Assessment of Postoperative Patients Satisfaction after Various Microlaryngeal Surgeries for Benign Vocal Fold Lesions using the Voice Handicap Index (VHI).

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Abstract

Speech is one of the unique qualities that set human apart from all other living organisms. Benign vocal fold lesions are commonly encountered causes of Hoarseness of voice which are often either surgically correctable or managed by voice therapy. One of the most widely used dysphonia –specific quality of life questionnaire is the Voice Handicap Index (VHI). It is a useful tool to help gain insight into the emotional, physical, and functional components of the voice problem as well as to measure therapeutic outcomes.

The aim of this prospective interventional study was to evaluate 30 patients satisfaction after microlaryngeal surgeries (MLS) with cold knife for benign vocal fold lesions by analyzing total Arabic VHI scores and sub scale scores preoperatively as well as six weeks post operatively and comparing the results with videolaryngoscopic findings.

In conclusion, MLS with cold knife gives perfect results as regards patient satisfaction of his voice quality by himself by using the VHI . VHI correlates well with the commonly used objective voice assessment parameters. It should be included in the standard voice evaluation protocols in dysphonic patients for a comprehensive assessment. That VHI is a reliable tool and easily applicable one not just in assessing quality of life but also in assessing the surgical outcome.

Keywords: Benign vocal fold lesions, Hoarseness of voice, MLS, VHI.

Contents

List of Abbreviations

APA	Auditory Perceptual Assessment
BMZ	Basement Membrane Zone
BVFL	Benign vocal folds lesions
CT	Computer Tomography
CSL	Computerized Speech Lab
DL	Direct Laryngoscopy
ENT	Ear Nose and Throat
FO	Average Fundamental Frequency
GERD	Gastroesophageal Reflux Disease
GHD	Gottingen Hoarseness Diagram
HNR	Harmonics To Noise Ratio
LP	Lamina Propria
Microdeb.	Microdebrider
MAP	Minimal associated pathological
MLS	Micro laryngosurgery
NS	Non Significant
S	Significant
SD	Standard Deviation
TVF	True Vocal Fold
VFNs	Vocal Fold Nodules
VFPs	Vocal Fold Polyps
VHI	Voice Handicap Index
VTD	Vocal Tract Discomfort
VoiSS	Voice Symptom Scale

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INTRODUCTION

Introduction

Benign vocal fold lesions are commonly encountered causes of dysphonia which are often either surgically correctable or managed by voice therapy .They include lesions like vocal fold polyps, cysts, nodules and Reinke's edema. Vocal fold polyps to be the commonest type of benign lesions of the larynx **.**

Speech is one of the unique qualities that set human apart from all other living organisms . Hoarseness of voice is a common complaint in today's high stressed life and describes terms such as dysphonia, aphonia, voice break and odynophonia and most commonly vocal fatigue **(Rosen .2005).**

The inability to communicate with ease is the most notable of the everyday functions which are significantly affected by a handicapped voice. Inability to communicate with confidence and ease can affect every facet of human experience, from education to gaining employment to forming relationships **(Deary et al .2004).**

A number of techniques for demonstrating laryngeal anatomy have evolved. Preoperative evaluation of these lesions initially by indirect laryngoscopy or direct rigid laryngoscopy, gave way to the use of transnasal flexible fibreoptic endoscopy. The introduction of the videostroboscope into Ear Nose and Throat practice has revolutionized the assessment of vocal fold pathology. With the advent of commercially available stroboscopes, the evaluation of these lesions as well as other laryngeal pathologies has become more comprehensive, cited from **(Colton et al. 1995)**.

Laryngeal videostroboscopy in a dysphonic patient helps to evaluate vocal fold abnormalities in detail. However, these modalities alone do not specifically evaluate the resulting handicap as the patient perceives it. The use of a structured questionnaire to evaluate the quality of life in these patients is required for this. One of the most widely used dysphonia –specific quality of life questionnaire is the Voice Handicap Index (VHI) **(Wilson et al. 2004).**

The VHI is comprised of a series of questions targeting the patient's perception of her/his own voice. It is a useful tool to help gain insight into the emotional, physical, and functional components of the voice problem as well as to measure therapeutic outcomes. It is made up of 30 questions, broken down into three groups according to the situation: functional, physical or emotional. The functional domain includes statements that describe the ''impact of a person's voice disorders on his or her daily activities.'' The emotional domain indicates the patient's ''affective responses to a voice disorder.'' Items comprising the physical domain are statements representing self-perceptions of laryngeal discomfort and voice output characteristics **(Jacobson et al. 1997).**

Laryngeal microsurgery is removal of abnormal tissue from the vocal folds using precision microlaryngeal instruments and/or laser. A laryngoscope is introduced into the anesthetized patient's mouth for exploration of the larynx and vocal folds., There are in essence three different types of surgical approaches to remove vocal fold lesion: Direct-Micro Laryngoscopy with mass excision**,** Direct-Micro Laryngoscopy with Micro-Flap mass excision**,** The third and final type of vocal fold surgery is the use of lasers **(Cheng .2009).**

The aim of this work

The aim of this prospective interventional study was to evaluate patients satisfaction after microlaryngeal surgeries for benign vocal fold lesions by analyzing total Voice Handicap Index scores and sub scale scores preoperatively as well as six weeks post operatively and comparing the results with videolaryngoscopic findings.

Review of Literature

Chapter I

Histo-anatomy

&

Physiology

Histo-anatomy and Physiology

Vocal Fold Structure:

True vocal fold is a three dimensional structure with outer dimensions of 1- 2 cm in Length , 0.5 – 1 cm in width and 0.5 – 1 cm in height (Fig.3). It protrudes into the middle of the airway such that the longitudinal dimension spans the diameter of the larynx (Fig.2)**.** The superior, inferior and medial faces are unconstrained. The anterior, posterior and lateral faces are fixed to laryngeal cartilages, cited from **(Titze & Talkin, 1979).**

The True Vocal Fold (TVF) is composed of 5 individually identifiable layers. The deepest layer consists of the thyroarytenoid muscle body . This muscle is capable of contraction and serves to voluntarily stiffen and thicken the vibratory margin of the fold. Overlying the muscle is a region referred to as the lamina propria (LP) (Fig.1), which can be divided into 3 portions (ie, superficial, middle, deep layers) based on the molecular compositions of each (Fig.1) .

The deep layer of the LP is largely comprised of densely crowded collagen fibers (Fig.1).The middle layer has some collagen but is distinguished by its high elastin content. The deep and middle layers of the LP blend imperceptibly on operative dissection to form a structure commonly referred to as the vocal ligament, a recognized and important landmark in vocal fold surgery, as well as a transition zone between the body (muscle) and the cover (epithelium and superficial LP) of the True Vocal Fold. The most superficial of these layers is the stratified squamous epithelial cover that overlies the LP(Fig.1),cited from **(Gray et al., 1995).**