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CLINICAL CASE REPORTS

RARE CLINICAL OBSERVATION OF PRIMARY TRACHEAL CANCER

N.A.Chertova*, Yu.V.Ulianova, M.A.Engibaryan, V.L.Volkova, I.V.Aedinova

National Medical Research Centre for Oncology of the Ministry of Health of Russia,
63 14 line str., Rostov-on-Don 344037, Russian Federation

ABSTRACT

The article describes a clinical example of primary adenoid cystic carcinoma of the trachea, characteristics of its clinical course, diagnosis and the choice of treatment. We noted the non-specificity of complaints and clinical manifestations of tracheal cancer, the period between its beginning and diagnosis, the development of severe complications in the respiratory and cardiovascular systems due to the long asymptomatic course of the disease, the need for an integrated approach by various specialists in the treatment of such a complex category of patients. An approach to the surgical treatment of tracheal cancer is described taking into account its extension to the subglottic larynx, which required laryngeal extirpation. We showed the possibility of radical treatment of patients with tracheal cancer in large medical centers with such specialists as head and neck cancer surgeons, thoracic surgeons, endoscopists, anesthesiologists and resuscitators, therapists, radiologists, and chemotherapists.

Keywords:
primary tracheal cancer, adenoid cystic carcinoma, laryngeal extirpation, malignant tracheal tumors, treatment of tracheal cancer, secondary tracheal tumors.

For correspondence:
Natalia A. Chertova – Cand. Sci. (Med.), surgeon of the head and neck tumor Department National Medical Research Centre for Oncology of the Ministry of Health of Russia, Rostov-on-Don, Russian Federation.
E-mail: chertova1510@mail.ru
SPIN: 7051-4574, AuthorID: 473541

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КЛИНИЧЕСКОЕ НАБЛЮДЕНИЕ

РЕДКОЕ КЛИНИЧЕСКОЕ НАБЛЮДЕНИЕ ПЕРВИЧНОГО РАКА ТРАХЕИ

Н.А.Чертова*, Ю.В.Ульянова, М.А.Енгибарян, В.Л.Волкова, И.В.Аединова

ФГБУ «НМИЦ онкологии» Минздрава России,
344037, Российская Федерация, г. Ростов-на-Дону, ул. 14-я линия, д. 63

РЕЗЮМЕ

Описан клинический пример первичного аденокистозного рака трахеи, особенности клинического течения, диагностики, выбор метода лечения. Отмечена неспецифичность жалоб и клинических проявлений рака трахеи, длительность заболевания от момента его начала до постановки диагноза, развитие тяжелых осложнений со стороны дыхательной и сердечно-сосудистой системы из-за длительного бессимптомного течения заболевания, необходимость комплексного подхода различных специалистов в лечении такой сложной категории больных. Описан подход к хирургическому лечению трахеи рака, учитывающий распространённость его на подскладковый отдел гортани, что сделало необходимым выполнение экстирпации гортани. Показана возможность радикального лечения больных раком трахеи в крупных медицинских центрах, располагающих наличием специалистов: хирургов отделения опухолей головы и шеи, торакальных хирургов, эндоскопистов. анестезиологов — реаниматологов, терапевтов, радиологов, химиотерапевтов.

Ключевые слова:
первичный рак трахеи, аденокистозный рак, экстирпация гортани, злокачественные опухоли трахеи, лечение рака трахеи, вторичные опухоли трахеи.

Для корреспонденции:
Чертова Наталия Анатольевна – к.м.н., врач-хирург отделения опухолей головы и шеи ФГБУ «НМИЦ онкологии» Минздрава России, г. Ростов-на-Дону, Российская Федерация.
Адрес: 344037, Российская Федерация, г. Ростов-на-Дону, ул. 14-я линия, д. 63
E-mail: chertova1510@mail.ru
SPIN: 7051-4574, AuthorID: 473541

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RELEVANCE

Tracheal cancer refers to rare tumors that are detected in the late stages of the disease, usually after the development of complications associated with tracheal stenosis, the development of secondary changes in the tumor, and sometimes distant metastases.

Although tracheal cancer has its place in the International classification of diseases (ICD) — C33, in the statistics of cancer care for patients with malignant neoplasms in Russia, tracheal cancer is not considered independently and is included in the trachea, bronchi, and lung group. Tracheal cancer does not have its own classification according to the TNM system. This is due to the fact that primary tracheal tumors are rare and, probably, there is not enough material for statistical processing and creating your own classification. Tracheal cancer accounts for 0.1–0.2% of all malignant tumors. This is approximately 0.2 cases per 100 thousand people, and providing highly qualified assistance to this group of people may be difficult.

