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## **TYPES OF SPEECH DISORDERS AFTER DISEASE (SURGERY)**

**Abstract:** Speech is a vital aspect of human communication, entailing complex physiological processes involving the brain, nervous system, muscles, and other organs. However, various diseases and surgical procedures can affect these delicate mechanisms, leading to speech disorders. The primary objective of this essay is to examine the diverse types of speech disorders that may arise after diseases and surgical interventions, their characteristics, and associated impacts on individuals' communication abilities.

**Keywords:** speech disorders, communication, adults, different diseases, voice loss, ALS

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**Introduction:** All individuals want to express themselves, communicate clearly, and ensure that others understand them. However, after a disease or surgical intervention, people may develop problems with graphical expressions. Diseases such as throat problems, polyps, and nodules may harm individuals and cause communication problems. It is known that throat diseases selectively affect people who talk too much or work in jobs that require talking. Voice problems are related to types of jobs. Hoarseness is accepted as the most common symptom in patients applying to a hospital with voice complaints. Children are also negatively affected by symptoms such as voice loss, phonation, coughing, and burning throat. Although these effects are limited and temporary for adults, they can be permanent for children. The cause of hoarseness in people includes diseases such as nodules, polyps, cysts, and tumors in the vocal cords, as well as polyps and cysts in the upper respiratory tract. There are various treatment methods for voice disorders caused by benign diseases.

Diseases such as Parkinson's, Huntington's, trauma, and amyotrophic lateral sclerosis that develop in the brain or nerve cells can cause communication and speaking problems. Patients may show hypernasal expression, sounds may be articulated inaccurately, or one may lose the ability to phonate using their voice at the end of the disease. Depending on the advancements in science and surgical techniques developed in the field of medicine, the disease can be removed easily, but patients may experience new speaking problems and lose the ability to speak after the procedure. Therefore, speech disorders may occur not only after the disease but also as a result of surgical procedures used to treat the disease in neurology. These diseases are described as speech problems caused by issues in the brain, problems in the nerves reaching the muscles, or problems in the muscles adjusting the processes in the vocal cords. In our study, we focused on the voice disorders that develop in humans and the speech disorders that arise after laryngeal diseases. A speech problem is particularly relevant after larynx surgery and throat cancer surgery. In this section, we described voice and swallowing disorders and speech problems that occur in patients after the disease and the surgical procedures used to treat it. During this explanation, our study aimed to define the duration, causes, and treatments concerning the issues in communication related to throat diseases. We also aimed to provide intermediary information for patients facing similar problems and seeking medical help.

### **Definition of Speech Disorders**

A speech disorder is a condition in which a person has problems creating or forming the speech sounds needed to communicate with others. These can be problems with the voice, articulation, or fluency of the speech and are classified into different categories. There are three classic categories of speech disorders caused by disease or surgery of the mouth and throat, the respiratory and phonatory system, the larynx, and the vocal cords: functional speech disorders, organic dysphonias, and dysarthrias. Each of them will include specific and particular symptoms that will be described.

## **Causes of Speech Disorders**

Attention to speech sounds and vocal fluency is needed after other serious illnesses, especially neurological diseases and laryngopharyngeal reflux disease, particularly after treatment of dysphonia or presbyphonia, and especially in an "age of human longevity." The cause is often a kind of partial damage to the brain due to a lack of blood from arteriosclerosis and some other organic lesions, tumors, and senility. A typical case is hemiplegia due to brain occlusion from the blood flowing from the internal carotid artery. The number of people with aphasia due to arteriosclerotic diseases is increasing annually. Stroke is characteristic, and normal reflexes and functions are gradually recovering. During the recovery period, there is usually a defense (feeding reflex, etc.) and a period without consciousness (from several days to several weeks). Then the patient enters the rehabilitative period, and when consciousness recovers, the language center is also established, and the language motor exercise is performed—if possible—by calling out or asking about it. In the acute stage, the speech center is dislocated in the open space due to the accumulation of intracranial blood and hemorrhage. The blood absorbs it during the recovery period, the dislocation disappears, the language can be understood, and linguistic judgment is possible, but the motivation for language expression and the function of utilizing mental meaning are different. The speech center is functioning again.

