

Introduction: Adherence to positive airway pressure (PAP) therapy is influenced by patient-related, treatment-related, and psychosocial factors. Individualized assessment and sustained follow-up support may help identify and overcome barriers to PAP use. We report a case of severe obstructive sleep apnea (OSA) in which PAP adherence improved following multifaceted intervention.

Case presentation: A 68-year-old woman with class III obesity and cardiometabolic comorbidities presented with snoring. Body mass index (BMI) was 40.6 kg/m², Epworth Sleepiness Scale (ESS) score was 6, and Pittsburgh Sleep Quality Index (PSQI) score was 5. Polysomnography confirmed severe OSA, with an apnea–hypopnea index (AHI) of 109 events/h. Peak transcutaneous carbon dioxide tension (PtcCO₂) reached 59 mmHg, raising suspicion of obesity hypoventilation syndrome (OHS). During PAP titration, therapy was converted from continuous positive airway pressure (CPAP) to bilevel positive airway pressure (BPAP) owing to high pressure requirements and nocturnal hypercapnia; the final inspiratory/expiratory pressures were 20/15 cmH₂O. An oronasal mask with a chin strap was used to manage mouth breathing and mask leak. Initial device-downloaded data showed a mean usage of 2 h 42 min on days used, with usage exceeding 4 h on 21% of days. Assessment of rhinorrhea and nasal obstruction revealed a rightward nasal septal deviation and bilateral pale, boggy inferior turbinates, consistent with a possible allergic rhinitis phenotype. Intranasal mometasone furoate was initiated; surgery was deferred because of high perioperative risk. Weight management comprised lifestyle modification and pharmacotherapy. At 10 months, BMI had decreased to 36.2 kg/m². Device-downloaded mean PAP usage on days used increased to 6 h 35 min, and the proportion of days with usage exceeding 4 h rose to 100%. ESS and PSQI scores decreased, and several domains of the 36-Item Short Form Health Survey (SF-36) improved.

Conclusion: Individualized management addressing mask interface leak, nasal pathology, and obesity was associated with improved PAP adherence and patient-reported outcomes. This case highlights the importance of systematically identifying and addressing multiple barriers to PAP use during longitudinal follow-up.

中文題目：個別化處置改善嚴重阻塞型睡眠呼吸中止症患者的陽壓呼吸器依從性：個案報告

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