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Posterior maxillary segmental osteotomy for management of supraerupted teeth

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Insufficient interarch space due to the non replacement of extracted teeth leads to supraeruption of the opposing teeth which causes' difficulty in prosthetic rehabilitation at a later date. The posterior maxillary segmental osteotomy becomes a more simple and conservative alternative management to achieve the surgical correction of the supraerupted maxillary segment. The purpose of this paper is to present a case of severe supraeruption of maxillary teeth managed by posterior maxillary segmental osteotomy.

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The effect of dexmedetomidine on postoperative care and haemodynamic parameters after bimaxillary orthognathic surgery

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Purpose: To evaluate the efficacy of postoperative dexmedetomidine intravenous sedation after bimaxillary orthognathic surgery on postoperative care and hemodynamic parameters.

Patient and methods: Patient admmited for bimaxillary orthognathic surgery ($n=40$) were included. All patients received an patient-controlled analgesia (PCA) using fentanyl citrate for postoperative pain control; then patients in the dexmedetomidine (DEX) group ($n=21$) received dexmedetomidine IV as loading dose (0.4 μg/kg/hr) for 1 day, while patients in non-dexmedetomidine (N-DEX) group ($n=19$) received no another sedatives for postoperative care. After operation, hemodynamic changes [systolic blood pressure, diastolic blood pressure, oxygen saturation and heart rate] were monitored for 1 day in recovery room and ward. Facial swelling score, breathing score, bleeding score and visual analogue scale (VAS) were measured by questionnaire for 3 days postoperatively.

Results: Significant differences were found in the blood pressure and heart rate between DEX group and N-DEX group excluding stable oxygen saturation (Freidman test, $P<0.05$). Compared with N-DEX group, DEX group demonstrated lower facial swelling score and lower visual analogue scale at postoperative immediately and day 2 (t test, $P<0.05$). On the other hand, lower breathing score and bleeding score were presented at day 1 and 2 postoperatively (t test, $P<0.05$).

Conclusions: Dexmedetomidine can be proper alternative resource for conscious IV sedative after bimaxillary orthognathic surgery. It has demonstrated hemodynamic and respiratory stability, including patient satisfaction after bimaxillary orthognathic surgery, when used as a sedative agent for postoperative care. Furthemore, there were also no postoperative amnesia suffering patients during sedation.

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Backward-planning for orthognatic surgery—a new inverse modelling algorithm to define the hard-tissue position from a desired soft-tissue surface

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Besides functional improvement the aesthetic outcome is a major concerns of patients undergoing orthognatic surgeries. As a consequence the simulation of the soft-tissue development became a standard procedure in planning this kind of interventions. In this paper we propose an efficient modeling approach to define the position of the hard-tissue segments (maxilla and mandible) on the basis of the desired facial appearance – in other words: a backward planning for orthognatic surgery. The method features an inverse modeling paradigm. It is presented under a clinically-oriented framework that employs a statistical shape model of the skull to automate the task of bone segmentation and to seemingly encode mechanical, surgical and simulation-specific information. To evaluate the proposed planning approach, the predicted osteotomy plan of six clinical cases that underwent CMF surgery were compared to the real clinical plan. Thereafter, simulated soft-tissue outcomes were compared using prediction and the real surgical plan. This preliminary retrospective comparison of both – osteotomy planning and facial outlook – shows a good correspondance and thereby underlines the potential of our application to serve as a new tool for planning orthognatic surgeries.

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Resurrection of maxillary step osteotomies

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Background and objectives: Designing of osteotomies requires meticulous planning and execution including thorough knowledge of art, craft, mathematics and surgical skills to achieve the desired objectives. Pioneer and contemporary maxillo-facial surgeons have toiled hard to devise various surgical techniques to restructure the facial skeleton of which some have been shelved for reasons unknown? Herewith presenting few cases of the versatile Le Fort I step osteotomy which provided stable results in all three dimensions with betterment of function and aesthetics.

Methods: Two males under 25 yrs were operated for class III skeletal discrepancies by Le Fort I step osteotomy and BSSO. One young female was operated only for maxillary deformity by advancement and rotation.

Results: Antero-superior movement of zygomatico-maxillary component and occlusal refinement were the key factors. This versatile procedure can also be used to rotate and correct minimal dental midline discrepancies as well as can be combined with mandibular procedures for bijaw correction.

Conclusion: Step osteotomy can be used to advance, retrude or position the maxilla superiorly or inferiorly and hence it is resurrection needs to be considered strongly when malar prominence is addressed.

Key words: step osteotomy; malar fullness; versatility

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