

Clinical symptoms and complaints of patients with carotid body tumor

Dr. Savchenko AA

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

Abstract

Materials and methods: The analysis of the clinical symptoms of 56 patients who were hospitalized in the department of vascular surgery Lviv regional hospital for the period 1995 to 2015 in this group of patients in the 31 case diagnosed tumor of the carotid body (study group) and 25 cases of tumors other oncogenesis in section of carotid arteries (control group). The calculation of statistical indicators performed using Excel 2010 with the definition of reliability of the results based on Fisher test.

Results: In the group of carotid body tumor (CBT) main symptom is the appearance of painless, round, tight elastic consistency, formation of the neck in the projection of the bifurcation of the common carotid artery, which slowly increased in size in 25 (81 %) patients with CBT, episodes of vertigo in 9 (17 %) of clinical cases, headache - 7 (23 %), episodes of fainting - 5 (16 %), the appearance of a painful lesion on his neck - 6 (19%), lymphadenopathy - 5 (16 %), amnesia - 2 (6 %), dysphagia - 2 (6 %), dysarthria - 2 (6 %), cough, ear disorder - 1 (3 %). In 5 (16 %) patients with CBT, we diagnosed the syndrome of carotid sinus. Based on the comparative analysis between the frequency of symptoms in study groups CBT statistically significant is the emergence of asymptomatic tumor in the neck in the projection of carotid arteries in 81% of patients ($p = 0.0021$), dizziness in 29% of patients ($p = 0.0489$), syndrome of carotid sinus in 16% ($p = 0.0445$).

Conclusions: Analysis of the clinical picture in patients with carotid body tumor shown that this disease is marked by the appearance of no pain, oval, tight elastic consistency tumor in the neck in the projection of the bifurcation of the common carotid artery, which is accompanied by dizziness and syndrome of carotid sinus.

Keywords: carotid body tumor, carotid artery, tumor

1. Introduction

At the beginning of XXI-century surgery remove tumors of the neck remains an urgent problem, given the severe complications and high mortality. In the overall structure of cancer incidence neck tumors account for about 5% of all cancer cases. 5-year survival in this group ranges from 30 to 75% depending on the type of tumor location, stage of the process and the physical condition of the patient [1, 2].

A paraganglioma is a rare neuroendocrine neoplasm that may develop at various body sites. On the neck are mainly represented by the carotid body tumor. Carotid body tumors (CBT) usually are ill women between the ages 20 - 50 years. Duration of anamnesis in these patients from several months to 18 years [3, 4].

The tumor of carotid node called carotid hemodektoma (chemodectoma, carotid paraganhlioma, carotid gland goiter) that make up 20 - 30% of paragangliomas in the neck. This term was proposed in 1950 Milligan [5].

Hemodektoma quite rare, grows slowly and over several years. According to some authors average rate of tumor growth is 0.83 mm / year. Hemodektoma carotid neck is only 0.012% of all human cancers. Their frequency in the population is 1 case per 1.3 - 2.5 million [6].

Clinical CBT has no specific symptoms. Typically patients find CBT only when the tumor begins to cause the deformation of the shape of the neck. Therefore, early detection of these tumors and their differential diagnosis from other tumors is of paramount importance. This allows time and with minimal complications perform their adequate treatment [7].

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 hemodektoma (carotid body tumor) - 31.

To study the characteristics of clinical course of carotid hemodektom all clinical cases were divided into two groups. The first, a core group includes clinical cases of carotid body tumor (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 the process of studying and organizing patients' complaints were found several patterns that are caused by features of the development and localization of cancer.

In CBT group leading symptom is the appearance of painless, rounded, tight elastic consistency, tumors of the neck in the

projection of the bifurcation of the common carotid artery, which slowly increased in size. Patients pay attention to these tumors only when they cause cosmetic defect on the neck. This clinical picture we have seen in 25 (81%) patients with CBT. Also, patients with CBT during hospitalization were complaints of dizziness episodes in history that was found in 9 (17%) of clinical cases. This symptom is caused by tumor compression carotid arteries that leads to their stenosis and as a consequence appearance of transitory brain hypoxia.

In 5 (16%) patients of this group were diagnosed syndrome of carotid sinus. The basis for the diagnosis of this syndrome in patients was the presence of bradycardia and hypotension, which regressed after removal of CBT.

Patients with CBT were complaints of headache -7 (23%) cases, collapse -5 (16%), appearance of painful tumor on the neck - 6 (19%). In 5 (16%) patients noted the lymphadenopathy on the neck. In the history of CBT patients noted the following symptoms: amnesia - 2 (6%), dysphagia - 2 (6%), dysarthria - 2 (6%), cough and ear disorder - 1 (3%).

In the control group dominated by symptoms that develop as a result of the rapid and /or invasive tumor growth. Clinically

it is manifested complaints of patients for the emergence of pain, fast growing, not moving formation in the neck, this symptom was detected in 15 (60%) patients in the control group. Moreover, this symptom is combined with complaints, reflecting the involvement in the pathological process of adjacent organs, such as brain symptoms as a result of cerebral ischemia due to tumor stenosis of the carotid arteries: episodes of dizziness - 2 (8%), headache - 5 (20%), collapse - 1 (4%), amnesia - 2 (8%) patients.

In the control group increased frequency of symptoms caused by the tumor process lesion of cranial nerves: dysphagia - 5 (20%), dysarthria - 6 (24%) patients. An increasing number of neck lymphadenopathy - 12 (48%) of clinical cases. In patients with benign tumors mainly manifested symptoms "plus tissue": the appearance of painless tumor on the neck, which slowly increased in size - 10 (40%) cases.

In order to detect statistically significant symptoms for CBT analyzed the data and determined the difference between the symptoms of comparative groups from «p», according to Fisher's test.

A statistical analysis are summarized in the table 1:

Table 1: Calculation of the reliability of the results in the experimental groups, according to Fisher's test

Symptom	Frequency, main group,	Frequency, control group	Value of p, according to Fisher's test
Collapse	5	1	0.1535
Headache	7	5	0.5398
Dizziness	9	2	0.0489*
The appearance of asymptomatic tumors in the neck	25	10	0.0021*
The appearance of symptomatic tumors in the neck	6	15	0.0021*
Dysphagia	2	5	0.1323
Amnesia	2	2	0.6084
Dysarthria	2	6	0.0692
The syndrome of carotid sinus	5	0	0.0445*
Cough	1	1	0.6981
Lymphadenopathy in the neck	5	12	0.0109*
Noise in the ears	1	1	0.6981

Based on the comparative analysis between the frequency of these symptoms in the study group for CBT statistically significant is the appearance of asymptomatic tumors in the neck in the projection of carotid arteries in 81% of patients ($p= 0.0021$), dizziness in 29% of patients ($p= 0.0489$) syndrome of carotid sinus in 16% ($p= 0.0445$). The appearance is symptomatic, painful tumor on the neck in the projection of carotid arteries, lymphadenopathy usually denies CBT and typical for other kinds of tumors. In other symptoms statistically significant difference between groups is not received.

4. Conclusion

1. Patients with carotid node tumors characterized by complaints of appearance asymptomatic tumors in the neck in the projection of bifurcation of the common carotid artery, episodes of dizziness and syndrome of carotid sinus.
2. The presence of specific symptoms enables clinician to early diagnosis of CBT conduct a preliminary differentiation from other tumors and as a result hold the

patient in the proper diagnostic algorithm and apply effective treatment.

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