

Publication Number : OP - 001

Abstract Referance : 7

Extraoral Fixation of a Gunshot Mandibular Fracture

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Gunshot injuries of maxillofacial skeleton cause significant tissue loss and complicate surgical management of the patients. Multiple fragmented and chronic infected cases are best treated with closed reduction without disturbing periosteal integrity. A 26 years young male patient had been injured with a sniper shot from the left mandible. He had immediate tracheostomy and soft tissue repair of lacerated intraoral wounds. The patient was rehabilitated with external pin fixation-halo device for chronic infected mandibular fracture for 4 weeks and underwent fragment repositioning with a reconstruction plate. Usage of external fixation for mandibular fractures will be also reviewed.

Keywords : gun shot ,fracture,mandible,external fixation

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Abstract Referance : 11

Treatment of Peri-implant Defects in the Rabbit's Tibia with Adipose and Bone Marrow-Derived Mesenchymal Stems Cells

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Aim: The purpose of this *in vivo* study was to evaluate the success of bone regeneration capacity of adipose-derived and bone marrow derived mesenchymal stem cells (MSCs) for the treatment of peri-implant bone defects when applied with Beta-Tricalcium Phosphate(TCP)/Collagen based scaffolds.

Material Methods: Forty implants were placed into the tibiae of 10 rabbits bilaterally. The implants were placed so that four threads were exposed at all aspects. The defects around the implants were treated with one the following treatment modalities; 1) Scaffold loaded with adipose derived MSCs + collagen membrane 2) Scaffold loaded with bone marrow derived MSCs + collagen membrane 3) Autogenous bone + collagen membrane 4) Collagen membrane only. The bone regeneration capacity of each technique was determined by histomorphometry, microCT scans and measuring the implant stability by resonance frequency analysis (RFA).

Results: One limb of one rabbit was excluded because of fracture and another limb was excluded because of infection. Histomorphometric parameters, microCT analyses and RFA measurements on 36 implants revealed that both sources of MSC can form equivalently new bone that is comparable to autogenous bone. The defects treated with membrane only had significantly less bone formation compared to other groups.

Conclusion: Both adipose-derived and bone marrow-derived MSCs are feasible alternatives to autogenous bone grafts in the treatment of peri-implant osseous defects.

Keywords : dental implants, mesenchymal stem cells, rabbit, guided bone regeneration

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Abstract Referance : 13

Microstomia Repair : Literature Review and Presentation of 2 cases

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Microstomia as a word means " small opening or window". Basically, decrease in rim lenght of the upper and the lower lips due to trauma, surgery or hereditary etiology causes microstomia .Several surgical techniques were described and the managment may vary according to reconstruction needs of an each case. We will review the literature and present surgical maangement of 2 patients with microstomia.

Keywords : microstomia,oral,surgery

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Maxillofacial Pseudoaneurysm as a Complication of Facial Bone Trauma: Report of two rare cases.

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Pseudoaneurysms of the facial arterial system are uncommon and rare vascular complications in the practice of oral and maxillofacial surgery. Maxillofacial pseudoaneurysm may occur following maxillofacial trauma, orthognathic surgery or facial surgical treatment and may appear immediately or weeks to months after the initial injury. The clinical diagnosis may be difficult initially but quick recognition and management is necessary to avoid the devastating consequences. In this presentation we report two rare cases of maxillofacial pseudoaneurysm that occurred following facial bone fractures, the first was related to the internal maxillary artery that occurred as a complication of complex untreated mandibular fracture with bilateral temporomandibular joints dislocation and presented clinically as severe bleeding during surgical repair, and the second case was related to the internal carotid artery occurring secondary to unilateral displaced mandibular condyle fracture. The presentation will highlight the clinical presentations and the procedures that have led to the diagnosis. As part of the management our first patient underwent endovascular embolization with titanium coil and for the second case the patient had intra-cranial stent insertion. Both patients had satisfactory resolution of the complication related to the pseudoaneurysm with a final successful outcome.

Keywords : pseudoaneurysm, complication, facial bone fracture, internal maxillary artery, internal carotid artery, endovascular embolization

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Abstract Referance : 15

Outcomes of MDO in Omani Paediatric Pier Robin Sequence Patient with severe upper airway obstruction.

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Abstract:

Objective: Mandibular Distraction Osteogenesis (MDO) is now widely used for treatment of children suffering isolated and syndromic Pier Robin Sequence (PRS) with severe upper airway obstruction.

Aim: This study aim to assess the outcome and complications of MDO in Omani paediatrics PRS patients with severe upper airway obstruction.

Methodology: A retrospective cohort study of PRS patients with upper airway obstruction treated with internal MDO at Sultan Qaboos University Hospital and Al-Nahda Hospital, Oman, from 2008 to 2014. Data collection included age, sex, pre-operative airway measure, pre-operative endoscopic airway assessment, pre and post MDO removal weight, airway outcome and surgical complications.

Result: 24 patients (19 male and 5 female) underwent MDO (16 isolated PRS and 8 syndromic PRS). Mean age was 17 months (range 13 days – 10 years). Pre-operatively, 12 patients were tracheostomised, 4 intubated and 8 had no airway support. All patients except for 1 underwent full endoscopic pre-operative airway assessment. Recorded complications were 3 cases had temporary facial nerve weakness, 4 skin infections and 1 scar formation. Twenty patients were successfully extubated or decanulated (83.3%) and 4 failed cases (2 failed to decanulate and 2 underwent subsequent tracheostomy). Mean weight gain at time of removal of MDO for successful cases was 1.2 kg compared to 400 grams for failed cases. The success rate of MDO was higher in isolated PRS compared to syndromic PRS (93.7% VS 62.5%).

Conclusion: MDO is a safe intervention with an overall success rate of 83.3% in PRS patients with severe airway obstruction.

Keywords : pediatrics , mandibular distraction osteogenesis , tracheostomy , feeding , upper air way

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Abstract Referance : 19

The investigation of the effectiveness of systemically administered denosumab on bone defects healing

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PURPOSE: Denosumab is a fully human monoclonal antibody that blocks its binding to RANK, inhibiting the development and activity of osteoclasts, decreasing bone resorption, and increasing bone density. Given its unique actions, denosumab are used useful in the treatment of osteoporosis. The present study aimed to investigate the effectiveness of denosumab on bone regeneration when used alone or in combination with grafts (BCP, Xenograft, Autograft)

EXPERIMENTAL DESIGN: In this study, 15 New Zealand white rabbits were used and four calvarial defects were prepared in each animal cranium. Autograft, xenograft, Biphasic calciumphosphate (BCP) were applied to the defects; one defect was left untreated as a control. After surgery only experimental group were administered to the systemically subcutaneous injection denosumab (10 mg/kg/month) for 2 month (n=8 group). Then rabbits were sacrificed at 8 week after, the samples were sent for histological and histomorphometric analysis to evaluate and compare the volume and area of regenerated bone.

RESULTS: Histomorphometric analysis showed that denosumab increased bone regeneration when denosumab was used in combination with autograft, a further significant increase in new bone formation was observed compared with that when other grafts was used (p:0.015; p<0.05).

CONCLUSIONS: Denosumab has a positive effect on bone formation when used alone and in combination with autograft

Keywords : bone defects, denosumab, bcp, xenograft, autograft, bone regeneration

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Abstract Referance : 20

Three-Dimensional Volume Change after Maxillary Sinus Floor Augmentation in the Presence of an Antral Pseudocyst

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Purpose: The purpose of this study was to analyze the effects of antralpseudocysts on bone graft material volume in a sinus-floor augmentation procedure.

Materials and Methods:A maxillary sinus lift procedure using lateral window technique was performed in 40 patients, of which 20 patients had an antral pseudocyst in their maxillary antrum; the remaining patients were a control group with no pathology in their maxillary sinus. 100% allogenic bone was used for all procedures. For evaluation of the grafted volume of the maxillary sinus area, CBCT scans were taken 10 days and 6 months after the operation. Mimics software program was used to evaluate the three-dimensional resorption volume rate.

Results:

Of all the procedures, only one graft infection and case of sinusitis was seen in the control group. This patient was excluded from the study and replaced with another patient. One implant failure also occurred in the control group. No other graft infections or sinusitis formations were encountered in either group. The graft volume reduction rate of graft material in patients with antralpseudocysts from 10 days after surgery until 6 months later was 32.9%, compared to 11.28% in the control group. Patients with antralpseudocyst had a considerably higher rate of graft volume resorption than patients without antralpseudocysts ($p < 0.01$).

