Abstracts and Case Studies from the ACOMS Residents Meeting, November 10-11, 2012

The ACOMS 2012 Residents Meeting was hosted by the Temple University Health Sciences Center, November 10-11, 2012. This 2-day program featured a world-renowned keynote speaker, lectures in practice and risk management, abstract and case study presentations from residents, and opportunities for residents to meet and network with their peers. A selection of abstracts and case studies from the meeting are included below. Additional resident abstracts were presented at the ACOMS 34th Annual Scientific Conference and Exhibition, April 20-22, 2013 and will appear in a future issue of the OOOO.

HUMAN HISTOLOGICAL ANALYSIS BETWEEN AN AUTOGRRAFT SYMPHYSIS BLOCK AND AN ALLOGRAFT J BLOCK WITH PRGF IN A MAXILLARY ANTERIOR RIDGE AUGMENTATION B Smith, G Jones, C Nguyen
Residency Program: Temple University
Program Director: Dr. Carl Bifano

Purpose: An autogenous symphysis block graft and an allogeneic J block were obtained and simultaneously grafted into a bilateral maxillary anterior ridge deficiency using platelet rich growth factor (PRGF) as a bioactive modifier. PRGF is a biological system of a complex bioactive proteins (transforming growth factor-B1, platelet-derived growth factor, and insulin-like growth factor). The augmented sites were allowed to heal for 6 months before obtaining core biopsy samples for histologic analysis. The purpose of this case study was to compare the histologic findings of an allograft and autograft block using a bioactive modifier, PRGF. The histologic findings from this study indicated bone remodeling with comparable amounts of viable woven and lamellar bone in each sample obtained.

Method: A 52-year-old female with past medical history of hypertension, hyperlipidemia, and hypothyroidism. Present medications include Lisinopril 20 mg PO daily, Simvastatin 40 mg PO daily, and Synthroid 150 mcg PO daily. She presents with a noncontributory social history. Dental examination reveals a history of wearing a maxillary acrylic removable prosthesis for 15 years, status post exodontia of all current missing teeth (5,7,8,9,10,12,13,14). Chronic generalized moderate periodontal disease was previously diagnosed. Periodontal therapy was then rendered with consistent periodontal maintenance.

Results/Conclusion: After graft maturation, a 3 mmL × 2 mmD core cylinder biopsy on the allograft block site revealed the decalcified section depicting a fragment of dense lamellar bone with empty osseous lacunae. There was a small portion of fibrous connective tissue in close approximation to 2 islands of “viable” woven bone. A 3 mmL × 2 mmD core cylinder biopsy of the autograft site revealed linear fragments of lamellar bone with also empty osseous lacunae. Adjacent to the lamellar bone were islands of woven bone with large lacunae that contained osteocytes. Although quantitatively the autograft block displayed more viable lamellar and woven bone than the allograft slide, the aforementioned bone is qualitatively found in the allograft block side. Overall impression of the osseous histology of both sites indicate nonviable lamellar bone and viable woven bone. Both allograft and autograft augmented sites, with the use of a bioactive modifier (PRGF), have demonstrated comparable histologic findings in this case study. As autologous bone has been considered to be the gold standard for most bone grafting procedures, allograft blocks have been proven to be an alternative to autogenous blocks with predictable prognosis.

AVULSIVE HELICAL RIM INJURY: A NOVEL RECONSTRUCTIVE TECHNIQUE AND CASE REPORT S Nizam
Residency Program: UMDNJ OMFS
Program Director: Dr. Vincent B. Ziccardi

Purpose: To reconstruct the helical rim as well as scapha region of the ear secondary to a human bite, as well as provide more defined tip-defining points, rotate the nasal tip, as well as correct a septal deviation.

Method: A 26-year-old female presented to our clinic status post human bite to her left posterior auricular rim resulting in a 2 cm defect. She was taken to the operating theater that day, where she underwent the first of a 2 staged bipedicled post auricular tube flap, as described by Ellabban et al in 2003. At the second stage surgery, 2 weeks thereafter, the flap was separated and inset without complication. Three months later, a volume deficit was noted, as well as unfavorable post auricular scar. A third operative procedure was performed that included a geometric scar revision, harvest of bilateral buccal fat pad, and transfer of this fat with platelet rich plasma to the deficient helical rim in a 3:1 ratio.

