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SOME FEATURES OF ACUTE STENOSING LARYNGOTRACHEITIS IN CHILDREN

Abstract. Acute stenosing laryngotracheitis in children is often a complication of acute respiratory dis ease of bacterial and viral etiology. Most often, laryngotracheitis is diagnosed in children under 3-5 years of age. This is due to the anatomical and physiological features of the larynx development and the imperfection of the immune defense of its mucous membrane. This article presents data on the features of acute stenosing laryngotracheitis in children. Common symptoms of acute laryngotra cheitis in children include the following manifestations: intoxication with fever, headache, chills, unpleasant sensations of irritation, dryness and pain in the throat. The article describes the causes, pathogenesis, classification, clinical manifestations, differentiated approach to the diagnosis and treatment of acute stenosing laryngotracheitis in children. Acute stenosing laryngotracheitis re quires a quick response, since without emergency medical care, severe complications of the disease may occur, including death. It is necessary to carry out complex therapy including antihistamines, mucolytic, anti-inflammatory and immunomodulatory drugs, as well as inhalation therapy to restore airway patency.

Keywords: acute stenosing laryngotracheitis, children, clinical manifestations, diagnosis, treatment.

Аннотация. Острый стенозирующий ларинготрахеит у детей часто является осложнением острого респираторного заболевания бактериальной и вирусной этиологии. Чаще всего ларинготра хеит диагностируется у детей в возрасте до 3-5 лет. Это связано с анатомо-физиологическими особенностями развития гортани и несовершенством иммунной защиты её слизистой обо лочки. В данной статье приведены данные о особенностях острого стенозирующего лирин готрахеита у детей. Общие симптомы острого ларинготрахеита у детей включают в себя сле дующие проявления: интоксикация с повышением температуры тела, головной болью, озно бом, неприятные ощущения першения, сухости и боли в горле, В статье изложены причины, патогенез, классификация, клинические проявления, дифференцированный подход к диагно стике и лечению острого стенозирующего ларинготрахеита у детей. Острый стенозирующий ларинготрахеит требует быстрого реагирования, так как без оказания неотложной медицин ской помощи могут возникнуть тяжелые осложнения

заболевания, вплоть до летального ис хода. Необходимо провести комплексную терапию, включающую антигистаминные, муколи тические, противовоспалительные и иммуномодулирующие препараты, а также ингаляцион ную терапию для восстановления проходимости дыхательных путей.

Ключевые слова: острый стенозирующий ларинготрахеит, дети, клинические про явления, диагностика, лечение.

Relevance. Acute stenosing laryngotracheitis (croup) is common in children aged 1 to 3 years. In 20–40% of patients, the disease is accompanied by severe upper respiratory tract obstruction [1, 3, 5].

In such situations, the child's severe condition in the first hours of illness forces parents to seek medical attention from a general practitioner at a clinic or an ambulance. The primary care physician's task is to provide emergency medical care to the patient, determine indications for hospitalization, and teach parents nebulizer techniques and strategies for intervention before the doctor arrives.

Acute stenosing laryngotracheitis in children can often be a complication of an acute respiratory infection of bacterial or viral etiology. Laryngotracheitis can often masquerade as an acute respiratory infection (ARI), with a gradual development of the clinical picture of the disease, characterized by a deterioration in the child's general condition during a prolonged course of the ARI [1, 2, 4]. A differentiated approach to the diagnosis and treatment of allergic and infectious stenotic laryngotracheitis is often necessary. In some cases, especially when typical symptoms appear in young children, emergency care and hospitalization may be required. In this disease, the pathological process involves the mucous membranes of the larynx and pharynx, leading to the development of local inflammatory edema with minimal mucus production. This provokes attacks of a dry, often barking cough.

Causes of the disease. The main factors contributing to the development of acute stenosing laryngotracheitis include: adenovirus infections and seasonal influenza; chronic inflammatory diseases of the nasopharynx, such as tonsillitis and adenoiditis; bacterial sore throats caused by coccal flora; fungal infections of the mouth and pharynx; allergic predisposition and autoimmune reactions; dry indoor air and exposure to tobacco smoke; insufficient fluid intake; chronic inflammatory processes in the paranasal sinuses [1,4].

A distinction is made between acute primary laryngotracheitis, which occurs in a generally healthy state as a result of exposure to pathogenic factors (mechanical, thermal, chemical, allergic, and infectious), and acute stenosing laryngotracheitis, which is a complication of long-standing colds.

Clinical manifestations of the disease. The disease begins with catarrhal symptoms, characterized by swelling and hyperemia of the mucous membrane, scanty sputum production, general malaise, hoarseness to complete aphonia, and a dry, paroxysmal, often barking cough with difficult-to-separate sputum, which gradually spreads to the lower larynx and trachea. The patient's body temperature

gradually normalizes on days 5-7 of illness. The cough may persist for 2-3 weeks [13]. The pathological process is often accompanied by the following clinical manifestations: pain, which is primarily a symptom of acute forms of the disorder; impaired normal breathing, leading to shortness of breath during physical exertion, and sometimes even at rest; hoarseness in both children and adults; and swelling of the airways, accompanied by wheezing and wheezing in the chest, which are audible without further examination.

