

## **ANTERIOR PELVIC EXENTERATION IN TREATMENT OF LOCALLY- ADVANCED CERVICAL CANCER**

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**Summary:** Case report of positive clinical experience of radical surgical treatment of patients with locally advanced cervical cancer (FIGO stage IVa) and ureterohydronephrosis, non-functioning kidney has been describe. The necessity of a radical approach in the treatment of cervical cancer, extending to the bladder, has been proved.

**Key words:** cervical cancer, anterior pelvic exenteration.

Cervical cancer (CC) comes second in the world among malignant tumors of reproductive organs in women, only after breast cancer. Every year are registered about 500 thousand new cases of cervical cancer; nearly 200 thousand women die from this disease.

According to the National Cancer Registry [1] in 2012 5122 patients were identified with cervical cancer, among them stage I-II – 81.8% of cases. Late stages of disease were diagnosed on average in 15-18% of patients (stage III – in 11.4%, and stage IV – in 3.9% of cases), about 15% of patients die up to year from the time of determination the diagnosis, although the index of coverage the specialized treatment is quite high and amounts to 81.3%.

Despite improved methods of diagnosis and treatment, results of treatment of regional cervical cancer are not considered to be satisfactory. About 25% of women die because of disease progression during the first year after treatment, due to: primary uncured tumor, proliferation process in the bladder, emergence of regional and distant metastases, emergence and intensification of signs ureterohydronephrosis and chronic renal failure [2]. The surgical treatment is contraindicated for these patients, and palliative radiotherapy or chemotherapy are ineffective.

The major surgical treatment in patients with invasive cervical cancer is enhanced hysterectomy by Wertheim (with / without attachments). [2] In patients with IVA stage of disease without distant metastases and with pelvic relapses that occurred in 2 or more years after initial treatment, the method of choice is pelvic exenteration.

The total pelvic exenteration (PE) – a radical surgery that involves removal of pelvic organs, including the reproductive organs, bladder and rectosigmoid part of colon [2]. In some cases, surgery may be limited to removal of genitals or recurrent tumor with the bladder – front exenteration; genitals or recurrent tumor with sigmoid intestine and rectum with preservation of the bladder – back exenteration.

Brunschwig A. was the first who described the experience of usage the PE in the treatment of regional malignant tumors in women in 1948. Operation had palliative character (extended life time to 8 months, postoperative mortality was 23%) [3] that is why it was criticized by professionals.

Since that time, scientists gained considerable experience in performing these procedures. So now, after 65 years, views on the role of PE significantly changed: there are stated indications to PE, improved surgical technique of treatment, developed methods of treatment for patients in the postoperative period that resulted in lower postoperative mortality up to 5% and significant improvement of survival and quality of life of patients [4,5,6].

In recent years, this surgical treatment has evolved from pure exenteration into operation, including reconstructive stages of formation of the urine tract, preserving the anal sphincter and pelvic floor reconstruction. Currently are developing surgical approaches with maintaining bone structures and removal of the sacrum, pelvis walls involved in the tumor process, previously considered contraindications for surgical treatment. Recent advances of laparoscopy demonstrated the possibility of radical removal of pelvic organs, so there is developed the concept of perineal surgery with laparoscopic assistance [6,7].

It is important to emphasize that patients who underwent PE after rehabilitation returned to normal life, so criticism concerning this operation is gradually fading away. Today, the vector of importance the PE was shifted from the method of

palliative care to the method of radical treatment the limited cohort of patients with primary and recurrent cervical cancer.

**Research objective:** to evaluate the effectiveness of anterior exenteration of lower pelvic in the treatment of regional cervical cancer.

Here are described two clinical cases in which were used different approaches to the treatment of regional cervical cancer.

1. Patient O., 44y., addressed outpatiently in the oncurology department on March 17, 2010 with complaints on evident general weakness, moderate pains in lower part of abdomen and lower back, over to the right, existence of nephrostomy to the left, thirst, dry mouth, excretion of bloody urine.

From past medical history: in October 2008, first noticed bleeding from the vagina. In OOD according to residence received neoadjuvant radiotherapy with dose of 30 Gy to the lower pelvis because of cervical cancer, and then executed operation Wertheim – III type (PHZ No.1738/2008 dated November 23, 2008 – moderately differentiated squamous cell carcinoma **with the distribution process on paravesical tissue**). *After 16 months* after surgery the patient appeared to be thirst, had dry mouth, noted bloody urine excretion. Ambulance diagnosed “anuria” (urea – 40mmol / l, creatinine – 1.2 mmol / l) and the patient was hospitalized, had surgery – lumbotomy to the left, circular nephrostomy. Then she was sent to the National Cancer Institute for further examination and resolution of subsequent treatment strategy.

