

The thesis is based on a series of cephalometric studies of patients with SAS, acromegalic patients with or without SAS as well as control groups. The studies presented in this thesis produce following results:

There are important differences in orofacial skeleton and soft tissue of nasopharynx measured by cephalometry in the patients with sleep apnoea compared to the control group of women and men. Proved skeleton changes (increased lower gonion angle, increased anterior facial heights, decreased depth of the upper face) and elongated soft palate predisposes patients to narrowing of upper airways in oropharynx, which significantly contributes to development of SAS.

Cephalometric differences in the size of the soft palate, the rotation of the mandible and the size of lower gonion angle can be found in men with mild and severe sleep apnoea. We conclude that the severity of the SAS depends on the degree of changes in the orofacial skeleton and adjacent soft tissues. The results, which reveal a significant differences in BMI and in the circumference of the neck between groups with mild and severe SAS, confirm the idea that the most important predisposing factor for SAS is obesity, in particular deposition of adipose tissue in the posteriolateral parapharyngeal space.

Patients with acromegaly (of both sexes) exhibit skeletal enlargement and soft-tissue hypertrophy in comparison with healthy control groups. The skeletal changes are found in the neurocranium as well as the viscerocranium. The most severe anomaly is observed in the mandible, with greater enlargement of the ascending ramus than of the body of the mandible. The shape of this bone is altered as well. In contrast, the position and size of the maxilla remain unaltered. The intensity of skeletal changes does not directly depend on the current hormonal levels.

Our study confirmed the frequent occurrence of SAS in the patients with acromegaly. SAS was diagnosed in 77% of such patients. The skeletal craniofacial abnormalities in patients do not result in an increased frequency of occurrence of SAS in those patients. The presence of a narrowed pharyngeal airway space and an enlarged uvula in acromegalic patients with SAS compared to acromegalic patients without SAS shows that upper airway narrowing caused by changes in pharyngeal soft tissues contributes to the development of SAS in patients with acromegaly. The obesity and fat deposition in the neck area have no effect on the development of the SAS in acromegalic patients as no difference in BMI and circumference of the neck was found between patients with acromegaly and SAS and patients with SAS alone. Based on the significantly higher values of parameters indicating the presence and degree of SAS observed in the patients with active acromegaly compared with those without active acromegaly, we conclude that hormonal activity appears to be a major SAS aetiology factor in acromegaly.

The existence of pharyngeal airway space narrowing and an enlarged uvula in patients with the active form of acromegaly compared to patients without the active form of acromegaly demonstrates the influence which the active adenoma exerts over the induction of changes in the upper respiratory tract soft tissues. In contrast, the prevailing hormonal levels do not appear to be a major predisposition to skeletal changes.