Keratocystic Odontogenic Tumor (KOT) is a common tumor of the jaws. KOT is locally destructive, has a high recurrence rate, and may be associated with increased morbidity secondary to multiple surgical procedures. Enucleation and curettage with application of Carnoy’s solution has been prescribed as one treatment modality with the advantage of decreased recurrence over enucleation alone. In the United States, the FDA has banned the use of chloroform for compounding resulting in a number of surgeons adopting the use of “Modified Carnoy’s” solution (without chloroform) for chemical cautery in KOT treatment. The purpose of this study was to examine the effect of chloroform removal on recurrence rates in a series of KOTs treated by enucleation and curettage (E&C), with application of Carnoy’s Solution (CS) versus Modified Carnoy’s Solution (MC).

A retrospective review of 210 patients with pathological diagnosis of KOT treated by three surgeons at a single center between January 1996 and December 2012 was completed. Patients with Gorlin’s syndrome, patients treated by surgical means other than E&C with CS or MC, and patient’s with less than 12 months of post-surgical follow-up were excluded from the study. All patients had biopsy confirmation of recurrence. To decrease bias, patients with recurrence were categorized as such and their subsequent treatment outcomes were excluded from the study. Seventy-five patients ultimately met inclusion criteria. Demographic, clinical, radiographic, and histological data was collected for each patient. Surgical treatment consisted of E&C and a three-minute application of CS or MC to the walls of the bony defect.

A two-tailed student’s t-test was utilized for comparison of means and fisher exact test for recurrence vs. no recurrences. A p value of 0.05 was considered statistically significant.

The mean follow up for CS patients was 44.75 mo. (13-144) vs. 27.23 (12-51) for MC patients. This difference was statistically significant (p=.01) and expected given that the switch to MC as a change of practice driven by the FDA in the mid 2000’s. Recurrences where more than twice as common in patients treated with MC 5/26 (19.2%) vs. CS 4/48 (8.3%) which did not reach statistical significance (p=.263). Average time to recurrence was 41.5 mo. in CS vs. 30 mo. for MC which was also not statistically significant p=0.09.

While the small sample size and lack of statistical significance limit robust conclusions, our findings support the concept of a higher recurrence rate for MC vs. CS. In theory, the development of two additional recurrences in the MC group over the next 17 months would both equalize the follow-up period for the groups and lead to a statistically significant difference in outcomes. While at present these results only raise concern that this difference may exist, it is an important consideration for those utilizing MC for treatment of KOT.
Introduction: Dry eye syndrome (DES) is a very common condition characterized by ocular irritation due to a deficient tear film. In its most severe form, it can cause ulceration of the cornea with spontaneous perforation and loss of the eye. There are many known causes of DES. They typically stem from conditions causing aqueous tear deficiency or increased evaporative losses. The most common cause being deficient tear production, this condition can be associated or unassociated with Sjogren Syndrome. Non-Sjogren related deficiencies include vitamin A deficiency, age related changes, and drug-induced. Sjogren-related DES is typically caused by connective tissue diseases. Lacrimal obstructive diseases are also included in this “aqueous tear deficiency” category and can be caused by post-radiation fibrosis, Stevens-Johnson Syndrome, or ocular pemphigoid. On the other hand, evaporative losses causing DES occur in the setting of facial paralysis or lid palsy, entropion, and low blink rate.

The tear film is crucial to protection of the globe as it functions to lubricate the ocular surface, guard against infection, and provides a refractive surface for visual acuity. Any alteration in the delicate composition of the tears results in a poor tear film that causes ocular irritation and inflammation.

Most DES patients are managed with pharmaceutical tear substitutes or minor surgical procedures such as punctum plugging or lid tarsorrhaphy. However, there exists a small subpopulation of patients who suffer from extremely dry eyes. In these patients, routine surgical measures or medical management do not suffice to prevent complications. Submandibular gland transfer as a treatment for DES has been studied and shown to be effective in other countries; however, the procedure is rarely used in the United States.1

The lacrimal gland is the primary source of secretions for lubrication of the ocular contents. In the head and neck, the parotid gland and submandibular gland are also major producers of secretions in the head and neck area. Both glands produce a constant baseline secretion. In 1986, Maurube-Del-Castillo2 described submandibular gland transfer. McCloud et al3,4 then reported clinical experience in the New Zealand and Australian literature. Sieg ET al5,6 has also popularized the procedure in the German literature. Recently, Paniello et al1 described a small series of patients who had the procedure performed in North America.

