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**RESECTION AND INJURIES  
OF THE URETERS DURING OPERATIONS FOR COLORECTAL CANCER**

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***Introduction***

In the surgical treatment of patients with colorectal cancer (CRC), the ureter may be involved in the tumour process, which requires its resection. However, the most common pathogenic damage of ureters including iatrogenic damage of ureters (IDU), is caused by complex topographic anatomical conditions associated with paratumorous inflammatory infiltration, large tumour sizes, repeated surgical interventions on the pelvic organs. The nature of intraoperative ureteral injuries is varied - ligation, flashing, crushing with a clamp, electric coagulation, partial or complete intersection and resection [1]. The frequency of complications is up to 0.3–0.4 %. Most often, IDU are diagnosed in obstetric-gynaecologic (60 %), urological practice (30 %), and in abdominal surgery (10 %) [2].

***Aim***

To analyse the short-term results of surgical interventions for CRC with resection of ureters and IDU.

***Material and Methods***

A retrospective analysis of 32 surgical interventions with resection and IDU, performed on CRC in the oncological abdominal department of the Gomel Regional Clinical Oncologic Dispensary from 1990 to 2017 was carried out.

***Results and discussion***

In just a 27-year period, intraoperative damage to the ureters (including cases of resection due to tumour ingrowth) was observed in 32 patients. During this period performed 7942 surgical interventions for CRC, including 7148 radical ones. In a retrospective analysis of the case histories, a clear indication of the iatrogenic nature of ureteral injury occurred in 10 (31.3 %) cases.

There are 17 (53.2 %) patients, whom ureteral resection was performed for histologically confirmed tumour ingrowth. In 2 (6.2 %) cases ureteral resection was performed in the absence of histological involvement of ureter in the tumour process. It occurred due to the paratumorous inflammatory infiltrate and cannot be qualified as iatrogenic. In 3 (9.3 %) cases, in the postoperative period, necrosis of the ureter developed; probably due to a violation of the trophism due to its extensive mobilization during the discharge from the paratumorous infiltrate. Thus, the frequency of IDU was 0.13 %, the frequency of all cases of ureter resection — 0.40 %.

Age of patients ranges from 36 to 78 years, are ranged  $57.3 \pm 20.8$  years, women prevailed (66 %). Patients underwent the following surgeries: in 6 (18.8 %) of cases — abdominoperineal resection, in 6 (18.8 %) — anterior resection of the rectum, in 4 (12.5 %) — resection of the sigmoid colon, in 3 (9.3 %) — Hartmann's operation, in 6 (18.8%) — removal of locoregional recurrence, in 3 (9.3 %) — left hemicolectomy, 4 (12.5 %) — right hemicolectomy. In the overwhelming majority of cases (25; 78.1 %) combined operations were performed.

Damage to the left ureter was observed more often — 18 (56.3 %) cases, the right one was involved in 13 (40.6 %) cases, in 1 (3.1 %) cases the damage was bilateral. In 22 (68.7 %) cases there was a complete intersection of the ureter, in 7 (22 %) — marginal injury, in 3 (9.3 %) — necrosis of the ureter. Out of 10 cases of IDU in 8 (80 %) they were diagnosed intraoperative-

ly, in 2 (20 %) cases — in the early postoperative period. Reconstruction was performed in 18 (56.3 %) cases (ureter anastomosis — 11 cases, suturing of the defect — in 7 cases). Nephroureterectomy was performed in 9 (28.1 %) cases, ureterocutaneostomy in 4 (12.5 %), in 1 (3.1 %) — drainage under ultrasound control of urinary flow (external fistula formed).

Postoperative complications developed in 7 (22 %) patients. 3 (9.3 %) patients died. The cause of death was acute renal failure, pneumonia and a colorectal anastomosis failure.

#### **Conclusion**

1. The incidence of all cases of ureteral resection in the surgical treatment of CRP was 0.40 %, and in 0.13 % of cases, there were IDU.

2. IDU was diagnosed intraoperatively in eight (80 %) cases and in the postoperative period — in 2 (20 %) cases. Most patients with intraoperative ureteral lesions (8; 80 %) underwent reconstructive surgery.

3. Postoperative complications developed in seven (22 %) patients, 3 (9.3 %) died, the cause of death was acute renal failure, pneumonia, failure of the colorectal anastomosis.

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### **СРАВНЕНИЕ АНАЛИЗОВ ЛЕЧЕНИЯ РАКА СРЕДНЕГО ОТДЕЛА ГОРТАНИ I СТАДИИ ХИРУРГИЧЕСКИМ И ЛУЧЕВЫМ МЕТОДОМ**

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#### **Введение**

Рак гортани является самой частой злокачественной опухолью органов головы и шеи в мире и в Беларуси [1]. Основной гистологический тип опухоли — плоскоклеточный рак. Чаще всего новообразование локализуется в среднем отделе [2]. В настоящее время в Гомельской области около 15 % карцином гортани выявляется в I стадии [3]. Методами выбора при лечении рака среднего отдела гортани (РСОГ) I стадии являются лучевая терапия (ЛТ) или органосохраняющая операция: резекция гортани [4]. Хирургическое лечение является несколько более эффективным, чем ЛТ [5]. Однако функциональный ущерб от операции (стойкая дисфония) приводит к тому, что в большинстве случаев приоритет первичного лечения отдается ЛТ. Критериями эффективности лечения РСОГ I стадии являются пятилетняя выживаемость пациентов, пятилетнее безрецидивное течение, доля пациентов с сохранением гортани [2]. Общая выживаемость пациентов с РСОГ I стадии превышает 90 %, поэтому в процессе наблюдения примерно у 10 % излеченных обнаруживают вторую и более опухоли других локализаций. В Гомельском областном клиническом онкологическом диспансере выполняется как лучевое, так и хирургическое лечение РСОГ I стадии согласно национальным алгоритмам. Накопленный материал побудил нас к анализу полученных результатов в течение 5-летнего периода.