When applying, in clinical blood analysis was observed anemia (Hb – 89h / l, Ht – 21,9%), in urine – hematuria, proteinuria, pyuria (protein – 1,2 g / l, Er – 50-100 p / s, Le – heavily in p / s), according to biochemical blood analysis revealed renal failure (creatinine – 308mkmol / l; urea – 14.7 mmol / l).

During bimanual gynecological examination 2/3 of the anterior wall of the vagina infiltrated by the tumor, is determined infiltration of parametrial tissue, over to the right to the walls of pelvis.

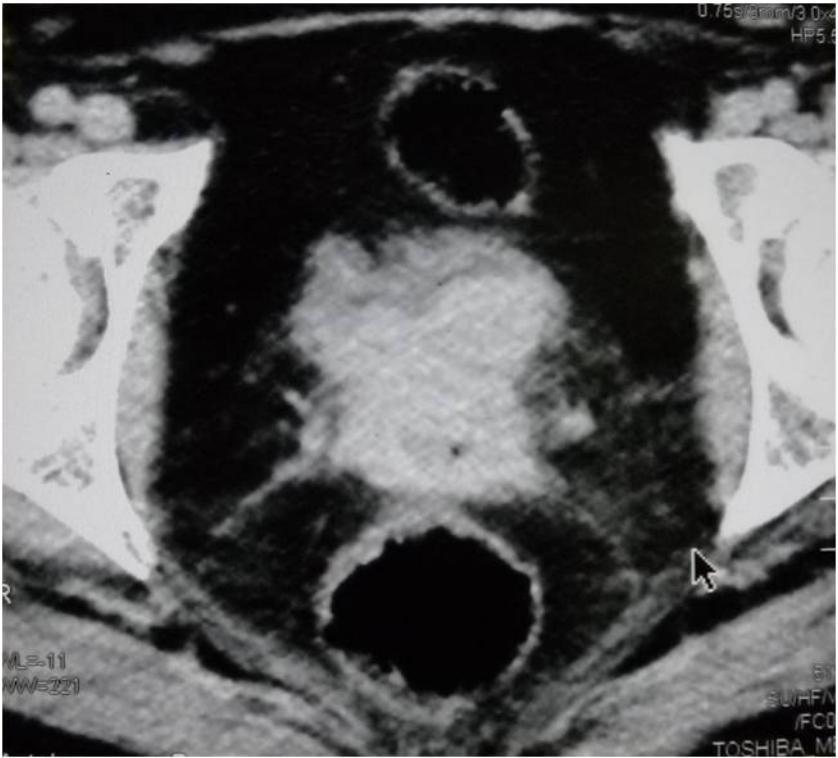
According to cystoscopy: size of urinary bladder 200cubic sm. Mucosa – pale pink. In the area of the cervix and the Lyeto triangle signs of tumor growths. Eyelets are not visualized.

According to ultrasound investigation on August 19, 2010: right kidney 105\*37mm, left kidney 112\*45mm, 12mm, thickness of parenchyma to the right 12mm., to the left – 14mm, extension of calyces and pelvis to the right. Right ureter is extended throughout to 14mm, to the left – nephrostome.

According to helical computed tomography diagnosed right sided ureterohydronephrosis, backset in the lower pelvis with the spread of process on bladder (Fig. 1).



a



b

Fig. 1. Spiral computed tomography of the patient O., 1966 year of birth: a) right sided ureterohydronephrosis, nephrostomy to the left, renal parenchyma is subtle; b) backset in the lower pelvis 55\*46mm with the spread on bladder

The diagnosis: **Cervical Cancer st. PV,  $pT_{2b}N_0M_0G_2$ . Condition after combined treatment (2009). Rec. morbi.** Regional backset with extension to the bladder, vagina, parametrium. Hematuria. Bilateral ureterohydronephrosis. CRF – III. Condition after lumbotomy, circular nephrostomy to the left (February 10, 2010). Posthemorrhagic anemia of difficult degree.

