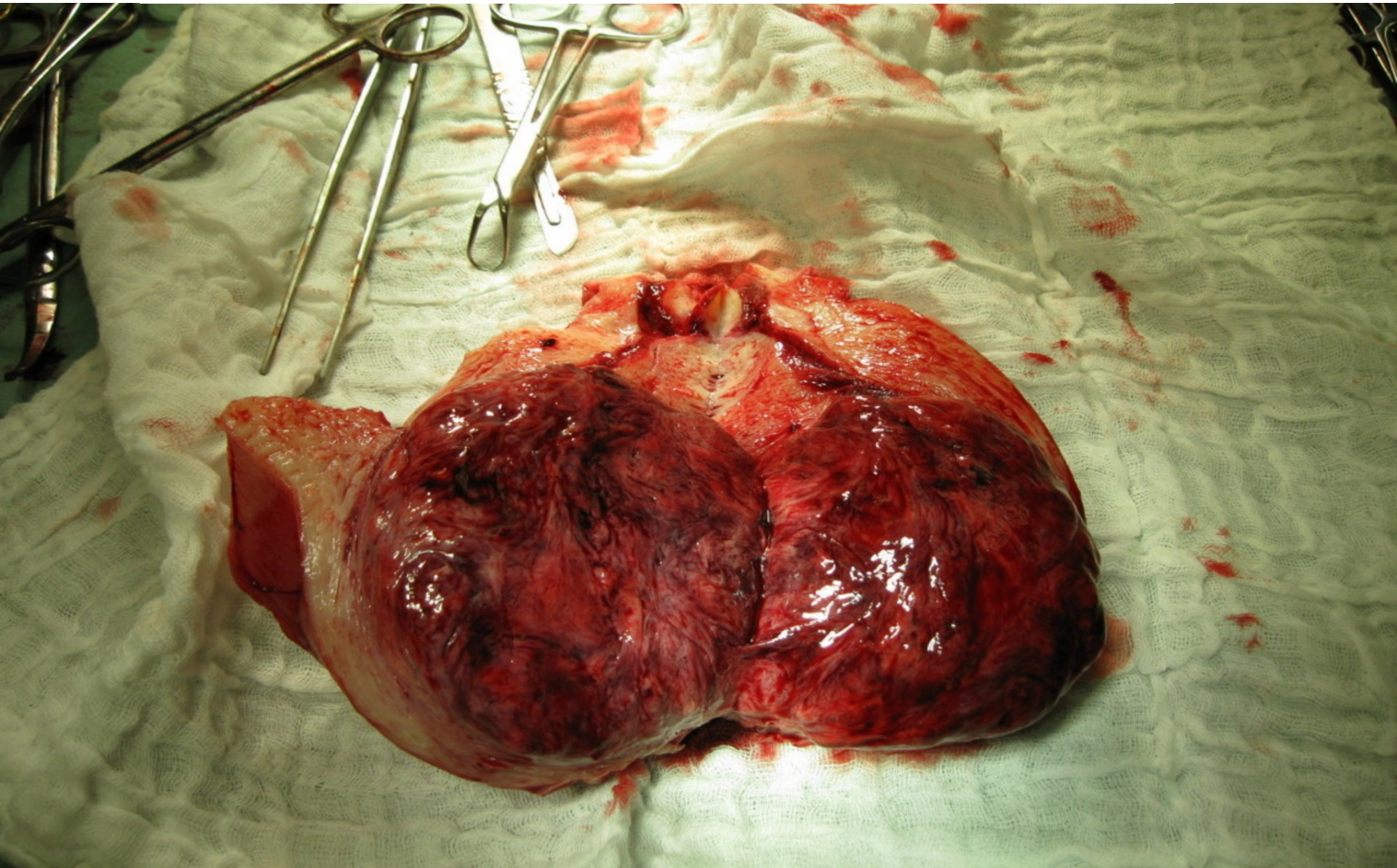


Five-year disease-specific survival rates in accordance withstages

Stage	5 year survival rates
I	78 – 90 %
II	74 %
III	36 – 57 %
IV	20 %

Clinical symptoms

Early stages

- irregular vaginal bleeding in premenopausal women
- postmenopausal vaginal bleeding
- vaginal discharge

Advanced stage of cancer

- pelvic pain, sacroiliac pain
- hematuria
- enterorrhagia

Asymptomatic patients (based on ultrasound examination)

Diagnosis

Absence of screening method !!!

