Cytoreductive surgery in ovarian cancer

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Relevance of the problem

- Ovarian cancer in Russia takes 7th place;
- 5th place in the structure of cancer mortality in women;
- The lethality of patients with ovarian cancer in the first year after diagnosis is 35%;
- In 75% of cases, the disease is diagnosed in stages III - IV;
- The “obliterated" clinical picture of the disease

Patient selection

- Safe physical status
- Assessment of the tumor stage area (implementation of the full standard comprehensive examination of organs and systems, including endoscopic examinations, MSCT of the abdominal cavity, small pelvis, diagnostic laparoscopy).

Treatment Methods

- Surgical: hysterectomy and removal of a large omentum, in case of high-grade tumors, pelvic and para-aortic lymph node dissection is performed
- Chemotherapy: preoperative and postoperative
- Radiotherapy

Cytoreductive surgery for ovarian cancer, as the first stage of treatment

- Accurate disease stage determination (24% of patients, within 2 to 6 months after the primary operation for ovarian cancer of stages I-II, a relapse of the disease is detected);
- The number of chemotherapy courses decreases;
- The effectiveness of chemotherapy application increases with the removal of the main tumor mass with a weak blood flow
- Relative normalization of the immune system;
- If possible, phenotypic resistant tumor cells are removed;
- The effectiveness of chemotherapy drugs correlates with high mitotic activity of ovarian tumors,
- The increase of median life expectancy is 13 months more with primary cytoreduction than with interval one

Chi D.S., Musa F.,Sonoda Y., Leitao M.M., Levine D.A., Gardner G.J., Abu Rustum N.R., Barakat R.R.. An analysis of patients with bulky advanced stage ovarian, tubal, and peritoneal carcinoma treated with primary debulking surgery (PDS) during an identical time period as the randomized EORTC NCIC trial of PDS vs neoadjuvant chemotherapy (NACT) // Gynecol. Oncol. — 2012. — Vol. 124. — P. 10–14.

Efficiency of cytoreduction

- With a residual tumor size not exceeding 5 mm, the average life expectancy of patients reaches 40 months;
- At size up to 1,5 cm - 18 months;
- More than 1.5 cm - only 6 months;
- Optimum - less than 1 cm;
- If the number of residual tumors is 20, the risk of death increases by 1.3 times, more than 20 by 1.5 times.

Hoskins W.J., Bundy B.N., Thigpen J.T., Omura G.A. The influence of cytoreductive surgery on recurrence free interval and survival in small volume stage Ill epithelial ovarian cancer: a Gynecologic Oncology Group Study // Gynecol. Oncol. — 1992. — Vol. 47. — P. 159—166.

Hyperthermic Intraoperative Intraperitoneal Chemotherapy

- Lavage of the abdominal cavity for 60-90 minutes with a chemotherapy solution at a temperature of 42 °C.
- 24 international studies, including 1167 patients with ovarian cancer.
- On the average, the 3-year survival rate after the treatment constituted 48-60%, and the five-year survival – 35-70%.
- With recurrent ovarian cancer, the 3-year survival rate is 35-60%, and the five-year survival is 12-54%.

Bristow RE, Puri I, Chi DS. Cytoreductive surgery for recurrent ovarian cancer: a meta-analysis. Gynecol Oncol. 2009;112(1):265–274. Armstrong DK, Bundy B, Wenzel L, et al. Intraperitoneal cisplatin and paclitaxel in ovarian cancer. N Engl J Med. 2006;354(1):34–43.

Aim Of The Work

- Introduction of cytoreductive surgical interventions for stage III ovarian cancer, including hysterectomy, peritoneumectomy, omentectomy, resection of the colon and rectum segments, small intestine, visceral peritoneum, bladder, performance of intraperitoneal chemohyperthermia

Materials and Methods

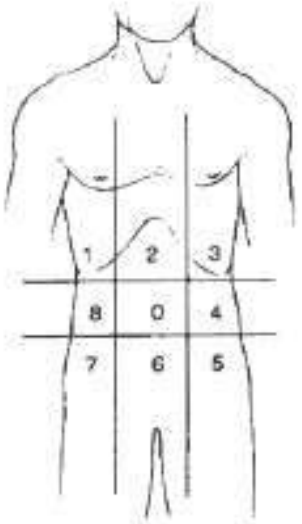
- The period of work covers 2016-2017;
- The study included 16 women;
- The average age of patients was 56.8 years;
- Diagnosis: ovarian cancer IIIC stage;
- A comprehensive examination at the preoperative stage;
- Indication for surgery - ovarian cancer with peritoneal carcinomatosis without extra-abdominal and hepatic metastases