Results: The final outcome was an aesthetically pleasing, well contoured, and lasting tissue replacement with minimum donor site morbidity.

APPLICATION OF DISTRACTION OSTEOMGESIS IN CRANIOFACIAL AND FACIAL RECONSTRUCTIVE SURGERY A Alshadhwi, M Bhalatheeq, S Alhazie
Residency Program: Boston University
Program Director: Dr. Andrew Salama

Purpose: To evaluate the surgical application of distraction osteogenesis of the facial skeleton versus conventional surgical procedures in treating common craniofacial deformities (i.e., cleft lip and palate, dentofacial anomalies) and also in facial reconstruction of post cancer ablation surgeries.

Method: An extensive search of the literature was performed in PubMed, Medline, ScienceDirect, and other available database sources for electronic English language publications, using the keywords in relation to the title. All data was taken from peer reviewed scientific journals published between the years 1999 and 2011, including meta-analysis, clinical and animal research, and big case series with long history of follow-ups.

Result: The search identified 133 articles on the application of distraction osteogenesis in craniofacial surgery and 128 in relation to facial reconstructive surgery. The articles were analyzed for their relevance to 5 main aspects when comparing to the standard surgical approach: relapse and long-term stability, rate of complication, OR time and management, patient satisfaction, and surgeon perception with the surgical outcome.
Conclusion: The surgical application of distraction osteogenesis in the practice of craniofacial and facial reconstructive surgery was demonstrated to be an effective tool to treat verities of complex defects of the facial skeleton. Distraction is a safe and predictable procedure with considerable high success rates. The published work is scant on this topic, and there is no information on large clinical experiences with long-term follow-up.

RARE METASTATIC NEUROENDOCRINE TUMOR PRESENTING AS A COMPLAINT OF POORLY FITTING DENTURE  S Ramachandra, D Reid, V Desa, L Davis
Residency Program: University of Nebraska Medical Center
Program Director: Valmont Desa, MD, DDS

Purpose: We report a metastatic gastrointestinal carcinoid lesion to the mandible and document histo-cytological features of metastatic carcinoid to localize primary. It is recognized that a neuroendocrine tumor can metastasize to the head and neck, but reports of metastasis to the bony mandible are rare. Less than 2 cases of neuroendocrine tumor metastasis to mandible from foregut have been reported.

Case Summary: Patient was a 60-six year-old female with small intestine neuroendocrine tumor with metastasis to the mandible. The presentation was a radiolucent lesion on x-ray with subjective complaint of poorly fitting mandibular denture. Patient had extensive medical history of chronic kidney disease, small bowel leiomyoma, and cardiac failure with implanted defibrillating device. The firm proliferation of the metastatic soft tissue lesion was locally destructive of the mandibular body with cortical expansion. Associated with a poor dentition, the lesion did offer a differential mimicking an odontogenic derivative. No sensory compromise was noted, even though the lesion was in very close proximity to the inferior alveolar nerve bundle. The lesion was poorly circumscribed with traces of trabeculation on plain film pantomogram. Patient was also discovered to have a 3 cm mass in the right lower quadrant on abdominal CT scan along with the liver metastasis. This tumor was of intermediate grade with a Ki-67 of 2% to 4%. The Ki-67 percentage was identical in both the primary abdominal tumor and metastatic mandibular lesion.

