Abstract:

Signs of pharyngeal neurodegeneration have been detected in patients with obstructive sleep apnea (OSA). Along with this neurodegeneration, a decreased pharyngeal sensitivity to mechanical stimulation has been described. The decreased sensitivity may play a role in the pathophysiology of this disease. The aim of the study was to investigate the chemosensitivity of the pharyngeal mucosa in patients with OSA compared with controls. Healthy controls and patients with OSA (age: 30-60 years) were included. Testing of oropharyngeal chemosensitivity was performed with subjective intensity ratings of capsaicin (SIR, visual analogue scale 0-10), air puffs (presented with an olfactometer), and stimulation with CO2 at the posterior pharyngeal wall. A 2-point discrimination test at the soft palate, an intensity rating of capsaicin at the tongue, and a nasal lateralization test were performed. Twenty-six patients with OSA and 18 healthy controls were included. No differences were detected in the SIR of capsaicin at the tongue or in the nasal lateralization test. At the pharynx, a decreased sensitivity to capsaicin (OSA: 6.8 ± 2.3; healthy control: 8.6 ± 1.3), air puffs (OSA: 2.8 ± 1.9; healthy control: 4.2 ± 1.6), and stimulation with CO2 (OSA: 1.5 ± 1.7; healthy control: 2.8 ± 1.8) were demonstrated in patients with OSA (all P< 0.05). Two-point discrimination at the soft palate was reduced with statistical significance in
the OSA group (OSA: 11.5 ± 5.4 mm; healthy control: 5.0 ± 2.4 mm). The results suggest reduced pharyngeal chemosensitivity in OSA patients in addition to the reduced mechanical pharyngeal sensitivity shown with 2-point discrimination. This demonstrates peripheral neurodegeneration in the context of this disease.