With the purpose of palliative treatment, elimination of signs of ureterohydronephrosis to the right and renal failure, outpatiently on March 17, 2010 was imposed puncture nephrostome to the right (Fig. 2).



a



Fig. 2. Patient O, 1966 year of birth: a) circular nephrostomy to the left; b) needle nephrostomy to the right

Taking into consideration prevalence of the process, recurrence of backset in terms of 2 years after initial treatment, PE was not shown. It is recommended the course of palliative chemo-radiation therapy on the lower pelvic area. Despite the conducted treatment, after 2 months (November 11, 2010) the patient died.

2. Patient V., 30y., case history No. 8169, admitted due to planned order in oncological unit on August 18, 2009 with complaints of severe pains in the abdomen and lower back, over to the left.

The patient considered herself sick for 2 months when she first noticed bleeding from vagina. She was examined according to place of residence and was diagnosed with cervical cancer (PHZ No. 6256/09 – intraepithelial squamous cell carcinoma). The patient was sent to the National Cancer Institute for further examination and resolution of subsequent treatment strategy.

At admission, in clinical blood analysis was observed anemia (Hb – 87h / L, Ht – 24,9%), in urine – hematuria, proteinuria, pyuria (protein – 0.132 g / l, Er – dense in p / s, Le – 10-15 p / h).

At gynecological examination: cervix was deformed by the tumor that extends to the front and right vault.

According to cystoscopy: size of urinary bladder 250cubic sm. Mucosa – pale pink. Eyelets without pathological changes. In the area of the cervix and the Lyeto triangle signs of tumor growths that extends to the level of eyelets.

On general and excretory urography on August 20, 2009: position, structure and function of the left kidney in the normal range. A slight expansion of the left ureter to 7mm. CMP to the right does not contrast. Bladder is distorted on the upper boundary (Fig. 3).





Fig. 3. X-ray examination of the patient V., 1979 year of birth: a) general urography; b) excretory urography (absence of function of the right kidney, ureterohydronephrosis to the left)

According to MRI on August 11, 2009: cervix is increased in size, deformed by means of surround formation 51\*47mm that extends to the upper third of vagina and uterus body. Right ovary increased r.53\*51mm, consists of cystic formation with cauls. Left ovary 31\*26mm with cystic formation d. 8.5 mm. Adipose tissue between the cervix and bladder is infiltrated, back wall of the bladder is deformed. Infiltration of parametric tissue, which does not reach the walls of the pelvis (Fig. 4).



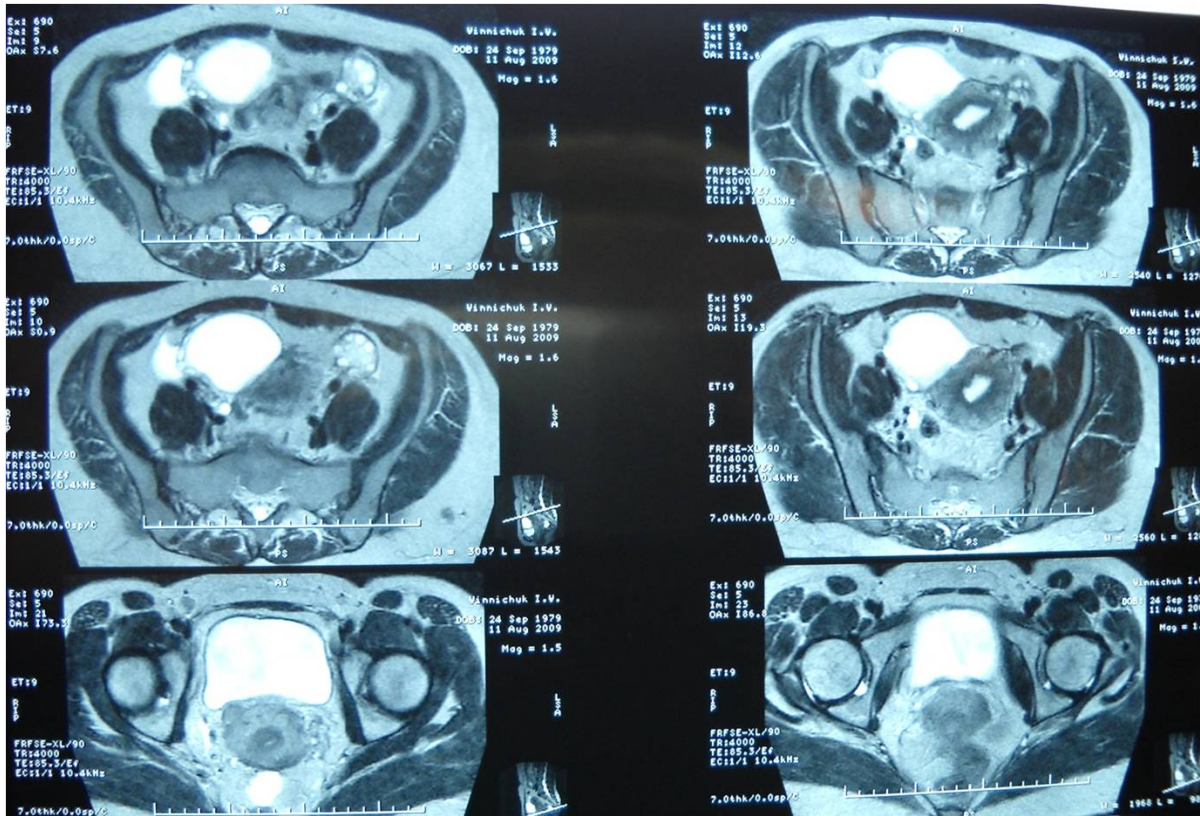
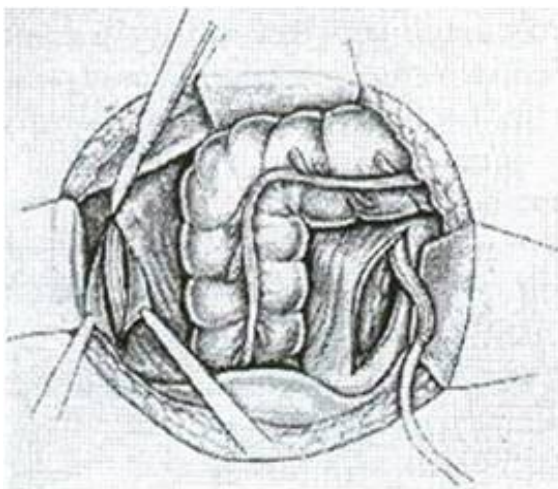