Treatment of primary tracheal cancer, even in modern conditions, is a difficult task that requires coordinated collaboration of doctors of several specialties, including surgeons performing operations on various organs, as well as significant material costs.

In most cases, tracheal tumors are secondary. Wood D. E. provides data that in 65% of cases, the cause of tracheal stenosis was tumors of the lung, thyroid gland, esophagus, less often tumors and enlarged mediastinal lymph nodes, tumors of the head and neck organs [1].

The very rare occurrence of tumors in the trachea compared to the larynx and bronchi is explained by the relatively simple structure of the trachea, the lack of complex function and protection from external stimuli. The complexity of the problem is also due to the peculiarity of tumor growth in the trachea, namely, the spread of tumor cells in the submucosal layer over an extended area from its visible borders.

Among primary tracheal tumors, squamous cell carcinoma is more often detected (41%) and adenocystic cancer (28%) [2]. In most cases of detection of squamous cell carcinoma of the trachea at the time of diagnosis, it is locally common, in a third of patients metastases to the lungs and mediastinal lymph nodes are detected, making the possibility of radical treatment doubtful.

Description of a clinical case

We present a clinical case of primary tracheal cancer.

Patient E. born in 1962, 55 years old, went to the NMRCO with complaints of difficulty breathing. He has been ill for the last 2 years, was treated by a therapist for chronic obstructive bronchitis, and received constant treatment without effect. In the last two months, I had difficulty breathing, I went to the clinic of the Rostov cancer research Institute on 09.03.2018.

When examining the larynx, no tumor was found in it, the larynx is fully mobile, the glottis is wide, sufficient for breathing. The patient underwent computed tomography of the chest and neck organs from 09.03.2017 (Fig. 1). a tumor of the upper third of the trachea was detected with a transition to the subclavian larynx 4x4x4.3 cm, narrows the tracheal lumen to 0.6 cm, involves the esophagus, the lower edge of the tumor at the level of the jugular notch."

Fig. 1. Computed tomography of the chest and neck organs in the left side projection.

Ultrasound examination of the neck lymph nodes from 09.03.2017 showed no increase in the cervical lymph nodes.

09.03.2017 the esophagus and its mouth were examined. There were no endoscopic signs of involvement of the esophageal mucosa in the process.

Due to decompensated respiratory failure caused by a tracheal tumor, narrowing its lumen to 0.6 cm, the patient was given a permanent tracheostomy for urgent indications on 21.03.2017.

During the operation, after opening the trachea, a submucosal tumor of a grayish color was found between the 1st and 2nd half-rings of the posterior and left side walls of the upper third of the trachea with a spread to the subclavian larynx. A tumor biopsy was performed. Histoanalysis No. 23644–48/17 of 27.03.2017 "G2 adenocystic cancer of the bronchial glands" was obtained.

Due to the involvement of the subclavian larynx, it was decided to perform a laryngectomy with resection of the upper third of the trachea.

18.04.2017 laryngectomy with resection of the upper third of the trachea was performed.

The walls of the esophagus are not affected. Tracheal rings up to 6 semirings were isolated, the upper third of the trachea was resected between 5 and 6 semirings, after which a tumor was isolated, originating from the upper third of the trachea (1–2 semirings, posterolateral wall on the left), spreading under the left lobe of the thyroid gland, squeezing the esophagus, but not sprouting it (Fig. 3).

Resection of the left lobe of the thyroid gland was performed, in a single block the larynx with half-rings of the upper third of the trachea, the tumor and the left lobe of the thyroid gland were cut off from the pharynx (Fig. 4). A nasoesophageal feeding tube was inserted and a wide tracheostomy was formed. Given the volume of tracheal resection, tracheoesophageal bypass surgery and voice prosthetics were not performed.

Figure 5 shows the type of macropreparation: the removed larynx with the hyoid bone and the upper half-rings of the trachea with a tumor, the drug is opened, in the tracheal lumen, the tumor is 4.5 cm light yellow, in the capsule, performing the tracheal lumen.

Postoperative histoanalysis from 25.04.2017 № 34037–42 / 17 "adenocystic cancer with spread to the larynx" № 34043–4 "resection lines have a normal structure".

The wound was healed by primary tension, all sutures and the nasoesophageal probe were removed. The patient eats through natural pathways, is engaged with a speech therapist, and the esophageal voice is formed.

Fig. 2. Fibrolaryngoscopy of the larynx.