Features Of Surgical Intervention

- Revision of the abdominal cavity organs;
- Confirmation of diagnosis and degree of tumor lesion;
- Determination of the degree of carcinomatosis;
- Organ resections and peritoneuromectomy only to remove tumor nodes with maximum preservation of the small and large intestine parts and other organs;
- Omentectomy not only within the boundaries of the large omentum, but also with the gastrocolic ligament seizure and ligation of the right and left gastroepiploic vessels;
- Four weeks after surgery, patients were prescribed adjuvant chemotherapy

Peritoneal Cancer Index

Peritoneal Cancer Index

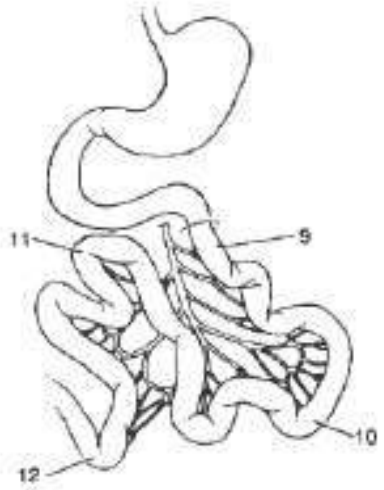


Regions	Lesion Size
0 Central	____
1 Right Upper	____
2 Epigastrium	____
3 Left Upper	____
4 Left Flank	____
5 Left Lower	____
6 Pelvis	____
7 Right Lower	____
8 Right Flank	____
9 Upper Jejunum	____
10 Lower Jejunum	____
11 Upper Ileum	____
12 Lower Ileum	____

PCI ☐

Lesion Size Score

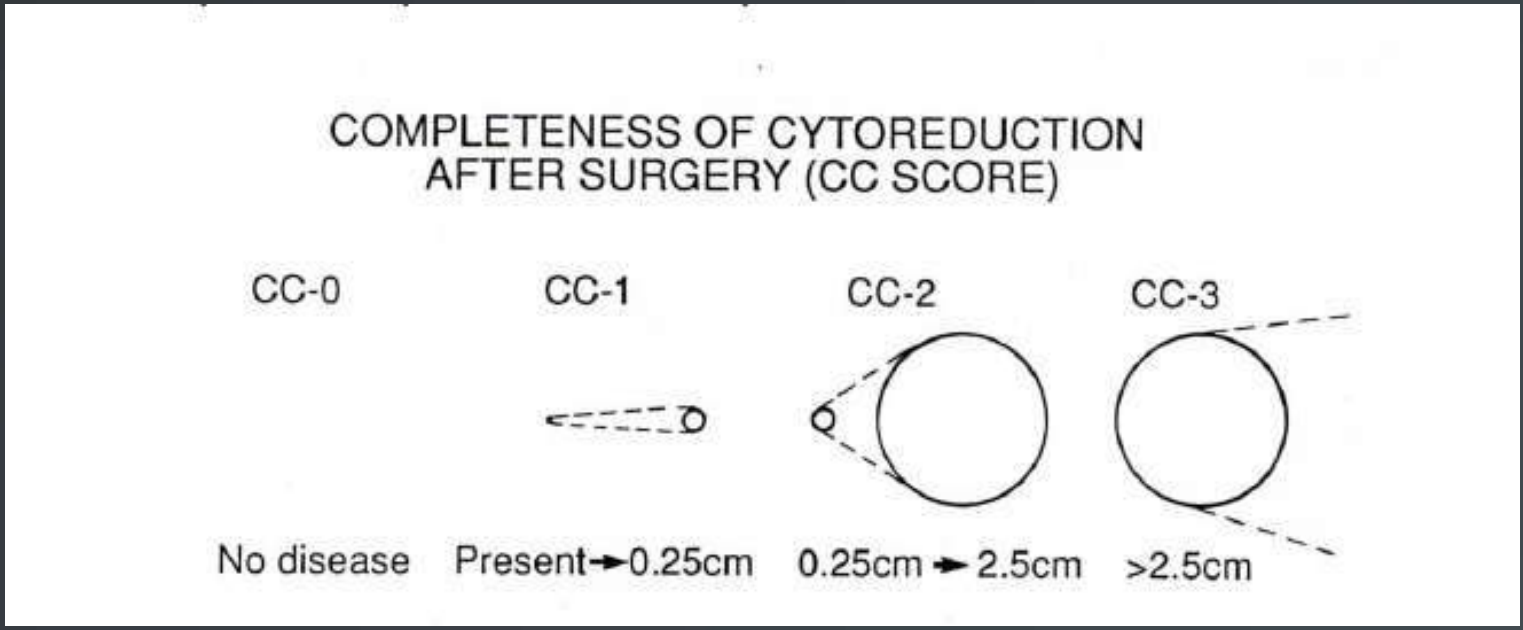
LS 0 No tumor seen
LS 1 Tumor up to 0.5 cm
LS 2 Tumor up to 5.0 cm
LS 3 Tumor > 5.0 cm or confluence