Conclusion:Although application of sinus-floor augmentation in the presence of antralpseudocysts seems to be reliable, the resorption rate of grafted area volume in maxillary sinus floors is considerably fast. Thus, surgeons should take into consideration this volume resorption rate before operations.

Keywords : antral pseudocyst, bone graft, sinus floor augmentation, three-dimensional radiographic changes

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Abstract Referance : 23

Objective evaluation of patient compliance to treatment of TMJ disorders by wearable micro-sensors.

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OBJECTIVE: The aim of this study is to acquire objective wearing-time of oral appliances used for treatment of TMJ disorders by heat-sensing micro-sensors and compare treatment outcome among patients with differing amount of wearing-time.

METHODS: 32 patients complaining TMJ pain and anterior displacement of disc with reduction associated with bruxism were included. patients were called for follow up on 1st, 2nd, 4th, 8th and 12th week of treatment.

RESULTS: Initial results of this on going study suggests that patient compliance to oral appliance therapy is less than anticipated amount. Average wearing time for first week was 5.80 hours/day and appliances were used properly average 4.18 days a week. 1 month following administration of appliances average usage was 5.29 hours a day and appliances were properly used for average 10,75 days of first month.

CONCLUSIONS: To conclude patients find wearing oral appliances difficult and wearing time of these appliances is less than the recommended amount.

Keywords : tmj, micro-sensor, compliance, wearing-time, oral appliance, bruxism.

Publication Number : OP - 009

Abstract Referance : 24

EXTRACAPSULAR SUPRADISCAL SURGICAL CORRECTION FOR TMPOROMANDIBULAR JOINT INTERNAL DERANGEMENT(ELSHEIKH TECHNIQUE)

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Background

Internal derangement of temporomandibular joint represents a real challenge over the past decades and causes many functional and psychological problems, many procedures had been introduced for correction of this problem but results were not satisfactory.

Patients and methods

This study was carried out on 50 patients complaining of temporomandibular joint internal derangement requiring surgical treatment with different age groups ranging from 13 to 50 years, 47 of them were females. In this study we introduced a new procedure which composed of two parts (done in one stage) to alleviate the derangement problem (ELSHEIKH TECHNIQUE).

Results

Results were very promising based on objectives and subjective remarks.

Keywords : temporomandibular, joint, internal, derangement

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Abstract Referance : 31

Efficacy of Marsupialization in Preadolescent Patients

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Dentigerous cysts

(DCs) are benign odontogenic cysts that develop from the reduced enamel epithelium related to the crown of an unerupted and/or impacted tooth. DCs are usually a symptomatic intraosseous lesions that affect the bones of the maxillofacial complex, interfering with tooth eruption. The treatment modalities range from marsupialization to enucleation of the lesion and are based on the involvement of the lesion with the adjacent structures. When large cysts are involving unerupted permanent teeth, marsupialization is the better option.

Marsupialization is a simple treatment technique that can be easily tolerated by the patients especially preadolescents, and it has low complication rates. The other advantages of marsupialization are preserving vital structures and allow eruption of impacted teeth.

The purpose of this presentation is to emphasize the superiority of marsupialization especially in preadolescence period. It should be considered as a primary treatment method of the cysts in appropriate cases.

Keywords : marsupialization, odontogen cyst, treatment, conservative treatment

Publication Number : OP - 011

Abstract Referance : 34

Use of Orthodontic Anchorage Screws for Treatment of Mandibular Fractures

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Orthodontic anchorage screws (OAS) or mini-screws are becoming increasingly more common in many orthodontic indications. These screws are also useful appliance for intermaxillary fixation as a conservative treatment of mandibular fractures. We present mandibular fracture cases treated with OAS. Indications and techniques of the method were discussed in light of literature.

Keywords : mandibular fracture, orthodontic anchorage screw, intermaxillary fixation, conservative treatment

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Abstract Referance : 41

POSTERIOR FACIAL HEIGHT CORRECTION; A CHOICE BETWEEN SPLIT RIB BUNDLE GRAFT AND ARTIFICIAL CONDYLE

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Posterior facial height disturbances may result from many problems; trauma, ankylosis, congenital and after tumor ablation leading to facial asymmetry and occlusal disturbances. This study was carried out on 20 patients of posterior facial height disturbances patients some of these patients were reconstructed with split rib bundle graft and the other 10 patients were reconstructed with artificial condyle. Patients reconstructed with artificial condyle exhibited more functional and aesthetic problem results with long term stability than the group reconstructed with split rib bundle graft.

Keywords : tmj,condyle, costochondral, facial height

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Abstract Referance : 51

Effects of local and systemic boric acid on synthetic bone grafts in the repair of critical size defects

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Abstract

Objective: The aim of this study was to assess the effectiveness of local and systemic administration of boric acid (BA) in promoting new bone formation in critical size bone defects in rat mandibles.

Materials and Methods: Thirty-six male rats were divided into six groups (two groups were control groups, and the other four groups were experimental). Each group contained six animals. B-tricalcium phosphate graft material was used for filling defects in all groups. No additional treatments were used in the control groups. In the systemic boron (SB) groups, the animals received graft material plus 0.3 mg/kg boric acid daily via the oro-gastric pathway. BA was given to the rats 1 day after the operation and daily during scarification. In the local boron (LB) groups, 0.3 mg/kg diluted boric acid was inserted in the graft material by syringe. Eighteen rats were euthanized after 15 days, and the remaining rats were euthanized after 45 days. Histomorphometric evaluation was performed to analyze new bone formation, the number of osteoblasts and capillaries, and the intensity of the inflammatory cells. Immunohistochemistry analyses was also performed to evaluate BMP-2, TGF- β 1, VEGF, OPG, and RANKL.

Results: On days 15 and 45, bone formation increased significantly in the LB groups compared to the SB and control groups. The SB groups also showed superior bone regeneration compared to the control group. In addition, the LB and SB groups showed superior effect compared to the control group in terms of histomorphometric and immunohistochemistry markers.

Conclusion: This study has demonstrated that boric acid, especially local administration, may hasten new bone regeneration and decrease the healing period of grafted areas.

Keywords : critical size defect, rat, mandible, boric acid, synthetic graft

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Abstract Referance : 57

Biomechanical Evaluation Of Oversized Drilling On Implant Stability – An Experimental Study In Sheep

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Objective: The aim of this study was to evaluate the effect of oversized drilling on implant success and secondary stability.

Methods: We employed 4 mm in diameter and 10 mm in length alumina blasted implants. 16 implant sites were prepared on the proximal tibias of the 2 sheep. In the right tibia, a standard preparation with 3.5 mm diameter was performed at the control group, while, in the left tibia, an over-preparation with 4.2 mm diameter was performed at the experimental group. However, the implants of the control group were nonmobile, the experimental group had rotational and vertical movements. The initial implant stability was measured using the resonance frequency analysis (RFA). Animals were sacrificed after 12 weeks. After the sacrifice of the animals, RFA and reverse torque (RT) values were measured.

Results: The results showed that there was no statistically significant difference between the experimental and control group in terms of RFA and RT values.

Conclusion: Osseointegration can be achieved in the absence of primer stability in the 12 weeks' period of healing time even for alumina blasted implants.

Keywords : animal study, dental implant, implant stability, osseointegration, oversized drilling.

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Abstract Reference : 79

Osteochondroma of the Tongue – A Case Report.

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Osteochondroma, a benign tumor of osseous and cartilaginous origins, generally develops in osseous tissue and is frequently found near the end of long bones. Relatively rare in the craniofacial region, osteochondroma is common in the mandibular condyle and coronoid process. Osteochondroma arising in the soft tissues of maxillofacial region is extremely rare. In this paper, we report on a rare case of osteochondroma arising in the tongue.

Keywords : osteochondroma, tongue

Publication Number : OP - 016

Abstract Referance : 94

Mixed Radiolucent-Radiopaque Lesions In The Mandibular Posterior Region: A Case Series

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Objectives: A large variety of lesions may involve in the maxillofacial region. Bone lesions have different radiographic feature such as well-deliniated radiolucent lesion, unilocular-multilocular radiolucent lesion, mixed radiolucent-radiopaque lesion. Differential diagnosis via radiographic, clinical and histopathologic correlation is usually the most beneficial way. Especially fibro-osseous lesions have similar radiographic characteristic and usually located in the mandible. Although these pathologies have been grouped under fibro-oseeous lesions, a more spesific diagnosis may be critical because of different surgical necessities range from none to complete removal. The aim of this report was to present a case series of posterior mandibular fibroosseos lesions.

