

中文題目:間接型負壓裝置於嚴重睡眠呼吸中止症病人---個案報告

英文題目: Intermittent negative air pressure device in a case of severe obstructive sleep apnea

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### **Abstract**

Studies have provided evidence about the relationship between obstructive sleep apnea (OSA) and cardiovascular disease. Polysomnography is the standard diagnosis of OSA and continuous positive airway pressure (CPAP) stands effective and the first line management of severe OSA. However, adherence of long term CPAP therapy seemed suboptimal. The intermittent negative air pressure (iNAP) device can retain the tongue and soft palate in a forward position to decrease airway obstruction but the effect of iNAP remains to be elucidated.

We presented a case of severe OSA with profound nocturnal desaturation. The awake neck computed tomography (CT) imaging demonstrated nearly total occlusion of airway at the level of the cervicomandibular ring and the obstructed airway opened after application of iNAP.

### **Case report**

We presented a case of 53-year-old male with a history of hypertension and ischemic heart disease. Because of morbid obese, snore, and daily sleepiness, we arranged a polysomnography, which showed an apnea hypopnea index of 55.4 per hour and minimum sPO<sub>2</sub> of 77%. Severe OSA with obvious nocturnal desaturation was impressed. Furthermore, we conducted an awake neck CT to evaluate the obstruction area from the skull base to the thoracic inlet using a 160 -slice Toshiba AQUILION PRIME scanner with settings of 120 kVp, 280 mA, 2-mm section thickness, 5-mm reconstruction interval, 1:1 helical pitch, and 20-cm display field of view. We measured the retrolingual cross-sectional airway by selecting an axial image at the level of the cervicomandibular ring, immediately superior to the tip of the epiglottis, but inferior to the tip of the uvula. The awake neck CT imaging demonstrated nearly total occlusion of airway at the level of the cervicomandibular ring (Figure 1) and the obstructed airway mildly opened after application of iNAP (Figure 2).

The patient commenced nocturnal oximetry monitor (Figure 3) after diagnosis of severe OSA. He cannot tolerate CPAP therapy because of mask fitting size at the first. After CT examination, he started iNAP therapy during sleep and monitored by nocturnal oximetry (Figure 4). Nocturnal desaturation did not improve considerably because abundant saliva drooling after applying iNAL during sleep. Afterwards, he adopted a suitable mask and reused CPAP to correct OSA and nocturnal desaturation.