- **Prebioptic methods**
  - ultrasound examination
  - cytodiagnostic techniques
- **Bioptic methods**
  - Pipelle endometrial sampling
  - dilatation & curettage
  - hysteroscopy with endometrial biopsy

Staging

Obligatory

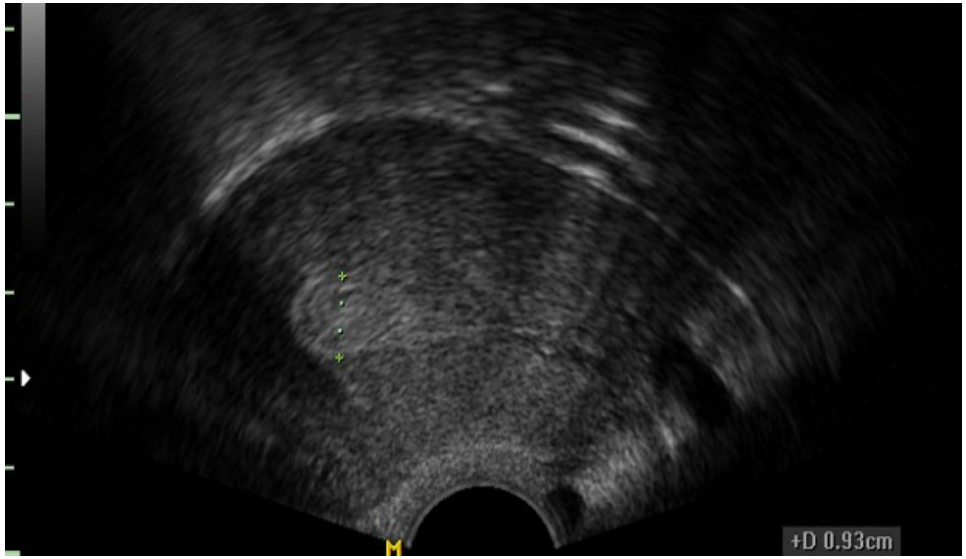
- Gynecologic examination
- Expert ultrasound of abdomen and pelvis
- Chest x-ray
- Laboratory tests, Internist examination

Facultative

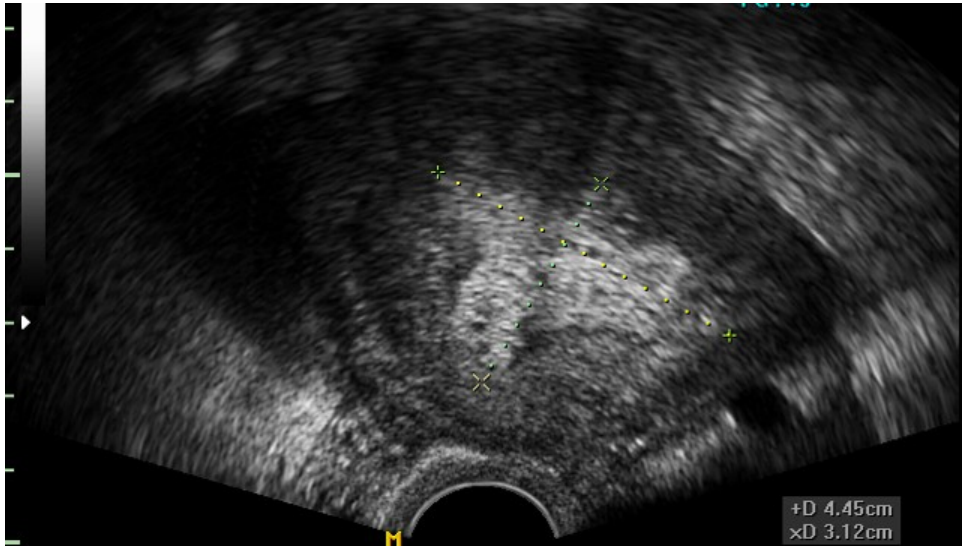
- MR of abdomen and pelvis (ev. PET/MR, PET/CT)
- Cystoscopy
- Rectoscopy (colonoscopy)
- Tumor markers (CA125, HE4)

