



Canadian Society of Otolaryngology-Head and Neck Surgery

**74th ANNUAL MEETING (Virtual)
September 26 – November 14, 2020**

“Quality and Excellence in Otolaryngology-Head and Neck Surgery”

Thursday, October 8, 2020 @ 9:05 p.m. – FPRS Moderator: Dr. Sami-Pierre Moubayed

09:05 p.m. - 09:10 p.m. ***A Novel Approach to Earlobe Reconstruction Using the V to Y Advancement Flap*** - K. Munroe, L. Allen, S.M. Taylor, Halifax, NS

Learning Objectives

1) Introduce the novel technique of V to Y advancement flap closure for reconstruction of upper lobular and antitragal reconstruction of the ear. 2) Discuss the postoperative aesthetic outcomes of V to Y advancement flap in five patients. 3) Review the efficacy of our novel technique compared to current treatment strategies.

Abstract

Background: The V to Y advancement flap of the earlobe offers an excellent option for reconstructing small defects of the external ear that are in close proximity to the lobule. We demonstrate its utility in upper lobular and antitragal reconstruction. To our knowledge this technique has not been previously described for auricular reconstruction. **Methods:** We describe the use of a novel V to Y advancement flap to reconstruct defects of the upper lobule and antitragal areas. This method has been performed on six male patients at a tertiary care centre in Halifax, Nova Scotia. Defects ranged in size from 1.0 cm to 1.4 cm. All cases were performed under local anesthesia using a V to Y subcutaneous island advancement flap. Photographs were taken intra-operatively, immediately post-operatively, and 12 weeks post-operatively. Aesthetic results were analyzed in follow-up. **Results:** All patients underwent excision of relatively small, non-melanoma skin cancer with subsequent reconstruction of the defect using the V to Y advancement flap from the auricular lobule. No post-operative complications such as bleeding or infection occurred in any case. There were no flap losses. Aesthetic outcomes were favourable with minimal scarring, and all patients were pleased with the final surgical result. **Conclusion:** The lobular V to Y advancement flap is a novel yet simple technique for reconstructing small defects of the upper earlobe and antitragal regions of the external ear. This method is technically straight-forward, poses minimal risk to the patient, and in our experience, yields a favorable cosmetic outcome.

09:10 p.m. - 09:15 p.m. ***A Review of the Pericranial Flap for the Inner Lining in Nasal Reconstruction with a Paramedian Forehead Flap*** - R. Care, Christchurch, NZ, T. Lewis, S.M. Taylor, Halifax, NS

Learning Objectives

1) Describe the anatomy of the pericranial flap. 2) Understand the operative steps required to undertake pericranial flap elevation and inset. 3) Relate the use of the pericranial flap for inner lining on nasal reconstruction to the surgical outcomes. 4) Apply the pericranial flap to your arsenal for nasal reconstruction.

Abstract

INTRODUCTION: Effective nasal reconstruction requires a three-layer closure of skin, cartilage and mucosa. Skin reconstruction commonly utilises the paramedian forehead flap; reconstruction of the inner lining can be challenging. Multiple flaps have been described including the pericranial flap. Here we present a review of a single surgeon experience of the pericranial flap for inner lining for nasal reconstruction. **METHODS:** A search of the patient database was performed using the billing code for the second stage nasal reconstruction from its introduction in 2007 - present; identifying patients who had received paramedian forehead flaps. A retrospective chart review of these patients was then performed to identify those who had received pericranial flap lining and these were reviewed for outcomes and complications. **RESULTS:** 66 patients who had received second stage reconstruction were identified of these 20 patients had received paramedian forehead flap nasal reconstruction with pericranial flap for reconstruction of the inner lining. There were no immediate post-operative complications related to the pericranial flap lining. Two patients had minor post-operative complications at other sites. One patient suffered major reconstructive failure post radiation; two patients had partial reconstructive failure following radiation. Two patients had minor side effects post radiation and one had persistent stenosis following surgery. **CONCLUSIONS:** The pericranial flap

is a reliable flap for inner lining of the paramedian forehead flap in nasal reconstruction. It is easily accessible and particularly useful in resections which leave limited mucosal options.

09:15 p.m. - 09:20 p.m.

Corneal Neurotization - A Sensitive Collaboration - T. Lewis, D. Lewis, S.M. Taylor, Halifax, NS

Learning Objectives

By the end of this session, the learner will be able to describe the anatomy of the supraorbital, supratrochlear and great auricular nerves, be able to define neurotrophic keratopathy and understand its importance in corneal integrity. Be able to describe how to perform an interposition nerve graft and understand the collaborative effort with ophthalmology to perform corneal neurotization.

