

The Relationship of Sensorineural Hearing Impairment After Coronary Artery Revascularization in Stable Angina Pectoris

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Abstract Sensorineural hearing impairment is a polyethological disease. Cases of unexplained hearing loss have become more frequent recently. The undeniable cause of this disease is stress. In addition, the most aggressive factors of the civilized world and the development of many common diseases underlie this, the pathogenesis of which is also based on the vascular factor of cardiovascular diseases, which enhances the course of major diseases and disrupts the processes of adaptation of people with disabilities to the external environment. In the scientific literature, studies related to the social problems of adaptation of people with hearing impairments show the presence of coronary heart disease. Thus, cardiovascular diseases and circulatory disorders of the brain formed against their background are a frequent etiological factor contributing to the occurrence of sensorineural hearing loss among the adult population.

Keywords Sensorineural hearing loss, Coronary heart disease, Angina pectoris

1. Introduction

Sensorineural hearing loss is a polyethological disease. According to the World Health Organization, the number of people suffering from hearing loss in the world reaches 40 million people. Recently, cases of unexplained hearing loss have become more frequent. The undeniable cause of this disease is stress. In addition, the most aggressive factors of the civilized world and the development of many widespread diseases of the 20th and 21st centuries underlie this, the pathogenesis of which is also based on the vascular factor of cardiovascular diseases, which enhances the course of the main diseases and disrupts the processes of adaptation of individuals to the external environment. In the scientific literature, studies related to the social problems of adaptation of people with hearing impairments indicate the presence of coronary heart disease. The problem of hearing loss is currently It is becoming more and more relevant in medical and social aspects.

2. Materials and Methods

Despite some successes achieved in otolaryngology in recent years, the number of people with hearing impairments is increasing, mainly due to sensorineural hearing loss [2,15]. The importance of issues of prevention, diagnosis, treatment

and rehabilitation of patients with hearing loss is largely determined by the fact that this pathology has social significance and affects all age groups of the population [18,24]. According to the data, sensorineural hypertension (CT) is one of the socially significant diseases affecting all age groups of the population. Hearing problems affect from 4 to 6% of the world's population [1,3,12] and it is expected that by 2026 the population with socially significant hearing loss will increase by more than 30 percent [11,17]. The anatomical and physiological structure of the inner ear, the circulatory system of the brain and their connection with the blood vessels of the vertebrobasilar system is specific, therefore, the issue of studying the mechanism of development of CT caused by vascular pathology and its methods of prevention, treatment and rehabilitation does not lose its relevance [3]. It is known that vascular disorders are one of the leading factors in the pathogenesis of CT [4]. Deterioration of microcirculation in the inner ear or hemorrhage into the inner ear, spasm or thrombosis of the labyrinthine artery are serious disorders in the form of hypoxia and metabolic acidosis of the hair cells of the spiral organ and their degenerative-atrophic changes. In the early stages of damage, it can be found in a state of depression or parabiosis, and changes can be functional. It is at this stage, manifested by stagnation of capillaries in the vascular strip, swelling of the nuclei in hair cells and metabolic disorders, effective therapy aimed at improving microcirculation and increasing oxygen delivery to the inner ear [11,15]. Systemic disorders were studied in working professions with a high risk of noise due to the state of auditory function. In recent years, publications have

appeared in which disorders of the hemodynamics of the brain are associated with changes in lipid metabolism [4,6]. Significant changes in blood rheology and hematopoietic system parameters were found in patients with acute sensorineural hearing loss. Among all the etiopathogenetic factors of the development of hearing disorders, ischemia of the receptor apparatus of the internal ear, pathways, hearing, vestibular nuclei and cerebral cortex, as well as vascular diseases as one of the most common causes [16]. Blood supply to the auditory and vesicular nuclei located in the rhomboid the fossa is carried out from the vertebrobasilar system, a violation of blood flow often leads to ischemic damage to the peripheral and central parts of the auditory and vestibular analyzers. Therefore, it is important to be timely-but to prevent significant damage to the central parts of the receptor apparatus and auditory vestibular analyzers, the irreversible development of hearing disorders and vestibular apparatus and the detection of the first signs of blood circulation in the vertebral-basilar system [7,8]. Damage to the coronary arteries, as well as a decrease in the permeability of the extra-articular and intracranial arteries, can lead to increased thrombosis. Currently, an important role in the development of the disease is played by the innate features of the structure of the vascular wall, the abnormal origin of the vertebral arteries, hypoplasia of one of them (less often—aplasia), pathological twists of the main arteries, insufficient development of anastomoses. The base of the brain, first of all, the arteries of the Willis circle, which sharply limits the possibilities of blood supply in conditions of damage to the main artery [4,7]. Damage to small cerebral arteries-microangiopathy against the background of arterial hypertension and diabetes mellitus, as well as extravasal compression in spinal cord pathology, in part - compression of vertebral arteries with pathologically altered cervical vertebrae (spondylolisthesis, spondylolisthesis, with large osteophytes), may also be the cause [5,6]. The genesis of such a vascular disorder leads to impaired sensorineural hearing.

3. Conclusions

Thus, with stable angina pectoris, an improvement in cerebral circulation, formed against the background of post-revascularization of the coronary arteries, may contribute to the improvement of sensorineural hearing disorders in patients who are an etiological factor.

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