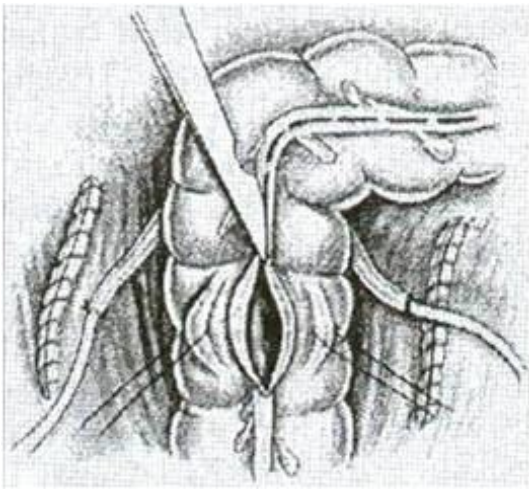
Fig. 4. Magnetic resonance image of the patient V., 1979 year of birth

Diagnosed with cervical cancer st. IVA, T4N<sub>x</sub>M0. Gross hematuria. Left-side ureterohydronephrosis – IIst. Afunctional right kidney. Posthemorrhagic anemia of difficult degree.

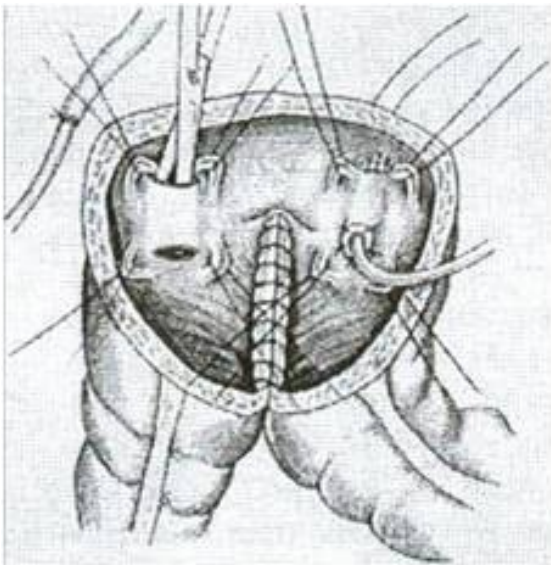
On August 27, 2009. made operation – front exenteration of lower pelvic, uretero-sigmoid anastomosis with plastic of sigmoid colon according to Mainz II, plastic of vagina (Fig. 5).



