

## Effect of surgical mandibular setback on pharyngeal airway

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**Background:** Using of jaw osteotomies in treatment of maxillofacial deformities has an effect on pharyngeal airway space as well as facial appearance.

**Aim of Study:** The purpose of this study was evaluation the effect of mandibular setback surgery on sagittal dimension of upper and lower pharyngeal airway and hyoid bone position.

**Patients and Methods:** 32 patients (16 males and 16 females) with average age 23.59 years (range 17 to 47 years) who suffered from skeletal class III malocclusion were examined prospectively. All patients underwent mandibular setback surgery only. The average of mandibular setback was 6.97 mm (range 3 to 13 mm). 16 patients received vertical ramus osteotomy (VRO) versus 16 patients bilateral sagittal split osteotomy (BSSO). Rigid internal fixation was used with lag titanium screws. Lateral cephalometric analysis was performed preoperatively, 3 months and 1 year postoperatively with particular attention to pharyngeal airway and hyoid bone changes.

**Results:** The lateral cephalometric demonstrated that the surgical mandibular setback significantly decrease upper and lower pharyngeal airway width ( $12.54 \pm 5.46\%$  and  $13.97 \pm 5.89\%$  respectively), and hyoid bone moved inferoposteriorly 3 months after surgery ( $P < 0.05$ ). After 1 year of surgery the decrease of upper and lower pharyngeal airway became less ( $7.83 \pm 6.39\%$  and  $8.46 \pm 5.95\%$  respectively) but still significantly narrower compared with its presurgical position, and hyoid bone relapsed superoanteriorly close to its original position ( $P < 0.05$ ). Analysis revealed a statistically significant correlation between decrease in pharyngeal airway and amount of mandibular setback ( $r > 0.70$ ) without significant differences between the two techniques.

**Conclusion:** Careful airway analysis should be performed, particularly in correction with large anteroposterior discrepancies.

**Keywords:** Mandibular setback, bilateral sagittal split osteotomy, vertical ramus osteotomy, pharyngeal airway, hyoid bone.

### Biography:

Mr. Miral Awdah is an Associate Consultant, Oral & Maxillofacial Surgeon at Saad Specialist Hospital, Al-Khobar, Saudi Arabia. He graduated from Tishreen University with BDS in 2001. Following internship in Jordan University Hospital, he got his High Diploma after 2 years research in TMJ surgery in 2005, and his Master Degree (MSc) with grade honor in OMFS after 3 years clinical research in augmentation of facial skeleton in 2008 from Aleppo University. He was certified by The Arab Board and Jordanian Medical Council in OMFS in 2009. After 4 years clinical research in surgical correction of skeletal facial deformities, he got his PhD with grade honor in OMFS in 2012 from Damascus University. He granted an invention in Orthognathic Surgery which was certified by the Commercial and Industrial Property Protection Directorate in Damascus in 2011. In 2015, He undertook clinical attachment within Maxillofacial and Head & Neck Surgery at The University Hospitals Coventry and Warwickshire (UHCW), UK. Mr. Awdah has many published researches in several medical journals.