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Upper airway 3D assessment in CBCT-based orthognathic surgery

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**Objectives:** To stratify the maxilla-mandibular movements in the orthognathic surgery treatments of class III patients, assess the volumetric and bidimensional repercussions of these movements in the Upper Airway (UA).

**Methods:** The CBCT data of 44 patients class III, who had undergone orthognathic surgery were collected. After acquisition, the images were recorded and stored in Digital Imaging Communication in Medicine (DICOM) format. Preoperative files (T0) and the 1 to 4 months post-operative files (T1) were obtained. The 3D craniometric evaluation was carried out in the software. In the sinus/airway tool, the total airway pharyngeal nasopharynx, oropharynx, and hypopharynx were delineated, as following the boundaries. In each region, the volume, Minimum Axial Area (MAA) and the area of the respective delineated regions were calculated. The patients were divided into Group I (maxilla 0 to 4.9 mm forward) and Group II (the maxilla 5.0 to 10.0 mm forward).

**Results:** In Group I the correlation between the counterclockwise and the hipopharynx’s MAA was moderate (0.439), and for every 1 mm of maxillary advancement obtained a gain of 214.74 mm³ in nasopharynx and 653.90 mm³ in the oropharynx.

**Conclusion:** Maxillary advancement promotes an increase in the upper airway, compensating for a possible constriction that the mandibular setback may promote in the hypopharynx. Small maxillary advancements associated with different mandibular movements promoted greater airway gain.

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Nasal Mosaic - An anthropometric analysis of the South Indian nose

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**Introduction:** The nose, not only is a beauty defining feature of the face but is also considered a principal element of one’s physiognomy. Nasal bone fractures are the most common fracture of the maxillofacial region and they have a direct effect on the individual’s appearance. In India, the number of children born with congenital anomalies altering the facial morphology are comparatively high. There is a requirement for correction of the deformity to achieve a near normal nasal anatomy. All the above-mentioned procedures are performed based on the values obtained from studies conducted on caucasian populations. But in a country like India, surgeons require dimensions obtained from the anthropology specific to Indian population. In this study, we aim to analyze the nasal architecture of the South Indian population and give values of aesthetically pleasing dimensions of the nose.

**Materials and Methods:** 50 female and 50 male volunteers who fulfil the inclusion criteria were included in this study. Frontal, lateral and submental view photographs were obtained for the study participants. Anthropometric analysis of the nose was done including the nasolabial angle, supra-nasal tip angle and fronto-nasal angle.

**Results:** The south Indian nose belongs to mesorhinae group with a nasal index of 81.28 and 72.59 for males and females respectively.

**Discussion:** The findings of this study will be unique as we are calculating the angles in the study population as well. These values can be applied to all aesthetic procedures involving the nose of south Indian population.

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Oral and cranio-maxillo-facial mucormycosis 2020 - A consequence of Covid -19?

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**Background:** A rapid rise in craniomaxillofacial Mucormycosis was seen post Covid 19 in India from August 2020 to July 2021. The aim of this study was to explore the possible causal associations observed in these Mucormycosis cases.

**Material & Methods:** Over 550 cases, 70 after the first Covid wave and 480 after the second Covid wave reported to our institute. Associations were looked for with demographic variables, H/o hospitalization and steroids admission during Covid infection, pre-existing medical conditions specially diabetes, H/o vaccination, extent of craniofacial involvement, surgical and medicinal therapy given, the mortality rate and recurrence.

**Results:** Out of 550 patients; 65% were male. The most common age group affected was 40-60 years, 77% patients reported H/O Covid, 64% patients gave H/o hospitalization, 70% patients were diabetic, 64.4% patient had received steroids, 8.18% of patients had received a single dose of vaccine and average D dimer level was between 0.8 to 1.4 g/L. Only maxilla was affected in 63%, both the maxilla and zygoma in 19.63%, maxilla & orbital floor in 8%, 6.4% showed intracranial extension and 2.72% presented with mucormycosis of the mandible. Mortality rate was 5.09% and recurrence was noted in 7.6%.

**Conclusion:** Mucormycosis is generally observed in immunocompromised patients, post cancer or post organ transplant therapy. However, a sudden outbreak of Mucormycosis in post Covid-19 patients, especially those who were hospitalized and received steroid therapy following which transient hyperglycemia occurred, shows a definite correlation between Mucormycosis and Covid-19.

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