

中文題目：

上下顎前移手術治療阻塞性睡眠呼吸中止症之三維電腦斷層影像變化  
Changes in 3DCT images of OSA patients undergoing maxillomandibular advancement

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**Objectives:** This study aimed to understand the changes to the head and neck musculoskeleton and the pharyngeal airway after surgery. We tested the correlation between the changes in the skeleton and pharyngeal airway and the apnea-hypopnea index (AHI).

**Methods:** In 84 consecutive subjects (9 women, body mass index: 23.7 Kg/m<sup>2</sup> ± 0.8, AHI: 37.7/sec ± 6.7) with Class II dentoskeletal malocclusion and high mandibular plane underwent segmental maxillomandibular rotational advancement (SMMRA). Subjects underwent overnight polysomnography and three-dimensional computed tomography scanning of the head and neck before and three months after surgery. Linear, angular, and area measurements were obtained from skeletal images placed in the Frankfort horizontal position and horizontal cross-sectional tomograms derived from the upright pharyngeal airway. Skeletal movements, dimensional airway changes, and correlations between measurements and AHI were calculated. A linear regression model was generated using significant bivariate correlations.

**Results:** The AHI was significantly reduced to 8.9/sec ± 1.8 with improvement in the nadir oxygen saturation from 81.8% ± 2 to 89.4% ± 1.2 after SMMRA. Following skeletal advancement, the hyoid bone was advanced and elevated by 7.5 mm ± 2.9 and 6.7 mm ± 5.5, respectively; the cervical spine was rotated forward by 4.6° ± 2.8; and the airway length was shortened by 6.8 mm ± 4.0 (all P < .01). Variable improvement of airway dimensions was noted at each horizontal level. A quadratic regression model was derived using the measurements of the Sella-Nasion-

B point angle and AHI (Rsq  $\frac{1}{4}$  0.557, sig  $\frac{1}{4}$  0.000).

Conclusions: Dimensions of the pharyngeal airway were correlated with dimensions of the craniofacial skeleton. Sella-Nasion-B point angle could be used to guide achieving normalized AHI after surgery.