Method: We confirmed the primary and metastatic lesion histologic similarities, immunological stains, the feature difference of carcinoids, and its management differences. Carcinoid or neuroendocrine tumors can present as metastasis from the lung, breast, and foregut primaries. Symptoms can include abdominal bloating, diarrhea, and flushing. Mandibular body is the most common area of metastasis in the head and neck area for all metastatic tumors. Synaptophysin, chromogranin, and CD56 and CDX-2 were positive in this case, as described in gastrointestinal literature. An octreotide scan can show a hypermetabolic lesion if metastatic to liver. Liver metastases can be treated with chemoembolization. Patient was treated with octreotide injections for systemic symptoms of flushing, bloating, and diarrhea for functional tumors. This mandibular carcinoid was considered for radiotherapy. Conclusions: Neuroendocrine tumors present a wide spectrum of histologic morphology with either soft tissue or hard tissue clinical metastasis. Mills classification divides these tumors into neural versus epithelial predominant carcinoids. We present the nature of this metastatic neoplasia to mandible, its aggressiveness, and the systemic consequences, diagnostic and prognostic features. The abstract emphasizes care to include it in differential diagnosis of head and neck, particularly mandible lesions. Carcinoids are treated with radiotherapy in the region.

MARSUPIALIZATION AS OPPOSED TO RESECTION FOR LARGE KERATOCYSTIC ODONTOGENIC TUMOR (KCOT): A CASE REPORT A Yosif, SA McClure
Residency Program: NOVA/OMFS
Program Director: Dr. Steven Kaltman

Purpose: To evaluate marsupialization as a treatment option for large KCOT.

Method: The World Health Organization has given odontogenic keratocyst a new name based on its behavior, histology, and genetics. Renamed “keratocystic odontogenic tumor” (KCOT) and defined as “benign unicystic or multicystic intraosseous tumor of odontogenic origin with a characteristic lining of parakeratinized stratified squamous epithelium and potential for aggressive infiltrative behavior.” Treatment modalities include marsupialization, enucleation with or without peripheral osteotomy, chemical debridement, and resection. Despite the plethora of literature, treatment of large KCOT remains controversial, with no established consensus.

Case Report: A 30-year-old healthy male presented to our clinic with a slow-growing mass over the left side of the mandible for a period of 1 year. A firm mass can be seen and palpated on the left mandibular angle. Intraoral exam revealed left mandibular buccal expansion and a mandible with no displaced teeth and intact oral mucosa. On CT, the lesion appeared as multilocular radiolucencies extending from the left condylar to the symphysis region with obvious displacement of mandibular left third molar below the inferior border of the mandible and no buccal or lingual cortical erosions. The lesion measured 55 mm in anterior posterior dimension and 23 mm in buccolingual dimension. Incisional biopsy confirmed the diagnosis of KCOT. All treatment options were discussed with the patient and he elected to proceed with marsupialization. Patient adhered to strict postoperative instructions, including thorough irrigation of the marsupialized area with normal saline.

Result: At 12-month follow-up CT revealed significant reduction of the cystic cavity to 30 mm in anterior posterior dimension and 11 mm in buccolingual dimension. The impacted left third molar was within the body of the mandible. Tolstunov and Treasure recommended enucleation for KCOT that collapsed to a small size following marsupialization to facilitate complete resolution of the lesion. A second surgery for enucleation and peripheral ostectomy was completed and routine follow-up regimen was established.

Conclusion: Based on Madras and Lapointe, a recurrence rate of <13% can be achieved with marsupialization followed by enucleation and peripheral ostectomy. Preserving continuity of the mandible and improving the quality of patient’s life should be considered when evaluating treatment options. Long-term follow-up for recurrence is imperative.

PAPILLARY SQUAMOUS CELL CARCINOMA: RETROSPECTIVE ANALYSIS OF 41 CASES D-J Summerlin, NM Eden
Residency Program: Indiana University
Program Director: Jeffrey Bennett, DMD

Background/Purpose: Squamous cell carcinoma is the most common malignancy of the head and neck, with multiple variants being described in the literature. Papillary squamous cell carcinoma represents a variant that is often underdiagnosed as
a benign entity. The purpose of this study is to identify the histopathologic and behavioral characteristics of papillary squamous cell carcinoma, leading to appropriate diagnosis and treatment.

Methods: The records of Indiana University Hospital and Cutaneous and Maxillofacial Pathology Laboratory were reviewed for diagnoses of squamous cell carcinoma. From this, 41 papillary squamous cell carcinomas were identified and evaluated for recurrence and metastasis rates.

