

Reliability of Drug Induced Sleep Endoscopy (DISE)

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Otorhinolaryngology

By:

Ismail Youssef Ismail Hosni Hassan

(M.Sc. E.N.T. Cairo University)

Supervised by:

Prof. Dr. Usama Mohamed Abdel Naseer

Professor of Otorhinolaryngology

Faculty of Medicine

Cairo University

Prof. Dr. Hassan Mohamed El Hoshy

Professor of Otorhinolaryngology

Faculty of Medicine

Cairo University

Dr. Ahmed Mohamed Hassan Nassar

Lecturer of Otorhinolaryngology

Faculty of Medicine

Cairo University

Faculty of Medicine

Cairo University

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Abstract

Fiberoptic examination of the upper airway under drug-induced sleep is a test that helps to detect the areas of vibration and collapse in patients with sleep-disordered breathing (SDB). This article is a review of the available literature on the subject, aimed at helping otolaryngologists to understand the procedure and to resolve some controversies surrounding it.

Key words: Sleep disordered breathing (**SDB**), Diagnosis, Drug-induced sleep Endoscopy (**DISE**)

Contents

<i>Introduction</i>	1
<i>The Aim of Work</i>	3
<i>Review of Litreture</i>	4
• <i>Anatomy Of The Upper Airway</i>	4
• <i>Physiology and Dynamics Of The Upper Airway</i>	16
• <i>Pathophysiology of Sleep Disordered Breathing (SDB)</i>	22
• <i>Clinical Evaluation of Sleep Disordered Breathing (SDB)</i>	29
• <i>Diagnostic Investigations for Sleep Disordered Breathing(SDB)</i>	45
• <i>Treatment of Sleep Disordered Breathing (SDB)</i>	69
<i>Patients & Methods</i>	95
<i>Results</i>	105
<i>Discussion and Conclusion</i>	113
<i>Summary</i>	121
<i>References</i>	123
<i>Arabic Summary</i>	

List of Figures

Number of Figure	Title	Page
Figure (1)	Internal and external nasal valves (<i>Janfaza et al., 2001</i>)	5
Figure (2):	Lateral view of the left side of the nasal septum. The left lateral wall of the nose has been removed (<i>Oneal and Beil, 2010</i>).	6
Figure (3):	Diagram of the aponeuroticomuscular structure of the soft palate in longitudinal section above and muscles of the soft palate from below (<i>Terris and Goode 2005</i>).	7
Figure (4):	Mandible, lingual aspect, genial tubercles, mylohyoid line, mandibular foramen, and coronoid notch (<i>Eusterman and Baumgartner, 2005</i>).	10
Figure(5):	Cartilaginous and fibroelastic structures of the larynx (<i>Rosen and Simpson,2008</i>).	16
Figure (6):	Effects of tracheal tug and longitudinal tension on the airway. (<i>Woodsonand Yang, 2005</i>).	18
Figure (7):	<i>Mallampati classification system based on visualization of posterior oropharyngeal structures. (Kushida,2007).</i>	39
Figure (8):	<i>Friedman palate position (FPP) (Friedman et al., 2002).</i>	41
Figure (9):	Tonsils size Grading (<i>Friedman,2009</i>)	41
Figure(10):	Auto-Adjusting PAP Machine(<i>d’Ortho Et Al.,2000</i>)	73

List of Tables

Number of Table	Title	Page
Table (1)	Patients history and complains.	105
Table(2)	History of previous operations.	105
Table(3)	The Mallampati Classification.	106
Table(4)	The Fridman palatal position (F.P.P)grading.	106
Table(5)	Body Mass Index(B.M.I)	107
Table(7)	The Polysomnography results	108
Table(8)	The level of obstruction as determined by DISE.	109
Table(9)	The Management.	110
Table(10)	Improvement of snoring (subjective improvement)	110
Table(11)	Improvement of Apnea (PSG following management)	111
Table(12)	Management Complications.	112