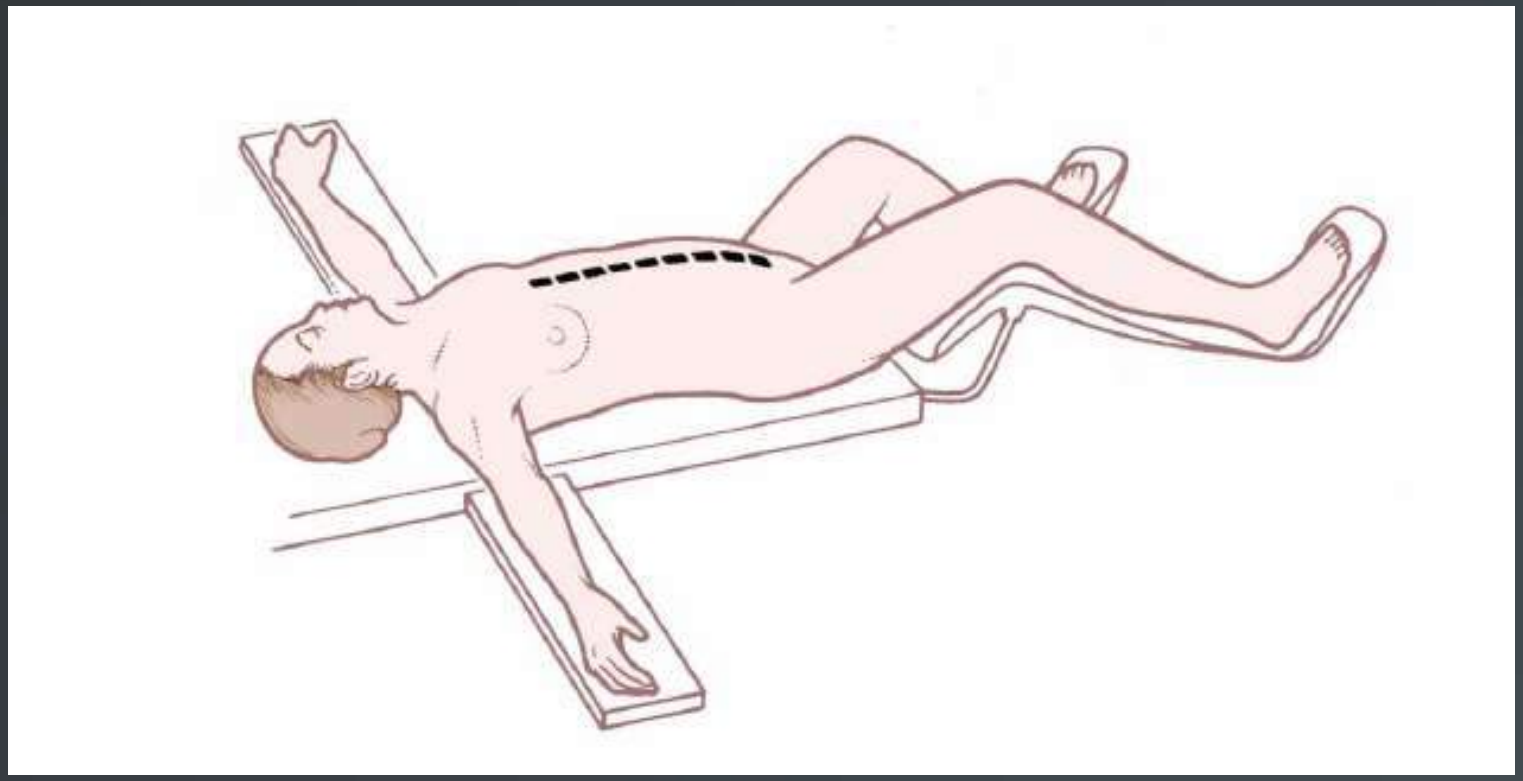
Assessment of Prior Surgical Score

Table 4. Assessment of prior surgical score (PSS).	
PSS-0 (none)	Biopsy only
PSS-1 (minimal)	Exploratory laparotomy, 1 region
PSS-2 (moderate)	Exploratory laparotomy with resections, 2-5 regions
PSS-3 (heavy)	Extensive prior cytoreduction, >5 regions