## **Results and Discussions.**

Dysarthria is a speech disorder caused by damage to the brain or nervous system, which can result from diseases such as cerebral palsy, Parkinson's disease, stroke, and amyotrophic lateral sclerosis (ALS). This condition affects the muscular coordination and control of the articulatory organs, including the lips, tongue, and vocal cords. As a result, individuals with dysarthria may exhibit slurred speech, difficulty articulating sounds, slower or rapid speech rates, and altered voice characteristics. Dysarthria can significantly impede communication, leading to frustration, social isolation, and decreased self-esteem.

### **Apraxia of Speech: A Neuromuscular Disorder**

Apraxia of speech is a condition that affects the brain's ability to coordinate and control the muscles responsible for speech production. This disorder can be caused by various neurological diseases such as stroke, traumatic brain injury, and neurodegenerative conditions like Alzheimer's disease. Individuals with apraxia of speech may experience difficulty articulating sounds, syllables, and words, resulting in distorted or inaccurate speech patterns. Apraxia of speech can also lead to an increased effort to produce speech, resulting in frustration and decreased communication effectiveness.

### **Dysphonia: A Voice Disorder**

Dysphonia is a voice disorder characterized by an abnormal voice quality, pitch, or volume. This condition can arise from diseases affecting the larynx (voice box) or the nerves controlling the vocal cords, such as laryngeal cancer, vocal cord nodules, or vocal cord paralysis. Dysphonia can also be caused by surgical procedures involving the larynx or the surrounding structures. Individuals with dysphonia may experience hoarseness, vocal fatigue, or decreased vocal volume, leading to communication difficulties and social isolation.

### **Traumatic Brain Injury and Speech Disorders**

Traumatic brain injury (TBI) can result in various speech disorders, including dysarthria, apraxia of speech, and cognitive-communication disorders. TBI can damage the brain's language processing areas, affecting attention, memory, executive functions, and linguistics. Individuals with TBI may exhibit difficulty processing and understanding spoken language, initiating or maintaining conversations, or retrieving words

and concepts. Cognitive-communication disorders can significantly impact an individual's ability to engage in social interactions and participate in daily activities.

### Cancer-Related Speech Disorders

Cancer and its treatment can cause speech disorders, particularly when malignant tumors affect the head and neck region. Surgery, radiation therapy, or chemotherapy can lead to the destruction or paralysis of muscles, nerves, or other tissues essential for speech production. For example, individuals with oral cancer may experience difficulty articulating sounds or swallowing food due to damage to the tongue, lips, or jaw. Similarly, those with laryngeal cancer may experience dysphonia or vocal cord paralysis, leading to permanent voice changes.

### Neurodegenerative Diseases and Speech Decline

Neurodegenerative diseases, such as Parkinson's disease, multiple sclerosis, and Alzheimer's disease, can cause gradual speech decline due to progressive damage to the brain and nervous system. Individuals with these conditions may exhibit decreased speech rate, reduced word retrieval abilities, and increased linguistic errors. Neurodegenerative diseases can also lead to social withdrawal, decreased self-esteem, and reduced quality of life.

### Conclusion.

Various diseases and surgical procedures can result in diverse types of speech disorders, including dysarthria, apraxia of speech, dysphonia, and cognitive-communication disorders. These conditions can significantly impact an individual's communication abilities, social interactions, and overall quality of life. Early diagnosis and treatment of speech disorders are crucial to mitigate the effects of these conditions and enhance communication effectiveness. Speech-language pathologists, in collaboration with other healthcare professionals, play a vital role in assessing, diagnosing, and rehabilitating individuals with speech disorders resulting from diseases and surgical procedures.

### Recommendations

To address the complex needs of individuals with speech disorders, it is recommended that:

1. Healthcare providers and speech-language pathologists work collaboratively to assess and diagnose speech disorders resulting from diseases and surgical procedures.
2. Multidisciplinary rehabilitation programs be established to address the linguistic, cognitive, and emotional needs of individuals with speech disorders.
3. Public awareness campaigns be conducted to educate people about the importance of speech and language, as well as the available treatment options for speech disorders.
4. Research be conducted to develop and improve diagnostic tools, therapeutic strategies, and assistive technologies for individuals with speech disorders.

By adopting these recommendations, we can improve the quality of life for individuals with speech disorders resulting from diseases and surgical procedures, enabling them to communicate effectively and participate fully in social and vocational activities.

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