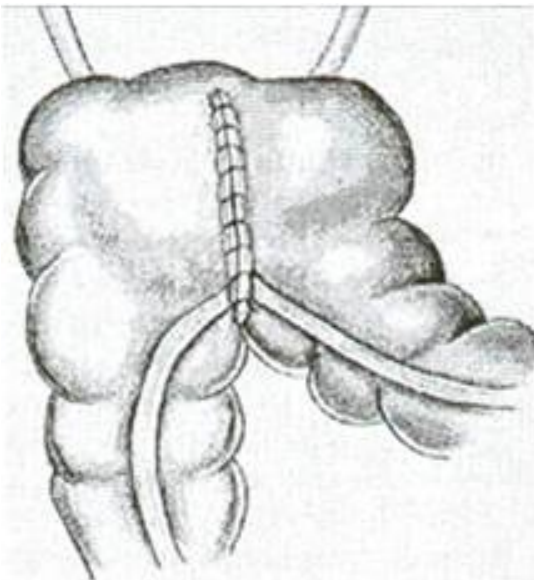
a



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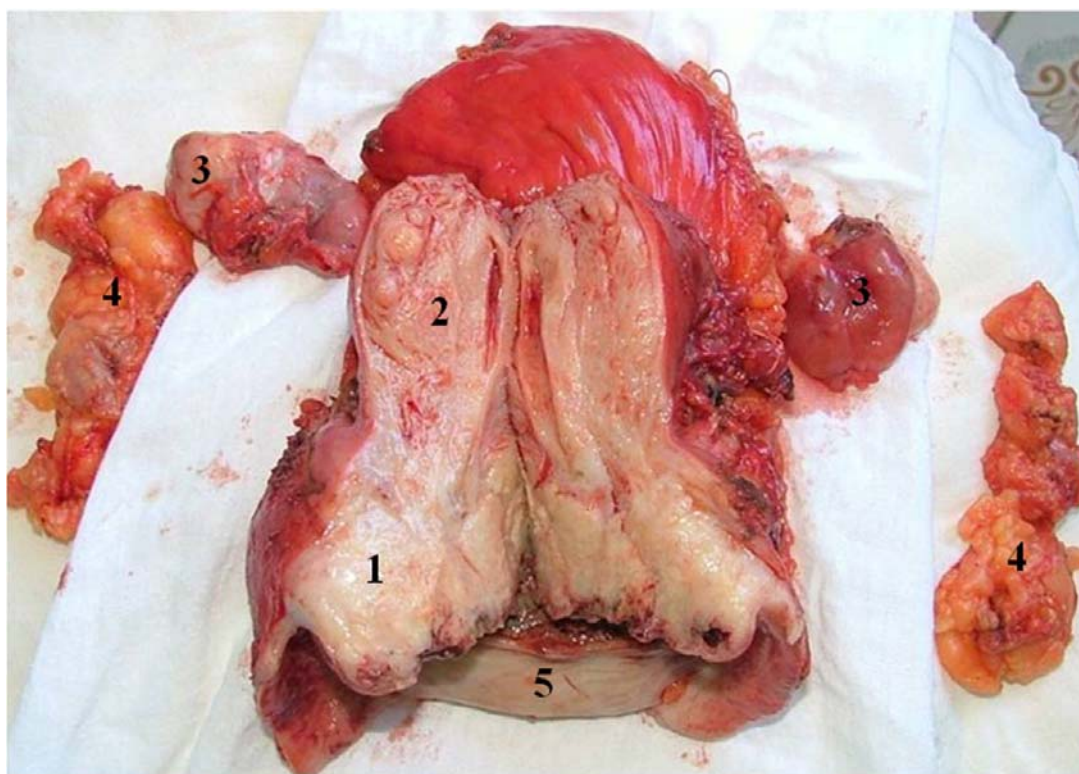


d

Fig. 5. Anterior pelvic exenteration, uretero-sigmoid anastomosis with plastic of sigmoid colon according to Mainz II: a) discharge both ureters and sigmoid colon; b) sigmoid colon is doubled up in the area of rectosigmoid angle, dissected by tenia over 20cm in each direction; c) medial edges are sewn together with vicryl three-row

suture, formed the rear wall of sigmoid reservoir, ureters are retroperitoneal displayed on the back wall of reservoir (left in the subserous tunnel, right – under the mesorectum of sigmoid colon) and transplanted with antireflux cuff Ricardo, ureteral drainage derived in direct intestine; d) anterior wall of sigmoid reservoir wall is sewn with vicryl three-row continuous suture

