Aim: To evaluate the cephalometric features of patients with obstructive sleep apnea syndrome (OSAS) and to elucidate the relationship between the severity of OSAS and cephalometric and clinical variables.

Materials and methods: Ninety-three patients (71M/22W) with OSAS were classified into 3 subgroups according to the apnea-hypopnea index (AHI). Various cephalometric and clinical measurements were carried out for all patients.

Results: Inferior airway space (IAS), maximum soft palate thickness (MSPT), SNGoGn°, and distance of hyoid bone to mandibular plane (Hy-MPPerp) were found to be higher in severe OSAS for both sexes. Middle airway space, IAS, MSPT, and Hy-MPPerp were correlated positively with AHI; however, superior airway space (SAS) was correlated negatively. In the stepwise regression analysis, mean SaO2, neck circumferences for men, and mean SaO2 and uvula length (PNS-PA) for women were included in the model to estimate AHI properties.

Conclusion: The values of IAS, MSPT, SNGoGn°, and Hy-MPPerp showed a tendency to increase with the severity of OSAS. Although the cephalometric variables used to estimate OSAS severity had no effect in men, PNS-PA was found to have an influence in women. However, it is thought that it is difficult to use cephalometric variables to estimate AHI severity in both sexes.