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Savchenko AA

Danylo Halytsky Lviv National Medical University, Department of Surgery №2, Lviv, Ukraine

Kobza II

Danylo Halytsky Lviv National Medical University, Department of Surgery №2, Lviv, Ukraine

Terletsy IR

Lviv Regional Clinical Hospital, Department of Surgery №1, Lviv, Ukraine

Verhola MR

Lviv Regional Clinical Hospital, Department of Surgery №1, Lviv, Ukraine

Correspondence

Savchenko AA

Danylo Halytsky Lviv National Medical University, Department of Surgery №2, Lviv, Ukraine

Experience of surgical treatment of the carotid body tumor and tumors with invasion at the carotid vessels

Savchenko AA, Kobza II, Terletsy IR and Verhola MR

Abstract

The analysis of the structure and results of surgical treatment of 56 patients who were hospitalized in the department of vascular surgery Lviv regional hospital for the period 1995 to 2015. Among the 31 case of this disease carotid body tumors (1st study group) and 25 cases (2nd control group) with other tumors of the neck. In first group structure surgery were: tumor removal and suturing of the vascular wall defects - 76%, resection and shortening of the common carotid artery - 21% expansion of the internal carotid artery - 3%, ligation of the external carotid artery - 10%, lymphadenectomy - 28%, prosthetic vascular wall - 3%, the tumor resection - 3%, internal jugular vein ligation - 7%, fragment excision muscle - 3%, nerve resection - 14%. In the second group of surgery were: tumor removal and suturing of the vascular wall defects - 96%, lymphadenectomy - 48% tumor resection - 30%, internal jugular vein ligation - 14%, fragment excision muscle - 4%, nerve resection - 13%. In group 1 intraoperative complications were observed in 1 (3.4%) cases that manifested massive bleeding from the tumor. In the postoperative complications were observed in 1 (3.4%) cases, there was cerebral ischemia. In 1 (3.4%) cases relapse after 9 years.

Conclusion: Clinic experience shows that surgery is an effective treatment for carotid body tumor and tumors with invasion into vessels of the neck, providing a low rate of complications, a full recovery or long-term remission.

Keywords: Hemodectoma, carotid body tumor, paraganglioma, neck

1. Introduction

Even in the early XXI century removal of tumors of the neck remains an urgent problem of medicine, taking into account the severe complications and high mortality.

In the total cancer incidence neck tumors account for about 5% of all cancer cases. Indicator 5-year survival rate in this group is the lowest among of tumors and for this patient population ranges from 30 to 50%^[1, 2].

Surgical treatment of neck tumors is complex. Defeat tumor structures that control such functions as speech, swallowing, taste, the blood supply to the brain making their removal impossible or leads to disability. All these structures can be lesions in malignancy and influence the choice of optimal treatment^[3].

The tumor of carotid node called carotid hemodectoma (chemodectoma, carotid paraneurinoma, carotid gland goiter) that make up 20 - 30% of paragangliomas in the neck. This term was proposed in 1950 Milligan^[4].

Hemodectoma quite rare, grows slowly and over several years. According to some authors average rate of tumor growth is 0.83 mm / year. Hemodectoma carotid neck is only 0.012% of all human cancers. Their frequency in the population is 1 case per 1.3 - 2.5 million^[5]

It should be noted that most of the authors in their works demonstrate significant contradiction in views on the solution to the problem diagnosis, treatment strategy and tactics surgery for carotid body tumor. So at the beginning of the 90 th century 66% removal carotid hemodectoms ends only its revision, in the 7.7 - 9.4% - not radical surgery, and in 21.8% of cases the tumor is considered unresectable^[6].

2. Materials and methods

The results of the retrospective examination and treatment of 56 patients with tumors of neck vessels, who were hospitalized in the vascular surgery department of the Lviv Regional Hospital from 1995 to 2015 on the basis of medical records of patients.