Diagnosis of the disease. To identify the pathogen, sputum analysis with bacteriological culture and antibiotic susceptibility testing is performed [10, 14]. All patients are prescribed a complete blood count and urine test, and if diagnosis is difficult, tracheoscopy, bronchoscopy, and microlaryngoscopy are recommended. If the cough persists for a long time, a chest X-ray is required to rule out acute pneumonia. Allergic laryngotracheitis requires a special approach to differential diagnosis, as antibacterial and antiviral drugs may be contraindicated in this case. Their unjustified use can worsen the patient's condition, causing false croup due to increased edema.

To determine the allergic nature of the disease, screening tests for allergens are performed. It is important to note that allergic laryngotracheitis usually does not cause fever [7].

Treatment. Stenotic laryngotracheitis in children requires emergency medical attention, as its absence can lead to suffocation and death. Until the doctor arrives, it is recommended to give the child an antihistamine, provide fresh air, sit them up, or elevate the head of the bed. If signs of increasing suffocation appear, an ambulance must be called immediately.

In most cases, acute laryngotracheitis in children is treated at home. Hospitalization is required if there are signs of respiratory failure and the risk of developing croup. Antibacterial therapy is not indicated for acute stenosing laryngotracheitis in children, as the disease is most often viral in nature. Bacterial laryngitis with the development of croup is extremely rare. However, activation of bacterial flora due to an acute respiratory infection or nosocomial infection can contribute to the development of complications.

The need for antibacterial therapy for acute stenosing laryngotracheitis is considered in the presence of:

• febrile fever (over 38°C) for more than 3 days;

• clinical signs of pneumonia (febrile fever lasting more than 3 days, lethargy, pallor, decreased appetite, asymmetry of physical examination, shortness of breath without signs of acute bronchial obstruction);

• bacterial complications of the ENT organs, confirmed during an examination by an otolaryngologist and by peripheral blood tests.

The main cause of laryngeal stenosis in children is influenza or parainfluenza infection. [13] use of the complex homeopathic preparation aflubin is suggested as an etiotropic treatment. At the same time, in each specific case, especially with croup syndrome in a child, it can be difficult to exclude the role of bacterial flora. The use of aflubin in combination with antibiotic therapy significantly shortens the

duration of therapy and reduces the incidence of antibiotic side effects [6-12]. V.V. Karpov and his colleagues were the first to use a course of nedocromil sodium (Tailed Mint, Rhone-Poulenc Rorer, France) lasting 8–12 weeks to prevent recurrences of stenosing laryngotracheitis. This method proved highly effective in 90% of cases [8, 10].

Bacterial lysates such as Bronchomunal and Ribomunil, which stimulate both specific and nonspecific immunity, were used to treat children with recurrent stenosing laryngotracheitis [11, 13]. Complex therapy also included Bifiform, a combination drug containing natural bifidobacteria and enterococci, fenspiride hydrochloride with anti-inflammatory properties [12, 15], as well as retinyl acetate or the vitamin complex "Triovit," containing vitamins C, E, and β-carotene.

Patients with severe disturbances in brain bioelectrical activity were additionally prescribed the nootropic drug phenibut.

All patients (100%) received inhalations using NE-29 compression inhalers and OMRON N-U17 ultrasonic nebulizers. The frequency and duration of treatments depended on the degree of stenosis and ranged from 2 to 4 sessions of 15 minutes per day. The initial medication was selected based on the clinical course and stage of croup. Steam or cold-air inhalations were not used [11,14].

The primary treatment for laryngotracheitis is eliminating the cause of the pathological process in the larynx and trachea. Therefore, the room is wet-cleaned at least twice a day. Rooms are ventilated every 3 hours. Drinking plenty of alkaline fluids (mineral water, milk with baking soda, certain juices and fruit drinks) is recommended. This stimulates expectoration and improves the patient's condition. A high body temperature is an indication for antipyretic medications. Typically, an antiviral medication (Ergoferon, Anaferon, Arbidol, Amiksin, Kagocel) is prescribed within the first 48 hours of the onset of clinical symptoms. If the body temperature has not returned to normal within 3 days of treatment, antibiotics (Ciprofloxacin, Azithromycin, Sumamed, Amoxiclav, Erythromycin, Ampicillin, Klacid, and others) are added to the regimen.

Antihistamines are mandatory even for non-allergic cases. Medications such as Suprastin, Tavegil, Ketotifen, Pipolfen, and Cetrin help reduce swelling of the mucous membrane and facilitate breathing.

To improve expectoration, mucolytic medications are used, including ACC, Lazolvan, Bromhexine, and Libexin. After 10-12 days, prescribing the antitussive Sinekod is advisable; it suppresses the cough reflex and eliminates unproductive cough, thereby promoting accelerated mucosal recovery. In children, inhalations with Pulmicort using a nebulizer may be effective. Herbal chest infusions and reflex-based methods, such as mustard plasters and compresses, are also acceptable.

Conclusion. Thus, acute constrictive laryngotracheitis requires a rapid response, as severe complications, including death, may develop without emergency medical care. Comprehensive therapy is necessary, including antihistamines, mucolytics, anti-inflammatory, and immunomodulatory medications, as well as inhalation therapy to restore airway patency. When

prescribing medications, the type of disease (viral, bacterial, or allergic) must be taken into account to avoid ineffective treatment. Strengthening the immune system, physical activity, and a balanced diet are important.

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