Abstract

Background: Exposure keratopathy, the most serious sequela of facial nerve paralysis, can result in vision loss via persistent corneal epithelial defects despite medical and conservative management. In cases with concomitant ocular hypoesthesia due to loss of trigeminal innervation, severe corneal ulceration, melting, and perforation are common, some patients even requiring corneal transplantation. This is due to the loss of sensory and neurotrophic factors that support the blink and tearing reflexes and nerve growth factors essential to the integrity of the corneal epithelium. Recent advances in corneal neurotization have resulted in restoration of sensation and improvements in vision including reversal of corneal damage. Surgical methods described include direct transfer of functioning branches of the trigeminal nerve and interposition grafts. The ideal nerve graft and method of innervating the cornea are subjects of debate. **Objectives:** To systematically review the literature regarding donor grafts, surgical approach, and method of innervating the cornea. A case presentation of the first corneal neurotization in Atlantic Canada will be presented with surgical videos. **Methods:** Medline and Google Scholar searches were performed with relevant key words. The literature was secondarily searched for studies exploring the characteristics and anatomy of donor nerves (supraorbital, supratrochlear, infraorbital and great auricular), and grafts (sural nerve, lateral antebrachial cutaneous nerve, great auricular nerve acellular allografts). **Results:** Successful corneal neurotization has been performed with various nerve graft approaches. Interposition grafts appear to have greater success than direct transfers.

09:20 p.m. - 09:25 p.m.

~~**Custom-made Pressure Clips for Treatment of Ear Keloid - A. Hooda, R. J.S. Gulia, S.P.S. Yadav, Haryana, India**~~

REMOVED 10/5/20

Learning Objectives

The attendees will be able to understand the following: 1. Pressure therapy is an integral part of keloid treatment; however, because of its complex and peculiar shape of external ear, it is not easily amenable to pressure therapy. 2. A custom made pressure clip can provide accurate pressure resulting in equal pressure distribution over the keloid. 3. Moreover the pressure adjustments can also be made in a custom-made pressure clip.

Abstract

Objective: Keloids of external ear due to its complex and peculiar shape are not easily amenable to pressure therapy. A custom-made pressure clip can provide an accurate pressure distribution over ear keloids. **Methods:** Study design: A prospective study. Years(s)/ Months (s) study conducted: August 2009 to November 2014. Disease/ Condition studied: Ear keloid; Subjects studied: Ten cases of either sex in the age group of 15-50 years. Setting in which subjects studied: Tertiary Care Center. Interventions: Pressure clips were used for ear lobe keloids both in the pre-operative and post-operative period. The pressure clips were fabricated using poly methy methacrylate, and consisted of two parts for the medial and lateral surface of the external ear, joined together with a 19 gauge orthodontic wire and shaped like a safety pin. The shape and size of the clip was in accordance to the size and shape of the keloid in the pre-operative period, while in the post-operative period they were shaped to fit the scar area. Outcome Measurements: Keloid recurrence. Independent Variables: Age, sex, size and location of the keloid. **Results:** Pressure applied by the custom-made pressure clips in the preoperative period reduced the size of the keloid, while in the post operative period it prevented recurrence of keloids over a follow up period of one year. **Conclusion:** Custom made pressure clips in the preoperative period help to reduce the size of keloid while in the follow up post operative period it prevents recurrence of keloid.

09:25 p.m. - 09:30 p.m.

Discussion

09:30 p.m. - 09:35 p.m.

On the Origins of Modern Facial Plastic Surgery: A Review of Sir Harold D. Gillies' Surgical Portfolio During WWI and a Comparison to Modern Day Practices - D. Curry, S.M. Taylor, Halifax, NS

Learning Objectives

1. Following the presentation, learners will have gained an understanding of the history and origins of modern facial plastic surgery 2. Following the presentation, learners will have gained an understanding of the function and reconstructive utility of historical and present-day craniofacial flaps 3.

Following the presentation, learners will have gained an appreciation for early skin grafting procedures in the head and neck, including a review of cases important to the advancement of rhinoplasty.

Abstract

Introduction: Born of the horrors of battlefield injuries sustained during the first World War, facial plastic surgery holds a unique and fascinating position in medical history. None have worked to transform plastic surgery more than its "modern father", otolaryngologist Sir Harold D. Gillies. Born in New Zealand in 1882, Gillies volunteered for the British Red Cross during the war before founding a medical unit and subsequent hospital exclusively focused on craniofacial reconstruction. Here, we review case descriptions, surgical drawings and photographs documented by Major Gillies in his 1920 text. Emphasis is placed on his earliest and most consequential innovations including the tubed pedicle flap and cartilage transplantation and skin grafting techniques used in rhinoplasty. An overview of the work completed under Gillies by E. Fulton Risdon is discussed to provide a uniquely Canadian perspective. A review of basic facial reconstructive principles is provided for the learner and comparisons are made to modern day craniofacial reconstructive techniques. **Methods:** Review of select case notes and commentary in Gillies' 1920 text Plastic Surgery of the Face as well as review of relevant facial reconstructive and historical literature. **Conclusion:** A strong grasp of history often provides wisdom for the future and the origin story of modern facial plastic surgery is no exception. We review the early facial plastics work completed by Sir Harold D. Gillies and provide a commentary and comparison to modern day practices. This fascinating period within medical history is thought to be of interest to early trainee and surgical expert alike.

