

## EDITORIAL

# Sleep-related breathing disorders – a challenge for the ENT surgeon

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**N**owadays, sleep medicine is more and more present in the life of both practitioners and patients. And this is natural, given the fact that it is estimated that we spend one-third of our lives sleeping<sup>1</sup>. So, the quality of sleeping is an important parameter of our patients' general well-being.

The sleep disturbances are multiple, starting from psychological problems that may cause insomnia and ending with serious respiratory problems like in the case of obstructive sleep apnea-hypopnea syndrome. All of them may have serious health consequences, one of the most important being sleep deprivation. This is a very serious threat to safety and overall emotional and physical well-being. This accumulation of sleep loss does not dissipate; it does, however, reduce our capacity to function properly.

For us, ENT specialists, the management of sleep-related breathing disorders (SRBD) has to be an important concern, given the consequences stated before. This has to be a concomitant effort with other medical specialties involved in the treatment of a patient with complex dysfunctions: pneumologists, allergologists, bariatric surgeons, anesthesiologists, maxillo-facial surgeons, endocrinologists, dieticians, etc.

For the patients with SRBD, the problem consists in a partial or complete obstruction of the upper airway during sleep. In the pharynx of a normal person, there is a very delicate balance between two opposing forces that maintain the normal endoluminal patency: the negative intra-pharyngeal pressure and the activity of the upper airway musculature. This balance can even be compromised by anatomical or central neural abnormalities, producing social-related problems, like snoring, or serious health problems, like cessation of breathing during sleep (obstructive sleep apnea – OSA)<sup>2</sup>. The ultimate goal of any kind of therapy is to

alleviate this obstruction and to increase the airway patency.

Today, this goal can be reached by medical or surgical treatments, alone or combined.

But, before treatment, the patient has to be very carefully assessed. A complete physical exam should be performed on every patient, focused in the regions of the head and neck that have been described as potential sites of upper airway obstruction, such as the nose, palate and tongue-base.

The technical progress allows us today to complexly monitor the functional parameters of a patient during sleep. The oxygen desaturation and number of hypopnea and apnea episodes, together with the evaluation of the brain, cardiac and pulmonary functions, body movements and positions during sleep, can be achieved using a modern investigation called polysomnography. We can also evaluate the upper airways patency during sleep, using sleep-endoscopy. The rhinomanometric measurement of nasal patency is also important, especially for the surgical cases. All of these investigations are also important for the evaluation of the therapeutic success.

Presently, there exists a multitude of treatment options for SDB. The current classification divides these options into conservative, apparative and surgical methods. In order to be able to define the best treatment plan for your patient, it is necessary to be familiar with all these methods, even if for us, ENT specialists, the surgical techniques are more appealing.

Conservative methods are considered of high importance when dealing with patients with SRBD. First of all, a great interest is attributed to weight reduction, which may be achieved by diet and changing of patient's life-style, or sometimes using endocrinological treatment or the so-called bariatric surgery. But, even

if weight reduction is of essential importance and simplifies every other OSA therapy, weight reduction in itself is only rarely able to resolve an OSA without further therapy. The maintenance of a good level of sleep hygiene, by avoiding alcohol, sedatives, smoking, certain sleep positions, is sometimes of equal importance.

The apparative treatment options include the usage of various types of oral appliances or the use of continuous positive airway pressure (CPAP) or bilevel positive airway pressure (BPAP) devices. The efficacy of CPAP was clearly demonstrated, being similar to tracheostomy for the patients with OSA, but there are patients that struggle to comply with or accept CPAP therapy<sup>3,4</sup>. These patients may be candidates for surgical treatment.

The goal of surgical treatment is to alleviate upper airway obstruction. This can only be accomplished if a thorough and systematic evaluation is performed on every patient. Since multilevel obstruction may exist, it may be necessary to treat more than one site. Failure to recognize or treat all anatomical levels will lead to persistent obstruction. Thus, the surgeon must be committed to treat the entire upper airway.

A surgeon has numerous procedures available to treat SRBD. Selecting the appropriate surgery for a patient can be challenging. Powell and Riley have created a two-phase surgical protocol (Powell–Riley surgical protocol) as a logically directed plan to treat the specific areas of upper airway obstruction<sup>5,6</sup>. This protocol includes in the 1st phase nasal permeabilisation methods (addressing to the nasal septum, turbinates

and nasal valve), tonsils surgery (tonsillectomy, tonsillectomy – using cold instruments, radiofrequency, LASER surgery, coblation, etc.), palatal surgery (uvulopalatopharyngoplasty-UPPP, uvulopalatal flap-UPF, Pillar palatal implant system, laser-assisted uvulopalatoplasty (LAUP), injection snoreplasty), hyoid myotomy and suspension and tongue-base reduction. Phase II surgery includes maxillomandibular advancement osteotomy.

With correct indications, all these surgical techniques may help the patient to overlap the serious health and social problems induced by the SRBD.

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