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LARYNCH DEFECT IN RHEUMATOID ARTHRITIS

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abstract

Rheumatoid arthritis is one of the many destructive systemic diseases of the body, which has a progressive character, characterized by periods of remissions and exacerbations. About 3% of the adult population of the world suffers from rheumatoid arthritis, which predominantly affects small peripheral joints. In 20% of patients with rheumatoid arthritis, extra-articular rheumatoid lesions are observed in various organs of the body. Laryngeal manifestations of rheumatoid arthritis can be in the form of: myositis, neuropathy of the recurrent laryngeal nerve, granulomas, arthritis of the cricoarytenoid joints and rheumatic submucosal nodules. In the article, the authors present a literature review of laryngeal lesions in rheumatoid arthritis (clinical symptoms, diagnosis and treatment), describe a clinical case from their own practice.

Rheumatoid arthritis is a systemic connective tissue disease with a predominant lesion of small joints as an erosive-destructive polyarthritis of unclear etiology with a complex autoimmune pathogenesis [1, 2]. In the adult population, the disease affects 3% of the population; among children, up to 35 cases per 100 thousand of the child population are recorded [1, 3]. Rheumatoid arthritis is characterized by the appearance of inflammatory infiltrates in the synovial membrane of the joints, consisting of mononuclear cells, mainly T-lymphocytes, and also activated macrophages and plasma cells, some of which produce rheumatoid factor. Synovial cells proliferate intensively, the synovial membrane swells, thickens, forms outgrowths into the underlying tissues [1, 3]. Lesions of the upper respiratory tract in rheumatoid arthritis are common [4, 5]. Laryngeal manifestations of rheumatoid arthritis can be in the form of: myositis, neuropathy recurrent laryngeal nerve, granulomas, arthritis of the cricoarytenoid joints, and rheumatic submucosal nodules [2, 3, 6, 7]. Arthritis of the cartilage of the larynx and rheumatoid nodules in the vocal folds can cause upper airway obstruction [8–10]. During the last decades of the last century, the incidence of laryngeal involvement in rheumatoid arthritis increased from 31% to 75%, which is most likely due to improved diagnosis. At autopsy, this figure reaches 90% [11-13]. In the early stages of the disease, patients report a feeling of fullness or tension, a feeling of a foreign body in the throat, in the later stages hoarseness, dysphagia, pain, cough and shortness of breath appear [2-5]. E. Murano and his co-authors, a change in the quality of the voice may be the first manifestation of the disease before the diagnosis of rheumatoid arthritis [14]. A change in the voice appears in the presence of rheumatic nodules in the vocal folds or when the cricoarytenoid joint is

affected.

The presence of rheumatic nodules in the vocal folds disrupt their vibrations, thus changing the timbre and amplitude of the voice. Sometimes a change in the voice is observed with simultaneous damage to the vocal folds by rheumatic nodes and arthritis of the cricoarytenoid joint [15]. In case of damage to the cricoarytenoid joint, dysphonia, dysphagia, and edema of the corresponding area of the larynx are noted. This condition differs from a neurogenic lesion (neuritis or injury of the corresponding recurrent nerve) in that the mucous membrane in the region of the arytenoid cartilage is hyperemic, edematous, and the contours of the cartilage are smoothed. . In this case, the vocal fold occupies either an intermediate position between the positions during its abduction and adduction (intermedial position), or a position approaching the middle ones (paramedial position). If there is a bilateral lesion of the cricoarytenoid joint, in the topr and paramedial position, suffocation occurs, often requiring emergency tracheotomy (for all stenosis of the larynx of inflammatory and infectious origin, requiring emergency care, a lower tracheotomy is performed, preferably at the level of the 3rd–4th tracheal ring, about further from the focus inflammation so as not to cause infection of the tracheostomy). When the inflammatory process subsides, the mobility of the vocal fold may remain limited; when the joint ends in ankylosis, its complete immobility occurs.

After the disappearance of acute phenomena, the joint area remains edematous for some time, its mobility is limited, which affects the phonatory function of the larynx. When permanent ankylosis of the affected joint occurs, the phenomenon of repercussion weakening of the function of the recurrent nerve on the side of the lesion is observed as a result of atrophy of the neuromuscular apparatus due to "lack of activity" [2, 3, 7–12]. Damage to the cricothyroid joint is less common. When pressing on the side plates of the thyroid cartilage, there is a sharp pain in the depths of the larynx. The same pain occurs during phonation of high sounds. The pain in this case can radiate to the corresponding half of the neck, sometimes to the ear. Endoscopic examination reveals signs of inflammation in the corresponding half of the larynx in the region of the cricoarytenoid joint and aryepiglottic fold [16]. Diagnosis of damage to the joints of the larynx in rheumatoid arthritis is based on general and local signs of the underlying disease. Ankylosis of the cricoarytenoid joint is differentiated from neuromuscular dysfunction with unilateral damage to the recurrent nerve on the basis that in the first case, the vocal process of the cartilage is located obliquely downwards in the direction of the lumen of the larynx and moves with movements of the opposite vocal fold, while with ankylosis of the joint, movements of the arytenoid cartilage are impossible. The lack of movement in the cricoarytenoid joint can be established by attempting to move the arytenoid cartilage with direct laryngoscopy [11, 15, 16].