Results: Of the 41 papillary squamous cell carcinomas identified, 22 of the cases were in men, 19 were female. Fourteen cases recurred for a rate of 34%. The average length from initial diagnosis to recurrence was 2.2 years (range, 1 to 7 years). Three cases (7%) had regional nodal disease either at the time of initial diagnosis or at a subsequent recurrence, and metastasis was seen in 1 (2%) case.

Conclusions: Papillary squamous cell carcinoma represents a distinctive histopathologic entity that requires definitive management as a carcinoma, given that it commonly recurs and may metastasize. Recognition of this defined subcategory of squamous cell carcinoma will aid in appropriate therapy for patients afflicted with this unique condition.

EARLY RECOGNITION AND PREVENTION OF TEN: A CAUTIONARY REPORT OF 2 CASES AND LITERATURE REVIEW

EW Spencer, CJ Yowler, DJ Meara, M Mueller
Residency Program: Christiana Care Health Services OMFS/Case Western School Of Medicine At Metrohealth Hospital OMFS
Program Director: Daniel Meara, MD, DMD

Toxic epidermal necrolysis (TEN) is a rare and devastating side effect of medication use by epidermal apoptosis associated with massive epidermal dissociation over >30% total body surface area; fever; bullae; and generalized rash. This reaction often initially presents itself in the form of oral facial rashes and erosions. It is regularly misdiagnosed as its less extensive forms of Pemphigoid conditions, Erythema Multiforme and Stevens-Johnson’s Syndrome. These early signs are initially seen by the primary care physicians and dental care providers, more specifically oral and maxillofacial surgeons. Incidence of TEN is low, and presentation of the disease is rapid and distinguishable. The first treatment staple for TEN involves immediate cessation of the offending drug; however, this is complicated by the prevalence with which TEN-causing drugs are prescribed. Among others, onset of TEN is associated with NSAIDs; sulfonamides; cephalosporins; aromatic anticonvulsants; and allopurinol, making early identification difficult. Furthermore, duration of TEN is associated with medication clearance, which can complicate treatment when TEN is caused by drugs with long half-lives. In this report, 2 cases are described in which the early recognition and cessation of medication therapy could have prevented both patients’ deaths secondary to the development of extensive TEN complicated by Gram-negative sepsis.

MYOSITIS OSSIFICANS TRAUMATICA OF THE TEMPORALIS MUSCLE: CASE REPORT AND REVIEW OF THE LITERATURE

MJ Schiff, DJ Meara
Residency Program: Christiana Care Health System
Program Director: Daniel J. Meara, MD, DMD, MS

Purpose: This case report reviews a unique case of myositis ossificans traumatica (MOT), a rare bone-forming process of mesenchymal stem cells within skeletal muscle or periosteum, involving a muscle of mastication. Literature review covers MOT etiology, types of myositis ossificans, differential diagnosis, radiographic and histologic findings, and treatment options.

Methods: Review of the case includes: physical examination of the patient at initial point of consultation and postoperative visits. Also, the orthopantomogram, CT, complete blood counts and basic metabolic panels, as well as esophagastroduodenoscopy by the General Surgery service are discussed. Literature review included cases of myositis ossificans involving the head and neck.

Results: Cases of MOT involving the head and neck in the literature are rare, with the majority of cases involving the masseter or sternocleidomastoid muscle. There are approximately 52 cases of MOT involving the head and neck muscles in the English literature. Of these, less than 30 cases involved the muscles of mastication. Furthermore, only 5 of these reported cases involved the temporalis muscle. Of significance in this case, the patient had a noteworthy history of long-standing severe systemic lupus erythematosus (SLE). While calcinosis cutis, a subcutaneous calcification is common in rheumatic disease processes like dermatomyositis and diffuse scleroderma, it is rarely reported in associated with SLE. There are currently approximately 36 cases reported in the literature of this association and no known cases of involvement of the soft tissues of the head and neck.