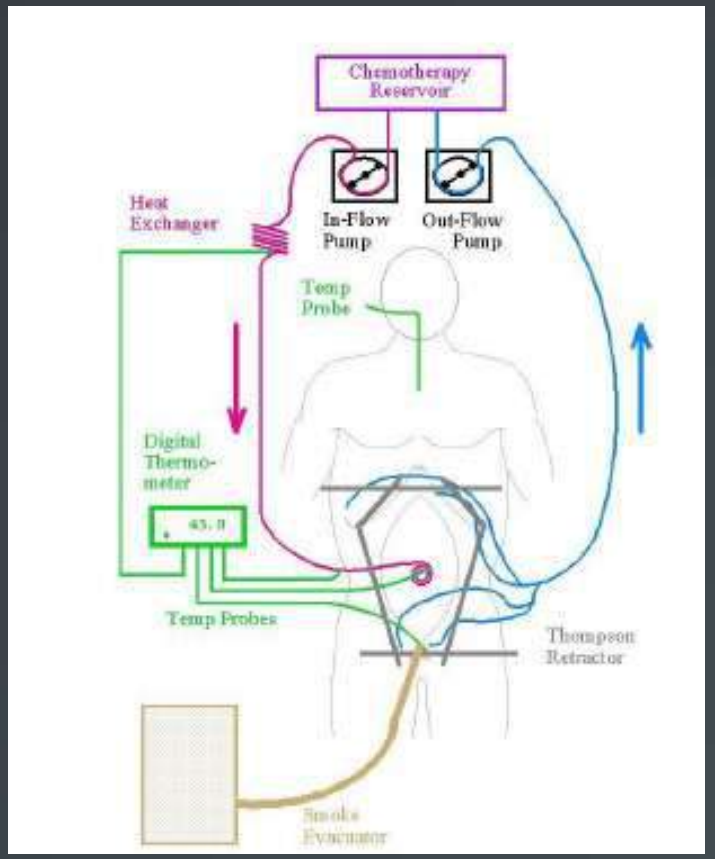
Completeness of Cytoreduction



Position on the Operating Table

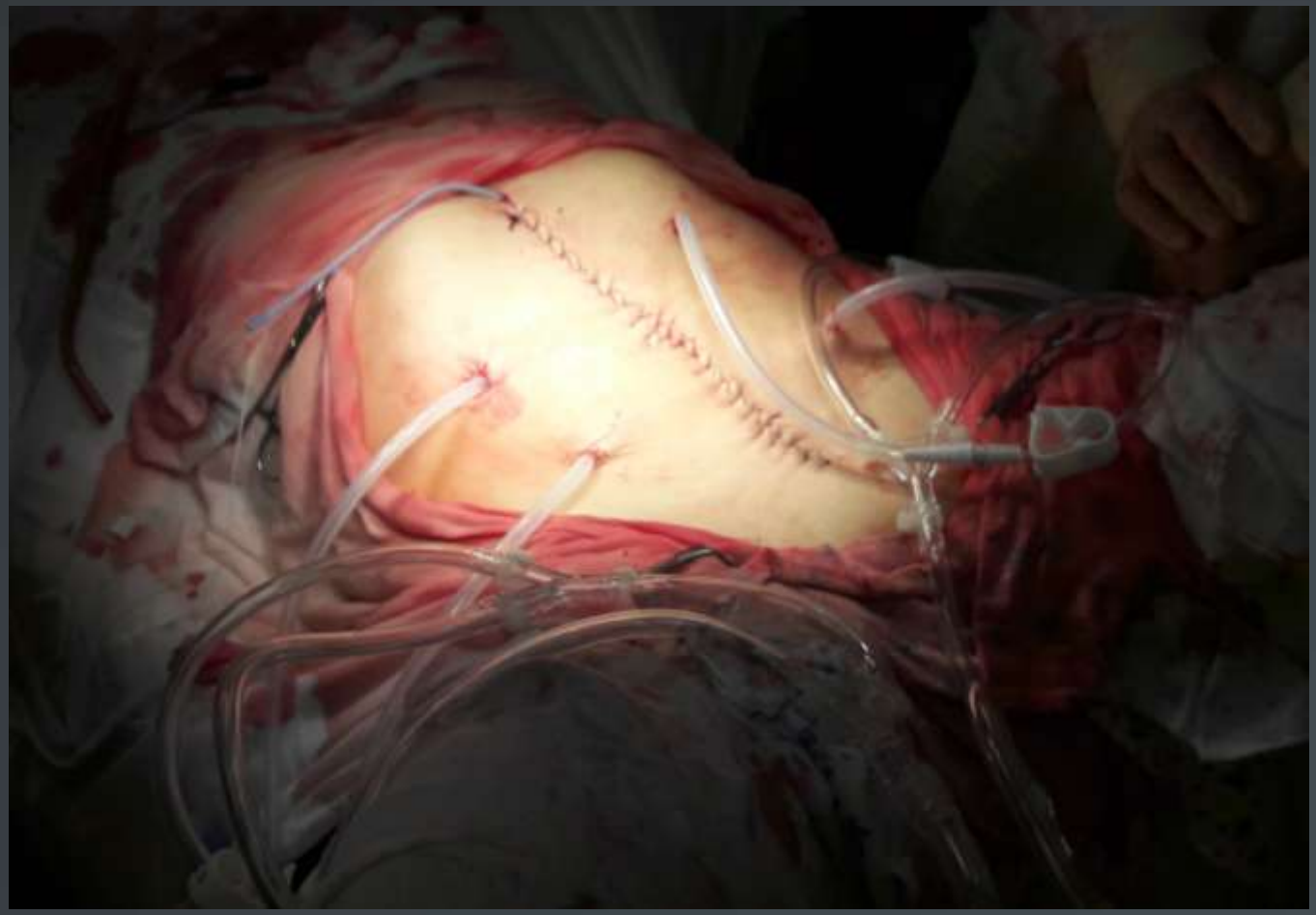


