Arousals in obstructive sleep apnea patients with laryngopharyngeal and gastroesophageal reflux

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ABSTRACTS

Patients with obstructive sleep apnea syndrome (OSAS) are known to have metabolic dyslipidemia and cardiovascular, cerebrovascular, or neurodegenerative complications. Laryngopharyngeal reflux (LPR) is thought to be an important factor in aggravating OSAS. Therefore, we investigated whether obstructive sleep apnea syndrome patients with laryngopharyngeal and gastroesophageal reflux were different in clinical characteristics, polysomnographic parameters, or upper airway symptoms when compared with patients with obstructive sleep apnea syndrome without reflux. The patients were divided into four groups: mild OSAS with LPR (n=12), moderate OSAS with LPR (n=12), mild OSAS with GER (n=14), and moderate OSAS with GER (n=12). Polysomnography was performed and upper esophageal pH monitoring was carried out using double catheter in a in-situ study. Results: Most reflux events in patients with severe OSAS with GER (n=21) were accompanied with respiratory arousals. On the other hand, among patients with mild to moderate OSAS, 64.4% and 24.8% reflux events were accompanied with spontaneous arousals in those with LPR (n=12) and GER (n=14), respectively, and 9.4% and 8.3% of reflux events were not accompanied by arousals. There were no significant differences in other sleep parameters between mild to moderate OSAS patients with LPR versus GER, and between severe OSAS patients with LPR versus GER. Conclusion: The patients with reflux, the types of arousal differed significantly between those with mild to moderate OSAS versus severe OSAS. In patients with LPR versus GER, LPR induces more spontaneous arousals than does GER.

Patients and Methods

We conducted a prospective study in Japanese patients with OSAS and LPR or GER. Patients simultaneously presenting with these conditions who had undergone overnight polysomnography were included in the study. The polysomnographic data and reflux data were combined and analyzed. Arousal events and related spontaneous arousals were counted as respiratory arousals if they were accompanied by oxygen desaturation over 3%, or certain respiratory events such as a decrease in airflow <10% baseline amplitude or an excursion of approximately <50% of the baseline for at least 10 seconds, associated with some change in baseline respiratory rate or in oxygen saturation (SpO2) excursion of approximately <50% of the baseline for at least 10 seconds, associated with some change in baseline respiratory rate or in oxygen saturation (SpO2).

RESULTS

Based on the results of polysomnography, 20.8% (16 of 77) patients with obstructive sleep apnea syndrome and reflux had both LPR and GER. The numbers of mild OSAS patients with LPR and GER were 12 and 15, respectively, and the numbers of severe OSAS patients with LPR and GER were 12 and 14, respectively. The patients with mild OSAS were divided into four groups: mild OSAS with LPR (n=12), mild OSAS with GER (n=14), moderate OSAS with LPR (n=12), and moderate OSAS with GER (n=12). Polysomnography was performed and upper esophageal pH monitoring was carried out using double catheter in a in-situ study. Results: Most reflux events in patients with severe OSAS with GER (n=21) were accompanied with respiratory arousals. On the other hand, among patients with mild to moderate OSAS, 64.4% and 24.8% reflux events were accompanied with spontaneous arousals in those with LPR (n=12) and GER (n=14), respectively, and 9.4% and 8.3% of reflux events were not accompanied by arousals. There were no significant differences in other sleep parameters between mild to moderate OSAS patients with LPR versus GER, and between severe OSAS patients with LPR versus GER. Conclusion: The patients with reflux, the types of arousal differed significantly between those with mild to moderate OSAS versus severe OSAS. In patients with LPR versus GER, LPR induces more spontaneous arousals than does GER.

REFERENCES