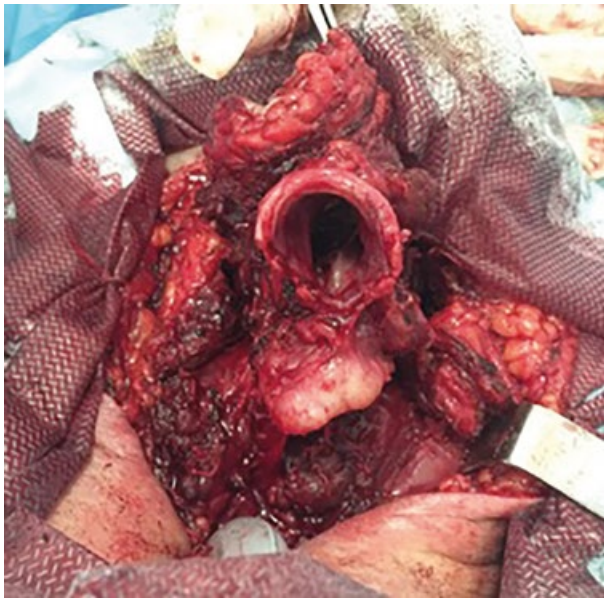

Fig. 3. Stage of separation of the upper third of the trachea with the larynx and the left lobe of the thyroid gland with a tumor.

After the operation, the patient underwent adjuvant radiation therapy on the tumor bed and lymph outflow pathway at a dose of 40g and 5 courses of adjuvant chemotherapy were performed according to the scheme: carboplatin AUC 5–6 (720 mg) intravenously drip on 1 day + etoposide 200 mg intravenously drip on 1–3 days, an interval of 3 weeks.

The patient is observed for one year after surgery without signs of relapse, regional and distant metastasis.

DISCUSSION

Among the Russian reports, the most representative is the material published in 2000. Kharchenko V. P. with co-authors who analyzed the fifty-year experience of monitoring 1062 patients with tracheal tumors, of which 46.2% are primary cancers. The authors proposed a classification of tracheal cancer and principles of diagnosis and treatment, taking into account the degree of tracheal stenosis and the presence of complications of tracheal tumors [3].

Due to the anatomical features of the trachea: the presence of sufficiently rigid cartilaginous semicircles, clinical manifestations of tracheal cancer occur at late stages and are associated with the clinic of tracheal stenosis to varying degrees of its severity.

Clinically, tracheal cancer can occur under the guise of other non-tumor diseases, such as bronchial asthma, chronic obstructive pulmonary disease. The degree of clinical manifestations is determined, for the most part, by the degree of stenosis. Often, patients with tracheal cancer complicated by stenosis of its lumen are admitted to the hospital for the first time in a state of sub — and decompensation of stenosis. This significantly complicates the possibility of diagnosis, sometimes limits the implementation of important examination methods for the patient, in particular, endoscopic. And the presence of complications of stenosis, such as purulent tracheobronchitis, pneumonia worsens the course of the disease, increases the risk of death if urgent and emergency surgical interventions are necessary.

Treatment of primary tracheal tumors can be symptomatic, aimed at restoring tracheal patency and providing breathing to the patient, which, in some cases, will allow performing radical or palliative special treatment. Depending on the level of tracheal lesion and its extent, this may be an urgent tracheostomy or various methods of endoscopic recanalization of the tracheal lumen — stenting, buging, electroexcision of the tumor, partial removal.

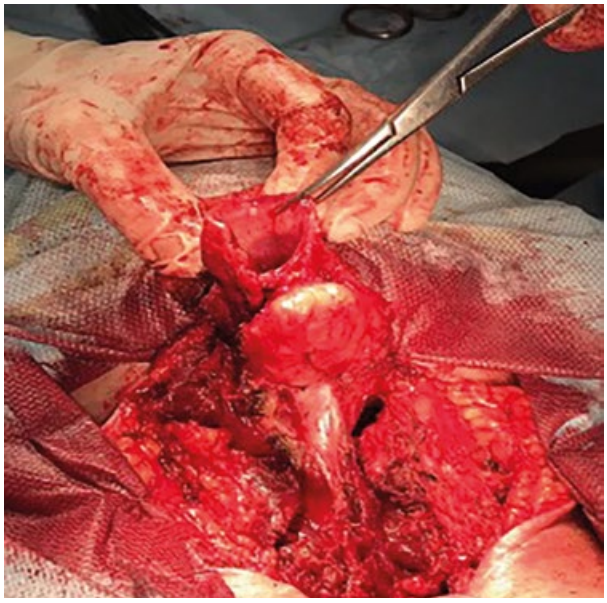

Fig. 4. Larynx with tracheal semicircles with a tumor before cutting off the preparation from the pharynx.

