

Postural cephalometric analysis and nasal resistance in sleep-disordered breathing.

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OBJECTIVES: The study was designed to compare upright and supine cephalometric measurements in snorers and to evaluate the effects of mandibular position and nasal resistance on pharyngeal dimensions. Anthropometric, rhinomanometric, and cephalometric measurements were used to investigate predictors of apnea-hypopnea index. **STUDY DESIGN:** Prospective, cross-sectional. **METHODS:** Forty consecutive habitually snoring men waiting for nasal surgery (mean age, 44 y; mean body mass index, 28 kg/m²) underwent an overnight polysomnographic, anterior rhinomanometric, and cephalometric analysis in upright and supine positions. **RESULTS:** Nasal resistance correlated positively with minimal pharyngeal airspace at the level of tongue. The opening of jaws after voluntary relaxation of the mandibular position on lying down correlated with decrease in pharyngeal airway measurements at both velopharyngeal and tongue-base levels. In stepwise multiple regression analysis the overall patient model explained 68% of the variation in apnea-hypopnea index with body mass index as the largest predictor. In the nonobese patients, the model explained 86% of variation in apnea-hypopnea index with change in anteroposterior position of the lower jaw in upright and supine measurements and combined nasal resistance after mucosal decongestion as independent determinants. In selected skeletal subtypes the models predicted 83%, 79%, 61%, and 90% of the variation in apnea-hypopnea index. **CONCLUSIONS:** In the nonobese patients nasal resistance and change in mandibular position on lying down were found to be independent contributing factors to the apnea-hypopnea index. Further research on supine cephalometry and relaxed mandibular position may improve prediction of sleep-disordered breathing in snorers.

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