Conclusions: The results of the treatment rendered in this case were successful in the immediate postop period. The maximum incisal opening increased from 2 mm pre-operatively to 51 mm status post the Brisement procedure and mandibular coronoidectomy. Subsequently, the patient began taking oral feeds without difficulty, gained weight, and had no dysphonia. While these results are promising, numerous reports have shown evidence that incomplete removal of the lesion leads to a high level of recurrence of the lesion and/or limitation of mandibular motion. Therefore, it is essential that practitioners follow these patients on regular intervals to monitor for signs of inflammation, decreased range of motion, or radiographic evidence of recurrent calcified mass formation. Further studies are required to define a standard of care for the diagnosis and treatment of MOT.

A FOCUSED REVIEW OF LOCAL ANESTHETIC ADMIXTURE WITH DEXMEDETOMIDINE IN REGIONAL ANESTHESIA; WHAT, IF ANY, CLINICAL IMPLICATIONS DOES THIS HAVE IN ORAL AND MAXILLOFACIAL SURGERY? VT Barreto
Residency Program: Temple University
Program Director: Brian Smith, DMD, MD

Purpose: Dexmedetomidine, a potent α2 adrenoceptor agonist, being 8 times more selective for the receptor versus clonidine has been shown to produce sedation, analgesia, and sympatholytic effects during intravenous sedation. Its usage has also been shown to be efficacious in prolonging the local anesthetic effect in regional anesthesia, lessening the local anesthetic requirement and prevention in adverse events such as local anesthetic toxicity. Moreover, it has been efficacious in treating pain in patients with cancer and Complex Regional Pain syndrome, as well as in neuropathic pain for which there was prior nerve damage. What, if any, implications could this have for our patient population?

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Method: Articles evaluating dexmedetomidine, clonidine, metedomidine, and a2 adrenoreceptor agonists/antagonists along with local anesthetics such as lidocaine, bupivacaine, levobupivacaine, its admixture, and its effects were identified from the English language PubMed search with the following keywords: local anesthetics dexmedetomidine, dentistry.

Results: To date, studies evaluating the efficacy on dexmedetomidine and local anesthetics in dental anesthesia are sparse.

Conclusions: Dexmedetomidine with local anesthetics not only prolong the anesthetic effect of local anesthetics, but it provides a better quality of anesthesia with lessened need for the local anesthesia, as well as a lessened need for postoperative opioids for pain relief. Its range of potential therapeutic interventions in oral and maxillofacial surgery are promising and should be considered as a potentially powerful adjuvant in therapeutic pain control for our patient population.

BISPHOSPHONATES: BOON OR A BANE? A SURVEY
S Appugounder, PJ Conforti, JP Kelly
Residency Program: Yale New Haven Hospital
Program Director: John P Kelly, DMD, MD
Bisphosphonates are given to patients with conditions characterized by excessive bone resorption including osteoporosis, osteopenia, Paget’s disease, multiple myeloma, and metastatic bone cancer. As with any drug, it has various side effects ranging from digestive problem to ocular side effects. About 8 years ago, oral and maxillofacial surgeons first identified and reported the link between necrotic bone in the jaws of patients and the use of IV bisphosphonates. Even though the occurrence of BRONJ is rare and almost always associated with IV bisphosphonates, recent publications show an increase in incidence of BRONJ with both oral and IV bisphosphonates. New cases are being reported with oral bisphosphonates associated with and without surgical intervention. As the oral form is the most commonly prescribed, this increased incidence should be of concern not only to oral and maxillofacial surgeons, but also our medical colleagues.

The purpose of this study/survey is to:
1. To determine the knowledge, awareness, and attitude of physicians who prescribe bisphosphonates and to analyze their understanding of the risks and benefits associated with therapy.
2. Bring awareness to the adverse effects of a medication that is being more commonly prescribed but is not well understood.
3. Establish guidance to clinicians on prevention and screening measures, and discuss the need for prescreening and management strategies.