According to the histological conclusion of operational material No. 26913-934 from September 04, 2009 diagnosed low differentiated squamous cell carcinoma of the cervix with extension to the cervical canal, uterine body, with infiltration of the entire thickness of myometrium, germination into the bladder, in the vessels of microvasculature of the uterus, one of the ovaries – tumor emboli. Fallopian tubes, endometrium – normal. In iliac l/v in the right and left – metastases (Pic. 6).



a

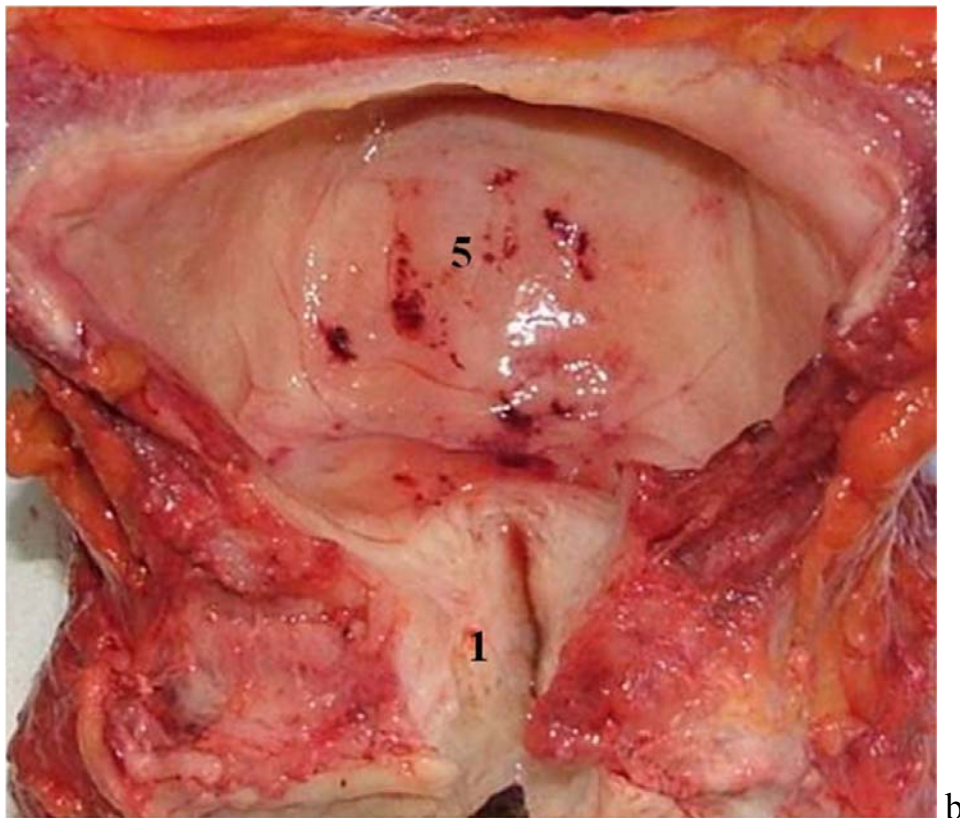


Fig 6. Macropreparation of the patient V., 1979 year of birth: 1) the cervix, 2) body of the uterus, 3) ovarian, 4) iliac to the left and right, 5) bladder

After 3 weeks after surgery was conducted the course of external radiotherapy on the lower pelvic area (SOD – 39Gy, ROD – 2Gy) and 4 courses of adjuvant platiniferous chemotherapy.