Expert ultrasound examination

Tumor in endometrial polyp limited to endometrium (without myometrium invasion)



Tumor invades less than one half of the myometrium



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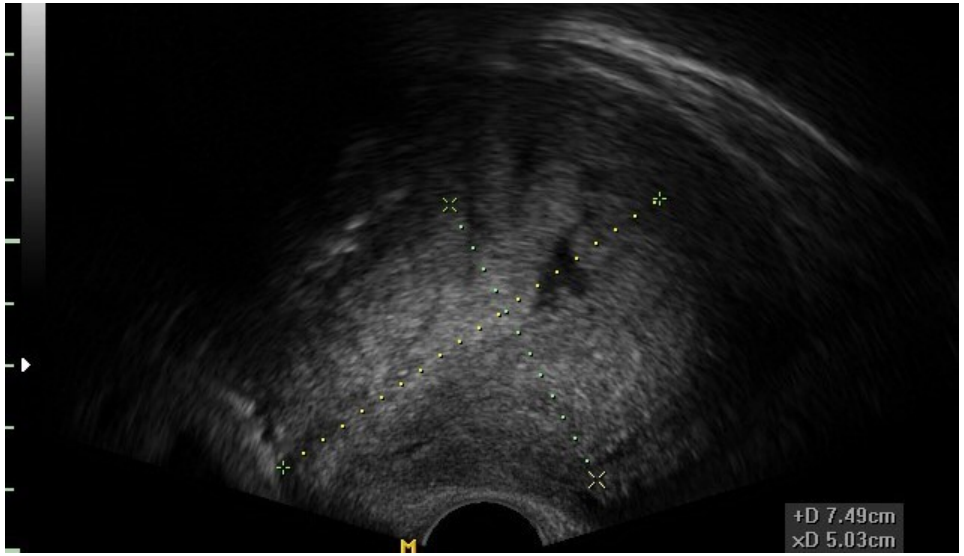
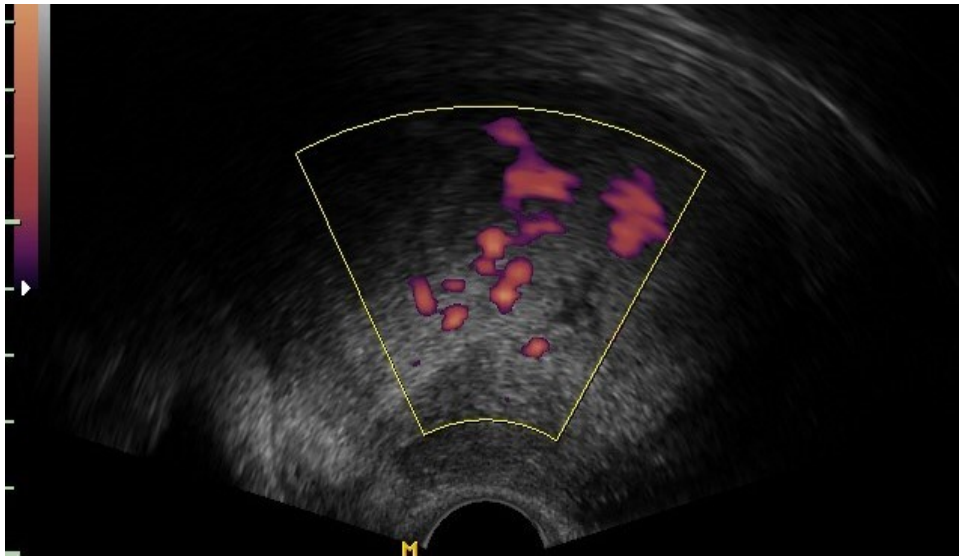
Expert ultrasound examination

