



The Role of the Dentist in the Diagnosis and Treatment of Obstructive Sleep Apnea

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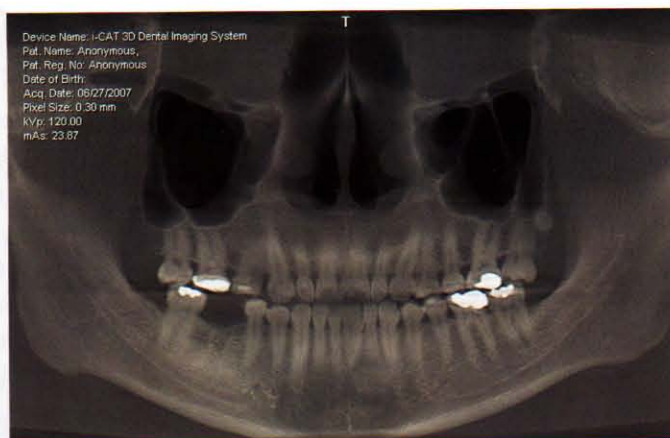
Over the last 10 years, I have become more and more involved in the treatment of snoring and obstructive sleep apnea (OSA). Most of my experience was surgical with the use of a CO₂ laser in performing laser-assisted uvulopalatoplasty (LAUPP). The more I learned about OSA, the more I realized that there is a significant role for the dentist in the treatment of this complex disease.

OSA is a disease affecting millions of people. It is a disease whereby the patient's airway becomes partially or totally obstructed, interfering with the proper ventilation and oxygenation during sleep. Basically, the patient suffocates due to the obstruction and the body becomes stressed due to the lack of oxygen. That sends a message to the brain arousing the patient from a deep sleep to a light sleep, at which point the patient can open his/her airway and start breathing again. Because the patient does not awaken completely, the patient may not be aware of this awakening; however, he/she will have symptoms related to lack of sleep. Some of the symptoms of OSA are morning headaches, daytime somnolence, high blood pressure, irritability and, in some severe cases, the patient may spontaneously fall asleep during the day.

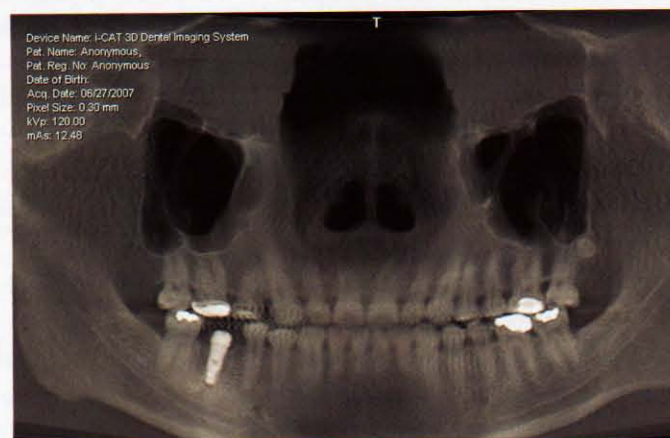
Frequently, the only clue to this disease is loud snoring that usually bothers a sleeping companion. Upon questioning the patient further, you will find that he/she may have signs of OSA. Based on prescreening process results, it is required that a patient participate in an objective sleep study. The sleep study can be conducted at a sleep lab or, as of more recently, with an in-home sleep study. The results from both types of study must be read and reviewed by a certified specialist.

New advancements in the treatment of snoring and OSA involve the dentist. By fabricating a dental appliance to position the mandible slightly anterior and inferior, the posterior airway space can be opened during sleep. This appliance is customized to the patient's needs and is frequently adjusted. Several years ago the Pillar Procedure received FDA approval as a method for treating snoring and sleep apnea. The Pillar Procedure consists of inserting three Dacron implants into the soft palate, creating a stiffening effect that dampens the vibrations from snoring and lifts the soft palate away from the posterior pharyngeal wall. This procedure alone greatly improves snoring and some OSA, but when paired with a dental appliance it significantly reduces both snoring and OSA. In order for me to determine the degree of improvement from a snoring appliance, I first take a CAT scan with the patient in light occlusion and then a second scan with the appliance in the patient's mouth. This way, I can measure objectively the posterior airway space.

Recently, I had a patient who is a medical anesthesiologist who came to me for dental implants. In taking his medical history this



Pre-op scan



Post-op scan

patient described OSA. At this time he was on the standard therapy for OSA, which is continuous positive airway pressure (CPAP). This device is simply a breathing circuit with a compressor pumping air to a mask on the patient's face. It is very effective in keeping the soft tissues opened by blowing them up like a balloon. While discussing the dental implant procedure, I mentioned the Pillar Procedure to the patient. The patient immediately realized the potential to improve his OSA and reduce his need for CPAP. He agreed to have the Pillar Procedure done in conjunction with his dental implants. Three months later the patient was scheduled to undergo a surgical procedure on his neck and the anesthesia team was concerned about his sleep apnea during the recovery from anesthesia. After extubation, the anesthesia team had prepared a CPAP machine in case the

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patient had OSA upon emergence from anesthesia. That scenario was very likely due to the fact that the patient had narcotics which will increase the magnitude of his soft-tissue collapse. The patient did not experience any obstruction while he was being monitored in the recovery room even though he was coming out of deep anesthesia with morphine. The patient sent me an extensive testimonial letter describing his procedure in detail and how saying how happy he was

to not have OSA anymore.

With the ability to reposition the patient's mandible with an oral appliance and stiffen the soft palate with a minimally invasive procedure called the Pillar Procedure, the dentists are truly in a prime position to improve their patients' lives and successfully treat OSA.

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From the Publisher

About seven years ago, my wife at that time complained about my snoring. I often felt tired throughout the day and frequently fell asleep during religious activities at the Kingdom Hall. Finally, after my second car accident, I decided it was time to see my doctor who prescribed a sleep study. I was told that the study would take from four to six hours to complete. After just two hours into the study the clinician woke me up and told me I could go home. I was informed that I had sleep apnea and would be later tested for a continuous positive airway pressure (CPAP) machine. While the machine was helpful in providing me with uninterrupted sleep throughout the night, the mask was uncomfortable to wear and the device required daily maintenance that often made the machine inconvenient to use.

As a CPAP user for two years, I discontinued its use after losing 20 pounds and the symptoms cleared up. I can honestly say that the Pillar Procedure seems like a much more viable and attractive alternative, as it directly addresses the problem.



Three Dacron Pillar inserts shown at left with dime for size comparison.