中文題目：

運用顱測及基本數值建構阻塞性睡眠呼吸中止症患者接受上下顎前移手術之多項睡眠生理檢查之成果預測模型

Polysomnographic outcomes prediction for obstructive sleep apnea patients undergoing maxillomandibular advancement: a model based on cephalometrics and demographics

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Objective:

Maxillomandibular advancement (MMA) has been vigorously performed to treat obstructive sleep apnea (OSA). A predictable treatment protocol still needs to be improved due to the complexity of OSA and the diversity of maxillofacial deformity. The study aimed to create an outcome prediction model based on cephalometries and patients' demographics.

Methods

A clinical database analysis was conducted on 109 OSA patients who underwent MMA. Cephalometric measurements included linear and angular relationships among craniofacial landmarks and pharyngeal airway dimensions (anteroposterior, lateral, and cross-section area). Demographic information, including gender, age, weight, and height were collected. Combining polysomnographic, cephalometric, and demographic data, a predictive model was created.

Results

Based on various ages, body mass index (BMI), and gender, an individual regression model was created according to the stratification. Patients with BMI 22~24 obtained the highest surgical success rate (93.3%) after MMA surgery. And patients with BMI 20~22 can have the highest cure rate (70%). On average, the apnea-hypopnea index (AHI) was improved from 39.9±25.8/hr to 6.6±4.3/hr. Anteroposterior dimensions were improved from 5.9±2.5mm to 10.3±2.5mm in the velopharynx and from 7.4±3.2mm to

14.0±2.9mm in the retroglossal airway. A feasible model was generated for outcome prediction and surgical planning.

Conclusion

Through a clinical model based on cephalometric combining demographics, sleep physicians and surgeons can build up surgical planning and execution with rationale and confidence.