09:35 p.m. - 09:40 p.m.

Parametric Multi-scale Modeling of Zygomaticus Musculature: Implications for Facial Reanimation - M. Peer, J. Tran, Z. Li, A. Agur, J. Davies, Toronto, ON

Learning Objectives

By the end of the session the audience will be able to describe the morphology of the zygomaticus muscle at the fibre bundle level. By the end of the session the audience will be able to consider the importance of vectors and force generation of the zygomaticus muscle in facial reanimation. By the end of the session the audience will be able to value the role zygomaticus muscles play in lip elevation.

Abstract

Background/Objective: Irreversible facial paralysis can result in devastating functional outcomes including oral incompetence and exposure keratitis, amongst others. The impact on social and mental health cannot be understated. Facial reanimation to replace non-functional neuromuscular units requires a comprehensive understanding of mimetic facial musculature. The zygomaticus major and minor muscles are primary lip elevators. A three-dimensional (3D) understanding of these muscles is necessary to effectively restore lip elevation following paralysis. The objective of this study was to analyze the 3D morphology and quantify architectural parameters of the zygomaticus major and minor. **Methods:** In five specimens, zygomaticus major and minor were serially dissected and digitized using a Microscribe Digitizer at the fibre bundle level. The two muscles were modeled in 3D (Autodesk Maya). Using software developed in our laboratory, 3D models were used to assess morphology, determine vectors and quantify architectural parameters including mean fibre bundle length (FBL), and physiological cross-sectional area (PCSA). **Results:** Zygomaticus minor coursed along the postero-inferior margin of orbicularis oculi and inserted into connective tissue superior to orbicularis oris without interdigitation. The mean FBL ranged from 30.85-67.05mm whereas the PCSA was 3.14-90.24mm². Zygomaticus major had a more lateral and wider area of attachment to orbicularis oris. The mean FBL ranged from 41.80-55.11mm whereas the PCSA was 6.91-120.13mm². Vectors of each muscle differed with zygomaticus major having a more superior direction. **Conclusion:** Understanding the vector and force generated by each zygomaticus muscle provides reconstructive surgeons with a more comprehensive approach to restoration of lip elevation following facial paralysis.

09:40 p.m. - 09:45 p.m.

Subtotal Septal Perforation Repair with a Unilateral Pericranial Flap - T. Lewis, S.M. Taylor, Halifax, NS

Learning Objectives

At the end of this session, the learner will be able to describe the anatomy of the pericranial flap and how to harvest it safely. They will be able to describe the external rhinoplasty approach to exposure of septal perforations and understand the pros and cons of this approach over the endoscopic approach.

Abstract

Background: Septal perforations can lead to distressing symptoms in some patients which persist despite medical and conservative measures. The risk of recurrence after surgical management is higher in perforations larger than 2cm. The pericranium provides a thin, pliable flap with reliable blood supply and has been utilized in other endonasal repairs. Only three case reports of using the pericranial flap for septal perforation repairs have been reported. The most recently published approach requires a Draf 3 and creation of a window in the frontal bone. All previous cases used a folded,

bilaterally harvested pericranial flap. We present a case of an external rhinoplasty approach to a 4cm x 4cm septal perforation repaired with a pericranial flap pedicled on a single supratrochlear artery. **Objectives:** To describe the surgical approach to subtotal nasal septal perforation repair with a pericranial flap. **Methods:** Medline and Google scholar searches were performed looking for septal perforation repair and pericranial flaps. Three case reports were found. **Surgical approach:** The nasal septum was exposed using an external rhinoplasty approach with marginal incisions and unilateral disarticulation of the upper lateral cartilage. A unilateral pericranial flap was elevated pedicled on supratrochlear artery and tunneled over the nasal bones an onto the nasal septum medial to the upper lateral cartilage. Absorbable sutures were placed to anchor the flap nasal stents applied. **Results:** This is the fourth case of a pericranial flap reported for nasal septal perforation repair and is the first to use a unilateral pericranial flap.

09:45 p.m. - 09:50 p.m.

Discussion