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REPLACEMENT OF A MACRODONT BY TRANSPLANTING A SUPPLEMENTAL TOOTH: A CASE REPORT

Danielle S. Dineen, Anne O' Connell

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ABSTRACT

INTRODUCTION: Macrodonia is a rare but cosmetically challenging dental anomaly due to irregular morphology. We present auto-transplantation as a solution for a challenging restorative case involving a geminated central incisor in association with a supplemental incisor.

BACKGROUND: Tooth auto-transplantation is a valid option for replacing teeth when a donor tooth is available. A donor tooth with incomplete root development and an intact PDL can continue root development in a receptor socket, promoting bone formation.

CASE REPORT: An 8-year-old boy dislikes his 'fused tooth'. His UR1 is 14 mm in width with an intact gemination line. There was a bony swelling labial to the UL1, which radiographs showed to be a supplemental incisor with incomplete root development. After considering the various management options, it was decided to transplant the supplemental tooth to macrodont site. A CBCT scan was taken to aid locating and measuring the unerupted supplemental tooth. After the donor tooth was exposed and transferred to the large macrodont socket, the tooth was stabilised using interrupted sutures, sling sutures and a flexiwire splint.

FOLLOW UP: After three weeks, a periapical radiograph confirmed bone formation. After six weeks, the tooth had normal mobility, colour and a positive result to vitality testing. The patient is very happy with the result.

CONCLUSION: Tooth auto-transplantation was a successful solution in this case. CBCT can be a useful adjunct in the assessment and planning for auto-transplantation.

Keywords: *macrodonia, tooth auto-transplantation, gemination*

MICRORNAS IN ORAL CANCER – PROMISING BIOMARKERS

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ABSTRACT

INTRODUCTION: MicroRNAs are endogenous, single-stranded, non-coding RNAs consisting of 22 nucleotides. Deregulation of some miRNA results in a tumor-suppressive or oncogenic effect.

AIM: The aim of this article is to identify new tumor-suppressor or oncogenic miRNAs and thus to contribute to personalized mRNA/miRNA expression profiling of patients with oral cancer.

MATERIALS AND METHODS: Eleven miRNAs with possible binding sites to 3'UTR untranslated regions of highly regulated genes in oral cancer were identified by means of bioinformatic analysis.

A total of 32 patients with a histologically proven diagnosis of squamous cell carcinoma of the oral cavity as well as 14 healthy individuals matching the profile of patients with oral carcinoma were included in the study. Tissue and blood samples were collected from the first group and blood was collected from the healthy volunteers. The expression of the eleven miRNAs in the collected samples was determined by means of RT-qPCR.

RESULTS: Expression levels of miR-21 and miR-518c were significantly increased, while the expression of miR-376a was significantly decreased in tumor tissue compared to normal mucosa. No published data about changes of expression of miR-376a and miR-518c in oral cancer patient tissue was found.

The expression levels of the 11 miRNAs in blood were also investigated, but the results showed heterogeneous expression among the analyzed samples.

CONCLUSION: miR-21, miR-376a and miR-518c demonstrated significant changes in expression levels in oral cancer tissues.

Keywords: mRNA, miRNA, cancer, biomarkers

Award “The Helene Matras Congress Scholarship” - European Association For Cranio-Maxillo-Facial Surgery (EACMFS)

SUBMENTAL ENDOTRACHEAL INTUBATION - AN ALTERNATIVE TO TRACHEOSTOMY IN SEVERE MAXILLOFACIAL TRAUMA

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ABSTRACT

INTRODUCTION: In some cases of maxillofacial trauma oral or nasal intubation is impossible or contraindicated. The standard approach is to perform a tracheostomy, which can cause different and severe complications. In these cases the submental endotracheal intubation can be an acceptable alternative.

Aim: The aim of this article is to report five cases of submental intubation in patients with maxillofacial trauma and discuss its advantages and disadvantages.

MATERIALS AND METHODS: Between May 2009 and December 2011 five patients underwent submental intubation. The indications and time needed to perform the intubation, the postoperative period and complications were registered.

RESULTS: Short operating time to perform submental intubation, limited additional surgical trauma, uneventful postoperative period without complications and no need for a second operation were noted.

CONCLUSION: In selected cases of severe maxillofacial trauma submental intubation can be used successfully as an alternative to traditional methods of intubation and especially tracheotomy.