Tumor invades one half or more of the myometrium



Deeply invasive tumor with high colour score in Doppler mode



Therapy

- Surgical treatment - method of choice
- Radiotherapy
- Chemotherapy – advanced stages of cancer
- Hormonal therapy – relapsed cancer

Surgical treatment

Low risk – Hysterectomy + bilateral adnexectomy

High risk - Hysterectomy + bilateral adnexectomy + aortopelvic lymphadenectomy (+ infracolic omentectomy in serous histologic type)

Advanced stages - Cytoreductive surgery, icluding pelvic exenteration in IVA stage

Surgical treatment

Surgical approache

Miniinvasive (laparoscopic, robotick)

- low risk pacients
- selected high risk patients

(without age and comorbidity limitation due to the Trendelenburg position)

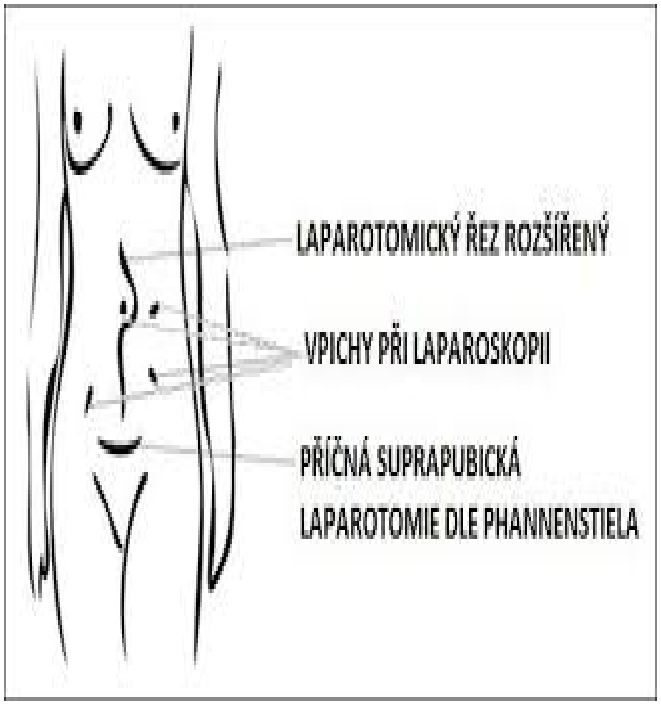
Surgical treatment

Surgical approache

Laparotomy

- Patients contraindicated to miniinvasive surgery (comorbidity, advanced stage of disease)

  - suprapubic incision - low risk
  - midline laparotomy - high risk, advanced stage of disease



