ABSTRACT
Obstructive sleep apnea (OSA) or obstructive sleep apnea syndrome is the most common type of sleep apnea and is caused by obstruction of the upper airway. It is characterized by repetitive pauses in breathing during sleep, despite the effort to breathe, and is usually associated with a reduction in blood oxygen saturation, these pauses in breathing, called "apneas" (literally, "without breath"), typically last 20 to 40 seconds. Conservative treatment modalities are recommended for treating mild to moderate forms of OSA. This case report demonstrates the use of a simple intraoral device designed on the Erkodent system, in the management of OSA.

KEYWORDS OSA, Intraoral device, Erkodent system.

INTRODUCTION - Obstructive sleep apnea (OSA) or obstructive sleep apnea syndrome is the most common type of sleep apnea and is caused by obstruction of the upper airway. It is characterized by repetitive pauses in breathing during sleep, despite the effort to breathe, and is usually associated with a reduction in blood oxygen saturation, these pauses in breathing, called "apneas" (literally, "without breath"), typically last 20 to 40 seconds. The syndrome is closely associated with cerebral infarction, angina pectoris, and hypertension. The individual with OSA is rarely aware of having difficulty breathing, even upon awakening. It is recognized as a problem by others witnessing the individual during episodes or is suspected because of its effects on the body (sequelae). OSA is commonly accompanied with snoring. Symptoms may be present for years or even decades without identification, during which time the sufferer may become conditioned to the daytime sleepiness and fatigue associated with significant levels of sleep disturbance. Sufferers who generally sleep alone are often unaware of the condition, without a regular bed-partner to notice and make them aware of their symptoms.

CASE REPORT
A 40 year old male patient reported to the dental clinic with the chief complaint of heavy snoring and disturbed sleep. General physical examination revealed the patient weighing 95 kgs with a height of 5 feet 5 inches. There was no significant medical history as revealed by the patient.

Procedure
1. Maxillary and mandibular impressions were made and poured in stone. The casts were surveyed to record the height of contour. Face-bow transfer was done and the casts were mounted on a semi-adjustable articulator.
2. The mandibular cast was advanced approximately 5mm on the articulator, but not beyond an end-to-end relationship of the dentition. The vertical dimension of occlusion was increased approximately 6 to 8mm between the anterior teeth.
3. Modeling wax was adapted to both casts to the height of contour, and a keyway was incorporated in the mandibular occlusal surface to maintain the protrusive position. A space of about 3mm was maintained between the wax rims, covering the anterior to serve as an airway.
4. The appliance was then fabricated using the Erkodent system.
mouth-wash (can cause discolouring) and water that is hotter than 50 °C(deformation). The patient was instructed the following after using the appliance:

To wash with water, To thoroughly clean the inner and exterior side of the splint with a tooth brush and soap, Shake off the water or dry with a towel. Never to blow-dry, Allow the splint to completely dry. Keep the appliance in a dry place, Wash with water again before using it. On recall, the necessary adjustments were made in the appliance, with the patient reporting satisfaction as regards, decrease in snoring and a sound sleep.

**DISCUSSION**

Obstructive sleep apnea (OSA) is now recognized as a common clinical disorder with potentially life threatening consequences. OSA is more common in men, and it can be strongly suspected if patient is a middle-aged, overweight, complains of excessive daytime sleepiness, and has a history of heavy snoring that is punctuated by periodic cessation of breathing. While snoring is caused by a narrow airway, sleep apnea is a true breathing obstruction. Other symptoms are early morning headaches which may be due to nocturnal CO₂ retention, impaired concentration, depression, anxiety, hypertension, and impotence. Obstruction during aponeic periods may occur at single or at multiple sites in the pharyngeal airway. Laryngoscopic studies have revealed that airway obstruction usually occurs at the level of the nasopharynx. Computerized tomography (CT) studies have demonstrated upper airway narrowing at the oropharyngeal and nasopharyngeal levels in awake OSA patients. Cephalometric studies of the upper airway in OSA patients have shown a reduction in the two-dimensional posterior pharyngeal airway space. Fundamental to the pathogenesis of this upper pharyngeal airway narrowing is an interaction between physiological and anatomical changes in this region. Several causes for OSA have been suggested. Obesity is a readily recognized phenomenon in OSA patients. Presence of oedema in the upper respiratory tract has also been suggested in the aetiology of OSAS. Others have suggested anatomical abnormalities of the upper airway, including tonsillar hyperplasia, macroglossia and soft-palate enlargement. Furthermore, the relaxation of upper airway musculature has been studied in relation to OSAS. It was found that when specific oropharyngeal muscles were stimulated during sleep in OSAS patients, airflow could be increased or decreased. Narrowing of the pharyngeal airway as a result of alterations in craniofacial morphology has also been suggested in the aetiology of OSAS. If the patient has a retrognathic mandible, the prosthetic device increases the airway by positioning the mandible in a more anterior position, thereby increasing the intraoral space for the tongue and minimizing the potential for airway obstruction. Some of the surgical procedures performed are tracheostomy, uvulopalatopharyngoplasty (UPPP), septoplasty and TAP (Thermal Ablation Palatoplasty). Orthognathic surgery procedures, which advance the maxilla or the mandible and the hyoid bone are considered for individuals with skeletal deficiencies. There is an established role for mandibular advancement devices in the management of both uncomplicated snoring and mild to moderate OSAS. There are several designs of snore guards to aid in suppressing snoring, from a simple diagnostic bite plate to a fixed or adjustable double jaw device which repositions the lower jaw and/or tongue forward and downward. In this case the appliance comprised of two transparent splints, one each for the upper and the lower jaw. The lower jaw is held in a predetermined position by two connectors that are fixed laterally to the splint causing the pharyngeal space to open up. Snore guards as it is commonly called makes sure, that night is quiet and sleep is refreshing.

**SUMMARY & CONCLUSIONS**

OSA is becoming a widespread disorder that requires multidisciplinary intervention by the medical and dental community. Conservative treatment modalities, such as oral prostheses, should be used before irreversible surgical procedures, especially for mild to moderate OSA. The appliance can be used for the treatment of sleep apnea syndrome, the large majority of cases of which are of the obstructive or mixed type. This article describes a practical, simplified technique for fabricating an OSA prosthesis. The goal of this prosthesis was to posture the mandible and tongue in an anterior position and prevent the tongue from obstructing the airway.
REFERENCES


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