Abstract

The treatment of dentofacial deformity often calls for a combined orthodontic and surgical approach to obtain satisfactory functional and aesthetic results with long term stability. The most frequent surgical procedure performed for correction of defects of maxilla is Lefort I osteotomy, both in its original form and with modern variations. Lefort I, specifically, is used to adjust the position of maxilla and maxillary teeth in three dimensions, either alone or in concert with other interventions to achieve these goals. Segmental Lefort I osteotomy , a modification of classical Lefort I osteotomy provides coordination of the premaxilla with the posterior segments while simultaneously enabling an improvement in transverse dimension. It is recommended for arduous anomalies like anterior open bite, vertical maxillary excess, transverse maxillary defeciencies.

We present 2 cases: a case of vertical maxillary excess with skeletal class II deformity in a 20 year female and a case of anterior open bite with skeletal class I relation in a 36 year female. In both cases, segmental (two-piece) Lefort I with BSSRO were performed with additional genioplasty in former case. Through the combined orthodontic-surgical intervention pronounced skeletal, dental and occlusal improvement were achieved.

The main purpose of this presentation is to highlight major advantages of segmental Lefort I osteotomy: single surgical intervention, reduced period of covalescence, psychological impact and treatment duration.

Keywords: anterior open bite, segmental Lefort I osteotomy , vertical maxillary excess

Conservative management of sialoliths

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Abstract

Background: Sialoliths are calcified structures found within the ducts of salivary glands, frequently located in the submandibular gland (84%), than in the parotid gland (13%). Diagnosis is based on history of pain and swelling associated with eating and conventional mandibular occlusal radiograph. Conservative management of salivary stones consists of salivary gland massage and use of sialagogues.

Case description: 24 year female presented to the department with chief complain of swelling below left side of tongue since 10 month which was insidious onset, gradually progressive associated with swelling on eating. On clinical examination single, localized, well-defined swelling roughly oval approx. size about 5.5cm*3.5cm in maximum dimension on left side of floor of mouth extending antero-posteriorly from 31 to 37, medio-laterally from sublingual fold to mucogingival junction . Two hard granular structure of size approximately 3mm*4mm and 2mm*2mm dimension could be palpated lingual to 31 and 33. Mandibular occlusal radiograph revealed two non-homogenous radiopacities. First one was oval shaped, regular border size approximately 5mmx5mm on lingual aspect of 31, 5mm anterior to soft tissue shadow of tip of tongue and second one with irregular shape and border, size approximately 5mm*9 mm on lingual aspect 5mm posteriorly and laterally to the first one. Vitamin C was prescribed and patient was advised to take adequate fluid. Retrieval of both sialoliths was done by stimulating the salivary gland with the help of lemon and milking posterioanteriorly.

Conclusion: Conservative management can be done in case of small and accessible calculi to prevent post-operative complications.

Key words: salivary stones, sialolithiasis

Single-stage Patient-specific Total Temporomandibular Joint Replacement with Simultaneous Correction of Dentofacial Deformity

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Abstract

End stage TMJ diseases severely affect the architecture as well as physiology of TMJ resulting in impairment in mastication, speech, airway support and esthetics requiring joint reconstruction to improve mandibular form and function. In cases of multiple prior operations and severe anatomical discrepancies from pathology, autogenous bone grafts often fail. Alloplastic total joint replacement has been evolving as a salvage procedure in such end stage TMJ diseases. Although stock prosthesis are available, patient specific prosthesis are preferred due to variability in mandibular anatomy and angulation of fit of condylar head to fossa. Advances like virtual surgical planning and 3D printing allowing patient- specific implants have increased the precision of preoperative planning with evolution of single step surgery.

We present 2 cases; a case of left TMJ ankylosis in a 28 years old female with resultant dentofacial deformity and a case of left condylar prosthesis failure in a 45 years old female where patient specific temporomandibular joint prosthesis were used for joint reconstruction with concomitant Orthognathic surgery to correct facial deformity .Easy adaptation of prosthesis without need of alteration of bony surfaces, reduction in operating time with avoidance of second surgical site with added advantage of starting physical therapy on the following day of operation , uneventful postoperative recovery and replication of virtually planned treatment objectives were experienced in both cases.

The aim of this report is to highlight " patient specific TJR with simultaneous orthognathic surgery " as an effective surgical option for the management of end stage TMJ diseases.

Keywords: Total temporomandibular joint replacement; TMJ ankylosis; end stage TMJ diseases; virtual surgical planning; 3D printing

Pre-operative virtual planning followed by fabrication of patient-specific guiding instruments for mandibular deformity after fibula free flap reconstruction

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Abstract

Background: Corrective osteotomy for secondary mandibular reconstruction is complex, and it is extremely difficult to achieve desirable three-dimensional positioning. The authors present a case for repositioning the mandibular segments of mandibular deformity after fibula free flap reconstruction using computer-assisted surgical simulation and patient-specific guiding instruments.

Case description: A 69-year-old man developed severe mandibular deviation after segmental mandibulectomy and reconstruction with fibula free flap for basal cell carcinoma of the mental region. A virtual osteotomy was performed between the mandible and fibula on a 3D virtual model using simulation software. The proximal mandibular segments were placed in the ideal position using a 3D virtual model. The original contour of the mandible before the primary resection was used as a reference for repositioning. Patient-specific guiding instruments were fabricated for the pre-osteotomy and intraoperative positioning of the osteotomized mandible, enabling bone fragments to be repositioned and fixed using the pre-operative plan. Post-operative CT showed that the mandibular segments were precisely repositioned.

Conclusion: In this case, virtual planning and patient-specific guiding instruments were useful in corrective surgery for mandibular deformity after fibula free flap reconstruction.