Obstructive Sleep Apnea Syndrome and Gastroesophageal Reflux Disease

Obstructive sleep apnea syndrome (OSAS) and gastroesophageal reflux disease (GERD) are linked. The pathophysiology of these two conditions seems to overlap significantly, as airway obstruction, inflammation, obesity, and several other factors are implicated in the development of both diseases. Furthermore, a collateral rise in prevalence of both OSAS and GERD has been noticed during the past few years, occurring in association with the emerging epidemic of obesity, a common risk factor for both conditions. OSAS and GERD share many other risk factors as well.

OSAS and GERD are often co-morbid disorders. The prevalence of GERD in patients with OSAS is significantly higher than the general population. There were significant correlations between laryngeal inflammation caused by GERD and severity of OSAS. Because of the decrease of primary peristalsis and the reduced production of saliva, as well as the diminished acid and volume clearance of the esophagus, sleeping can be considered as a risk factor of the reflux event by itself. Moreover, the transdiphragmatic pressure increases in parallel with the growing intrathoracic pressure generated during obstructive apnea episodes, resulting in lower esophageal sphincter (LES) insufficiency and GERD.

The relationship of GERD and OSAS is also supported by evidence showing that treatment of GERD improves OSAS and vice versa. Studies show that treatment of GERD with continuous positive airway pressure (CPAP), a standard therapy for OSAS, improves GERD even in patients without OSAS. Conversely, some preliminary evidence indicates that treatment of GERD with an acid-suppressing agent also seems to help reduce OSAS.
It has been suggested that obesity may contribute to the risk of nocturnal GERD and OSAS by certain obesity-related alterations in gastrointestinal tract functioning, including slower esophageal transit, increased intra-abdominal pressure, and the development of hiatal hernia, which increases esophageal acid clearance times. With reduction in body weight, symptoms of both apnea and GERD have been reported to improve.

In conclusion, there is a strong reason to believe that GERD and OSAS potentially exhibit a two-way, mutually reinforcing relationship. During the obstructive apnea period, the significant changes in transdiaphragmatic pressure facilitate the migration of the gastric contents toward the esophagus. On the other hand, the same repetitive pressure changes engender an irreversible destructuring of the LES, leading to GERD. The relationship of GERD and OSAS is particularly supported by the observation that treating either of the two conditions improves the other one as well. There is considerable evidence to link nighttime reflux with severe esophageal damage and respiratory complications. Sleep disturbances that occur with nocturnal reflux may have serious consequences on the general well being of patients. Given the high prevalence of both GERD and sleep disturbances, it is likely that there is substantial overlap in both prevalence and causality. Thus, we must be aware of the sleep-related implications associated with nocturnal reflux in order to provide effective treatment.