Case series: Six posterior mandibular fibroosseous lesions (4 focal cemento-osseous dysplasia, 1 florid cemento-osseous dysplasia and 1 cementoblastoma) were presented in this report. The mean age of the patients was 31. The differantial diagnosis, clinical, histopathological and radiological features, surgical treatment proceures and follow-up period of the patients were explained in detail.

Conclusion: Fibro-osseous lesions should be considered for differential diagnosis of mandibular teeth related radiolucencies. During the radiolucent period of lesions, they may be confused with apical periodontitis, traumatic bone cyst or radicular cyst. During the mixed period the lesions may misdiagnosed as Pindborg tumor or calcsified odontogenic cyst. To ensure correct diagnosis and perform ideal treatment, detailed radiographic and clinical examination should be made.

Keywords : pathology, fibro-osseous lesions, differential diagnosis

Publication Number : OP - 017

Abstract Referance : 114

A Case Report: Surgical Management Of Obstructive Sleep Apnea in Treacher Collins Syndrome

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Introduction

Treacher Collins syndrome or mandibulofacial dysostosis is a autosomal dominant congenital disorder characterized with craniofacial deformities. It's typical features are downward slanting eyes due to underdevelopment of zygomatic bone, hearing loss due to malformation of mid-ear bones and ears and malnutrition accompanied with OSAS due to micrognathia. Our aim is to present the surgical management of micrognathia with mandibular distraction protocol.

Case Report

A ten year old girl has been brought to our clinic by her parents and the main complaint was that she was unable to sleep. Clinical observation showed that mandible was too underdeveloped that the patients tongue was outside her mouth. She was unable to close her mouth and drooling constantly. The patient was underdeveloped due to malnutrition.

Panaromic and CT images also supported clinical view of the patient. We decided that mandibular distraction would prevent drooling and help with the sleeping problem because advancing the base of tongue and hyoid bone increases the pharyngeal airway. After two weeks of distraction, our patients sleeping and feeding problem was improved.

Discussion

The children having a retruded mandible compromise a condition with potential for morbidity and mortality due to respiration, feeding and sleeping problems. Application of mandibular distraction osteogenesis is an important component in treatment of OSAS and permits mandibular advancement in treacher collins syndrome. Moreover, It is an early surgical part of the treatment stages of the syndrome. During the growth of the children, overcorrection of advancing the mandible is preferable. Bilateral mandibular distraction is a useful method to improve pharyngeal airway, expanding the mandible and advancing the base of tongue and hyoid bone.

Keywords : distraction osteogenesis, obstructive sleep apnea, treacher collins syndrome

Publication Number : OP - 018

Abstract Referance : 119

Management of patients receiving bisphosphonates: A case series

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Introduction: Bisphosphonates (BPs) are used to treat osteoporosis and bone metastases from malignancy. They may result in BPs-related osteonecrosis of the jaws (BRONJ) in a subset of patients receiving BPs. This study examined management of BRONJ lesions and patients at risk category.

Methods: This retrospective clinical study included a series of 16 cases of BRONJ. We recorded all patients' symptoms and clinical findings and classified each patient into a BRONJ stage (at risk category and 0-3; stage). Four out of 16 patients were at risk category who had no apparent necrotic bone following dental procedures. 12 patients referred to our clinic for treatment of BRONJ lesions

Results: Four out 12 patients with BRONJ lesions treated surgically. Conservative treatment alone was delivered to 8 out of 12 patients. Dental extractions are the most potent local risk factor. Bisphosphonate exposure ranged from 3 months to 6 years. Ages ranging from 32 to 77 years, were included in this study. Underlying diseases in our patients were malignant diseases, osteoporosis, multiple myeloma and Paget disease. Ten out of 16 patients prescribed bisphosphonates for malignant metastases.

Conclusion: Although both conservative and aggressive surgical approaches can result in successful treatment of BRONJ lesions, aggressive surgical treatment needs a shorter mean duration to achieve complete remission of BRONJ lesion than conservative treatment. In conclusion prevention of BRONJ development is the best solution for better quality of lives of patients.

Keywords : bronj, bisphosphonate necrosis

Publication Number : OP - 019

Abstract Referance : 125

Management of Post Traumatic Deformity; a Case Report

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A 21 years old male patient with history of traffic accident and post traumatic surgery at INT clinic referred to Selcuk university faculty of dentistry department of oral and maxillofacial surgery with complain of malocclusion and function loss. After oral and radiographic examination false fixation of the maxilla or relaps detected. Lefort I osteotomy was performed to advance the maxilla and get the maxilla to class I occlusion. For dental rehabilitation block graft harvested from mandibular symphysis area and applied to maxilla anterior region with allograft. After healing period dental implants placed and 4 months later dental prosthesis were performed.

Keywords : trauma- post trauma - deformity

Publication Number : OP - 020

Abstract Referance : 131

THE CHANGE OF LOWER LIP ESTHETIC FOLLOWING BONE GRAFT HARVESTING FROM MANDIBULAR SYMPHYSIS

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Objectives: The mentalis muscles elevate the central lower lip and support the lip vertically. Following the surgical release of mentalis muscle, lip incompetence and/or increase lower incisor exposure may be occurred due to wrong closure, undesirable attachment or lengthening of these muscle fibers.

The aim of this study was to evaluate the extent of lip ptosis, lower incisor exposure, and other soft-tissue changes following onlay bone graft harvesting from mandibular symphysis.

Methods: Seventeen consecutive patients (13 females, 4 males) who underwent bone graft harvesting operation from mandibular symphysis were included in this study. Preoperative and sixth month postoperative digital lateral cephalograms were analyzed to evaluate the horizontal and vertical soft-tissue changes of the lower lip and chin. The statistical comparison of preoperative and postoperative findings was performed with *Regression analysis*.

Results: Lower incisor exposure increased 1.41 mm six months after bone graft harvesting procedure and this increase was statistically significantly ($P < 0.05$). Vertical position of soft tissue supramentale was placed more inferiorly and this vertical change was also statistically significant ($P < 0.05$). The positional changes of lower lip soft tissue were not significant on horizontal plane ($P > .05$).

Conclusions: Even the mentalis muscle fibers were placed to its original position during the closure of mucoperiosteal flap, vertical positional changes of the lower lip can be observed following the bone graft harvesting from mandibular symphysis.

Keywords : lower incisor exposure; chin ptosis; lower lip ptosis; bone graft harvesting

Publication Number : OP - 022

Abstract Referance : 200

Effect of Botulinum Toxin Type A in the treatment of TMD

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Etiology of temporomandibular disorder (TMD) is generally multifactorial. Occlusal factors, trauma, emotional stress, pain and parafunctional activities are common etiologic factors encountered.

Clinical characteristics of muscular disorders are dysfunction, pain in rest, increased pain with function, feeling of muscle tightness and pain muscle palpation.

Management of TMD is aimed to improve function and reduce pain and discomfort. Soft diet recommendations, pharmacotherapies, physical therapies, occlusal appliance therapies are commonly used treatment methods for the patients with myofascial pain and dysfunction (MPD).

Recently, the therapeutic uses of Botulinum Toxin type A have expanded exponentially to include a wide range of medical and surgical conditions. Botulinum toxin is a neurotoxin derived from a bacteria called clostridium botulinum. The toxin inhibits the release of acetylcholine (ACH), which is a neurotransmitter responsible for the activation of muscle contraction and glandular secretion, and its administration results in reduction of tone in the muscle.

The use of Botulinum Toxin type A is a minimally invasive procedure and is showing quite promising results in management of muscle-generated dental diseases like Temporomandibular disorders, bruxism, clenching, masseter hypertrophy and used to treat functional and esthetic dental conditions.

In this study, we report the outcomes of 20 TMD patients with MPD who were treated with conservative and nonsurgical approaches in combination with botulinum toxin injections.