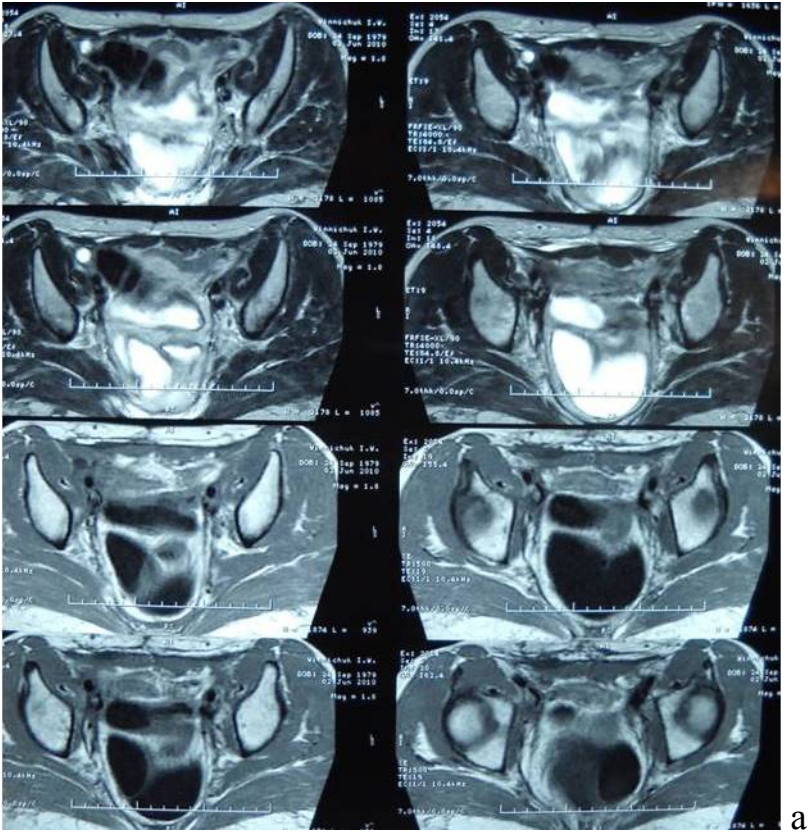
Remote results were assessed after 3 years after combined treatment. The patient works as sales manager of cosmetics. She does not have any complaints. Urination is in portions of 250-300ml every 3.5-4 hours. Differentiate the discharge of urine and feces, urine keeps both day and night. Blood indices and acid-base balance – in the normal range. SCC from May 21, 2013 – 0.2 ng / ml.

On gynecological examination: vagina is not changed, parametrium – normal. Postirradiation and postoperative fibroid changes.

According to the dynamic renoscintigraphy on June 03, 2013: SKF general – 78ml/min.; SKF separate (to the left – 53, to the right – 25ml/min.); Tmax (to the left – 7, to the right – 18min.); % of output to 30 min. – (to the left – 15, to the right – 5 min.). Type of curve to the left and right – parenchymal.

According to the SCT on May 16, 2013. Mediastinal lymph nodes are not enlarged. Lungs without focal changes. Sinuses free. The liver, pancreas, adrenal glands, spleen and right kidney are in the normal range. In the left kidney is cystis 8mm. Retroperitoneal l / v are not increased. In the lower pelvis: uterus, ovaries are removed. Vagina cult with clear contours. Condition after cystectomy, additional lesions in the lower pelvic cavity were not found. Data about backset, metastasis are not registered.

According to MRI from May 24, 2013 vagina cult ends blindly, vagina within normal, lymphocyst is not found. Reservoir with sufficient size filled with urine, accusations into large intestine were not found. Ureter is not dilated. Renal CMP is not expanded, parenchyma is preserved. Lymphadenopathy is not found (Fig. 7).



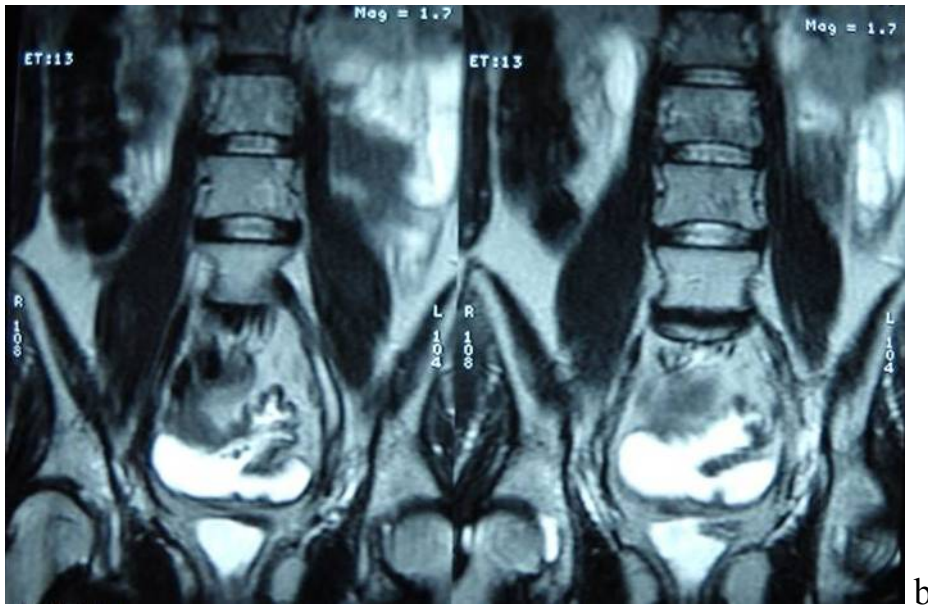


Fig 7. Magnetic resonance image of the patient V., 1979 year of birth: a) axial section, b) coronary section

On general and excretory urography on April 06, 2013: position, structure, function of both kidneys in the normal range. Ureters within normal. Urinary reservoir in normal position (Fig. 8).