FACIAL FEMINIZATION SURGERY: CASE REPORT, UTILIZING COMPUTER ASSISTED SURGICAL SIMULATION AND A NOVEL TECHNIQUE FOR CRANIOPLASTY
RL Katz, SI Kaltman, R Movahed, O Borges
Residency Program: Nova Southeastern University
Program Director: Steven I. Kaltman
Facial feminization surgery (FFS) refers to a set of surgical procedures that help to feminize, by facial alteration, a male-to-female transsexual to aid with society acceptance and recognition of the transgender as a female. The hard and soft tissue techniques used include scalp advancement, cranioplasty, brow lift, rhinoplasty, malar augmentation, bi-maxillary osteotomy, lip lift, mandibuloplasty, genioplasty, and chondrolaryngoplasty. To date, computer-aided design and computer aided manufacturing (CAD/CAM) and computer assisted surgical simulation (CASS) technology have been used for reliable surgeries in the middle and lower thirds of the face. The aim of this case study is to review the current facial feminization surgery (FFS) surgical modalities, and propose a technique to provide a more predictable, accurate, and meaningful facial feminization for male-to-female transsexuals, with employment of CAD/CAM and CASS for surgery in the upper third of the face, as well as lower two thirds.

A 21-year-old male transgender patient who desired to undergo facial feminization surgery was evaluated using the CASS technique. Proper preoperative surgical work-up was performed in simulation surgery mode. The preoperative and postoperative results were compared and analyzed. CASS surgery can play a major role in preoperative assessment of the candidate for facial feminization surgery. The cranioplasty technique presented in this report is reliable, safe, and a great tool in choosing the appropriate surgical modality.

INCREASING EXPRESSION OF INSULIN-LIKE GROWTH FACTOR I IN MASSETER AS PROTECTIVE THERAPY TARGETING THE MUSCULAR APOPTOSIS AND REMODELING PHYSIOLOGY OF TMD PAIN
J Messina, E Barton
Residency Program: Harvard/Massachusetts General Hospital
Program Director: Maria J. Troulis, DDS, MS
Background: The temporomandibular joint (TMJ) is a site of chronic pain problems commonly associated with overload in the muscles of mastication and the resulting stress on the joint. A potential therapy can be seen in the ability of insulin-like growth factor I (IGF-1) to enhance repair and maintain tissue health. Faster and increased growth and repair through increased IGF-1 expression in the masseter may promote muscle that is more resistant to the normal increase in apoptosis found in overloaded masseter, potentially reducing symptoms of TMJ pain.

Hypothesis: Based on the response profile of IGF-1 in normal muscle physiology, promoting its expression in masseter muscle to therapeutic levels will result in reduced apoptosis and increased tissue regeneration when going from an unloaded baseline to the reloaded state.

Experiment Design: The transgenic mouse model MLC/mIgf-1 demonstrates elevated levels of IGF-1 expression in masseter muscle. Transgenic and control mice are unloaded for 2 weeks on a liquid diet followed by a reloading hard food diet with masseter tissue dissection at days 0, 1, 3, 7, and 14 of the reloading phase.

Data Collection: Right masseters are used in RNA extraction for stress gene analysis. The stress gene SMHS-1 is quantified using qRT PCR as a biomarker for upregulated cellular remodeling and survival mechanisms. Left masseters are used for histologic analysis. Dystrophin-2 staining outlines muscular fiber size and Caspase-3 staining compares levels of active apoptosis to compare masseter atrophy, growth, and repair among timepoints.

Results: SMHS-1 data have shown trends of overall increased SMHS-1 expression in the transgenic mice compared with the wildtype. Histology has shown increased fiber size in transgenic mice compared to wildtype throughout every timepoint. At a critical timepoint for apoptotic change in the reloading phase, Day 3 demonstrates increased staining for Caspase 3 in wildtype mice over transgenic.

Conclusions: In the stress-inducing process of reloading muscle as a simulation for the physiologic characteristics of overloaded masseter in TMD, increased IGF expression in the masseter reduces apoptotic stress markers and increases tissue
regeneration capability compared with wildtype masseter. This is significant for future masseter modulation therapy to provide protection against the underlying pain-inducing physiologic pathways from which our TMD patients suffer. Because there are numerous splice variants of IGF, further studies could be conducted to determine which splice variant would induce greater muscular repair and stress protection without the associated muscular hypertrophy.

