PATHOGENESIS OF PHARYNGITIS ETIOLOGY IN YOUNG CHILDREN

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Annotation: In about 3% of children, viral infections of the airways that develop in early childhood lead to narrowing of the laryngeal lumen in the subglottic region resulting in symptoms such as hoarseness, abarking cough, stridor, and dyspnea. These infections may eventually cause respiratory failure. The disease is often called acute subglottic laryngitis. Terms such as pseudocroup, croup syndrome, acute obstructive laryngitis and spasmodic croup are used interchangeably when referencing this disease. This article discusses the pathogenesis of the etiology of laryngitis in young children.

Keywords: Croup, inspiratory dyspnoea, laryngeal obstruction, stridor, subglottic laryngitis.

In children, laryngitis is an inflammatory disease of the upper respiratory tract, a pathological condition characterized by disorders of the vocal cords and respiratory system. In children, laryngitis is characterized by cough, hoarseness, fever, and difficulty breathing. In children, the diagnosis of laryngitis is made by a pediatric otolaryngologist based on clinical signs, laryngoscopy, virological, or bacteriological examination. In children, laryngitis is an inflammation of the mucous membranes of the larynx and vocal cords. Laryngitis is more common in young children and preschoolers. In children, acute laryngitis can lead to obstruction of the upper respiratory tract, in which case immediate medical attention is required. The symptoms of laryngitis mentioned above should not be ignored by parents, pediatricians and pediatric otolaryngologists. In children, laryngitis can be caused by infection, allergies, diathesis, psycho-emotional and other factors. In most cases, laryngitis is caused by viruses: parainfluenza, influenza, herpes simplex virus, measles, adenovirus and others. Bacterial laryngitis is rare in children, but is very severe. In these cases, the main causative agents may be hemophiliac type b, staphylococcus, pneumococcus, hemolytic streptococcus, group A bacteria, Bordeaux bacillus (whooping cough), and others. As a result of prophylactic vaccinations against diphtheria, diphtheria laryngitis is almost non-existent in children. The peak period of laryngitis in children is winter. The most common causes of the disease are colds, nasal breathing disorders, hypovitaminosis, immunosuppression, rhinitis, pharyngitis, adenoiditis, and tonsillitis.

Children with lymphatic-hypoplastic diathesis are particularly prone to laryngitis. Allergic laryngitis in children is caused by inhalation of various chemical vapors, dust, animal dander into the respiratory tract, improper use of certain aerosol preparations, and allergic reactions to food. Occasionally, laryngitis can be caused by vocal cords, laryngeal spasms caused by strong emotional states, laryngeal injuries, foreign body aspiration, re-emergence of acid in the stomach, and airway obstruction. The development of laryngitis in children depends on the anatomical and physiological characteristics of the child's airways, as well as the age of the child, the narrowing of the laryngeal cavity and the funnel-shaped larynx, the innervation of the larynx, the weakness of the respiratory muscles. This is why laryngitis causes acute airway obstruction and acute respiratory failure.

It is important to remember that in children, swelling of the mucous membranes of the larynx and even a thickness of 1 mm leads to a half-narrowing of the laryngeal cavity. In addition, reflex spasm and mechanical obstruction of the muscles also play a role in upper airway obstruction. Narrowing of the larynx and difficulty in breathing occur mainly at night due to changes in the lymphatic and circulatory system of the larynx at night, a decrease in the number of breaths during sleep. In children, laryngitis: acute and chronic; uncomplicated and complicated forms are distinguished. Based on endoscopic examination, laryngitis in children is divided into types of otolaryngology - acute catarrhal, edematous and phlegmonous, chronic catarrhal, hypertrophic and atrophic laryngitis. In catarrhal laryngitis, the inflammatory process occurs only in the mucous membrane of the larynx, and in the form of phlegmon, it also affects the submucosa, musculature, ligaments and joints. In hyperplastic laryngitis, thickening of the laryngeal mucosa and hyperplasia are observed. Atrophic laryngitis is characterized by thinning of the mucous membrane. Catarrhal and hypertrophic forms of the disease are common in children. Depending on the prevalence of the inflammatory process, laryngitis can take the form of laryngitis, diffuse laryngitis and laryngotracheobronchitis. In children, clinical signs of laryngitis appear 2-3 days after the onset of acute respiratory infection. Children complain of weakness, pain when swallowing, difficulty swallowing, fever, headache, difficulty breathing and rapid breathing. In children with laryngitis, the voice may change: the voice may be muffled, hoarse, weak, or completely silent. A dry cough develops, and after 3-4 days it turns into a wet cough. Uncomplicated laryngitis can usually last 5-10 days. Exacerbation of laryngitis in young children leads to narrowing of the larynx and the development of acute laryngotracheitis. Chronic laryngitis is more common in older children. Symptoms may include transient or persistent dysphonia, excessive tiredness, itchy throat, and reflex cough. When laryngitis attacks, the above symptoms are most pronounced. For the diagnosis of laryngitis in children, it is sufficient for a pediatric otolaryngologist to collect a medical history and refer to clinical signs. Special

otolaryngological examinations include pharyngoscopy, rhinoscopy, otoscopy, and palpation of the lymph nodes in the neck. The main method of examination in the diagnosis of laryngitis in children is laryngoscopy. Examination reveals hyperemia of the mucous membrane of the larynx, edema, increased vascular velocity, or petechial vascular rupture in the mucous membrane. When you make a sound, the vocal cords thicken and do not close completely. Voice changes caused by laryngitis in children require specialist examinations, such as by a phonist, speech therapist, or phonoped. In children, laryngitis is an inflammatory disease of the upper respiratory tract, a pathological condition characterized by disorders of the vocal cords and respiratory system.

Acute laryngeal obstruction most frequently occurs during the course of a viral respiratory tract infection in young children. Acute laryngeal obstruction in the course of a viral infection can also be caused by Respiratory syncytial virus. In unvaccinated children, the condition can be observed in measles. Herpes simplex virus has also been associated with a severe course of the disease. Less commonly, acute laryngeal obstruction can also be observed in other bacterial respiratory infections such as epiglottitis, diphtheria and fibrinous laryngotracheobronchitis. Mycoplasma pneumoniae is also mentioned as an etiological factor.

The predisposing factors for acute subglottic laryngitis in children are the shape and size of the larynx, a tendency for submucosal swelling and airway hyperreactivity. A viral infection of the respiratory tract is usually associated with a diffuse inflammatory reaction of the airway mucous membrane, with the presence of congestion, mucosal swelling, epithelial necrosis and desquamation. The intensity of inflammation depends, among other things, on the type of pathogen as well as on individual predispositions. Symptoms of acute subglottic laryngitis are caused by edema within laryngeal mucosa, leading to narrowing of the lumen and subsequently, airflow disturbances. Laryngeal obstruction is observed only in some children with respiratory tract infections, possibly due to anatomic predisposition or abnormal immune response. The most common location of obstruction in children is the subglottic region. This is because of the specific anatomical structure of the larynx in this age group. This is the narrowest part of the airway. In the larynx, especially in the subglottic region, the submucosa contains significant amounts of connective tissue which can easily get swollen with clinically significant obstruction as a result of the action of inflammatory mediators. Because of its shape and structure, there is no possibility for the cricoid cartilage to dilate so swelling causes a reduction in the internal diameter. This leads to an increase in airflow resistance, which is inversely proportional to the fourth power of the radius of the laryngeal diameter. In the case of turbulent flow, this resistance can rise to the fifth power.

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