Keywords: *submental intubation, tracheotomy, intubation anaesthesia, maxillofacial trauma*

INTRAOPERATIVE CT IMAGING IN MAXILLOFACIAL TRAUMA – REPORT OF TWO CASES

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ABSTRACT

INTRODUCTION: Intraoperative use of imaging in maxillofacial surgery has clear advantages and is becoming more available.

AIM: To report the use and advantages of intraoperative CBCT in two rarer maxillofacial trauma cases.

MATERIALS AND METHODS: A three-year old girl with lateral dislocation of a fractured condyle underwent intraoral reduction with intraoperative CT control. A 56-year old lady had a supraorbital rim/anterior frontal sinus fracture reduced by a less invasive approach and intraoperative CT imaging control.

RESULTS: Both fractures were reduced satisfactorily and healed uneventfully.

CONCLUSIONS: Intraoperative CT imaging allows limited invasiveness in the treatment of maxillofacial fractures and more widespread use with specific indications can be expected.

Keywords: *CT imaging, maxillofacial trauma, surgery, fracture*

SUPERLUMINOUS DEVICES AND LOW INTENSITY LASER FOR TEMPOROMANDIBULAR DISORDERS

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ABSTRACT

AIM: The aim of this study is to compare the pain intensity reduction between the mean radiation doses per session of gallium-aluminum-arsenide (GaAIAs) laser with superluminous diodes (SLD) in four of the most common pain-related chronic temporomandibular disorders (TMD) – local myalgia, myofascial pain.

MATERIALS AND METHODS: This study was implemented in 124 patients with pain-related temporomandibular disorders according to the DC/TMD criteria. We applied trigger point-oriented near-infrared laser (785 nm, 100 s, 8 J/cm²) and SLD cluster sessions (the cluster is composed of 49 SLDs with a combination of visible red (633 nm) and infrared (880 nm) diodes, 200 mW, 300 s, 8 J/cm²) for the temporomandibular joints and the affected muscles.

Patients were evaluated at the start of the treatment, and after the 6th session of combined phototherapy. The pain intensity scores were measured according to the Visual Analogue Scale (VAS). Our results show that the most statistically manifested pain reduction is found for the SLD dose, $p=0.000118$, followed by the overall dose (laser plus SLD); $p=0.001031$, and the laser dose; $p=0.030942$ (ANOVA dispersion analyses). Consequently, it can be concluded that myalgia is better treated through lower doses of red light compared to infrared laser doses because SLDs combine the prooxidative effect of photons with 633 nm wavelength, a large area of exposure, sufficient tissue penetration, and some positive warming thermal impact of the SLD clusters.

Keywords: *temporomandibular pain-related disorders, low level laser therapy, superluminous clusters*

CONTRACTURES AND COMORBID CONDITIONS IN AXIS II POSITIVE TMD PATIENTS

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ABSTRACT

At 30.64% (n = 19 out of 62) of patients with chronic temporomandibular disorders, a reduced volume of lower jaw movements was observed. Mean values of the interincisal distances for symptomatic TMD patients were 39.629 mm (SD 11.7), and 25.47 mm (SD 8.17) for the subgroup with mandibular contractures, respectively. These values are significantly different from the mean values for asymptomatic individuals for the Bulgarian population - 51.76 mm (in the range 33.51 - 69.20 mm) for men and for women - 47.56 mm (25.26 - 59.00 mm), as well as the average values for literary data - from 35 to 60 mm, an average of 53.3-58.6 mm.

Combined phototherapy, which is a comfortable and effective non-invasive method for reducing pain symptoms mainly in m. masseter and temporomandibular joints, leads to overcoming arthrogenic and myogenic contractions. Student's T-test for dependent samples demonstrated the statistical relationship between the interincisal distance before and after the combined phototherapy. Individually applied, combined phototherapy overcomes contractures from 25.47 mm to 37.26 mm (SD 4.27, $p=0.000001$) that are close to normal.

Patients (n = 13) in whom comorbid conditions were found - depressive and anxiety disorders - account for 20.96% of the patients. Overall, no significant limitations in jaw movement were found in this subgroup, and it averaged 34.07 mm, with combined phototherapy increasing the interstitial clearance to 39.46 mm ($p = 0.027332$). In 8, Axis II positive patients (12.90 %, comorbid conditions are depression, somatization and anxiety), the reduced interincisal distances were changed from 27.62 mm to 37.25 mm ($p = 0.0078$) by combined phototherapy. No psychogenic comorbid conditions were found in 11 patients (17.74%) with reduced interincisal range. In this subgroup the most manifest overcome was found - from 23.81 to 37.18 mm ($p = 0.000019$).