HIPEC set PERFORMER HT (Italy).



System Work Parameters

Placement of drains and temperature probe

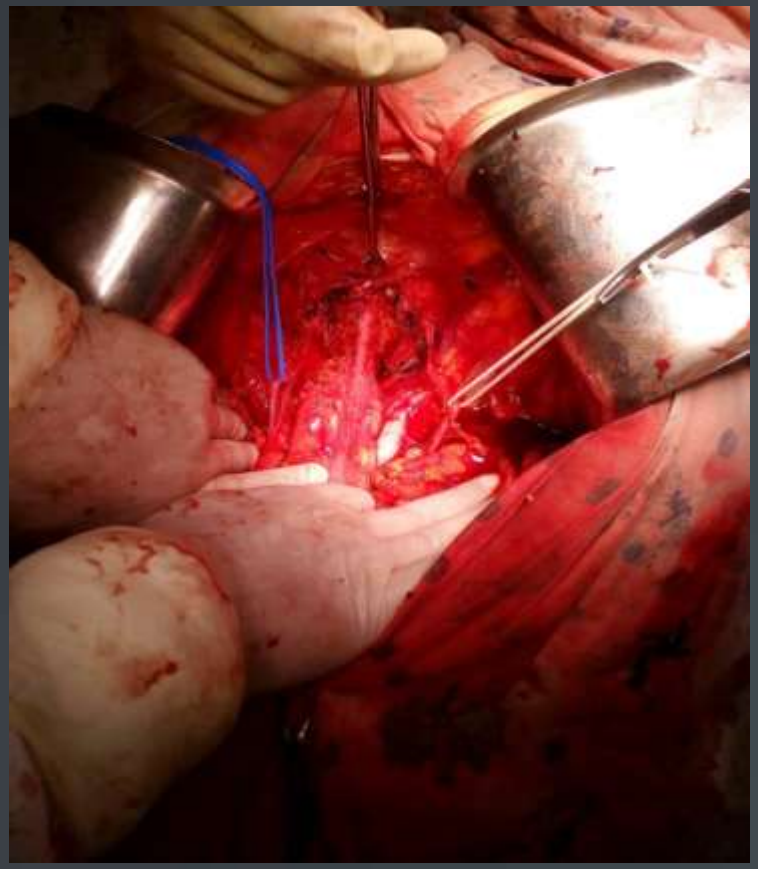


Surgical interventions (PCI – 14,2)