Keywords : tmj, botulinum toxin, bruxism, tmd, masticatory system disorders

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Abstract Referance : 216

Efficacy of bilateral mental nerve block with bupivacaine for postoperative pain control in mand. parasymphysis Fx

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Efficacy of bilateral mental nerve block with bupivacaine for postoperative pain control in mandibular parasymphysis fractures

Postoperative pain control is extremely important for patients and surgeons. Due to the surgical trauma and subsequent cascade release of pain mediators various degree of pain are stimulated. Opioid drugs administration is common technique to reduce pain from surgical trauma. However, the use of opioids during and after surgery can be associated with an increased incidence of ventilatory depression, sedation, nausea, vomiting, pururitis, difficult voiding and ileus. In maxillofacial surgeries in which patients often receive intermaxillary fixation, these complications can lead to a life-threatening complication especially in early postoperative hours and in recovery room. Various methods have been proposed to minimize these side effects. Bupivacaine is a well-known long acting local anesthetic solution. The aim of current study was to evaluate the efficacy of bilateral mental nerve block with this solution for post operative pain control and reduction of opioid drugs need in traumatized patients referring to Tabriz trauma center. A double blind case - control study was performed for this research

Keywords : bupivacaine, mandibular fracture, pain

Publication Number : OP - 024

Abstract Referance : 226

COMPARISION OF EFFICIENCIES OF BUPIVACAINE AND ARTICAINE FOR POST OPERATIVE ANALGESIA IN IMPACTED THIRD MOLAR SURGERY

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Pain is the most prevalent complication after surgical removal of the mandibular third molar. Post operative pain is generally related with bone osteotomy during extraction of third molars. According to literature, pain after surgical extraction of a third molar makes a peak at 6-8 hours after surgery.

Articaine is a common LA used in oral surgery. Even though it is considered a long lasting anesthetic then the other local anesthetics , such as bupivacaine, etidocaine or ropivacaine, with more extended anesthetic effects. Bupivacaine is often chosen in prolonged operations due to its extensive anesthetic period. Moreover, some authors have attributed the ability to attain longer postoperative analgesic periods, bupivacaine is reducing analgesic requirements in the early postoperative hours when the maximum pain intensity is reached. The onset of postoperative pain is majorly important for the patient when undergoing a surgical procedure. The patient's requirement for postoperative opioid analgesics is considerably lessened when bupivacaine is administered for pain control.

The aim of this study was to compare the post operative analgesia efficiencies of bupivacaine to articaine in impacted third molar surgery and however to compare use of bupivacaine-infused absorbable gelatin hemostatic sponges versus to articaine-infused gelatin hemostatic sponges for postoperative analgesia in impacted third molar surgery.

Keywords : dentoalveolar surgery, pain, postoperative analgesia, bupivacaine, articaine

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Abstract Referance : 229

A pilot study: Is there any correlation with the orthognahic surgery and sleep apnea ?

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Objective: The aim of this study was to evaluate the pharyngeal airway volumetric changes on patients with bimaxillary orthognathic surgery on Class III patients by using 3 dimensional simulation programme and observe whether there is any correlation with the surgery and sleep apnea.

Material and Method: Five Class III adult patients were included in the study to evaluate phareyngal airway after orthognathic surgery (mean age 21 years old.). All the patients were treated with mandibular set back and maxillar advancement. Polysomnography and computed tomography were done before surgery and 9 months after surgery. The tomographic data were transferred to computer using OsiriX (OsiriX Foundation, Geneva, Switzerland) programs. The pharyngeal airway was divided into three sections (Upper, middle and lower phareyngal airway) The pre-treatment and post-treatment pharyngeal airway evaluated by linear and volumetric values. Polysomnographic parameters consist of apnea hypopnea index (AHI), REM of sleep and desaturation index. The results among the groups were evaluated by using Mann Whitney U test. The corelation between the changes of phareyngal airway and polysomnographic results were evaluated by using Spearmen's rho test.

Results: Before and after surgery the phareyngal airway changes and polysomnographic outcomes did not show any significant ($P>0.05$). Lower phareyngal airway showed correlation with AHI and desaturation index. Upper and lower pharyngeal airway did not show any correlation with apnea parameters.

Conclusion: The orthognathic surgery which includes mandibular set back affects negatively the apnea scores and oxygen saturation index. The advancement of maxillary increase the total volume of the phareyngal airway but this improvement did not influence the polysomnographic parameters.

Keywords : bimaxillary surgery, pharyngeal airway, apnea, polysomnographic value

Publication Number : OP - 026

Abstract Referance : 241

BONE HEALING IN CRITICAL SIZE DEFECTS TREATED WITH EITHER BONE GRAFT, HYALURONIC ACID OR COMBINATION OF BOTH MATERIALS

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Introduction: Different types of grafts, artificial materials and techniques were introduced and positive effects during treatment of large bone defects were stated in previous researches. Hyaluronic acid (HA) provide lots of benefits in a wide variety of biological events such as wound healing, osteogenesis and immune response. The aim of this study was to evaluate bone healing parameters after local HA and alloplastic bone graft augmentation alone or in combination at the fourth and eighth weeks of bone healing in rat critical-size calvarial bone defects.

Materials and Methods: Twenty four Sprague-Dawley rats were used for this study. Four, 5-mm diameter, critical-size bone defects were created with a trephine bur to the parietal and frontal bones bilaterally symmetrical. Treatments were distributed to defects in a planned manner as control, HA, graft and HA-graft combination. Rats were randomly divided into two groups and were sacrificed at the fourth and eighth weeks of surgery. Calvarium of rats were harvested and processed for histologic analysis. Tissue sections were evaluated under light microscope. Defect closure, inflammation, new bone formation, angiogenesis and connective tissue formation were investigated. For comparing different treatment groups Kruskal-Wallis statistical analysis was used.

Results: Defect closure and new bone formation were significantly higher in the HA group at the fourth ($p<0,01$) and eighth weeks ($p<0,05$). However, HA is ineffective on connective tissue formation, angiogenesis and inflammation. Our data also indicated that graft augmentation enhanced new bone formation, defect closure, angiogenesis and connective tissue formation significantly in both graft and HA-graft combination groups ($p<0,01$) at the fourth and eighth weeks.

Conclusion: HA is effective in bone production and related healing parameters. However, graft augmentation enhance almost every bone healing parameters. Results indicate that augmentation with graft materials is the essential treatment procedure for critical size bone defects.

Keywords : hyaluronic acid, bone graft, bone regeneration

Publication Number : OP - 027

Abstract Referance : 244

IMPROVEMENT OF LABIAL CANTING DUE TO ASYMMETRIC ORTHOGNATHIC SURGERY

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AIM: Labial canting seems to be normal in most patients and can be ignored. However, patients treated with orthognathic surgery expect elimination of labial canting with correction of facial asymmetry. The aim of this study is to evaluate the changes observed in the labial plane inclination in patients with or without labial canting, following two-jaw orthognathic surgery.

MATERIALS AND METHODS: 30 adults who received two jaw orthognathic surgery (Le Fort I osteotomy and bilateral sagittal split ramus osteotomy with/without genioplasty) were included in the study. The patients were divided into two groups depending on whether they have lip canting or not before orthognathic surgery. 14 patients presenting 2° or more labial canting were included in group 1 and 16 patients presenting less than 2° were included in group 2. Frontal facial photographs and posteroanterior cephalometric radiographs of patients taken before and at least 6 months after surgery were examined. Skeletal and soft tissue changes obtained due to orthognathic surgery were evaluated with angular and linear measurements and parameters were statistically analyzed.

RESULTS: As a result of asymmetrical impactions and down fractures in the maxilla, position of menton was corrected in group 1. The asymmetries of the facial soft tissues were reduced due to the correction of the hard tissue asymmetries. The correction of the soft tissues was as prominent as the hard tissues and labial canting observed before surgery was prominently reduced.

CONCLUSION: The vertical asymmetry of the jaws can be successfully eliminated and well balanced aesthetic smiles can be obtained with asymmetric two jaw orthognathic surgical procedures.

Keywords : orthognathic surgery, labial cant

Publication Number : OP - 028

Abstract Referance : 260

In The Le Fort I Osteotomy Performed Patients Effect of Cinch and V-Y Suture On The Lip and Nose Soft Tissue

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The purpose of this study was to evaluate the effect of cinch suture and VY suture on nose and upper lip appearance for prevention of unexpected changes following maxillary advancement and impaction surgery and to compare the measurements obtained from marked reference points on the nose and lips in 15 consecutive patients.