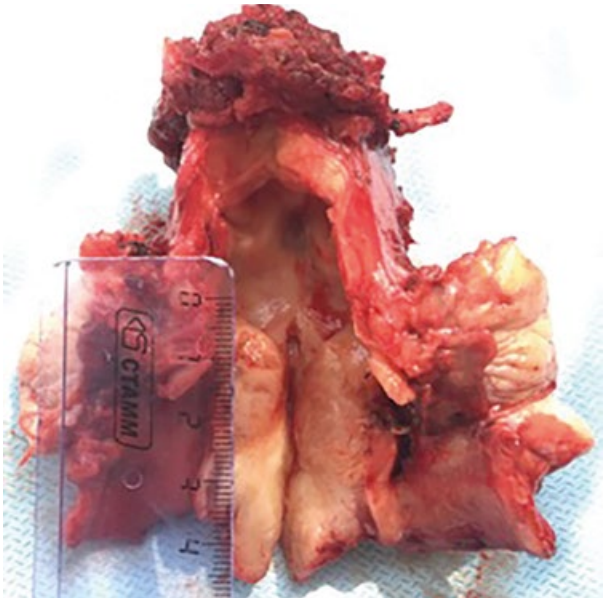

Fig. 5. The view of the removed macropreparation.

A number of authors dealing with tracheal tumors are of the opinion that the costs and efforts made for radical treatment of patients are questionable [4–7]. The trend of recent decades is the expansion of indications and opportunities for palliative care [8, 1, 5]. The possibility of recanalization of the trachea, the use of laser photocoagulation and cryodestruction of the tumor allows, in some cases, to conduct palliative radiation therapy in conditions of compensated respiration. Views on the effectiveness of radiation therapy for adenocystic tracheal cancer are different: the previous opinion about the radioresistance of adenocystic cancer is not shared by a number of authors, who provide data on five-year survival in 80% of patients treated with radiation [9, 10]. These results allowed the authors to recommend radiation treatment by the method of choice, regardless of the prevalence of the process. Proponents of surgical treatment are of the opinion that the only radical method is circular resection of the affected area of the trachea [11, 12].

There are also controversial opinions about the significance of a positive resection line and the presence of lymph node metastases. Some researchers consider them prognostic factors [13, 14, 6], but there is an opinion that the presence of tumor cells at the border of resection or metastases in regional lymph nodes does not significantly affect the long-term results of treatment in cases of adenocystic cancer [15]. When assessing the five-year survival rate of patients with adenocystic tracheal cancer, the absence of resection tumor cells and regional metastases does not significantly improve treatment results [10].

In the radical treatment of tracheal cancer, the best results are described when using a coined method of treatment with radical surgery at the first stage — the 5-year survival rate was 85.1% for adenocystic cancer and 40.9% for squamous cell carcinoma [3].

CONCLUSION

Thus, our own experience and analysis of literature data suggest that the problem of treating primary tracheal cancer is far from complete, cases of successful treatment of tracheal cancer are isolated and possible only in large multi-specialty hospitals with modern diagnostic capabilities, surgeons performing operations on areas adjacent to the trachea — the organs of the head and neck, chest, esophagus, equipped with a powerful intensive care unit, endoscopic service that owns methods of stenting the trachea and esophagus. The approach to planning the treatment of such patients should be comprehensive, involving radiotherapists, surgeons, chemotherapists, resuscitators, therapists, and in each case individual.

Authors contribution:
Chertova N.A. – research concept and design, manuscript writing, material processing, scientific editing.
Ulianova Yu.V. – surgical procedure; collection, analysis and interpretation of data.
Volkova V.L. – surgical assistance, analysis and interpretation of data.
Aedinova I.V. – scientific and technical editing

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Information about author:

Natalia A. Chertova* – Cand. Sci. (Med.), surgeon, Department of tumors of head and neck National Medical Research Centre for Oncology of the Ministry of Health of Russia, Rostov-on-Don, Russian Federation. SPIN: 7051-4574, AuthorID: 473541

Yulia V. Ulianova – Cand. Sci. (Med.), surgeon, Department of tumors of head and neck National Medical Research Centre for Oncology of the Ministry of Health of Russia, Rostov-on-Don, Russian Federation. SPIN: 1276-9063, AuthorID: 457370

Marina A. Engibaryan – Dr. Sci. (Med.), head of the head and neck tumors Department National Medical Research Centre for Oncology of the Ministry of Health of Russia, Rostov-on-Don, Russian Federation. SPIN: 1764-0276, AuthorID: 318503

Viktoria L. Volkova – Cand. Sci. (Med.), senior researcher of the head and neck tumors Department National Medical Research Centre for Oncology of the Ministry of Health of Russia, Rostov-on-Don, Russian Federation. SPIN: 8289-6300, AuthorID: 290072

Irina V. Aedinov – Cand. Sci. (Med.), senior researcher of the head and neck tumors Department National Medical Research Centre for Oncology of the Ministry of Health of Russia, Rostov-on-Don, Russian Federation. SPIN: 9904-0539, AuthorID: 734387