

THE CURRENT STATE OF THE PROBLEM OF LARYNGEAL PAPILOMATOSIS IN CHILDREN (LITERATURE REVIEW)

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Abstract

Despite the successes achieved in recent years in solving the problems of respiratory papillomatosis, the most important issues in terms of diagnosis, surgical and conservative treatment (anti-relapse), as well as forecasting the course and outcome of the disease remain unresolved. Therefore, the problem of treating respiratory papillomatosis is one of the most important and relevant in otorhinolaryngology. Its significance is due to the fact that, affecting the larynx, papillomatous growths narrow its lumen, which leads to impaired vocal and respiratory function. Chronic respiratory hypoxemia, which develops in this regard, is the cause of violations of the physical, psychomotor and emotional development of the child.

Keywords: laryngeal papillomatosis, larynx, virus.

Introduction

Laryngeal papillomatosis (PH) is one of the most difficult problems of modern pediatric otorhinolaryngology. In recent years, there has been a tendency to increase the incidence of laryngeal papillomatosis all over the world, including in the Republic of Tajikistan. The importance of this problem is due to frequent relapses, growth and a tendency to malignancy, which causes a disorder of important body functions - respiratory and vocal [4]. This, in turn, leads to a drop in living standards, the formation of social readaptation of patients who require the attention of specialists and certain psychological correction. The treatment and rehabilitation of children suffering from PG is an important problem of modern clinical medicine.

There are juvenile respiratory papillomatosis (in children and adolescents) and papillomatosis in adults. Abroad, the division of laryngeal papillomatosis is proposed not into "juvenile" and "adult laryngeal papillomatosis", but into "aggressive" and "non-aggressive". PG is considered "aggressive" in patients who have undergone 10 or more endolaryngeal interventions or more than 3 operations per year, as well as when the process spreads to the sub-vocal space. Juvenile laryngeal papillomatosis (Childhood-onset recurrent respiratory papillomatosis) is a disease, in most cases caused by perinatal infection of a child from a sick mother with HPV of low oncogenic risk (HPV 6 and HPV 11 types). It usually manifests itself in children under the age of 10-14 years. Children suffering from juvenile recurrent laryngeal papillomatosis are more often first-born, born to young mothers, while the birth is vaginal [3].



Juvenile papillomas, as a rule, are common. They are prone to spread to all parts of the mucous membrane of the larynx, rapidly relapse, especially in young children, causing respiratory stenosis, which requires frequent repeated operations to remove papillomas, they do not become malignant. Recently, a hypothesis has emerged according to which the development of neoplasms in the larynx can spontaneously end at any moment. Spontaneous remission is observed approximately in 25-30% of cases, which may be due to puberty, immunological restructuring ("maturation") of the body or other causes [1].

Although juvenile papillomatosis has a benign course, since malignancy into a malignant tumor rarely occurs, it belongs to the section of severe, often disabling pathology. This is due to the recurrent course of the disease, the lack of etiological treatment [11]. In this regard, some authors use the terms "recurrent laryngeal papillomatosis" (RPG) or "recurrent respiratory papillomatosis" (RRP) to refer to juvenile respiratory papillomatosis.

The incidence of damage to the mucous membrane of the respiratory tract in patients with juvenile respiratory papillomatosis (YRP) varies. Isolated laryngeal lesion is most common - in 55 - 57.5% of cases, in 12 -15.4% of cases there is a combined lesion of the larynx and trachea, and only in 0.4% of cases there is an isolated lesion of the trachea. Extremely rarely, in severe forms of the disease, the process spreads to the mucous membrane of the bronchi and lungs. Data on the incidence of lower respiratory tract papillomatosis vary and range from 5% to 28.8% of cases. The reason for the spread of papillomas to the lower parts of the respiratory tract may be frequent operations, but most often the occurrence of papillomatosis in the trachea, bronchi and lungs is observed after tracheotomy and intubation of the trachea [2-7].

The true prevalence of respiratory papillomatosis remains unknown. The prevalence of laryngeal papillomatosis in Denmark, on average, is about 3.84 per 100,000 population; among children - 3.62 per 100,000, and among adults - 3.94 per 100,000 people. In the United States, about 2,500 new cases of recurrent respiratory papillomatosis are reported each year in children (4.3 per 100,000 children) and 3,600 cases in adults (3.8 per 100,000). Moreover, from 1979 to 2009, the frequency of new cases increased from 0.4 to 3.21 per 100,000 among public health care providers and to 1.98 per 100,000 among private ones. In Canada, the prevalence of URP among children under 14 years of age is 0.24 per 100,000 people, in the UK - 1.42 per 100,000 people [8].