15 orthognatic surgery patient underwent maxillary advancement and impaction surgery because of treatment of malocclusion related with growth anomaly, were included this study. The age of the patients are between 18 and 29 (mean age 24). 14 class III patients and class I patient were treated by orthognatic surgery. Bimaxillary surgery were applied to all patients. The measurements between the marked references points were recorded to detect the changes on the nose. Lateral cephalometric graphies were obtained preoperatively. As soft tissue edema due to surgery relieves 6 months after the surgery, 6.months after the surgery clinical and radiographic measurements were obtained to compare with the preop data.

After orthognatic surgery, in the V-Y suture performed group mean 1,28 mm not significant increased, in the V-Y suture not performed group mean 0,3 mm not significantly decreased observed. Alar width; in the cinch performed ($p=0,010$) and not performed group ($p=0,016$) statistically significant increased observed. The differences between the groups were not statistically significant ($p=0,463$). Subalar width; in the cinch suture performed group mean $1,88\pm0,64$ mm significant ($p=0,010$), in the cinch suture not performed group $2,57\pm0,53$ mm significant increased observed ($p=0,015$). In this measurement differences between groups were statistically significant ($p=0,047$). Nasolabial angle; in the cinch suture performed group $4,63^{\circ}\pm9,68^{\circ}$ decreased, in the cinch suture not performed group $2,29^{\circ}\pm8,42^{\circ}$ increased observed ($p=0,865$). Nose nostril height not important changes, in the width statistically not significant changes done. When in the cinch suture performed group right nostril width increased, left nostril width decreased. In the cinch suture not performed group right and left nostril width increased observed.

Keywords : maxilla, soft tissue, surgical closure techniques, orthognathic surgery

Publication Number : OP - 029

Abstract Referance : 264

Surgical Treatment of TMJ Internal Derangement : Which Procedure?

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Internal derangement (ID) is a condition of TMJ that interferes the smooth action of a joint, lead to pain and restricted mouth opening. This disturbance can lead to degenerative changes of the disc, cartilage and bony frame of the joint. According to the many studies about internal derangement of TMJ, there is an agreement that conservative approaches are applied first in the management of ID. If conservative methods fail, open surgical procedures are applied.

The aim of this study is the comparision of discectomy, discectomy with replacement and eminectomy procedure to discuss the appropriate procedure for different disturbances of TMJ internal derangement and discussion of ending time of the noninvasiv conventional treatments.

The medical notes of 258 patients who had refered to our service with internal derangement syptoms over 5-year period between 2009 and 2014 were retrospectively reviewed.

Patients were staged by wilkes classification in order to clinical and radiological findings. Patients has end stage TMJ diseases (Wilkes stage 5) were excluded from this study. Discectomy, discectomy with dermis-fat grafting and eminectomy were performed to the patients who received open joint surgey after the convantional treatments failed. All of the operated patients were asked the question that were they content of operation. Success of the operation types were statistically evaluated regarding to this question and clinical measurements. Thirty five of 258 patients were male (27%). According to the clinical and radiographic findings, 103 of the patients were diagnosed as reducdated disc displacement, 70 patients were irreducdated disc displacement and the remaining 85 patients had irreducdated disc displacements with degenerative changes. Thirty patients did not receive any treatment.

Thirty open joint surgeries were performed in total. Two eminectomy, one discectomy with replacement and one discectomy surgery were failed.

There are a few surgical procedures described for TMJ ID; open surgery and rehabilitation increased the range of movement. Depending on literature many studies have been showed that open surgeries are more effective at eliminating or decreasing the pain.

Keywords : tmj, internal derangement, surgical treatment, open surgery

Publication Number : OP - 030

Abstract Referance : 265

Mikroleakage and Push-Out Bond Strength of Zirconia Pins Used As A Core Material in Retrograde Fillings

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ABSTRACT

OBJECTIVE: The aim of this in-vitro study was to evaluate the apical leakage and bond strength of Mineral Trioxide Aggregate (MTA) and BioAggregate application with or without zirconia pin as a root-end filling material.

METHODS: Eighty-six extracted single rooted, fresh human teeth were used in the study. All teeth except positive control group were filled with gutta-percha and AH Plus root canal filling materials. Three teeth in the positive control group were filled only with gutta-percha. The root apices of teeth in negative control group were covered with three layers of nail polish. The apical 3 mm of the samples were resected by using diamond saw perpendicular to the axis of teeth. The root-end cavities were prepared by using ultrasonic retro tips in 5 mm depth. The specimens were randomly divided into four groups of 20 samples. In groups 1,2,3 and 4 root-end cavities were filled with MTA, BioAggregate, MTA and zirconia pin, BioAggregate and zirconia pin, respectively. The zirconia pins that were prepared at the same size of ultrasonic retro tip were placed with digit pressure into the root-end cavities filled with MTA or BioAggregate. The microleakage of samples was tested by using fluid filtration method and the bond strength of root-end fillings in all groups were evaluated by using push-out test method. The data were evaluated by using SPSS, 17.0. One-way ANOVA and the Post Hoc Tukey HSD tests were used for the analysis of data. Statistically significant differences among the groups were set at $p \leq 0.05$

RESULTS: Group 4 showed lower apical microleakage than the other groups, however statistically significant difference was found between groups 1 and 4 ($p=0.015$). Group 4 showed higher bond strength than the other groups. There was statistically significant differences between groups 1 and 4 ($p=0.005$), and groups 3 and 4 ($p=0.003$) in terms of bond strength.

CONCLUSIONS: New developed bioceramic containing root-end filling material BioAggregate and MTA showed similar results in terms of sealing ability and bond strength. In addition, application of zirconia pin into root-end cavities showed better results than the conventional root-end filling technique. It is suggested to conduct further studies to evaluate the effects of zirconia pins used with different materials which simplifies the retrograde filling procedure.

Keywords : bioaggregate, fluid filtration , mta, push-out, zirconia pin

Publication Number : OP - 031

Abstract Referance : 266

Mandibular reconstruction using CAD/RPM technology for preoperative surgical planning in odontogenic myxoma

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Background: Odontogenic myxoma is a benign odontogenic tumor with locally aggressive behaviour. Since this neoplasm is rare in the oral cavity, there are currently no clear surgical management guidelines for odontogenic myxoma, and a variety of approaches may be used although a propensity exist towards radical excision. In addition if a resection is planned in order to optimize reconstruction and rehabilitation proper treatment protocol should be instituted. In this case report preoperative planning and intraoperative handling techniques are presented.

Patients and Methods: An asymptomatic lesion was diagnosed as an odontogenic myxoma. The location of the planned resection, the cosmetic and functional demands of the patient, and the nature of the tumor dictated for a segmental resection. Surgical and reconstructive planning, a CAD / RPM (Computer assisted design / Rapid Prototyping Modelling) plan was designed for the resection and reconstruction. Rapid Prototyping Modelling-designed models utilized for cutting guides for the mandible and harvesting of the ileum cortico-cancellous grafts. A reconstruction plate was prepared at this stage to minimize operating time. In addition a resection template is prepared and used as an acrylic cutting guide/ template that was placed in-situ to handle the segments following resection. Another template was designed to be used at the donor site.

Conclusion: The patient is followed-up for 6 months and currently is free of recurrence. The used technology in terms of a CAD/ RPM considerably shortened the operation time, provided avoidance of mishaps of malocclusion intraoperatively, and proper transfer of preoperative surgical planning. Collectively both operating team and patient benefitted from this technology.

Keywords : computer assisted surgical planning ; odontogenic myxoma ; mandibular reconstruction; operation time; rapid prototyping ; segmental resection; cad/ rpm

Publication Number : OP - 032

Abstract Referance : 272

Histopathologic evaluation of effects of local simvastatin and photobiomodulation by led on bone healing

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Objective: The aim of this study is to evaluate the effect of photobiomodulation (PBM) and locally applied simvastatin on bone formation in critical size defects formed in rat calvaria.

Material and Methods: A total of 28 Sprague-Dawley male rats average aged of 18 weeks were used. Bilateral 5 mm critical sized calvarial defects (CSD) were created in experimental animals. 0,5 mg simvastatin solution was embedded to gelatin sponge and locally applied in the one of the defects. The other one was left empty. Half of the animals were subjected to PBM treatment where on the remaining half were left spontaneously healing. The animals were sacrificed at days 8 and 15. The specimens were histopathologically analyzed.

