Research Paper Medical Sciences

Sleep Nasendoscopy in Management of Snoring

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ABSTRACT

Introduction;snoring is the production of sound by the upper aero digestive tract during sleep. In sleep nasendoscopy sedation is administered by anaesthesiologist in a fully equipped anaesthetic room using propofol, once snoring began, flexible nasendoscope was introduced transnasally. The anatomical level of pharyngeal collapse and the sites of snoring noise generation is recorded.

Material and Method; 37 patients who were admitted in ENT department for some other unrelated surgery under general anesthesia , in these patients history of snoring was taken and sleep nasendoscopy was done after proper written consent.

Result and conclusion; It was found that 15 (88%) patients out of 17 patients who gave history of snoring produced snoring due to propofol sedation.Patients who produced snoring due to propofol sedation, it was found that majority of patients (47 %) had sleep nasendoscopy Grade 2B ,sleep nasendoscopy Grade 3 i.e. tongue base level obstruction was found in 6 % patients only.

KEYWORDS snoring,sleep nasendoscopy,propofol

Introduction; Snoring is a breathing noise that appears during the inspiratory and sometimes also the expiratory phase of the respiratory cycle during sleep.[1] The source of the sound is the pharyngeal segment of the upper airway. Relative atonia of the upper airway dilator muscles during sleep induces narrowing and increased resistance at this level[2]. As a consequence, airflow becomes turbulent and the pharyngeal tissues vibrate as the air passes through. More specifically, snoring is characterized by oscillations of the soft palate, pharyngeal walls, epiglottis and tongue base[3,4].

There are many methods used for determining site of snoring. Mullers maneuver, sleep nasendoscopy , sleep MRI etc. in This study we evaluate role of sleep nasendoscopy in determining site of snoring in patients who gave history of snoring.

Material and Method; This prospective study was conducted first time in the department of Otorhinolaryngology Head and Neck Surgery, Government Medical College and Associated SMHS Hospital Srinagar.this study includes 37 patients who were admitted in ENT department for some other unrelated surgery under general anesthesia in ENT operation Theatre,history of snoring was taken from patients and his/her bed partner and in these patients sleep nasendoscopy was done after proper written consent.

Sleep nasendoscopy was done after Anesthetist start anesthetizing these patients with propofol in dose of 15mg/kg body weight, this doze induces sleep in patient and we observe if patient starts snoring, as soon as patient starts snoring, flexible nosopharyngoscope was guided through one of the nostril and site from which snoring sound is produced was noted down.

Results;

Table 1: Distribution of patients who gave history of Snoring andThose who Develop Snoring Due to Propofol Sedation during Sleep Nasendoscopy (n= 37)

History of Snoring	No. of Patients	No. of Patients who Develop Snoring Due to propofol Sedation	Percentage
Present	17	15	88
Absent	20	02	10

Table 2: Distribution of Sleep Nasendoscopy Grade and findings of patients who develop snoring due to Propofol Sedation (N= 17)

Grade	Findings	No. of Patients	Percentage
Grade 1	Single level Palatal Snoring	5	29
Grade 2A	Multi segmental involvement; Palatal level + Epiglotic	3	18
Grade 2B	Multi segmental involvement; Palatal level+ Circumferential oropharyngeal obstruction	8	47
Grade 3	Tongue base level Obstruction	1	6

It was found that 15 (88%) patients out of 17 patients who gave history of snoring produced snoring due to propofol sedation and 2 (10 %) patients out of 20 patients who did not give history of snoring produced snoring due to propofol sedation (table 1).

Patients who produced snoring due to propofol sedation, it was found that majority of patients (47 %) had sleep nasendoscopy Grade 2B with multi segmental involvement; palatal + circumferential oropharyngeal obstruction. sleep nasendoscopy Grade 1 i.e. single level palatal snoring and Grade 2A i.e multi segmental involvement palatal level + epiglottic was

found in 29% and 18 % respectively. sleep nasendoscopy Grade 3 i.e. tongue base level obstruction was found in 6 % only (table 2).

Discussion; Snoring is commonly associated with abnormalities of the soft palate or uvula. An overly long or floppy soft palate may vibrate irregularly with airflow. This abnormal vibration makes a sound snoring. Other sources may also contribute to snoring and, for this reason, careful and complete evaluation is imperative in order to direct effective treatment. Nasal sources (deviated septum, inferior turbinate hypertrophy, polyps, chronic and allergic nasal congestion) nasopharyngeal sources (enlarged adenoids and nasopharyngeal growths) oral sources (enlarged tongue base, small jaw, enlarged uvula or tonsils), and throat and neck sources (floppy neck soft tissues) may all contribute to snoring and to sleep apnea.

Snoring may have several other side effects. Intense flutter of the upper airway structures may cause vibratory trauma, resulting in early inflammation [5] and permanent damage of the pharyngeal tissues [6,7] and adjacent vessels[8,9.] To overcome increased upper airway resistance, snorers significantly increase inspiratory muscle effort, as a consequence of which nadir intra thoracic pressures may double or triple[10,11]. Excessive negative intrathoracic pressure increases cardiac afterload by increasing myocardial transmural pressure[12] and may facilitate gastro-esophageal reflux[13]

Upper airway surgery is an important treatment option for patients with snoring, particularly for those who have failed or cannot tolerate positive airway pressure therapy. Surgery aims to reduce anatomical upper airway obstruction in the nose, oropharynx, and hypo pharynx. Upper airway surgery for snoring is not excisional but is reconstructive[14]. The primary goal of these procedures is to modify tissues and alter structures to improve and restore upper airway function. Surgeries for snoring could be divided into techniques with and without resection. The resection techniques are uvulopalatopharyngoplasty (UPPP), laser-assisted uvulopalatoplasty (LAUP), Z- Palatoplasty and resection of soft palate by using radiofrequency, septoplasty etc. Techniques without resection are radiofrequency volume reduction of soft palate (RFVR), injection scleroplasty, Sling Snorplasty, Modified Sling Snorplasty and palatal implant.

Sleep nasendoscopy is usful method of finding the site of upper airway obstruction and cause of snoring and accordingly appropaiate surgical procedure to reconstruct that anatomical site can be done.

Gary Mckee (2003)[15] done prospective cohort study on 54 snoring patients in which sleep nasendoscopy was done before laser assisted uvulopalaoplasty, this study showed that Grade 2B Sleep nasendoscopy grade was most common grade of SNE and 10 %of Snorers fail to produce snoring due to sedation. Results of our study were in accordance with this study.

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