Histological examination of the affected laryngeal joints showed synovial proliferation, with fibrin deposition in the early stages of the disease, ankylosis and joint obliteration in the later stages. Submucosal cystic formations, rheumatic nodules in the vocal folds are also detected. Histological examination reveals areas of focal necrosis and salt deposits in the area of the nodules [17]. Despite the fact that the frequency of occurrence of rheumatic lesions of the larynx is quite high, its timely diagnosis is delayed, and in some cases requires a multidisciplinary approach and the use of complex X-ray studies. For this purpose, a conventional X-ray examination or computed tomography of the neck and larynx is used. High resolution computed tomography makes it possible to detect the initial stages of a lesion of the cricoarytenoid joint. From the level of the hyoid bone to the cricoarytenoid joint, 0.5 mm sections are used, from the vocal folds to the trachea - 0.7 mm [1, 11, 18]. Magnetic resonance imaging can be used to further assess changes in the soft tissues of the larynx in patients with rheumatoid arthritis [18].

Early diagnosis and timely treatment are crucial, as they prevent the occurrence of joint deformities. Treatment consists mainly of high doses of steroids systemically or locally in the cricoarytenoid joint. Injections into the cricoarytenoid joint are performed in addition to systemic corticosteroid therapy [7, 19]. To improve the voice, in the presence of rheumatic nodes in the vocal folds, they are sometimes

removed with direct micro laryngoscopy. In this case, frequent recurrences of rheumatic nodes should be taken into account [6]. In cases of laryngeal stenosis, tracheostomy is performed. [8–10].

We present our own clinical observation of rheumatic lesions of the larynx. Patient G., born in 1978, in October 2015, was admitted to the Department of Otorhinolaryngology, GBUZ MO MONIKI. MF Vladimirsky with complaints of foreign body sensation, discomfort in the throat, hoarseness, difficulty breathing during exercise, snoring. From the anamnesis: considers himself ill for a year, when he complained of a feeling of a foreign body in the throat, hoarseness. Was treated conservatively. The hoarseness disappeared, the feeling of a foreign body in the throat persisted. It is also known that the patient has been suffering from rheumatoid arthritis since 2000. She is observed by a rheumatologist at the place of residence and receives: Metipret 8 mg per day, diclofenac 10 mg per day, methotrexate 10 mg per week. The patient was examined at the place of residence, a CT scan of the larynx was performed: in the upper and middle sections of the larynx on the right, an additional oval-shaped formation of heterogeneous density, 1.8x2.0x1.0 cm in size, was detected, extending from under the epiglottis to the lower edge of the thyroid cartilage (Fig. 1) .In September 2015, fibrolaryngoscopy with puncture of laryngopharyngeal formation was performed at the Moscow Regional Oncological Dispensary. Pus was obtained and diagnosed with a cyst, she was sent to the Bukhara Regional Multidisciplinary Clinic. At admission: there is a pronounced deformity of the joints of the hands, a sharp limitation in them during movement. Deformity of the ankle and knee joints, artificial hip joint on the left. Blood test for "rheumatological profile": ASLO: 210 U/ml, CRP 40 mg/l, RF 255 Med/ml. Fibrolaryngoscopy: a volumetric formation is determined in the region of the right pyriform sinus with a transition to the retro-cricoid space. The mucous membrane in the area of the arytenoid cartilage on both sides is hyperemic, edematous, the cartilage contours are smoothed. . The vocal folds occupy a position approaching the median (paramedial position). Under general anesthesia, hypopharyngoscopy was performed with the removal of a neoplasm of the right pyriform sinus. The formation contained approximately 2 ml of pus, odorless. The operation was performed using a cold plasma apparatus Coblator II. The conclusion of the histological examination of surgical material No. 7799/21: productive inflammation with the formation of granulomas of the type of rheumatoid nodules with collagen necrosis and cystic transformation. Severe xanthomatosis, inflammatory infiltration. The patient was repeatedly consulted by a rheumatologist, hormone pulse therapy was recommended: Dexamethasone 142 mg intravenously in saline solution drip every other day, 3 days. Fibrolaryngoscopy 7 days after the operation and a course of hormonal pulse therapy: fibrinous plaque is determined in the area of the surgical wound. The vocal folds occupy a paramedial position. At the control computed tomography 2 weeks after the operation and a course of hormonal pulse therapy, there is a clear positive trend, while signs of arthritis of both cricoarytenoid joints remain. After correcting the treatment and achieving positive dynamics of the condition, the patient was discharged under the supervision of a rheumatologist and ENT at the place of residence.

Conclusion. Damage to the larynx in rheumatoid arthritis can be accompanied by destructive changes in cartilage and mimic many diseases, both inflammatory and neoplastic. Correctly interpreted data from the clinic, endoscopic examination, and computed tomography should guide the doctor and aim at the search for systemic pathology. All patients with rheumatoid arthritis should have regular ENT examinations for early diagnosis of possible upper respiratory tract involvement.

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