The prevalence of laryngeal papillomatosis in the Moscow region is 2.3 per 100,000 children and 1.95 per 100,000 adults [2]. According to Belarusian researchers, the frequency of new cases of URP in the Republic of Belarus has increased several times over the past decade, and most of the patients repeatedly undergo inpatient treatment (from 2 to 7 times during the year) [1]. Domestic statistics do not have data on the incidence of RP in the Republic of Tajikistan.

In 28% of cases, RRP occurs in the first 6 months of life. About 25% of cases are detected before the age of 1 year, followed by a peak of 75% at the age of 3 to 5 years, which is probably due to the so-called physiological immunodeficiency, functional immaturity of the immune system and the IFN system, and the rest during puberty [3].

A number of authors [9] found that in 85.7% of cases, the disease developed before the age of 5, and the peak of clinical manifestations was noted at the age of 4. According to these authors, PG occurs more often in first-born children (85.7%), somewhat less often in those born with a second child (14.3%). An unfavorable "family background" for HPV was noted in 71.4% of cases.



According to the results of foreign authors [10] who conducted a retrospective analysis of the database for 2002-2011 in one of the hospitals in West Africa, juvenile recurrent papillomatosis was found in 8.8% of 307 children with laryngeal pathology who were under observation. The largest number of children with laryngeal papillomatosis (51.9%) were aged 6 to 10 years. Patients of low socio-economic class accounted for slightly more than half of the surveyed (51.9%), while the middle and upper socio-economic strata accounted for 22.2% and 25.9%, respectively. Recurrence of the disease was observed in 63.0% of patients.

The observations of the authors [5] indicate that the majority of children were born to young mothers from families with low socio-economic status.

Papillomatosis in adults (Adult-onset recurrent respiratory papillomatosis) more often debuts in 20-30 years and after 60 years. The ways of infection are through sexual contact or indirect contact with anogenital lesions [7].

Papillomas that occur in adults, as a rule, are single. In adults, papillomas occur most often against the background of a pathologically altered mucous membrane as a result of chronic inflammation, previously transmitted infectious diseases, frequent microtraumas, alcohol consumption, as well as exposure to chemical and physical factors, various carcinogenic substances [12].

A distinctive feature is that laryngeal papillomas in adults usually manifest as a slow-growing, localized formation, and are more often malignant within two to three years (especially caused by HPV types 11 and 16) [13].

According to a number of authors [2], out of 42 patients who were referred to the "Research Institute of Oncology" with a diagnosis of "papilloma" or "benign laryngeal formation", 32 people turned out to be smokers with a long smoking period, 5 patients had a smoking period of 20-25 years, 7 – 30 - 40 years. In 3 cases, the smoking experience was more than 50 years. Laryngeal epithelial dysplasia has been reported in patients who have smoked for more than 50 years.

Malets E.L. and co-authors point to the prevalence of the common form of papillomatosis (51.8% of cases) in relation to the limited form of PG (48.2% of cases) [14].

When examining children with laryngeal RRP, a number of authors [2] found a common form in 5 out of 7 children, one child had a limited form of RRP. In 1 case, papillomatous growths passed into the trachea and oropharynx.

According to Chernokur A.A., the localization of the pathological process in the examined patients with laryngeal papillomatosis was as follows: the actual vocal apparatus of the larynx – in 10 people, the vestibular department and the actual vocal apparatus of the larynx – in 3 patients [2]. Svistushkin V.M. and co-authors examined 50 patients (men - 31 people, women - 18 people) aged 18 to 65 years with a diagnosis of PG, in 72% of patients (18 people) papillomatous formations were found on the vocal fold and anterior commissure, in 20% (5 people) papillomas were located only on In one vocal fold, papilloma growths were found in the subclavian space in 8% of patients (2 people) [5].

In 30 patients [3], single papillomas were found in the area of the vocal folds, in 2 papillomas were detected in the posterior commissura, and in 3 more, the presence of papillomas was observed in several parts of the larynx.

Volkova K.B. during the examination of 25 patients with laryngeal papillomatosis in 3 patients, she found papillomas on the lingual and laryngeal surfaces of the epiglottis, in 5 patients - in the



area of the anterior commissura, in 11 patients - on one vocal fold with transition to the anterior commissura, in 6 patients - on both vocal folds and anterior commissura [11].

According to the data of foreign authors [9], RRP was most often found on the true vocal folds and in the anterior commissariat. The viral factor is most often isolated in the etiology of papillomatosis, which was proved by the authors, who managed to reproduce this tumor by autoinoculation of its filtrate. It is also believed that papillomatosis is a kind of diathesis that manifests itself only in individuals with an individual predisposition to it [8].

Human papillomavirus viruses belong to the genus papillomavirus, belongs to subgroup A of the family Papoviridae. The human papillomavirus has small virions and is devoid of a membrane membrane. The virus genome is represented by 2-helical ring-twisted DNA and includes about 8000 base pairs containing a genetic triplet code that stores the memory of the structure of DNA molecules and proteins. Some viruses multiply in epithelial cells and exit cells that are destined to die. Other viruses are embedded in the DNA of the host cell, changing the cell, they are always in the infected cell and in its future generation, while the viral genomes retain the ability to determine the origin of new viral particles [5].