**RECONSTRUCTION OF LARGE SOFT TISSUE CHIN DEFECTS WITH A COMBINATION OF Z-PLASTY AND INFERIOR SUBMENTAL ADVANCEMENT FLAPS**

*D Peysakhov, C Nguyen, C Bifano*

**Purpose:** Autogenous block grafting has long been a modality of treatment to create adequate bone volume in larger osseous deficient ridges prior to dental implant placement. With some autogenous donor sites being unfavorable anatomically to harvest from, clinicians have turned to using allogenic block materials. With the development of allogenic cortico-cancellous J blocks, it has allowed the clinician to seek other options of grafting when our gold standard, autogenous blocking, is unavailable.

In our case study, an autogenous symphysis block graft and an allogeneic J block graft were obtained and simultaneously grafted into a bilateral maxillary anterior ridge deficiency (#7–#10).

The recipient sites and surgical protocol for handling both donor specimens were treated in the same manner and were grafted adjacent to each other.

The augmented sites were allowed to heal for 6 months before obtaining core biopsy samples for histologic analysis.

This abstract investigates the clinical and histologic outcome of both autogenous and allogenic block grafts augmented adjacent to each other when following standard surgical protocols.

**Patient Selection:** A 52-year-old female.

PMHx: Hypertension, hyperlipidemia, and hypothyroidism.

Medications: Lisinopril 20 mg PO daily, Simvastatin 40 mg PO daily, and Synthroid 150 mcg PO daily.

Social History: Noncontributory.

Dental Hx: Patient revealed a history of wearing a maxillary acrylic removable prosthesis for 15 years, status post exodontia of all current missing teeth (5,7,8,9,10,12,13,14).

Chronic generalized moderate periodontal disease was previously diagnosed. Periodontal therapy was then rendered with consistent periodontal maintenance.

**Results:** After 6 months graft maturation, the fixation screws were removed and the grafted sites were assessed and biopsied. A 5 mmL × 3 mmD core cylinder biopsy revealed linear fragments of lamellar bone with also empty osseous lacunae. Adjacent to the lamellar bone were islands of woven bone with large lacunae that contained osteocytes.

Although quantitatively, the autograft block displayed more viable lamellar and woven bone than the allograft slide, the aforementioned bone is qualitatively found in the allograft block side.

Overall impression of the osseous histology of both sites indicate nonviable lamellar bone and viable woven bone. Both allograft and autograft augmented sites has demonstrated comparable histologic findings in this case study. As autologous bone has been considered to be the gold standard for most bone grafting procedures, allograft blocks have been proven to be an alternative to autogenous blocks with predictable and satisfactory prognosis.

It is the author’s belief that if specific surgical protocols are followed in handling block grafts, it will improve the graft outcome and predictability, regardless of whether the donor is autograft or allograft.

These surgical protocols include decortication and perforation of the recipient bed for rapid revascularization, tension-free wound closure for prevention of wound dehiscence, bicortical and double screws to provide immobility and anti-rotation of the graft material, using bioactive modifiers to assist in angiogenesis, and providing the patient with a nonmobile provisional prosthesis to prevent dislodgment of the grafts. All of these protocols were followed in this investigation.

**COMPUTER ASSISTED MANDIBULAR RECONSTRUCTION OF THE TRAUMA PATIENT WITH AXIAL PATTERN FLAP STEM CELL CONCENTRATE IN CORTICOCANCELLOUS AUTO GRAFT**

*A Deshmukh, C Bifano, B Smith*

**Purpose:** Management of facial fractures requires sound assessment of bony involvement and soft tissue deficiencies. At the onset of treatment planning for midface and perioral injury, in particular projectile trauma, the aim of repair is to prevent long-term complications. Our goal was to predictably generate a cosmetic benefit with minimal peri/postoperative complications using bone marrow aspirate concentrate (BMAC), autograft, and soft tissue to correct a deformity.

**Methods:** This was a case study that staged reconstruction via a temporalis flap at initial presentation, and secondarily utilized bone marrow aspirate concentrate combined with a corticocancellous autograft.

**Results:** Neither postoperative complications nor cosmetic deficiencies have been noted to date.

**Conclusion:** Bone marrow aspirate concentrate can be a valuable asset in repairing midface/perioral trauma.