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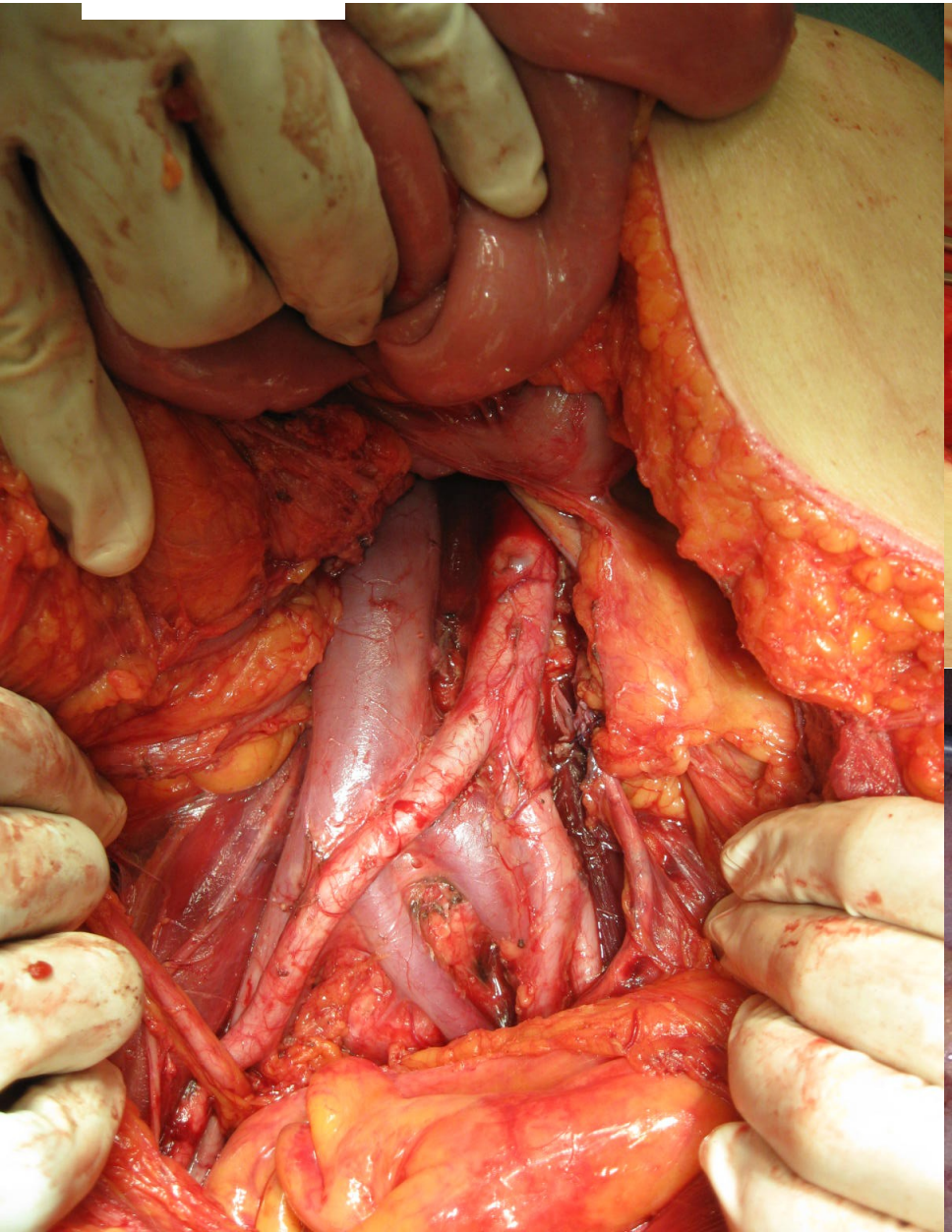

