

Irregular CPAP use induced visceral fat accumulation in obstructive sleep apnea regardless of daily sleepiness

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Background: Obstructive sleep apnea syndrome (OSAS) is a common disorder in obese subjects. Occasionally OSAS causes excessive daily sleepiness (EDS) and resulted in adipose tissue accumulation. The other hand, there were many people who do not have daily sleepiness despite of sever OSAS. But the effect of continuous positive airway pressure (CPAP) treatment on visceral fat accumulation (VFA) in OSAS without sleepiness has not been known.

Material and Methods: VFA and subcutaneous fat accumulation (SFA) were assessed by CT before and 1 year after CPAP treatment in 47 OSAS patients (mean apnea and hypopnea index/Epworth sleepiness scale; 40.7 times/h/5.4±4.5). The sample was divided according to CPAP therapy, with regular users defined as a minimum nightly use of (≥4 h /day ≥75%/month); 27 subjects were regular and 20 were irregular CPAP users.

Results: Neither the regular CPAP use group nor irregular CPAP use group showed any change in body mass index or subcutaneous fat area levels. VFA increased significantly after 1 year of CPAP treatment in irregular user (171.3±68.5 to 161.2±72.4 cm² (-3.4±5.1%) vs 170.0±75.3 to 192.5±66.7 cm² (+13.4±14.6%), P<0.0061)

Conclusions These data suggested that irregular CPAP use induce visceral fat accumulation in patients with severe OSAS regardless of EDS. OSAS may have significant effects on the visceral fat accumulation without EDS.