Results: Histopathologic evaluation revealed that the 15 day new bone formation levels were significantly higher compared to 8 days.

Conclusion: PBM and local simvastatin applications had favorable effects on new bone formation and antiinflammatory action in the rat CSD.

Keywords : simvastatin, photobiomodulation, new bone formation, local, defect

Publication Number : OP - 033

Abstract Referance : 274

Mantle Cell Lymphoma of the Oral Cavity Clinically Misdiagnosed as Pleomorphic Adenoma: A Case Report

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Mantle cell lymphoma (MCL) is recognized as a distinct clinicopathologic subtype of B-cell non-Hodgkin's lymphoma. MCL of the oral cavity is an uncommon diagnosis. Most oral MCLs occur in an elderly male population and have a possible predilection for the palate. Like MCL occurring in other sites in the body, the prognosis and outcome of oral MCL appears to be poor. Recognition of MCL and its differentiation from other non-Hodgkin's lymphoma (NHL) subtypes is important because of both the variable prognosis and changing therapeutic regimens.

In this poster, 74 year old female patient who had an asymptomatic swelling with normal overlying mucosa misdiagnosed as pleomorphic adenoma, localized on right side of the palatal region, its surgical treatment and pathological reports is presented.

Keywords : mantle cell lymphoma, pleomorphic adenoma, pathology

Publication Number : OP - 034

Abstract Referance : 279

Conservative treatment for large keratocystic odontogenic tumors in the jaws: Report of 3 cases

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A keratocystic odontogenic tumor is a benign intra-bone mass originating from dental lamina or its residue. The term odontogenic keratocyst was first used by Philipsen in 1956. This lesion was renamed as Keratocystic odontogenic tumor (KCOT) and reclassified as neoplasm in World Health Organisation's 2005 edition due to its biological behavior. Clinically, KCOT is frequently involved in mandibular region . Due to its infiltrative characteristic, when KCOT involved near the maxillary sinus, it could expand to giant size and occupy the entire maxilla. It almost always occur within the bone, except small number of perpheral KCOT. The cystic lumen is filled with creamy proteinaceous material or clear yellowish fluid which is also a diagnostic marker. Treatment options; enucleation and open packing/surgical obturator, marsupialization and open packing/surgical obturator, decompression by marsupialization followed by enucleation.

In this paper we aimed to describe three cases of large KCOT, surgical, clinical and radiological aspects with follow-up results, overview of various aspects with literature data.

Keywords : keratocystic odontogenic tumor, keratocyst, jaws, maxilla, mandible, marsupialization, decompression, enucleation, surgical obturator

Publication Number : OP - 035

Abstract Referance : 285

A new surgical approach to paraalar hypoplasia

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Objective

The aim of this presentation is to define a new surgical approach to paranasal area for correction of alar base hypoplasia in order to improve paranasal and nasolabial aesthetics.

Methods

Maxillary anterior segmental osteotomy was combined with high level lateral nasal wall osteotomy. Lateral nasal wall was splitted about 1,5-2 cm above the nasal base to achieve desired aesthetics. Maxillary anterior segmental distraction started 7 days following to surgery. The duration of the distraction was determined according to occlusal relationship and soft tissue changes. The distractor was removed after 8 weeks of consolidation and the treatment was continued with straight-wire orthodontic mechanics.

Results

When pre and postoperative radiographs were overlapped, it was observed that paranasal deficiency and nasolabial angle were improved by these osteotomies.

Conclusions

Paraalar hypoplasia and adjacent soft tissues can be rehabilitated with this presented technique.

Keywords : paraalar hypoplasia, nasolabial aesthetics, nasal tip sag

Publication Number : OP - 036

Abstract Referance : 288

Reconstruction of Major Anterior Maxillary Defects with Intraoral Distraction Osteogenesis

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Objective

Distraction osteogenesis (DO) is a technique of applying controlled traction across the site of surgically produced bone disruption while it is healing. In the surgically created gap, the technique takes advantage of the regenerative capacity of bone by creating an active area of bone formation. Anterior maxillary defects are among the most complicated ones. Bone grafting attempts are mostly disappointing as the soft tissue and nasal base coverage are not easy. The aim of this study, is to review DO as it applies to major maxillary anterior defects.

Methods

To be able to show the results of this new maxillary horizontal distraction technique we present the usage of DO in cleft and gun shot injuries.

Results

Both bone and soft tissue defects were augmented by horizontal distraction osteogenesis. At the follow up of two months all of the reconstructed sites were stabile with acceptable aesthetics and function.

Conclusions

Intraoral distraction osteogenesis can be successfully used to correct major maxillary defects at cleft patients and gun shot injuries.

Keywords : distraction osteogenesis, cleft patients, gun-shot injuries, case report

Publication Number : OP - 037

Abstract Referance : 312

Different treatment modalities of cystic lesions of the jaws: a clinicopathological study of 30 cases

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Objective: The aim of this retrospective study was to evaluate the effectiveness of the treatment types in the management of cystic lesions of the jaws.

Methods:The records of odontogenic and nonodontogenic cysts treated in oral and maxillofacial surgery unit between 2008 to 2015 were retrieved and analyzed for age, gender, location of the lesion.

Results: Thirty patients with cystic lesions of the jaws were collected, comprising 29 odontogenic cyst and one nonodontogenic cyst. The most frequent diagnosis was radicular cyst (43,33%), followed by odontogenic keratocyst (keratocystic odontogenic tumour) (40%), dentigerous cyst (13,33%) and nasopalatine duct cyst (3,33%). The overall male to female ratio was 1:1.14. Mean age of the patients was 33.8. Three patients were in the pediatric age group (7 years to 15 years) and 27 were in the adult age group (16 to 83 years). Treatment modalities were: marsupialization, marsupialization with enucleation, total enucleation. The longest marsupialization period was 15.5 months. Second surgical operation was required in two cases (6.66%) and recurrence was found in one case (3.33%).

Conclusions: As a conclusion, clinician should have a knowledge of the biologic behavior and clinicopathologic features of the jaw cysts for an early diagnosis, accurate management of the treatment and adequate surgery.

Keywords : odontogenic cyst, nonodontogenic cyst, jaw cysts, marsupialization, enucleation.

Publication Number : OP - 038

Abstract Referance : 323

Evaluation of osseointegration with different regeneration techniques in treatment of circumferential bone defects

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Aim: The aim of this study was to evaluate the osseointegration of implants placed in areas with artificially created circumferential bone defects, using three bone regeneration techniques.

Material and methods: The experimental model was the rabbit femur (24), where bone defects were created and implants were placed. The peri-implant circumferential bone defects were filled with a DFDBA (8 rabbits), DFDBA combined with PRF (8 rabbits) or DFDBA combined with rifamycin (8 rabbits). After 4 weeks, the animals were euthanized and bone tissue blocks with the implants and the surrounding bone tissue were removed and processed according to a histological protocol for hard tissues on non-decalcified ground sections. The samples were studied by light microscopy, histometric analysis was performed to assess the percentage of bone in direct contact with

the implant surface and new bone formation a statistical analysis of the results was performed.

Results: In the samples analyzed 4 weeks after implantation, the percentage of bone tissue in direct contact with the implant surface for the three groups were 50.94 ± 5.26 % (DFDBA), 60.07 ± 4.91 % (DFDBA – Rifamisin), 73.43 ± 3.86 % (DFDBA – PRF). The percentage of new bone formation for the three groups were 37.61 ± 1.70 % (DFDBA), 48.51 ± 2.80 % (DFDBA – Rifamisin), 63.09 ± 2.10 % (DFDBA – PRF). In terms of the percentage of bone contact and new bone formation, groups DFDBA – rifamycin and DFDBA – PRF presented statistically significant differences from group DFDBA ($P < 0.05$). DFDBA – PRF group also presented statistically significant difference from group DFDBA – rifamycin ($P < 0.05$).

Conclusion: In conclusion, DFDBA – PRF combination presented a percentage of bone contact with the implant surface and new bone formation statistically greater than in the other groups.

