facial thirds. Studies of punch grafting techniques have supported the fact that donor grafts must be taken along the hair shafts to optimize the number of growing hairs in each graft. Hair direction, as well as the selection of proper punch diameter size, are also critical in achieving optimum cosmetic results.

Over the past several years, the most refined method of hair transplantation involved the placement of micro and minigrafts, which can be utilized to completely correct areas of alopecia and/or further enhance the frontal hairline. Micro (follicular) grafts contain from one to three hairs, minigrafts (follicular groupings) from four to eight hairs, which produce a more delicate result, more closely resembling hair growth prior to balding. These grafts are usually taken from a donor strip. Through meticulous microsurgical technique, single hair follicles may also be used. Additional grafts can be placed throughout the transplanted area in order to blend hair and achieve the fullest appearance. This virtually eliminates the “tufted” look often created by individuals unfamiliar with the true art of hair transplant surgery.

Lastly, the postoperative use of medication, proper bandaging and careful cleansing of each graft in the immediate postoperative phase insure 100% graft survival.

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S427

Endoscopic Forehead Rejuvenation for the OMS

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Ptotic brow position, upper eyelid skin redundancy, and forehead rhytids are some of the most common complaints verbalized by patients seeking cosmetic rejuvenation of the upper face.

Upper lid blepharoplasty combined with numerous open forehead-lifting techniques have been used in the past to obtain predictable surgical results. Unfortunately many patients are hesitant to undergo extensive open lifting techniques. Failure to identify or treat the full range of problems associated with the aging upper face leads to suboptimal surgical results and patient dissatisfaction.

During the past decade, endoscopic forehead lifting has dramatically changed the surgical treatment of patients seeking cosmetic rejuvenation. The advantages are decreased postoperative morbidity, elimination of visible scarring and increased patient acceptance with comparable clinical results.

The Oral and Maxillofacial surgeon, utilizing anatomic knowledge based on the coronal flap approach to midface trauma and expertise in temporomandibular surgery can rapidly incorporate endoscopic forehead lifting into their cosmetic practice. As with most new techniques, diagnostic knowledge, patient selection criteria, use of straightforward, reliable surgical techniques and prompt management of complications lead to predictable surgical success. A demonstration DVD will be provided for each attendee.

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S431

Diagnosis and Management of Trigeminal Nerve Injuries

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Injuries to the lingual and inferior alveolar nerves may occur commonly following a variety of routine procedures performed by the oral and maxillofacial surgeon. Nerve damage constitutes a large proportion of the medico-legal matters facing clinicians today despite an informed consent process. Third molar surgery is responsible for the majority of injuries to both the inferior alveolar and lingual nerves. The reported incidence of nerve injury varies, but generally, both temporary and permanent paresthesia, with and without spontaneous recovery, must be considered. Nerve injury may occur also following orthognathic surgery, maxillofacial trauma, and implant placement. The anatomy of the trigeminal nerve system is unique, since it carries, in some branches, both general sensory information and special sensation (taste). Injury to a nerve may result in neuroma formation that can present with a variety of clinical signs and symptoms. Nerve injuries are classified by two popular classification schemes (Seddon, Sunderland), which are based upon the likelihood of an injured nerve to recover spontaneously. A basic understanding of normal nerve wound healing is essential in order to most appropriately manage clinical situations.

The initial evaluation of patients with nerve injuries must proceed in a simple orderly fashion, with levels of testing to determine most accurately the degree of individual nerve injury. A standard set of neurosensory tests is used for most patients; however, some advanced testing is available for special circumstances. In considering treatment options, a variety of pharmacologic and nonsurgical treatments is available. Once the decision is made to proceed with microneurosurgery, the success rates of the specific procedures must be evaluated. Various reports cite different success rates with variable levels of experience, and the most important factor in success seems to involve the length of time from injury to repair. Specific treatment time recommendations for management of the nerve-injured patient are reflected in the AAOMS Parameters and Pathways. Specific surgical techniques depend upon which nerve is involved, as well as the extent of injury. Microneurosurgical repair involves neurolysis and preparation of the nerve stumps in order to perform neurorrhaphy. Several studies document the deleterious effects of tension on a nerve repair site, so an inability to perform primary repair with sutures, warrants the consideration for an autogenous nerve graft, or other option for management of the nerve gap (entubulation). Following surgery, postoperative sensory reeducation may augment the repair process.

The field of microneurosurgery continues to evolve. As more surgeons become familiar with the diagnosis and management of nerve-injured patients, and as more laboratory and clinical research information becomes available, we will be better able to guide therapy for these difficult problems. Also, residency programs will be able to teach the principles and practice of microneurosurgery to surgeons in training, and foster access to care throughout the country, or at least in regional centers of excellence.

This surgical clinic is designed to provide the requisite information necessary for the practicing oral and maxillofacial surgeon, as well as the resident in training, regarding the diagnosis and management, and referral, of the patient with a trigeminal nerve injury.

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Considerations and Priorities in Functional Reconstruction of the Tongue; Kinematics of Tongue Function as the Basis for Reconstruction

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Functional reconstruction of the tongue in most cases proves to be less exacting in execution than the complex anatomy and functional complexity of the normal tongue would indicate. Although acceptance of a measure of disability by patients following a major ablative surgery plays a part, undeniably the enormous capacity of the tongue-palate-pharyngeal complex to functionally adapt, essentially underpins the relative success of the numerous reconstructive strategies that have been described. For this reason with some justification, the focus in reconstructive surgery of the tongue has been on techniques of tissue transfer to create a neotongue without adequate consideration for the kinematics of tongue function that ultimately determines its success. Consequently, although the technical challenge of functional reconstruction of the tongue appears to have been surmounted, major difficulties in establishing and quantifying the merits of any particular technique or the failure of others remains. Evaluations purely based on subjective parameters are useful but difficult to interpret and offer no specific direction for refinement of techniques. The objective of this presentation is to address these issues by presenting a model of tongue function based on kinematics that can be translated into specific elements of reconstructive strategies.

"Acting as a muscle filled sac, tongue performs complex morphological alterations that characterize invertebrate motion, yet relies on the movements of the hyoid-mylohyoid complex for locomotion freely within and in accord with the oropharynx. Reconstruction of this complex anatomic subunit requires conception of an architectural model of the tongue representing the kinetics of tongue function that can be translated into a reconstructive strategy by explaining the mechanism determining the envelope of motion for the neotongue, quantification of volume needed to be replaced, its optimal morphology and physical properties. Such a model would serve not only as a template for surgical reconstruction with the available techniques of tissue transfer but also provide a mathematical basis for evaluation of the result.

An architectural model of tongue and its clinical applications will be discussed. Several clinical cases illustrating a variety of techniques spanning over a decade will form the basis for the discussion. The recognition of the fact that functional reconstruction does not necessarily require accurate duplication of normal anatomy but an approximation of aspects of normal function achieved through strategic use of a variety of tissues raises exciting possibilities for reconstruction. The aim is to provide the basis for developing an engineered strategy for functional reconstruction using a variety of re-