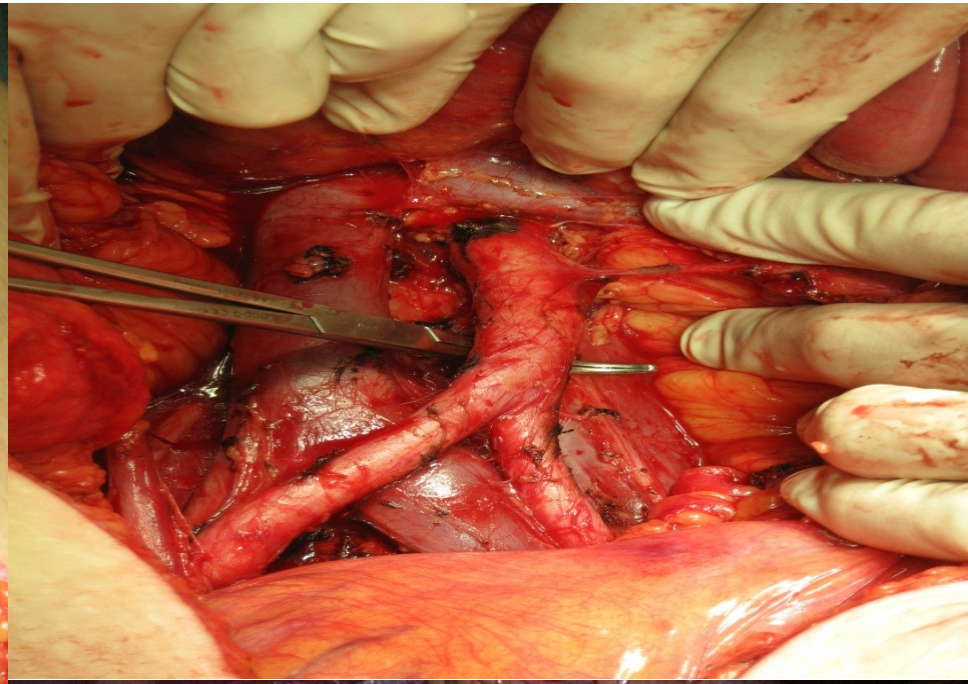

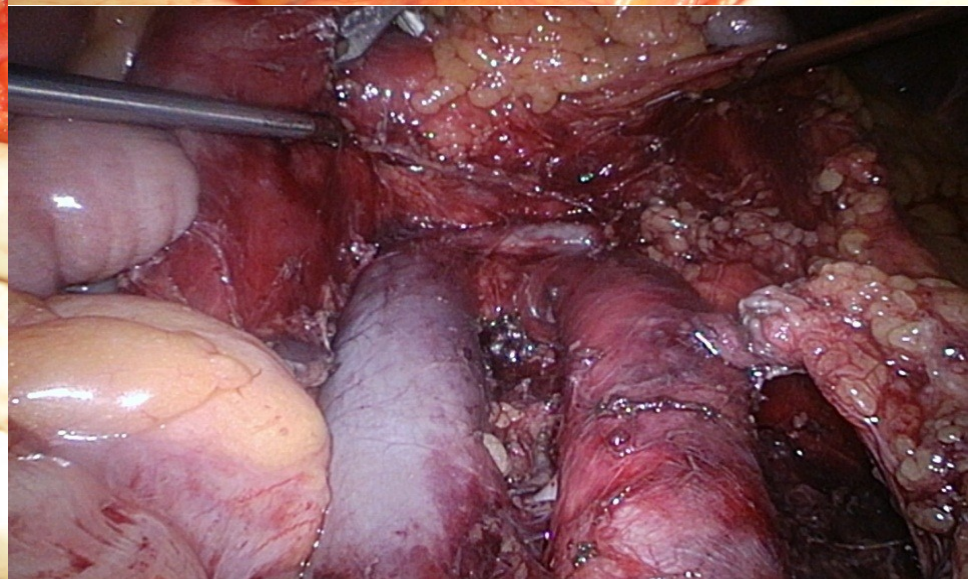

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Surgical treatment

- **high risk** – in more than 50% cases with negative lymph nodes

- lymph nodes positivity

: 50% pelvic region

: 30% pelvic and paraaortic lymph nodes lesion in the same time

: 20% isolated paraaortic lymph node lesion

DEVELOPMENT OF NEW METHODS FOR SENTINEL LYMPH NODES DETECTION

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Surgical treatment

SENTINEL NODES DETECTION METHODS

- subserous myometrial application
- Hysteroscopic subendometrial application near the tumor
- **Intracervical application (PREFERENCE !)**

: „double detection technique“ – radioisotope +
+ methylene blue dye x ICG (indocyanin green)