Keywords: *temporomandibular pain-related disorders, TMD comorbid conditions, superluminous clusters*

EPIDEMIOLOGICAL AND DEMOGRAPHIC CHARACTERISTICS OF PATIENTS WITH TUMORS OF THE SALIVARY GLANDS

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ABSTRACT

The maxillofacial region may be affected by inflammatory, traumatic, oncological and other processes. The main section of the specialty is maxillofacial oncology. One of its features is the development of tumor characteristics of the maxillofacial area only. These are the tumors of the salivary glands. The engagement of a certain anatomical area usually leads to disturbances in the surrounding areas. On the other hand, surgical interventions in oncology surgery should be radical and ablative. Observing this basic rule in conducting surgical treatment in patients with salivary gland tumors, especially their malignant variants, often there are severe functional, aesthetic and, last but not least, psychosocial problems.

Keywords: *maxillofacial region, surgery, tumor, salivary glands*

MAJOR MICROVASCULAR COMPOSITE FLAP IN RECONSTRUCTIVE HEAD AND NECK SURGERY

Daniel Markov, Svetoslav Slavkov, Nikolay Yanev

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ABSTRACT

Most malignant tumors in the head and neck cannot be adequately treated without surgical treatment. Tumor resection offers good control of the disease, but often leads to significant impairment of function and cosmetic defects. Traumas in the maxillofacial region can also lead to disfigurement and disorders in speech and nutrition.

The development of reconstructive surgery goes from restoration of the integrity of the tissues through the construction of their original appearance and shape to the pursuit of rehabilitation of the function.

Keywords: *malignant tumors, tumor resection, reconstructive surgery, maxillofacial region*

APPLICATION OF THE LTT TEST IN DENTISTRY AND MAXILLOFACIAL SURGERY

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ABSTRACT

The different materials, some of which are implanted permanently in the human body, could contain allergens. Various plates, screws, joint prostheses, acrylates, and other substances used in dentistry may potentiate sensitization in patients. The metal ions removed from the alloys and the residual monomer from the acrylates are haptenated. They bind to the proteins in the body and alter their structure. Modified proteins are already foreign bodies for the human organism and cause an immune response. There is sensitization after the use of metals and acrylates of the 4 types with few exceptions. In this type of allergy, the body produces specific T cells directed against the allergen. Investigating the LTT makes it possible to prove the existence of this reaction to specific materials and can respond to unidentified appearances in the maxillofacial region

Keywords: *LTT test, dentistry, maxillofacial surgery, allergens*

INTRAOURAL APPROACH TO LARGE DERMOID CYSTS OF THE FLOOR OF THE MOUTH

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ABSTRACT

INTRODUCTION: The term “dermoid cyst” of the floor of the mouth is used to describe three histologically closely related cysts: dermoid, epidermoid and teratoid cyst. They are rare and encountered throughout the body, particularly in the areas where embryonic elements fuse together. Usually they are presented as slow growing, mobile, non-tender, soft-tissue formations. This paper presents four cases of dermoid cysts in the floor of the mouth treated in the Department of Oral and Maxillofacial Surgery at the St. Marina University Hospital, Varna, over a 3-year period, between 2014 and 2017. In all cases a CT-scan was performed and an intraoral approach was preferred. The diagnosis was verified histologically.

AIM: The aim of this article is to present an intraoral approach to large cysts of the floor of the mouth.

RESULTS: Excision of large cysts of the floor of the mouth through intraoral approach yielded very good results from a functional and aesthetic point of view. In all the cases the motor and sensory function of the tongue remained completely intact. There were no complications during the postoperative period and no pathological findings at the control examinations.

CONCLUSION: The excision of large cysts of the floor of the mouth through intraoral approach is preferred because of its excellent aesthetic and functional results.

Keywords: *dermoid cyst, floor of the mouth, intraoral approach*

Award “The Helene Matras Congress Scholarship” - European Association For Cranio-Maxillo-Facial Surgery (EACMFS)

CALCIFYING ODONTOGENIC CYST: A CASE REPORT AND A REVIEW OF THE LITERATURE

Ciara Mulvihill, Paul Brady, Joe McKenna, Duncan Sleeman

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University College Cork, Ireland*

ABSTRACT

INTRODUCTION: A calcifying odontogenic cyst (COC) is a rare odontogenic lesion with a vast variety of clinical, radiological and histopathological features as well as biological behavior. In this paper we illustrate a case of an 18-year-old male patient with a complaint of swelling in his right maxilla for the past 18 months. The lesion was diagnosed with radiological, cytological and histopathological investigations, revealing large COC associated with an impacted 18.

