

**Functional Assessment of Voice Outcome after Thyroid
Surgeries: Change In DSI Versus VHI In
Post-Operative Period**

A thesis submitted for Partial Fulfillment of
Master Degree in Phoniatics

By

Marwa Rabie Abdallah Elmawy

M.B.B.Ch

Supervised By

Prof. Dr. Hossam El-Dessouky

Professor of Phoniatics

Faculty of medicine, Cairo University

Prof. Dr. Hossam Abdelghaffar

Professor of Audiology

Faculty of medicine, Fayoum University

Dr. Ayatallah Sheikhany

Assistant Professor of Phoniatics

Faculty of medicine, Cairo University

Faculty of Medicine

Fayoum University

2019

Summary

Thyroidectomy is an operation that involves the surgical removal of all or part of the thyroid gland. Surgeons often perform a thyroidectomy when a patient has thyroid cancer or some other condition of the thyroid gland (such as hyperthyroidism) or goiter. Other indications for surgery include cosmetic (very enlarged thyroid), or symptomatic obstruction (causing difficulties in swallowing or breathing).

Voice changes related to thyroid is either due to thyroid diseases or following thyroid surgery.

Thyroid diseases occur in the form of abnormalities in the size and shape of the thyroid gland (goiter) and of abnormalities of thyroid secretion (hyper and hypothyroidism). Diffuse or nodular enlargement, whether benign or malignant, may cause compression or invasion of the adjacent recurrent laryngeal nerve. The patient whose recurrent laryngeal nerve is compromised by pressure or tumor infiltration will have the voice of a paralyzed vocal cord, which will be breathy and barely audible.

Thyroid surgery may result in RLN as well as in superior laryngeal nerve trauma. Recurrent laryngeal nerve injury varies from 1.8% to 13.3% and the external branch of superior laryngeal nerve injury varies from 5% to 28%. However, other alterations in voice quality can be found even in the cases with preserved function of laryngeal nerves. In such cases, voice alteration after thyroidectomy could be secondary to laryngeal edema, vocal fold bowing, orotracheal intubation trauma, extralaryngeal strap muscles damage or temporary malfunction of these muscles, and laryngotracheal fixation. The most usual complaints are roughness, volume alteration, and vocal fatigue, which may have an important impact on the patient's professional and social life.

The Voice Handicap Index (VHI) is a subjective self-administered

questionnaire evaluate the patients perceived disability. It consists of three domains including functional, physical, and emotional aspects of voice disorders and is administered by patients themselves regardless to the type of their voice disorder in a five-point for each item (from 0 = never to 4 = always). Patients with severe voice disorder would gain higher total VHI scores. It is a valid and reliable instrument for assessing self-perception of patient's voice handicap.

The Dysphonia severity index (DSI) is a useful, easily applicable multiparametric measurement in clinical practice for objective evaluation of voice quality.

The data in this study suggest that the quality of voice deteriorated after thyroid operation, both subjectively and objectively, even in absence of vocal fold paralysis, this is important in the preoperative counseling of patients before thyroidectomy.

Vocal fold mobility impairment is highest in patients with larger thyroid cancers and in patients who undergo total thyroidectomy.