Among the patients was 27 (48%) men and 29 (52%) of women aged between 4 – 69 years. The average age of patients was 37.7 years. Them of working age were 40 (83%) people.

In these cases the structure of cancer in the neck were as follows: benign tumor – 12, malignant tumor – 13, carotid hemodectoma (carotid body tumor) - 31.

To study the characteristics of clinical course of carotid hemodectom all clinical cases were divided into two groups. The first, a core group includes clinical cases of carotid hemodectoma (CBT), is 31 patients. Second, the control group was formed from clinical cases of tumor invasion of another oncogenesis currently bunch, here included 30 patients. It was studied, compared and summarized the main aspects of clinical groups by gender - age, length of history, structure complaints and objective methods of research data, the feature of the volume and nature of the surgery.

3. Results

In both groups, clinical observation was performed a total of 52 operations.

In the main group in 1 patient in the hospital stay developed acute myocardial ischemia, which was the contraindications to the operation and the patient was transferred to a specialized cardiology department. In the second group of additional examination in 2 patients, the presence of multiple metastases, combined lymphocyte - phagocytic immunodeficiency in one clinical case. In 1 patient we diagnosed multiple metastases in the internal organs and locus of massive tumor in the neck, which was recognized inoperable. Patients were discharged from the hospital for symptomatic treatment in the community.

In the first group performed 29 operations in the second group 23 respectively. The average duration of the operation in the first group was 114 +/- 31 min. In the second group of 90 +/- 26 min. The duration of postoperative hospital stay of patients is on average 5 days.

In group 1 structure surgery were: tumor removal and suturing of the vascular wall defects - 76%, resection and shortening of the common carotid artery - 21% expansion of the internal carotid artery - 3%, ligation of the external carotid artery - 10%, lymphadenectomy - 28%, prosthetic vascular wall - 3%, the tumor resection - 3%, internal jugular vein ligation - 7%, fragment excision muscle - 3%, nerve resection - 14%. In the second group of surgery were: tumor removal and suturing of the vascular wall defects - 96%, lymphadenectomy - 48% tumor resection - 30%, internal jugular vein ligation - 14%, fragment excision muscle - 4%, nerve resection - 13%.

In the second group performed the following operations: removal of the tumor with vascular wall defect closure – 96%, removal of the tumor with resection of the sternoclavicular muscle - 4%, tumor removal with rotary intersection nerve – 13%, removal of metastases – 30%, excision of the tumor with resection of the internal jugular vein – 14%, removal of the tumor with lymphadenectomy – 48%.

Pharmacological support these patients included the antibiotics (cephalosporins), anticoagulants (Bemiparyn), the choice of the drug we justify the presence of data on its anticancer properties, decongestants means (L - lysine escunat).

In the first group we observed intraoperative complications in 1 (3,4%) patients with CBT (class I Stamblin), which manifested massive bleeding from the tumor, was brought down coagulator. In the postoperative complications observed in 1 (3,4%) patients with CBT (class III Stamblin) 2 days after surgery occurred cerebral ischemia on a background of postoperative stenosis of internal carotid artery more than 60%.

There have been a second operation in the amount of resection of the common carotid artery and endarterectomy of the internal carotid artery, after which the patient's symptoms regressed completely. In 1 (3.4%) cases we have had a relapse after 9 years, who were operated.

In the second group, 1 case of intraoperative became necessary to establish tracheostomy due to severe deformity of the larynx. In the same patient in the postoperative period observed paralysis of the facial nerve and swallowing difficulties.

4. Conclusions

Clinic experience shows that surgery is an effective treatment for carotid body tumor and tumors with invasion into vessels of the neck, providing a low rate of complications, a full recovery or long-term remission. Surgical intervention in these patients should be performed by vascular surgeons, as the surgical removal of these tumors, especially the carotid hemodectom often requires resection perform common carotid artery and internal carotid artery prosthetic.

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