Evaluation of the complex treatment effectiveness of malignant non-organ retroperitoneal tumorson a relapse-free period

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Abstarct. The article delineates the immediate and long-term results of 54 patients with non-organ tumors of the retroperitoneal space who witnesseda number of complex treatments. Tumors of a malignant nature were histologically verified by trepan biopsy in all patients (100%). In the group,liposarcoma was verified in 16 (29.6%) patients, leiomyosarcoma in 17 (31.5%), fibrosarcoma in 9 (16.7%), pleomorphic sarcoma in 8 (14.8%), angiosarcoma in 4 (7 , 4%) patients. Depending on treatment method, patients were stratified into 2 groups - main n = 26 and n = 28. All patients underwent radical surgery after 3 courses of PCT after which they received a course of radiation therapy (ROD-1.8-2Gy). Preoperative chemotherapy before the operation had led to partial tumor regression in 10 (38.5%) patients. 6 (23.0%) patients registered stabilization and progression of the process was observed in 3 (11.5%) patients. The relapse-free period in the main group was set to become 10.2 + 0.4 months while the metastatic-free period was 11.4 + 0.5 months. An integrated approach to the treatment of non-organ retroperitoneal tumors proliferates the average life expectancy of patients as well as the duration of the disease-free and metastatic period.

1 Introduction

Non-organ tumors of the retroperitoneal space are rare. No more than 1-2% of all human neoplasms do not allow one to have significant experience in the treatment of this patients' category. Retroperitoneal non-organ tumors (RNT) are oddly diverse neoplasms in their histological structure. The anatomical features of the retroperitoneal space determine the absence of specific clinical symptoms requiring bizarre diagnostic and therapeutic tactics [3]. The primal trait of their clinical course is a tendency to relapse and the achievement of large sizes, the connection with surrounding organs and tissues, including the great vessels causing significant difficulties and requiring the performance of combined operations [8].Among soft tissue sarcomas, the share of retroperitoneal sarcomas amounts to 10-20%. As a matter of fact, RNT makes up 0.03 - 1.0% of all human neoplasms [4]. According to various authors, 60 - 80% of tumors of the retroperitoneal space are malignant and 14 - 40% is benign [10]. Malignant retroperitoneal tumors are characterized by a high percentage of recurrence after

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surgical treatment (13 - 82%). However,themetastaticpotentialofRNTisrelativelylow (19 - 32%) [9].

Aim of the research is to increase the effectiveness of retroperitoneal sarcoma treatment by developing an integrated approach using neoadjuvantendoarterial chemotherapy, surgical intervention followed by a radiation therapy.

2 Material and methods

Material applied in the study was the analysis of treatment results belonging to 54 patients in the span of 2019-2020 in the Samarkand branch of the Republican Specialized Scientific and Practical Medical Center of Oncology and Radiology. At the stage of examination, histological verification was obtained in 100% of patients by trephine biopsy. On the basis of this, liposarcoma was verified in 16 (29.6%) patients, leiomyosarcoma in 17 (31.5%), fibrosarcoma in 9 (16.7%), pleomorphic sarcoma in 8 (14.8%) and angiosarcoma in 4 (7.4%) patients. With the distribution by sex, men are in their 30s (55.6%) whilst women's age registered to be 24 (44.4%) and the average age of patients is 65 + 10.5 years. Formation diameters ranged from 25 to 40 cm in the largest dimension.Patients were divided into 2 groups depending on the method of treatment. Group 1 - main n = 26 who underwent neoadjuvant RNT + radical surgery + RT (SOD-60Gy). Control group 2, n = 28 who underwent radical surgery + adjuvant RNT. In 26 patients, at the preoperative stage, an endoarterial catheter was installed as close as possible to the vessels feeding the tumor. 3 courses of neoadjuvant chemotherapy were served with an interval of 21 days according to the seasonal affective disorder (SAD) scheme. Drugs were administered endoarterially at a slow rate over 48 hours under strict bed rest. Complications associated with chemotherapy were not encountered in. All patients after 3 courses of PCT experienced radical surgery intervention. In postoperative phase, patients were treated with a course of radiation therapy on the bed of the removed tumor, a split course in the classical dose fractionation mode. Single focal dose (SFD) amounted to 1.8-2 grams whereas total focal dose (TFD) was 60 grams. To assess integrated approach efficacy to the treatment of retroperitoneal sarcomas, the following criteria were selected:

- influence of chemotherapy on tumor size, volume and trauma of surgery and on prolongation of relapse-free and metastatic period.
- postoperative radiation efficacy therapy for the duration of the relapse-free period