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Uterine cancer

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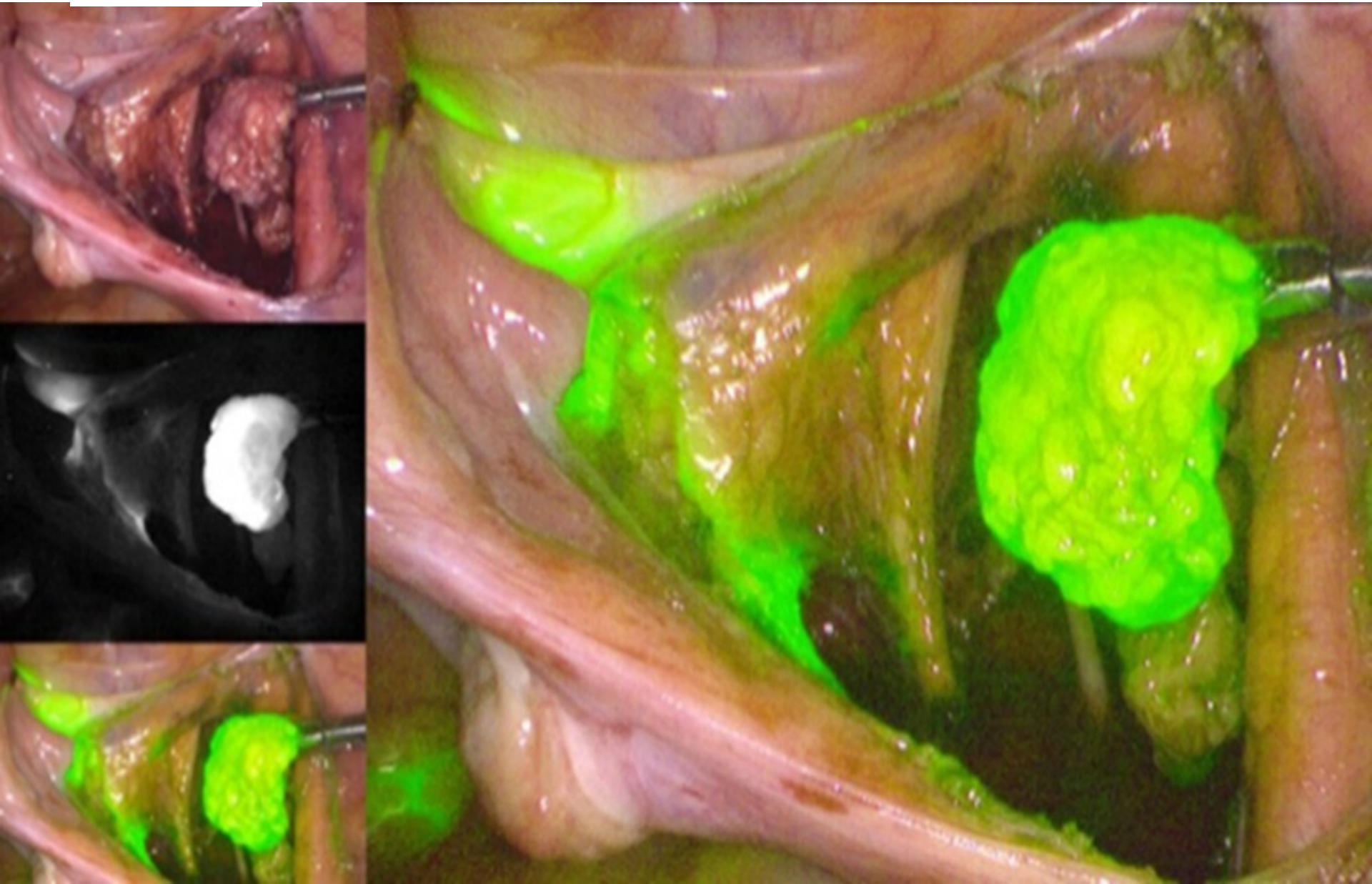

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