Keywords : dental implant, dfdba, prf, rifamycin, circumferential bone defect

Publication Number : OP - 039

Abstract Referance : 332

Surgical Approach in Subcondylar Fractures

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Mandible fractures commonly occur in patients who have exposed blunt facial trauma, and the subcondylar region is the most frequently fractured due to its intrinsic biomechanical weakness. Subcondylar fractures most commonly result in medial dislocation of the head of the condyle with a subsequent loss of ramal height that causes open bite and facial asymmetry. Treatment is one of the most controversial aspects in the field of maxillofacial traumatology. This controversy is based on the positive and negative aspects of open and closed approaches for the treatment of this kind of fractures. The treatment can be divided into two major methods: closed reduction and open reduction. Closed reduction requires a period of maxillomandibular fixation (MMF), followed by active physiotherapy. Open reduction allows good anaomical repositioning and immediate functional movement of the jaw. Closed reduction is often associated with reduced mouth opening, decreased patient compliance and potential for ankylosis. Beside this; dislocated subcondylar fractures can not be reduced desired position with closed reduction and can result with malocclusion. In such situations open reduction become compulsory. These situations are; luxation type condyle fractures and dislocated subcondylar fractures.

In the light of these knowledges, we aimed to present our dislocated subcondylar fracture cases, the types of surgical approaches, miniplate osteosynthesis we have achieved and follow-up results with literature data.

Keywords : subcondylar fracture, trauma, surgical approach, preauricular approach, open reduction, maxillofacial traumatology, miniplate osteosynthesis

Publication Number : OP - 040

Abstract Referance : 356

Surgical Approaches in Orbito-zygomaticomaxillary Complex Fractures

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The zygomaticomaxillary complex (ZMC) plays an important role in maintaining the structure and function of the face. The prominent convex shape of the ZMC makes it particularly vulnerable to trauma. Fracture of the ZMC is one of the most common facial injuries. So the etiology is commonly trauma. Early diagnosis of the fracture is essential for optimal treatment and is directly dependent on appropriate initial evaluation, correct injury assessment. Treatment of ZMC injury has improved due to various reduction methods and development of miniplates, screws and wires. The treatment consist of surgical reduction and fixation of the dislocated bone fragments to their original location. Most ZMC are successfully repositioned with open reduction such as intraoral and transconjunctival approach or closed reduction such as Gillie's approach. The primary goals in treatment include the restoration of the projection and the height of zygoma by accurate reduction and the restoration of the aesthetic. Adequate exposure and reduction by multiple incisions and strong fixation by plates are believed to be essential to achieving satisfactory results.

This presentation is intended discussion and presentation of our orbito-zygomaticomaxillary complex fracture cases which occurred due to facial trauma, surgical reduction and fixation methods we have achieved.

Keywords : zygomaticomaxillary complex , fracture, trauma, facial trauma, surgical reduction, malocclusion, miniplate osteosynthesis, wire osteosynthesis, circumzygomatic suspension, hook traction, infraorbital approach, dingman's approach, intermaxillary fixation

Publication Number : OP - 041

Abstract Referance : 363

Evaluation of Locking and Non-Locking Reconstruction Plate-Screw System in lateral mandibular defects by FEA

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Background: Reconstruction plate systems have been used to restore function following mandibular resection.

Objective: The purpose of this study is to analyze and compare stress distribution on bone screws and plate systems in locking and non-locking screw-plates design with lateral mandibular defects.

Methods: Solid mathematical model of the mandible was created by three-dimensional finite elements analysis and 25 mm in length of lateral resection was performed on model. Models were reconstructed with two different reconstruction plate system including three 2.4 mm titanium screws. Realistic mastication force was applied by simulating natural muscles vectors. The stress formation on bone and hardware system were evaluated and compared.

Findings: The stress values of the cortical bone, plate and screw system of the conventional plate model was higher than the locking system model. The highest stress values were measured in the proximal segment especially in conjunction with conventional screw system. Furthermore, the distribution of the stress on bone surface more homogeneously in the locking system.

Conclusions: It is evident that in the reconstruction model, the use of locking system offers an additional advantage over the conventional system in 25 mm in length of lateral mandibular defects.

Keywords : locking plate, segmental resection, reconstruction, fea, mechanical stress

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CHALLENGING CASES OF BISPHOSPHONATE INDUCED OSTEONECROSIS OF THE JAW

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Objective:

The aim of this presentation was to emphasize the failure of current treatment methodologies in such Bisphosphonate Induced Osteonecrosis of the Jaw (BIONJ) cases.

Methods:

Four patients (3 male, 1 female) with age between 65-81 referred to Başkent University Department of Oral and Maxillofacial Surgery because of symptomatic BIONJ occurrence following tooth removal procedures. All of them had intravenous bisphosphonate (zoledronate) therapy for multiple myeloma, prostate or breast cancer. Two of them had stage 1 and the others had stage 2 and 3 BIONJ according to American Association of Oral and Maxillofacial Surgeon's (AAOMS) classification. Several conservative treatment methods such as superficial debridement of wound, sequestrectomy, prolonged combined intramuscular and oral antibiotics, platelet rich fibrin application for dressing the exposed bone, biostimulative diode laser, ozone therapy and/or hyperbaric oxygen treatment were applied together with zoledronate drug holiday.

Results:

Following all treatment applications, the existence of exposed bone, pain, pus suppuration and/or extraoral fistula were still observed; however, a little improvement was observed in some symptoms after 6 months follow up. All patients have been followed up for 1 year.

Conclusion:

Clinicians should be aware of persistent BIONJ cases and insufficiency of current treatment options is still a universal problem in treatment of BIONJ. Therefore further multicentre outpatient studies to obtain successful BIONJ treatment should be performed.

Keywords : bionj; osteonecrosis; osteochemonecrosis; zoledronate

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Treatment of Subcondylar Mandibular Fracture by Transoral Approach

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Fractures of the mandible are the most common fractures of the facial bone as, it is reported that 9 to 45% of mandibular fractures are observed at the condylar process. Mandibular condyle fractures frequently result from scuffles, sports and traffic accidents, with definite geographic differences. The clinical features of the mandibular condylar fracture includes malocclusion, open bite, swelling, tenderness over the joint, loss of mandibular function, deviation of chin, crepitus and laceration on the skin. There is still debate about whether open reduction and internal fixation (ORIF) or closed reduction with maxillomandibular fixation (CR/MMF) should be the treatment of choice for fractures of the mandibular condyle. Factors that influence this choice include the type of the fracture, associated mandibular fractures and risk of complications such as loss of the height of the ramus, malocclusion, anterior open bite, injury to the facial nerve, chronic pain, reduced mandibular function, deviation during mouth opening, restricted mouth opening, and ankylosis . Although closed treatment is the most widely used method, even for the treatment of dislocated condylar fractures, anatomic reduction may be difficult to achieve, compared with open reduction and internal fixation (ORIF). Some authors have considered another method as transoral open reduction. Treatment of subcondylar fractures of the mandible with transoral approach is included within the concept of minimally invasive surgical procedures. This method is a valid alternative to the transcuteaneous approach for the reduction and fixation of extracapsular condyle fractures in selected cases.

The aim of this report is to describe the reduction of the subcondylar mandibular fractures by transoral approach and present the clinical and radiographic results through a case treated in Kocaeli University Faculty of Dentistry, Department of Oral and Maxillofacial Surgery.

Keywords : subcondylar fracture, transoral approach

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Development Of A Three-Directional Distractor System For The Correction Of Maxillary Transverse And Sagittal Deficiency

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Objectives

Patients with maxillary deficiency who need both transvers palatal expansion and maxillary advancement are generally treated with two separate surgeries, which lengthen the treatment period, and cause scar formation. The aim of this study was to develop a one step solution for the correction of maxillary deficiency in adult patients. Our goal was to design and produce a bone borne three-directional distractor to achieve simultaneous transvers palatal expansion and maxillary advancement.

Material and Methods

Cone beam computed tomography images of a patient were used to design a three dimensional distractor system. The images have been transported to a projection software (Solid works®), and a virtual three-dimensional maxillary model (V3DM) was created. Three different distractors (D1, D2, and D3) were designed virtually, and adapted to V3DM. Finally a Y-shape segmental osteotomy of the maxillary model was performed for the simulation of distraction osteogenesis. Vertical bite forces were applied on the first molar, and incisive areas. Finite element analysis were performed to investigate biomechanical properties of three different distractors. Maximum distraction lengths of three different distractors were also determined.

Results

234 N of bite force on the first molar region led maximum von mises stresses (MVMS) of 332,376, 217,97, and 335,169 N/mm² in the bodies of D1, D2 and D3, respectively (D3>D1>D2). MVMS that were transmitted from the plates to the maxillary bone was 48,21, 39,05, and 69,6 N/mm² respectively in D1, D2 and D3 (D3>D1>D2).

