REHABILITATION OF ORONASAL SPEECH DISORDERS

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Abstract:

Oronasal region, as an important organ of taste and smell, being respected for its impact on the resonace, which is crucial for any normal speech production.

Different congenital, acquired and/or developmentalpdefect, may not only have impacts on the quality of respiration, phonation, resonance, also on the process of a normal speech.

This article will enable readers to have more focus in such important neuroanatomical speech zones disorders and their respective proper rehabilitation methods in different derangements.

Among all other defects, oronasal malfunctionings would definitely has an influence on the oronasal sound resonance and furtherly render impairments on a normal speech production. Rehabilitative approach by speech and language pathologist is highly recommended to alleviate most of oronasal speech disorders.

Key word:
oronasal speech/ nasality/ speech therapy/ nasality reconstructions.

Introduction:

Speech is highly considered as an important key in all human communication values. Speech also is considered as a final complex processes of language which gets finalized in respiratory, phonatory, resonance and special articulatory organs, to work as an integrated components for generating speech sounds. Resonance, as being an important function of sound modalities, occurs when the air passage flows through the respiratory pipe and faces with different significant organs of pharynx. The produced sound acoustics are refined furtherly as resonance by most of these phyryngeal, oral and nasal soft tissues. These soft tissues, will render its melodic effects on the sound in mannering a better quality of its nature. This qualified sound, receives even its better patterns of harmony by escaping through the oral and the nasal cavity. The sound which escapes into the nose for its better quality refinement is named "nasal resonance"; and those which escape through the oral cavity, as "oral resonance".

Normal Oronasal Speech:

Normally, once the sound is produced, will get emerged into a unifiable and

hamronized voice quality which is more acceptable and comprehensible for any listener. If any possible deviations occur, speech pathologist as a keen listener, would assess such shift and brings up a diagnosis in any oronasal speech disorders.
Normal speech produced in normal nose, as examined precisely by speech pathologist, should be investigated for any possible disorders and the main cause of such abnormal deviation. Nasality should be tabulated precisely in mind by performing a thorough history and physical examination in purpose of assessing most of the possible oronasal neuroanatomical disorders.

Abnormal Oronasal Speech

Any type of neuroanatomical disturbances along the two areas of oropharynx and nasopharynx, may lead to an abnormal nasal resonance. Some of the common derangements may be named as any type of acute or chronic inflammations, abnormal velopharyngeal valve functioning, cleft lip, cleft palate, cleft lip and palate, presence of benign and/ or malignant tumors, septal deviations, with or without conchal hypertrophies, nasal polyps with or without active sinusitis, malocclusions as maxillary protrusions, maxillary retrusions, mandibular retrognathia or prognathia and many other types of oronasal abnormalities, which all have some reflections on processing a normal speech production.

Articulators Balance

As the sound is produced in vocal box, is delivered furtherly to the pharynx, a harmonized soft tissues contraction and relaxation moves which are produced for refining this produced sound.
Pharyngeal muscles actions in balance with the soft palate and its surrounding tissues, have an important role in coupling and uncoupling mechanism of oronasal neuroanatomical zones. Velopharyngeal complex, acts as an sphincter to modulate such balance. This means, there are some phonetics need to escape from the oral to nasal zone and some phonetics need, not to be escaped through this neuroanatomical part. Coupling is the time when oronasal parts do meet, and uncoupling when the oronasal parts do not meet for neuroanatomical connection.
Balancing each neuro anatomical parts is another major concern in any normal process of speech. Any soft tissues imbalance actions in different zones such as lips, maxillary, mandibular, dental, tongue, hard and soft palate, all may create a disordered move. Likewise, any neuroanatomical defects in nasal parts such as mucosal inflammations, conchal hypertrophies, septal deviations, sinusitis and many other orther nasal diseases, will have a negative impact on a normal process of speech resonance.
Articulators as viewed in oronasal aspects, must not only be in an neuroanatomical exact, but also need to get contracted, relaxed in unity with a

balance move for generating a synchronized speech.

Pathology Diagnosis

Broad knowledge of speech and language pathologist in neuroanatomy, physiology and neuroanatomical basis of articulator organs is highly stressed. By obtaining patient's history and a physical exam, rehabilitation therapist will get a general information about the "etiology". Such etiology is being furtherly confirmed by clinical and paraclinical interspeciality tests and an ultimate diagnosis for a rehabilitative plan in possible oronasal speech disorders, are planned.

Rehabilitation

Once a proper diagnosis is set, a "rehabilitation plan" is tabled by speech & languaue pathologist. Plans are targeted to the exact neuroanatomical defects.
Nasality, in forms of hyponasality and/ or hypernasality is confirmed and viewed based on the "defect and cause" relationships. Some defects may need to be referred for medico-surgical remedies and in some for rehabilitative approach.
In cases of nasal airway escape which occur in any oronasal fistulas, velopharyngeal incompetencies and or in any nasal defects, focusing may be conducted upon the rehabilitations of exact neuroanatomical weaknesses . Consonant distortions may be noticed in a higher rate and thus therapeutic speech intervention is focused more in this regard.
Any intra and extra oronasal pressures excercise to strenghten these compartments, will also help the quality of speech consonants sounds. Oftenly, exercise activation of defected neuroanatomical zones with some substituitions may also help to rehabilitation of disorders occur in nasal consonant and oral consonants. Vowels are effected less, in compare to those of consonants. Velopharyngeal assessments and exercise implications to activate such sphincter, may also alleviate some oronasal speech problems.
Moreover, the importance of velopharyngeal competency is not just for the air leakage concerns, but also it affects the intraoral and intranasal pressure balance as well. Sounds which require the most intraoral pressures such as plosives, fricatives and voiceless consonants, are mostly viewed for their rehabilitation plans, once the diagnosis are set.
Teaching individuals with such disorders to inspire nasally and expire orally, will activate their muscles of oronasal neuroanatomical zones. Lowering their voice, while increase the speech in tensities during text readings , will rehabilitate the respiratory, phonatory and pharyngeal muscles. Exercising the masseteric muscles in "clinching practice" and mouth "closure-and- opening" maneuver, along with intraoral and extraoral pressure creation, while the nose is closed, rehabilitates the orbicularis oris, nasalis, zygomatic major and minor along with the soft palate and velopharyngeal complex. Facial proprioceptive neuronal fascilitations will

rehabilitate the actions of most oronasal and orofacial muscles by the proper exercise implications.

Conclusions

Oronasal speech disorders are, most commonly noticed among individuals with any types of congenital, acquired and/ or developmental defects. Aside, the ones may require many different medico- surgical therapeutic approach, majority of these patients may benefit just by the speech rehabilitation approach.

Precise obtaining a complete history and physical examinations, along with proper paraclinical assays and a correlative clinical as a team work consultations, will provide most of the oronasal speech disordered patients in a right tract of rehabilitation . Patient selections by speech and language pathologist who is been trained for such proper rehabilitation therapy, is highly recommanded. Most of these patients, overcome most of their oronasal speech disorders within a proper rehabilitation therapy follow- ups.

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