

The Influence of Mono And Bimaxillary Surgery on The Pharyngeal Airway in Class III Patients

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Correction of skeletal class III deformities can be achieved by using either mandibular setback surgery or bimaxillary surgery - maxillary advancement and mandibular setback. Skeletal movements affect the position of the soft tissues, also. Tongue base is positioned more inferiorly and anteriorly in Class III patients as well as the hyoid bone is more anteriorly positioned. Structural changes in the airway generally occur between the soft palate and epiglottis after mandibular setback surgery. Surgery for mandibular deformity can subsequently change dimensions of the pharyngeal airway space (PAS) and additionally, mandibular setback may even cause OSA. For that reason, it is necessary that surgeons preparing Class III patients for correction should assess the pharyngeal airway spaces of these patients before surgery, as well as after surgery. It is important to evaluate changes of the PAS and to estimate eventual effect on breathing and quality of life.

A prospective study included 30 class III patients were taken in order to evaluate PAS before and after mandibular setback or bimaxillary surgery (maxillary advancement and mandibular setback) using CBCT scans. The pharynx was studied at three levels measuring the cross-sectional area and lateral as well as anteroposterior dimensions at each level. The volume of all three parts of pharynx was measured as well. Second part of study included evaluation of psychological condition of the patients and problems with breathing and sleeping.

The pharyngeal airway showed significant narrowing after both mandibular setback surgery and bimaxillary surgery at level of oropharynx and hypopharynx. However, volume of nasopharynx decrease in patients undergoing bimaxillary surgery. Symptoms of breathing problems are bit worst postsurgically, although this narrowing doesn't have major effect on breathing No one patient involved in this study had excessive day sleepiness. Quality of life is significantly improved.