AIM: The purpose of our case presentation is to present a case history of COC in the maxilla, which is a rare entity. The purpose of this discussion is to portray the clinical and radiographical presentation of COC and to highlight the role of the GDP in early diagnosis and appropriate referral

MATERIALS AND METHODS: A panoramic radiograph revealed a large well-defined unilocular radiolucency present in the maxilla, extending from the right maxillary tuberosity to the root of the UR3 and radicular resorption of involved teeth.

The upper right molar teeth were extracted, surgical enucleation of the lesion and bone curettage was performed under general anaesthesia. An aspirate and the tissue was sent for histopathologic evaluation.

RESULTS: Histopathology results confirmed the diagnosis of COC. The patient recovered quickly after surgery and the area appeared to be healing well.

CONCLUSION: In conclusion, COC is an uncommon odontogenic lesion. The diverse range of clinical and radiological presentation of COC render it problematic to diagnose clinically. Since the chief complaint in a number of cases is pain or multiple mobile teeth, thorough clinical examination and astute diagnostic skill allow for prompter referral and treatment of pathology, thereby reducing deformity.

Keywords: *calcifying odontogenic cyst, surgery, lesion*

RECONSTRUCTIONS OF JAW DEFECTS

Anton Dzhorov

Acibadem City Clinic Tokuda Hospital, Sofia

ABSTRACT

After trauma with high kinetic energy or surgical treatment of tumors, dysplasias, large cysts, etc. pathological processes can lead to defects of the jaw bone, which require reconstruction. Various methods have been developed for them, but the best therapeutic results are still sought.

We share experience of recovering maxillary and mandibular post-traumatic defects.

We treated and watched 43 patients with traumas and blast processes of the jaws where we carried out reconstructions by autogenous free, vascularized bone grafts and guided tissue regeneration with dystrogenic osteogenesis.

The results were followed in the immediate, early postoperative period, the healing phase, and in many patients and years later. Only one case had a vascular thrombosis and necrosis of a large portion of a vascularized scapula graft complex.

For maximum reconstructions, from free bone grafts, we consider those of the cranial artery to be the most appropriate. In the recovery of mandibular defects, autogenous bone from the hip comb has not yet lost its significance. The success rate is high in certain fixation, but its resorption is unpredictable. We find the vascularized anastomosomalous and fibular grafts as optimal, and for their alternatives, the dystrogenic osteogenesis with one-, two-transport disk or compression of the preserved fragments and subsequent distraction. In areas of newly formed bone, for rehabilitation of the patients, intrasodial dental implants can be successfully applied.

Keywords: *jaw defects, reconstructions, bone grafts, dental osteogenesis, dental implants*

FACIAL AND JAW BONE FRACTURES

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ABSTRACT

This article presents the anatomical and biomechanical characteristics of the three facial floors. There is a retrospective analysis of the methods of treatment of fractures. It also describes step by step the used by the author ways of reposition, fixation and immobilisation in the upper, middle and lower facial floor. A classification of the fractures of the frontal sinus and algorithm for their treatment is available. The literature introduces naso-orbito-ethmoidal fractures as an independent nosological unit. They are also classified as a basis of the surgical treatment. In the treatment of the zygomatic fractures „open” and „closed” methods of treatment are indicated. We determine the sequence of implementation of the osteosynthesis and create a model of their treatment. Analyzed are the ways and means to restore the defects of the orbital walls. We present the surgical protocols of the “open” methods of fixation in the treatment of the total maxillary fractures. In cases of fractures of the lower jaw the techniques of the osteosynthesis with titanium plates and screws which do not need intermaxillary immobilization are presented.

Keywords: *maxillofacial region, facial floor, fracture, reposition, fixation, osteosynthesis*

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Zhang M, Holman CD, Price SD, Sanfilippo FM, Preen DB, Bulsara MK. Comorbidity and repeat admission to hospital for adverse drug reactions in older adults: retrospective cohort study. *BMJ.* 2009 Jan 7;338:a2752. doi: 10.1136/bmj.a2752. PubMed PMID: 19129307; PubMed Central PMCID: PMC2615549

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