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The cephalometric morphology of patients with obstructive sleep apnoea (OSA)

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ABSTRACT

This prospective study analysed the lateral cephalometric radiographs of 59 dentate, white, Caucasian males. Thirty-five patients with proven obstructive sleep apnoea (OSA) formed the experimental group, while 24 subjects with no history of respiratory disease acted as controls. Radiographs were traced and digitized, and both hard and soft tissue features were compared between the groups. The pooled data were then subjected to discriminant analysis. Although conventional cephalometric measurements did not differ between the two groups, significant reductions were found in the lengths of the mandibular body and cranial base and in cranial base angulation in OSA subjects. The width of the oropharynx was significantly narrower in this group, particularly in the post-palatal regions. The area of the soft palate was increased although the tongue was not. Intermaxillary space length (the distance between the posterior pharyngeal wall and the tip of the lower incisor) was decreased, and thus the area in which the tongue had to function was smaller in OSA subjects. From the discriminant analysis, two four-variable models were derived, both of which provided 100 per cent discrimination between the OSA and normal subjects. For the first model the entire OSA group was used: for the second, only obese OSA subjects (those a body mass index >25) were chosen. The combination of a short mandible and intermaxillary space, with an enlarged soft palate but decreased pharyngeal airway has relevance to the effective management of OSA. In selected patients, advancement of the lower jaw by a nocturnal mandibular repositioning splint may be indicated. The orthodontist would seem to be in a unique position to assist in both the identification and treatment of these subjects.

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