List of abbreviations

<i>Pcrit</i>	Critical Tissue Pressure
<i>(VImax)</i>	Maximal Inspiratory Flow
<i>PN</i>	Nasal Pressure
<i>RN</i>	Nasal Resistance
<i>REM sleep</i>	Rapid Eye Movement Sleep
<i>NREM sleep</i>	Non Rapid Eye Movement Sleep
<i>EEG</i>	Electroencephalogram
<i>SDB</i>	Sleep-Disordered Breathing
<i>AASS</i>	The American Academy Of Sleep Medicine
<i>SAHS</i>	Sleep Apnea Hypopnea Syndrome
<i>CSA</i>	Central Sleep Apnea
<i>ICSD-2</i>	The International Classification Of Sleep Disorders (Second Edition)
<i>OSA</i>	Obstructive Sleep Apnea
<i>EDS</i>	Excessive Daytime Sleepiness
<i>CPAP</i>	Continuous Positive Airway Pressure
<i>UARS</i>	Upper Airway Resistance Syndrome
<i>AHI</i>	Apnoea/Hypopnoea Index
<i>GERD</i>	Gastroesophageal Reflux
<i>LPR</i>	Laryngopharyngeal Reflux Disease
<i>BMI</i>	Body Mass Index
<i>TMJ</i>	The Temporomandibular Joint
<i>FPP</i>	Friedman Palate Position
<i>ESS</i>	Epworth Sleepiness Scale
<i>TcCO2</i>	Transcutaneous Carbon Dioxide
<i>RERA</i>	Respiratory Effort-Related Arousal
<i>MSLT</i>	The Multiple Sleep Latency Test
<i>PSG</i>	Polysomnography
<i>RDI</i>	Respiratory Disturbance Index
<i>C.T</i>	Computerized Tomography
<i>ESS</i>	Epworth Sleepiness Scale
<i>OA</i>	Oral Appliance
<i>PAP</i>	Positive Airway Pressure
<i>APAP</i>	Adjustable Positive Airway Pressure
<i>BI-PAP</i>	Bi-Level Positive Airway Pressure
<i>CMS</i>	The Center For Medicaid And Medicare Services
<i>RF</i>	Radiofrequency(
<i>UPF</i>	The Uvulopalatal Flap

<i>H-UPPP</i>	Han- Uvulopalatopharyngoplasty
<i>LAUP</i>	Laser-Assisted Uvulopalatoplasty
<i>CAPSO</i>	Cautery-Assisted Palatal Stiffening Operation
<i>SPC</i>	Superior Pharyngeal Constrictor Muscles
<i>UPPP</i>	Uvulopalatopharyngoplasty
<i>VPI</i>	Velopharyngeal Insufficiency
<i>TBRHE</i>	Tongue Base Resection With Hyoepiglottoplasty
<i>ZPP</i>	Zetapalatopharyngoplasty
<i>IS</i>	Injection Snoreplasty

Introduction

The term “sleep-disordered breathing” (SDB) encompasses a number of different clinical disorders. These conditions result from several different pathophysiologic mechanisms and represent different points along a continuous spectrum of severity (*Davidson, 2005*).

SDB includes snoring, upper airway resistance syndromes (UARS), mild, moderate, and severe obstructive sleep apnea (OSA), and a myriad of chronic illness-related sleep disorders such as hypoventilation syndromes and Cheyne Stokes breathing (*Davidson, 2005*).

SDB is a common illness affecting 24% of adult males, 9% of adult females, and 10% of children (*Davidson, 2005*).

Upper airway shape is critical in determining airflow and the function of upper airway muscles. Cross-sectional area is critical in determining upper airway resistance (*Leiter, 1996*).

From the surgical viewpoint, the clear establishment of the obstructive sites is essential for the planning of effective treatment (*Friedman, 2009*).

Static radiologic imaging techniques such as x-ray cephalometry, computed tomography (CT) scanning and magnetic resonance imaging (MRI) have been used mostly to detect differences in airway anatomy. Dynamic scanning protocols (e.g. ultrafast CT or cine MRI) and multiple pressure recordings have been used to gain insights into the mechanism and level of airway obstruction (*Terris and Goode, 2005*).

Endoscopy of the upper airway during wakefulness still constitutes the basis of every airway evaluation in snorers and obstructive sleep apnea (OSA) patients. Anatomic and static clinical findings were the first

parameters to be evaluated in order to improve treatment success (*Stuck and Maurer, 2009*).

Croft and Pringle, 1991 first introduced the technique of sleep nasoendoscopy for assessment of snoring to aid proper case selection for surgical intervention.

Sleep nasoendoscopy allows for a targeted management of snoring or obstructive sleep apnea in suitable individuals by clarifying the underlying contributing anatomical sites (*Berry et al., 2005*)

The Aim of Work

To study the reliability, efficiency and the safety of Drug Induced Sleep Endoscopy (DISE) in patients with sleep disordered breathing (SDB) to evaluate the site and the level of the obstruction which is an important step for proper assessment of their condition and to choose the appropriate line of management.

Review of Literature