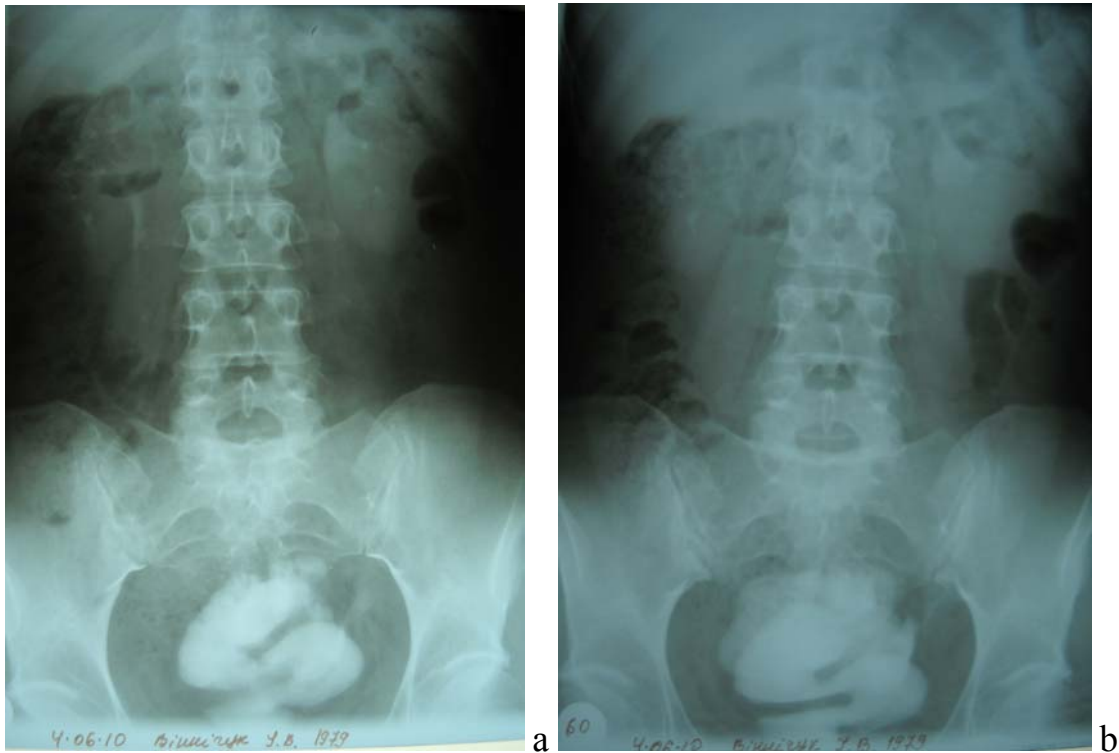


Fig. 8. Excretory urography of the patient V., 1979 year of birth: a) on 30 minute; b) on 60 minute

Thus, these results are consistent with the literature data over the last decade on the feasibility of TE in patients with cervical cancer of IVA stage without distant metastases [8-15].

Use of TE enhanced to raise the 5-year rate of survival to 33-56%, while reducing postoperative mortality to 4%. In 5 of 8 cited works (Berek J.S. et al., Roos E.J. et al., Shama S. et al., Maggioni A. et al., Benn T. et al.) in the treatment of patients was used anterior exenteration as in the above case from personal experience. It should be noted that one of the greatest achievements in the process of evolution the technology of pelvic exenteration – the formation of intestinal reservoir for urine, which can not only cure the sick, but also help them to return to normal life, without compromising its quality.

In the first clinical case due to insufficient examination in preoperative period was not diagnosed distribution process on paravesical tissue, resulting in making non-radical operative treatment. However, even in patients with cervical cancer IVA stage with signs of ureterohydronephrosis, non-functioning kidney, in the absence of distant metastases according to ray methods, is possible radical operative treatment in the volume of anterior exenteration. Our positive clinical experience is consistent with the literature and points to the necessity for a radical approach in the treatment of cervical cancer that spreads to the bladder.

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