93 N of bite force on the first incisive region led MVMS of 352,269, 554,922, and 284,428 N/mm² in D1, D2, and D3, respectively (D2>D1>D3). MVMS of bone were 44,93, 244,12, and 104,96 N/mm² respectively in D1, D2 and D3 (D2>D3>D1).

Distraction lengths of D1, D2, and D3 were 12 mm, 12 mm and 6,5 mm, in transvers direction; and 9, 9, and 10 mm in sagittal direction, respectively.

Conclusions

This study is the first report in the literature for the development of an intraoral bone born distractor to correct maxillary hypoplasia in three directions. D1 and D2 had similar final lengths of distraction, and better biomechanical properties than D3. Also, D1 can be considered as the most convenient design regarding the ease of application from the surgical point of view.

Keywords : distraction osteogenesis,maxillary deficiency,three direction

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Unilateral Temporomandibular Joint Ankylosis Treated With Custom-made Fossa Prosthesis: A Case Report

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Temporomandibular joint (TMJ) ankylosis mostly arises from trauma and infections. Treatment of TMJ ankylosis might usually needs multiple surgical approaches involving multistep procedures and long treatment times. Hemi-joint replacements or fossa prostheses have been used in the treatment of various TMJ disorders providing reduced operation time and less invasive surgery. However fabrication of custom-made TMJ fossa prosthesis may generally be time consuming and expensive. We report a single-stage technique for replacement of an ankylosed joint using a custom-made prosthesis, and discuss the technical aspects of the procedure. A 27-year-old man who had no history of significant medical problems or any family history of hereditary disease referred to our clinic. He had had an accident that caused a serious trauma to his chin 3 years ago. His main complaint was limited mouth opening (17 mm) and pain in the left TMJ region during function. After preparation of a template from pattern resin on stereolithographic model, a custom-made fossa prosthesis was produced with routine casting procedures in dental laboratory. Under fiberoptic assisted nasotracheal intubation A preauricular incision with temporal extension (hockey stick incision) was used to access the TMJ. After determining the anterior and posterior limits of the ankylosed TMJ, the ankylosed mass was removed. The irregular edges of the segments were reshaped with a bur, and the ramus was completely disconnected from the upper bony block. The custom-made fossa prosthesis was fit in the fossa and fixed with screws. The gap was filled with fat graft. Maximum interincisal opening was 36 after operation. The patient was then followed up for a period of 1 year with no pain or evidence of recurrence. 85% of custom TMJ prosthesis patients experienced long-term quality of life improvement as a result of increased mandibular function and reduced chronic pain. Custom TMJ prosthesis device components are designed and manufactured for each specific case and clinical situation. Stereo lithographic models generated from computed tomography is reported to have dimensional accuracy of 97.9%. The present technique may be preferred for TMJ surgery because of it well adaptation, simple and cost-effective features.

Keywords : temporomandibular joint, tmj, prosthesis, joint replacement, ankylosis, custom-made

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Clinical and Radiological Outcomes of Piezosurgery in SARME ; preliminary results

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Introduction:

The surgically assisted rapid maxillary expansion (SARME) is a form of distraction osteogenesis of the maxilla. Using combined orthodontic- forces and bone osteotomy leads to particular expansion of the midline palatal suture.

Purpose:

The purpose of this clinical study is to compare the using of piezosurgery and conventional method (oscillating saw) during the bone cut in SARME patients and to evaluate clinical & radiological outcomes of them.

Material &Method:

17 patients at the age of 18 to 25 underwent a SARME under IV sedation. The patients were randomly divided into two groups. In Group 1 (10 patients) the bone cut was performed with piezosurgery, while in Group 2 (7 patients) bone cuts were performed with oscillating saw. Intra operatively complications and operation period was detected. In the evaluation of postoperative edema facial width measurement (in mm) were done by a measuring tape clinically and by ultrasound device. The difference was calculated by the recording preoperatively on the 2nd, 5th and 7th days. The maximum mouth opening measure was obtained by measuring the maxillo-mandibuler incisor distance A Pain analysis was done with visual analogue scale (VAS) during the first 7 days. Student t-test and ANOVA were used in the statistical analyses.

Results:

Maxillary expansions were obtained in all SARME patients as well. There were no permanent complication was occurred both intra operatively and post operatively. Although VAS scores of Group 1 are higher during 2nd hour and 12th hours measurement and lower at the others measurements, these differences were statistically not significant.

Trismus levels were lower in Group 1 in all measurement times. The difference between two groups was statistically significant.

Edema was almost disappeared at the end of the first week control in all patients. Group 1, edema measurements were higher in the 2nd days and lower at the other periods. However these differences were statistically insignificant in all periods

Conclusion

Based on the results of our study we conclude that piezosurgery are comparable and safe method in bone cut

Keywords : same, piezosurgery, ultrasound , edema, vas

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Evaluation of the Effect of Photoionization on Dental Implant Osseointegration: Experimental study

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Objective: The term 'photoionization' means; ionization (as in the ionosphere) of a molecule or atom caused by absorption of radiant energy. This phenomenon, can be achieved by using, uv lights, electricity or radiant energy. The aim of this study is to evaluate the effect of (u.v light source) photoionization treatment on dental implant osseointegration in a new experimental animal model.

Material and Method: 10 rabbits were undergone bilateral surgical procedures of placement of specially experimental model designed dental implants (Nucleoss (Turkey/Izmir), 2.8x4mm SLA) on mandibular corpus. Before placement of dental implant in the right side of rabbit (*group 1* n=10), photoionization was applied to implant socket by using a detector (miniRAE,3000) in a period of 20 minutes. Whereas the implant in the left was placed as control (*group 2* n=10). After ten weeks, the animals were sacrificed for histomorphometric examinations. Specimens were stained with Goldner's trichrome method. Bone and osteoid formation were measured by using a software programme (AnalySIS LS Research). The total amount of new bone, bone and osteoid together (TB) and percentage of bone-implant contact and TB-implant contact to the implant surface were calculated according to the total region between the threads. The data was analyzed statistically.

Results: All implants were placed in mandibular corpus of rabbits uneventfully. The implant-to-bone contact was slightly lower in the control group (*group 2*). Percentage of new bone and TB formations were found greater in experimental group (*group 1*). However, no significant difference was found between the groups neither in percentage nor in amount of bone and TB. ($p > 0.05$).

Conclusion: Mandibular corpus of rabbit is a new experimental model for dental implant placement. Photoionization may not have any positive or harmful effect on dental implant osseointegration in low dose and 20 minutes duration. Further studies with different duration and doses of photoionization may be needed to reach certain consequences.

Keywords : implant, mandible, photoionization, bone, osseointegration

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Abstract Referance : 457

SURGERY FIRST IN ORTHOGNATHIC SURGERY

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Objective

The aim of this study was to assess the psychosocial and functional outcomes, satisfaction of surgery, requirement and duration of orthodontic treatment after surgery-first procedure of orthognathic surgery.

Methods

This study was carried out in 22 (52%) patients (12 female / 10 male; mean age 22 years) who had undergone surgery-first approach out of total 42 ortognathic surgery procedures for correction of dentofacial deformities in Medipol University Department of Oral and Maxillofacial Surgery in 2014 by the same surgical team. Satisfaction from surgery and requirement and duration of orthodontic treatment after surgery were assessed retrospectively. Psychosocial questionnaire were administered to 7 patient pre and postoperatively.

Results

Surgery without orthodontic treatment was performed in 6 patients (27%). Sixteen patients (73%) had ortodontic treatment following surgery. Two out of 16 (12%) patient who had orthodontic treatment quit orthodontic treatment after surgery due to satisfaction from the current occlusion. Satisfaction and motivation form the results of early performed surgery was analysed. The effects of surgery first procedures on the patients psychology was also evaluated.

Conclusion

The surgery-first approach offers an alternative to the orthodontics-first approach for correction of maxillofacial deformity. As a conclusion the surgery first procedure improves the general life quality of the patients and effective and quicker treatment method in the correction of dentofacial deformities. Both the surgeon and orthodontist should be experienced and cooperate closely to achieve predictable and satisfactory outcomes.

Keywords : surgery first approach, orthognathic surgery, psychosocial