



Manage Your Condition

Snore & You Sleep Alone

Snoring is frequently deemed as a social nuisance. Not a nuisance to the snorer, but a nuisance to the bed-partner. Most patients who snore do not believe that there is anything wrong with them, until perhaps their spouses' sleep quality has been adversely affected or they find that they are excessively tired, fatigued and are falling asleep behind the wheel. The presence of snoring is an "alarm" that alerts one to the possibility of a sleep disorder. Sleep-disordered breathing is a spectrum of diseases related to decreased airflow through the upper airway during sleep, due either to complete or partial upper airway obstruction. These encompass simple snorers (patients who snore without excessive daytime tiredness), and obstructive sleep apnoea (OSA), (patients who snore and have pauses in breathing during sleep, with both excessive daytime somnolence and an abnormal sleep study). These sleep disorders result in poor sleep quality, fragmented sleep, intermittent nighttime lack of oxygen and increased stress at night. These manifest in the day as daytime tiredness, morning headaches, poor concentration, memory loss, frustration, depression and even marital discord.

Obstructive sleep apnea (OSA) is a common sleep disorder; studies have found an incidence of 24% in men and 9% in women. It is estimated that up to 93% of females and 82% of males with moderate to severe OSA remain undiagnosed.

OSA has profound effects on the cardio-respiratory systems. The Sleep Heart Health Study and the Wisconsin Sleep Cohort have demonstrated a strong link between OSA and hypertension. Patients with OSA have a 1.6 to 2.3 times higher chance of a heart attack and stroke than a normal patient. This is believed to be due to sleep fragmentation, intermittent hypoxemia and increased sympathetic tone resulting in a higher chance of developing hypertension, congestive heart failure and strokes.

Physiology

The fundamental abnormality in sleep-disordered breathing is in the collapsibility of the anatomy in the upper airway. Snoring is caused by a vibration of the structures in the mouth - the soft palate, uvula, tonsils, tongue base, epiglottis and pharyngeal walls. Partial or complete upper airway obstruction during sleep can be due to excessive soft tissue content or an abnormally small facial skeletal framework. Overweight patients have an exaggerated disease due to a crowded upper airway with very little space for airflow. It is the vibration of these soft tissues during sleep that results in snoring. When the bulk of this soft tissue exceeds a certain amount, it leads to collapse (partial or complete) of these structures, which then leads to upper airway obstruction during sleep.

Symptoms

During the day:

- Daytime sleepiness, tiredness
- Poor concentration
- Poor memory
- Morning headaches
- Mood changes



Irritability

During the night:

Choking sensation at night
Gasping for air at night
Frequent arousals
Nocturia (frequent passing urine)
Loud snoring

Diseases associated with OSA

- ↳ Obesity
- ↳ Hypertension
- ↳ Ischaemic Heart Disease
- ↳ Stroke (Cerebrovascular Accidents)
- ↳ Diabetes Mellitus

Diagnosis

The gold standard for differentiating simple snoring from OSA is a non-invasive, painless, overnight polysomnogram (sleep study). It is appropriate to obtain a sleep study for any snoring patient with a history of excessive daytime tiredness, with or without physical findings suggestive of OSA, especially in patients with a history of hypertension, heart disease or strokes.

Treatment of Snoring

Simple snoring is considered a social disease with no medical significance. There are a number of treatment modalities, the efficacies of which are pretty similar but differ mainly in pain outcomes and costs. The majority of simple snoring is secondary to palatal flutter. Thus, treatment is directed at the soft palate. Scarring of the palate has been the objective of all treatments. The theory is that the more collagen deposited into the soft tissues, the stiffer they are and the less likely to flutter. In patients with excessive soft tissues, resection of redundant tissue has also been advocated. With the advent of minimally invasive procedures, many newer office based techniques have been introduced. Dr Kenny Pang, A/Consultant, Department of Otolaryngology, was a key investigator of a multi-center trial in the United States of America, investigating the use of synthetic Palatal Pillar Implants (figure 1), for the treatment of snoring and mild OSA. This procedure is an office-based, day procedure, done under local anaesthesia with minimal pain, short recovery time and can be done under 10 minutes. The results have been very impressive and encouraging.

Treatment of Obstructive Sleep Apnoea

Medical Treatment

Conservative measures include weight loss, sleeping on one's side, avoid smoking, alcohol, avoid being sleep deprived, and start a regular exercise regime. Nasal Continuous Positive Airway Pressure (CPAP) is a non-invasive method of treatment; it entails using continuous positive airway pressure by a nasal mask worn by the patient throughout the



night. CPAP is the most effective and frequently used treatment for OSA, but the issue of compliance is a major problem. Oral Appliances (OA) are mouthpieces that are worn while sleeping to prevent the airway from collapsing. It works by repositioning the tongue or mandible forward.

Surgical Treatment

Surgical treatment of OSA can range from reduction of soft tissues in the mouth to enlarging the skeletal framework of the jaw. The traditional uvulopalatopharyngoplasty (UPPP) operation has always been done in conjunction with other procedures in patients with moderate to severe OSA. Recent advances have been to provide maximal surgical benefit with minimal surgical access. A new minimally invasive tongue base sling suture (Repose Tongue Suspension) has been recently introduced in Singapore, and Dr Pang has currently introduced this procedure to Singapore and Asia. Other procedures available include:

1. uvulopalatopharyngoplasty
2. laser assisted uvulopalatoplasty
3. nasal submucous diathermy
4. palatal advancement
5. tongue base reduction
6. genioglossus advancement
7. maxillomandibular advancement