



## Does the Role Otorhinolaryngologist Increase in the Diagnosis and Treatment of Snoring and OSA?

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OSA is one of the most controversial diseases of otorhinolaryngology. The earliest records of snoring and sleep apnea date back more than 2,000 years. The earliest records of surgery for snoring was simply uvulectomy since it was easy to remove the uvula. The surgeons developed sophisticated instruments for this purpose and uvulectomy was a traditional surgery for hundreds of years. In the 1950s, Schwartz proposed some procedures for snoring, the surgery was the resection of soft palate triangles just paramedian of the uvula. In the 1960s, amputation of the uvula became popular again, but it did not have much effect on apnea and only changed the pitch and the intensity of snoring [1,2]. In 1964 Ikematsu [3] described a more physiologic and conservative UPPP technic. Ikematsu's technic was modified later by Fujita in 1981 [4], by a more aggressive technic. Later, multiple procedures for reconstruction of the soft palate, to maxillomandibular skeleton, and tongue base were introduced. However all these surgical approaches have not restored the main physiological dysfunctions (cognitive or cardiovascular) completely.

The physiological changes occurring during apnea are not understood completely and the proposed mechanisms may not be the real ones. The objectives of treatment, which are the same in medical and surgical treatment, are to decrease sleep-related symptoms and to improve the quality of life and to reduce health morbidities for both the short and long term. For this purpose besides surgery positive airway pressure (PAP) therapy was introduced in 1976 by Colin Sullivan [5] and it became the standard

modality of treatment for moderate and severe OSA. PAP increases the intraluminal pressure above the critical pressure of pharyngeal collapse and relieves the airway obstruction by opening the airway. However due to certain conditions such as decreased nasal passage, claustrophobia some patients can not use it. The patient may express that he can not sleep with it or mask can slip during sleep without awakening. The adherence rate to PAP is reported to range from 30% to 60% [6]. This limited adherence may limit its effectiveness. In some patients under PAP therapy with good adherence, it is not a guarantee to prevent long-term prevention of complications of OSA due to unknown genetic factors. The duration and the intensity of the syndrome also have some effects on complications.

The oral appliances (OAs) for mandibular advancement are also recommended. They are useful if the patient selection is done properly. OAs should create sufficient pharyngeal dilation with jaw protrusion. Occlusion class, the dental and gingival status may limit its use. Its use is also limited due to occlusal changes and orofacial discomfort and it is not always efficacious. In selected cases, positional therapy may help the patient and it may be combined by OAs.

Although many sleep medicine specialists deny the role of surgery, we as the otorhinolaryngologist see that some patients benefit from the surgery. In patients with non-compliance with PAP, OAs, or insufficient efficacy of these devices, surgical treatment options should be offered to patients and otorhinolaryngologist plays the key role in this context.

The advantage of surgical therapy over other nonsurgical treatments is that it has nothing to do with adherence to a device. Although noncompliance and inadequate adherence is the main reason for PAP, OAs, and other medical devices, there is not such a problem with surgery. Moreover, surgery may improve and help the adherence to and effectiveness of these medical treatments.

The aim of the surgical treatment except tracheotomy is not to cure, but to reduce the symptoms. The surgical approach should be clinically applicable with high success rate, anatomically relevant, and accepted by the patient. This principle can also be said for PAP and other medical devices. Pittman and Pillar [7] reported a 27% CPAP efficacy rate, defined as an AHI less than or equal to 5. Weaver and Maynard compared patients treated with uvulopalatopharyngoplasty (UPPP) with those treated with CPAP and found improved survival for patients who underwent UPPP compared with those treated with CPAP.

A wide variety of surgical techniques creates difficulty for evaluating the effectiveness of surgery for OSA. Although UPPP was considered as the main surgery for OSA, in the last decades, several surgical approaches have been defined for different pathologies thanks to new evaluation methods. Better understanding of the pathophysiology of OSA and new endoscopic and radiologic evaluation methods enabled the physician in defining various anatomic pathologies and different patterns of collapse at different sites better, allowing to decide right surgical techniques and better outcomes. The new technology and understanding of the physiopathology of OSA brought up new surgical techniques such as maxilomandibular advancement surgery, radiofrequency or robotic tongue base surgery, and hypoglossal neurostimulation surgeries with better results [8].

Through all these developments the paradigm for OSA surgery shifted from more ablative, excisional, destructive surgery toward more conservative, more physiologic, more reconstructive, less destructive, less ablative, less excisional surgeries. Secondly, the surgery has been more problem-oriented according to the site of the collapse. Surgery of snoring and apnea which started as uvulotomy then changed into a multilevel surgery with uvula and mid-palate preservation concept.

Surgery plays a key role in the multimodality combination treatment plan. Even it can not solve the problem it may play an adjunctive role to the medical device therapy.

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