Six submandibular glands were harvested for transfer at our institution between January, 2010 and February, 2013. Harvesting of the gland for microvascular transfer is similar to that undertaken for resecting the gland. After harvesting, the submandibular gland is placed into a temporal pocket and the duct is tunneled to the supero-lateral fornix of the eye. Microvascular anastomosis is performed and blood flow re-established to the gland. Successful transfer was achieved in six of the four transfers. In the four viable transfers, we have noted that patients begin to get tear production and relief of symptoms within as soon as two weeks. However, one must wait up to three months before the optimal result can be obtained. The two nonviable transfers failed due to progressive scarring at the supero-lateral fornix with subsequent obstruction of the duct in one case and post-operative infection in the other.

Submandibular free tissue transfer to rehabilitate patients with DES has entered the field of reconstructive surgery in the United States of America. This method has been successfully used at our institution for the management of severe DES cases resulting in a wet eye with improvement in ocular symptoms.

References:

The Use of Custom 3D Anatomical Spacers in Maxillofacial Resection and Reconstruction of the Temporomandibular Joint

J. M. Green III: National Capitol Consortium-Walter Reed National Military Medical Center Bethesda, E. Wise, S. Lawson, P. Liaouras, M. Gentile, G. T. Grant

Introduction: With the rise of three dimensional treatment planning, the fabrication of custom 3D joint prosthesis in infectious and pathologic surgical modalities has become widespread. Refinements in these techniques have led to more exact fitting prostheses and improved function and durability of the reconstruction. In infectious and failed reconstructions with retained hardware, staged surgeries can often be necessitated for clearance of infectious etiology and for ideal fabrication of the final prosthesis. For these staged surgeries, collapse of the soft tissue envelope can greatly add to secondary surgery complexity and complication rate. Through the fabrication of custom 3D anatomical spacers, a soft tissue envelope can be preserved with or without antibiotic impregnation, improving both clearance of infectious

Submandibular Gland Transfer in the Treatment of Severe Dry Eye Syndrome

D. Petrisor: Oregon Health & Science University, A. Pittman, M. Wax, E. Steele, W. Chamberlain

Dry eye syndrome (DES) is a very common condition characterized by ocular irritation due to a deficient tear film. In its most severe form, it can cause ulceration of the cornea with spontaneous perforation and loss of the eye. There are many known causes of DES. They typically stem from conditions causing aqueous tear deficiency or increased evaporative losses. The most common cause being deficient tear production, this condition can be associated or unassociated with Sjogren Syndrome. Non-Sjogren related deficiencies include vitamin A deficiency, age related changes, and drug-induced. Sjogren-related DES is typically caused by connective tissue diseases. Lacrimal obstructive diseases are also included in this “aqueous tear deficiency” category and can be caused by post-radiation fibrosis, Stevens-Johnson Syndrome, or ocular pemphigoid. On the other hand, evaporative losses causing DES occur in the setting of facial paralysis or lid palsy, entropion, and low blink rate.

The tear film is crucial to protection of the globe as it functions to lubricate the ocular surface, guard against infection, and provides a refractive surface for visual acuity. Any alteration in the delicate composition of the tears results in a poor tear film that causes ocular irritation and inflammation.

Most DES patients are managed with pharmaceutical tear substitutes or minor surgical procedures such as punctum plugging or lid tarsorrhaphy. However, there exists a small subpopulation of patients who suffer from extremely dry eyes. In these patients, routine surgical measures or medical management do not suffice to prevent complications. Submandibular gland transfer as a treatment for DES has been studied and shown to be effective in other countries; however, the procedure is rarely used in the United States.1

The lacrimal gland is the primary source of secretions for lubrication of the ocular contents. In the head and neck, the parotid gland and submandibular gland are also major producers of secretions in the head and neck area. Both glands produce a constant baseline secretion. In 1986, Maurube-Del-Castillo2 described submandibular gland transfer. McCloud et al3,4 then reported clinical experience in the New Zealand and Australian literature. Sieg ET al5,6 has also popularized the procedure in the German literature. Recently, Paniello et al1 described a small series of patients who had the procedure performed in North America.

Six submandibular glands were harvested for transfer at our institution between January, 2010 and February, 2013. Harvesting of the gland for microvascular transfer is similar to that undertaken for resecting the gland. After harvesting, the submandibular gland is placed into a temporal pocket and the duct is tunneled to the supero-lateral fornix of the eye. Microvascular anastomosis is performed and blood flow re-established to the gland. Successful transfer was achieved in six of the four transfers. In the four viable transfers, we have noted that patients begin to get tear production and relief of symptoms within as soon as two weeks. However, one must wait up to three months before the optimal result can be obtained. The two nonviable transfers failed due to progressive scarring at the supero-lateral fornix with subsequent obstruction of the duct in one case and post-operative infection in the other.

Submandibular free tissue transfer to rehabilitate patients with DES has entered the field of reconstructive surgery in the United States of America. This method has been successfully used at our institution for the management of severe DES cases resulting in a wet eye with improvement in ocular symptoms.

References:

AAOMS • 2013