

### Muscle Tension Dysphonia—The Untold Story

Human voice production involves coordinated functioning of the vocal folds and regulated airflow from the lungs to the oropharynx. A synchronized activity of respiratory, phonatory, resonatory and articulatory systems lead to the optimal phonatory outcome. Smaller intrinsic muscles and larger extrinsic muscles need to work in harmony, to produce voice, which is appropriate to age, sex, and society. The excessive tension of the laryngeal or extralaryngeal muscles or both result in suboptimal phonatory function.

Muscle tension dysphonia (MTD) is a condition characterized by varying degree of dysphonia and other associated symptoms, primarily due to tension and uncoordinated activity of intrinsic and extrinsic muscles of the larynx. This is generally subdivided into primary and secondary type. In primary MTD, there is no structural or neurological abnormality associated with muscle tension. The secondary type usually occurs as a compensatory mechanism for underlying glottic insufficiency or mucosal lesion. On the other hand, long-term untreated MTD may itself turn out to be a precursor of phonotraumatic mucosal lesion.

Earlier, these patients with vocal dysfunction with no apparent structural lesion or neurological dysfunction were stamped under the category of functional voice disorders. Subsequently, extensive work by many authors has led to the understanding of this complex condition. Evolution of classification has also resulted in the addition of a plethora of terminologies to the literature namely hyperfunctional dysphonia, muscle misuse voice disorder, musculoskeletal tension dysphonia, hyperkinetic dysphonia, laryngeal isometric disorder, laryngeal tension fatigue syndrome and many more. Finally, “muscle tension dysphonia” has emerged to be the universally accepted nomenclature.

Multifactorial etiology of this condition is well established. Anxiety and stress, coupled with vocal abuse and misuse are the major causative factors; personality plays an important role. Besides, compensatory maladaptation for any structural lesion can lead to secondary MTD.

An MTD, either primary or secondary is one of the most commonly encountered diagnoses in any voice clinic. Patients may present with a mild degree of hoarseness to extremely strained voice, along with odynophonia. A careful history of vocal demand and usage along with any history of underlying stress often provides diagnostic clue. External neck inspection is of paramount importance to detect the position of larynx and muscle tension during phonation. Palpation of suprahyoid, thyrohyoid and cricothyroid space usually elicits tenderness of specific muscles, even at rest. The endolaryngeal examination should ideally be done with a flexible nasolaryngoscope, to detect supraglottic muscle tension during the larynx in action. Stroboscopy helps identify any associated mucosal lesion leading to MTD. Intrinsic muscle tension at the supraglottic or glottic level is usually graded on the basis of various classifications.

Management involves voice therapy which may be indirect or direct. Indirect therapy involves educating patients about healthy phonatory habits and training corrective vocal exercises to release tension. Direct therapy is aimed at releasing musculoskeletal tension to promote healthy phonatory posture. Circumlaryngeal therapy, stretch and flow phonation, vocal function exercises and resonant voice therapy are the common techniques used. Medical treatment of associated problems like laryngopharyngeal reflux and surgical treatment of any structural lesion should be undertaken. Role of EMG-guided botulinum toxin injection is also emerging in recent years.

Diagnosis of MTD is simple and straightforward, provided the clinician is aware of this condition. However, there is a need for more comprehensive grading system encompassing both external and endolaryngeal findings. This would help in delivering more tailor-made direct voice therapy to correct tension of specific muscles. Use of botulinum toxin injection is also likely to increase, especially for cases refractory to voice therapy.



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