3 Results

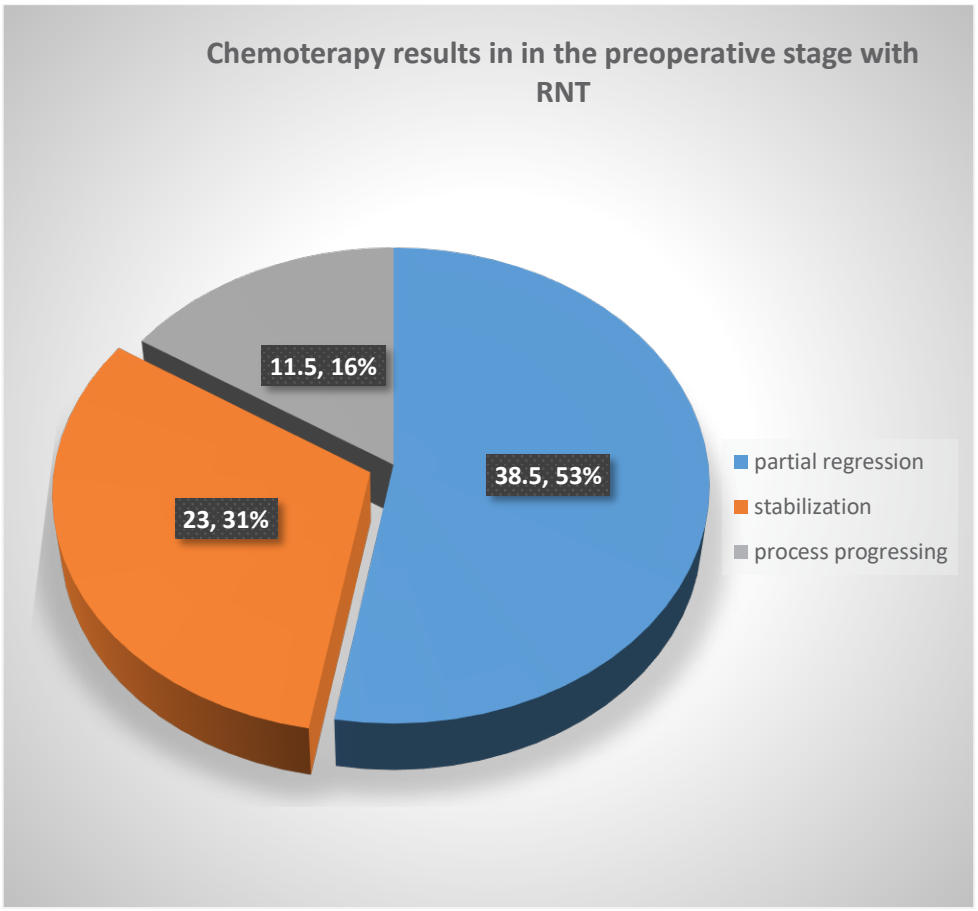

Fig. 1. Preoperative chemotherapy was treated in partial tumor regression in 10 (53%) patients. 6 (31%) patients experienced stabilization and progression of the process was noted in 3 (16%) patients

In connection with tumor regression and a decrease in infiltration into neighboring organs, more favorable conditions arose for surgical intervention. The efficacy of postoperative radiation therapy was assessed in combination with the treatment methods performed in terms of average life expectancy, relapse-free and metastatic periods. Patients' average life expectancy study which is the central determining factor, depicted a surge in life expectancy in the main group to 18.2 +0.4 months and in the control group 12.4 +0.3 months. ($P < 0.05$) (Table 1).

Table 1. The relapse-free period in the main group was 10.2 +0.4 months while in the control group it was 7.3 +0.3 months ($P < 0.05$). Moreover, metastatic-free period was 11.4 +0.5 months and 9.1 +0, respectively.

	Main group (n=26)	Control group (n=28)
Average life longevity	18.2 ±0.4 month	12.4 ±0.3 month
Relapse-free period	10.2 ±0.4 month	7.3 ±0.3 month

Metastasis-free period	11.4 ±0.5 month	9.1 ±0.4 month

4 Discussion

Retroperitoneal non-organ tumors are a heterogeneous group of diseases. One of the features of RNTs is their slow pervasive growth with minimal clinical manifestations. The absence of pain syndrome allows tumors to shape large sizes (more than 20-30 cm in diameter). Depending on the type and rate of growth, histological structure, such tumors can either propagate into neighboring organs, else, conversely, shift them to the side which makes it viable in some cases to perform organ-preserving operations.Pursuant to various point of views by authors, liposarcomas are more prone to develop painless syndrome and they are more difficult to be diagnosed through ultrasound. Leiomyosarcomas can arise from small or large veins (inferior vena cava) and they enable a high potential for malignancy and a tendency to hematogenous metastasis.The main radical method of retroperitoneal non-organ tumor treatment, regardless of the histological structure and localization, is a surgical treatment. The surgical method for treating this pathology is consideredas a gold standard. According to many authors, the use ofsurgical treatment solely cannot provide a long relapse-free and metastatic period.A more effective treatment method is the combined application of surgery, chemotherapy and radiation therapy. Combined use of neoadjuvantendoarterial chemotherapy was treated in partial regression of the tumor process in the studied group of patients. In connection with tumor regression and a decrease in infiltration into neighboring organs, more favorable conditions derive for surgical intervention. When investigating these patient groups, a proliferation in life expectancy, relapse-free and metastatic periods was registered. Hence, neoadjuvant therapies (chemotherapy, external beam radiation, or combination radiation and chemotherapy) are safe for carefully selected patients and may be considered after thorough consideration by the multidisciplinary suggestion for sarcoma tumors when the risk of recurrence is relatively high [11]. The preferred method is selected based on the nature of the recurrence. Chemotherapy is used in histological studies with the highest systemic risk (for example, leiomyosarcoma and high-grade dedifferentiated liposarcoma), and radiation therapy in patients with the highest local-regional risk (for example, well-differentiated liposarcoma and dedifferentiated low / medium).

5 Conclusion

An integrated approach to the treatment of retroperitoneal sarcoma exponentially boosts the average life expectancy of patients as well as the duration of the relapse-free and metastatic period. The use of adjuvant long-term endoarterial chemotherapy up to 58.3% of cases induces a partial effect and thus creates favorable conditions for surgical intervention.

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