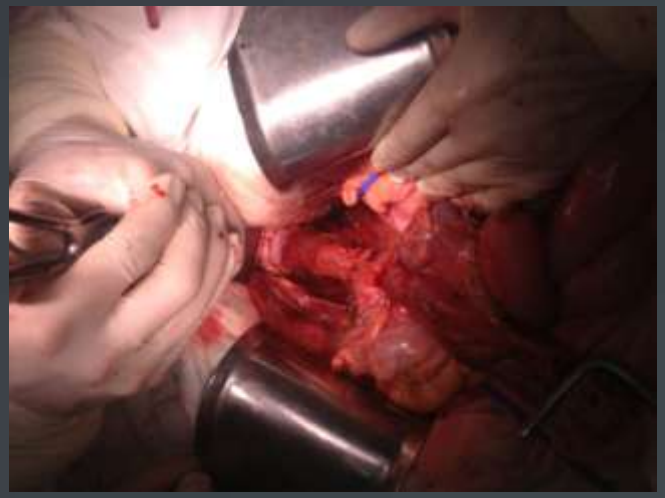
- In 1 case, combined hysterectomy, anterior rectal resection, colectomy, omentectomy, peritoneumectomy in the 0, 2, 4, 5, 7, 8 sectors of the peritoneum (Sugarbaker, 2003, PSS-3 ((heavy)), resection of the bladder;
- In 4 cases, obstructive combined sigmoidectomy, low anterior rectal resection, omentectomy, hysterectomy, peritoneumectomy in the volume of 0, 2, 4, 5, 7, 8 peritoneal sectors (Sugarbaker, 2003, PSS-3 ((heavy));
- In 1 case, resection of the bladder, omentectomy, hysterectomy, peritoneumectomy in the volume of 0, 1, 2, 3, 4, 5, 7, 8 peritoneal sectors (Sugarbaker, 2003, PSS-3 ((heavy));
- In 1 case, right hemicolectomy, low anterior rectal resection, omentectomy, hysterectomy, peritoneumectomy in the volume of 0, 1, 2, 3, 4, 5, 7, 8 peritoneal sectors (Sugarbaker, 2003, PSS-3));
- In 9 cases, omentectomy, hysterectomy, peritoneumectomy in the volume of 0, 2, 4, 5, 7, 8 peritoneal sectors (Sugarbaker, 2003, PSS-3 ((heavy));

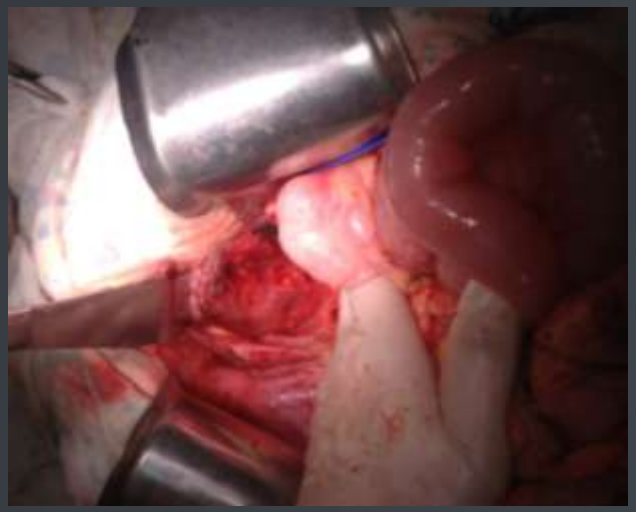
Combined hysterectomy, anterior rectal resection, colectomy, omentectomy, peritoneumectomy

Omentectomy, hysterectomy, peritoneumectomy in the volume of 0, 2, 4, 5, 7, 8 peritoneal sectors (Sugarbaker, 2003, PSS-3 ((heavy))



Obstructive combined sigmoidectomy, low anterior rectal resection, omentectomy, hysterectomy, peritoneumectomy in the volume of 0, 2, 4, 5, 7, 8 peritoneal sectors (Sugarbaker, 2003, PSS-3 ((heavy))





Short-term Results

- Complications and mortality in the course of surgical intervention and postoperative period were not noted
- All patients in the remote postoperative period underwent a follow-up examination on the 3rd and 6th month of the postoperative period. During the examination, there was no evidence of recurrence and progression of the disease

Discussion

- Analysis of the results of cytoreductive interventions performed by joint surgical teams (abdominal surgeon + oncogynecologist) demonstrates the effectiveness and safety of the treatment.
- Treatment regimen: cytoreductive surgery + adjuvant chemotherapy is a promising approach in the treatment of locally advanced forms of ovarian cancer.

Thank you!