Conclusion

An analysis of the literature data showed that children with respiratory papillomatosis have T-cell immunodeficiency, which is most likely due to the cytotoxic effect of the virus or to the immaturity of the immune system, a genetically predetermined delay in the maturation of the immune system of children with respiratory papillomatosis.

Based on the analysis of literature data, it can be concluded that the etiological factor of papillomatosis is the human papillomavirus, complication factors during pregnancy and childbirth, chronic carriage of bacterial viral infection, HPV coinfection with CMV, EBV, HIV, concomitant immunopathology. The clinical course of the disease is influenced by HPV types. The activation of laryngeal papillomatosis is facilitated by shifts in the immune system, hormonal and metabolic changes. Determining the parameters of the immune system characterizing antiviral immunity is important for predicting the course of the pathological process in respiratory papillomatosis.

References:

1. Василевский И.В. Клинико-фармакологическая стратегия использования в педиатрической практике индукторов интерферона /И.В.Василевский //Педиатрия. Восточная Европа. - 2015. - № 1. - С. 88 - 100.
2. Вайцеховская А.Е. Папилломавирусная инфекция человека – одна из наиболее часто диагностируемых инфекций в мире /А.Е.Вайцеховская [и др.] //Вестник Ферона. - 2017. - № 4. - С. 3 - 5.
3. Влияние вакцинопрофилактики против ВПЧ и ПВИ на состояние местного и общего иммунитета у беременных / Е.В.Данилова [и др.] //Вестник Ферона. - 2017. - № 4. - С. 6 – 13
4. Волкова К.Б. Сравнительный анализ результатов лечения двух групп больных папилломатозом гортани /К.Б.Волкова, А.С.Марченко //Рос. оторинолар. - 2016. - № 1. - С. 48 - 51.



5. Волкова К.Б. Комбинированный способ ведения больных папилломатозом гортани в сочетании хирургического и консервативного лечения: автореф. дис. ...канд. мед. наук: 14.01.03 / Волкова Карина Борисовна. – М., 2017. – 24 с.
6. Вирус папилломы человека. Профилактика ВПЧ-ассоциированных заболеваний / Ф.Ч.Шахтактинская [и др.] // Пед. фармакол. – 2015. – Т. 12, № 1. – С. 74 – 78.
7. Горкина О.К. Характеристика показателей гуморального иммунного ответа слизистой оболочки ротовой полости у пациентов с распространенным папилломатозом гортани, осложненным рубцовым стенозом / О.К.Горкина, П.В.Павлов // Рос. оторинолар. – 2015. – № 6. – С. 31 - 35.
8. Гусейнов И.Г. Комбинированное лечение рецидивирующего папилломатоза гортани с применением углекислотного лазера и фотодинамической терапии: автореф. дис. ...канд. мед. наук: 14.01.03 / Гусейнов Исмаил Гасанович. – М., 2018. – 42 с.
9. Диагностическая ценность виртуальной ларингоскопии / Я.Л.Манакова [и др.] // Russian Electronic J. of Radiology. – 2015. – Т. 4, № 5. – С. 24 - 32.
10. Достижения и перспективы использования лазерного излучения в оториноларингологии / А.С.Лапченко [и др.] // Материалы XIX съезда оторинолар. России: Казань, 2016. – С. 46.
11. Дьяков И.А. Фармакоэкономическая эффективность квадριвалентной вакцины для профилактики ВПЧ-ассоциированных заболеваний / И.А.Дьяков // Мед. совет. – 2016. – № 19. – С. 103 – 108.
12. Дьякова С.Э. Новые возможности исследования функции внешнего дыхания у детей / С.Э.Дьякова, Ю.Л.Мизерницкий // Рос. вест. перинатол. и педиатрии. – 2018. – Т. 63, № 4. – С. 79 - 83.
13. Егоров В.И. Папилломатоз гортани у детей: современное состояние проблемы / В.И.Егоров, Д.М.Мустафаев, А.О.Кочнева // Вестн. оторинолар. – 2018. – Т. 83, № 5. – С. 84 - 90.
14. Ершов Ф.И. Использование индукторов интерферона при вирусных инфекциях / Ф.И.Ершов, А.Н.Наровлянский // Вопросы вирусологии. – 2015. – № 2. – С. 5 - 10.
15. Жайсакова Д.Е. Комплексный подход в лечении папилломатоза гортани / Д.Е.Жайсакова, Д.М.Муканова, М.Б.Калтаева // Вестн. КазНМУ. – 2017. – № 3. – С. 94 - 95.

