

ABSTRACT NUMBER: 1548

## **NASOLACRIMAL DUCT PROBING: FAILURE AND TREATMENT**

Shawky Elmorsy, MD

**INTRODUCTION:** when probing treatment for congenital nasolacrimal duct obstruction fails, it is often unclear whether it is due technical difficulties, or the severity of obstruction. So, our aim is to study the causes of probing failure and how to treat them.

**METHOD:** In a prospective study, 36 nasolacrimal ducts of 26 children aged 12 months to 4 years with congenital nasolacrimal duct obstruction (CNLDO) were treated by probing. In all children probing was done under direct vision using nasal endoscopy. Different forms of CNLDO were treated and studied to determine the potential predictors for treatment failure.

**RESULTS:** The overall success rate was 95.5%. Expected failure was attributed mainly to the construction of different forms of membranous penetration on probing. Surgical membranotomy at the area of Hasner's valve under direct nasal Endoscopic visualization is an essential step for proper management of CNLDO.

**CONCLUSION:** Probing combined with intranasal endoscopy can be helpful in identifying causes of failure and their proper management. This can minimize intranasal trauma and lead to better surgical outcome.

ABSTRACT NUMBER: 1567

## **MICRONIZED COLLAGEN INJECTION FOR THE MANAGEMENT OF PATULOUS EUSTACIAN TUBE**

Rakesh Chandra, MD, Andrew Fishman, MD, Michiel Bove

Patulous eustacian tube (ET) may be a significant source of distress secondary to symptoms of autophony of one's voice and/or respiration. Multiple approaches have been described to manage this problem, including myringotomy and tube placement, as well as procedures directed towards the tubal orifice itself, which may be accomplished via transoral and/or transnasal access. These include ET ligation, augmentation with autologous cartilage or fat grafts, and translocation of the tensor veli palatini muscle. Herein, we employ video footage to illustrate the case of a 37 year old female with chronic troubling symptoms of unilateral patulous ET that was refractory to myringotomy and tube placement. The patient underwent an endoscopic trans-nasal approach with submucosal injection of Cymetra® into the posterior cushion of the ET orifice using a 23G spinal needle. Total procedure duration was <20 minutes, which included the time necessary for nasal decongestion, as well as preparation of the material for injection. The patient tolerated the procedure well and blood loss was negligible. She expressed immediate relief and has since been symptom free, without otorrhea or hearing loss. Observed advantages of this technique include precision, speed, and lack of morbidity related to the approach or a donor site.

ABSTRACT NUMBER: 1576

## **ENDOSCOPIC MAXILLARY FAILURES**

Robert Meyers, M.D.

**INTRODUCTION:** Uncommonly, endoscopic maxillary osteotomy fails to resolve the underlying sinusitis. Several reasons have been postulated, including inadequate surgical creation of an ostium, underlying fungal etiology, unspecified cilia dyskinesia and others. Regardless, the surgeon faces an unhappy patient.

**METHOD:** By creating a wide inferior window and connecting it with the previously widened maxillary osteotomy, in essence, a partial medial maxillectomy is created.

**RESULTS:** This almost always results in resolution of the maxillary sinusitis.

**CONCLUSION:** The postulated mechanism could be that the cilia were not capable of an active anti-gravity system and a newly created window effects mucous clearance by gravity. Before the advent of ESS, inferior windows were effective most of the time.

ABSTRACT NUMBER: 1577

## **AN ALTERNATIVE TO REVISION ENDOSCOPIC PROCEDURES IN FRONTAL SINUS FAILURES**

Robert Meyers, M.D.

**INTRODUCTION:** There are basically two types of open frontal sinus surgery. The first, more traditional, involves frontal sinus obliteration technique, while the second involves recreating the outflow tract. The latter procedure is required when entities, such as mucoceles and mucopyoceles have eroded the adjacent structures, mainly the orbit and/or posterior frontal wall. In these situations, the periorbita or dura become intimately involved with the mucocele. The mucous membrane of the mucocele becomes inextricably adherent to the periorbita or dura and cannot be removed without sacrificing these structures. This open technique can be adapted for endoscopic failures.

**METHOD:** This operation is designed to bypass the need for resection of the dura or periorbita by leaving the mucous membrane lining of the mucocele in place and marsupializing the contents of the frontal sinus into a widely created frontal outflow tract.

**RESULTS:** This method has had almost 100% success as measured by the need for additional frontal surgical procedures as exemplified by 15 cases in 15 years.

**CONCLUSION:** It is also effective for endoscopic frontal failures. Of course, some revisions can be done endoscopically by very experienced operators, however, the less experienced surgeon may not be comfortable with revision frontal techniques, but should be able to easily accomplish this open technique.

ABSTRACT NUMBER: 1579

## **ENDOSCOPIC MANAGEMENT OF CHRONIC ISOLATED FRONTAL SINUSITIS: THE UNCINECTOMY APPROACH**

Mohamed Askar, MD

**OBJECTIVES:** Chronic isolated frontal sinusitis occurs due to either anatomical or pathological abnormalities confined to the frontal recess obstructing the sinus drainage pathway. The aim is to describe a targeted endoscopic approach to the frontal sinus depending upon resection of the upper two thirds of the uncinate process only without violation of the other anterior ethmoidal structures.

**STUDY DESIGN:** From 2001 to 2006, 27 patients with isolated chronic frontal sinusitis refractory to medical treatment underwent the endoscopic uncinctomy approach. The main symptom in all patients was persistent or recurrent frontal pain. Follow up ranged between 8 to 32 months (mean 20.7). The results were obtained depending on both the subjective and objective assessments.

**METHODS:** It was crucial to study preoperatively the computed tomograph (CT) scanning to delineate the anatomy of the frontoethmoidal connection area including the attachment of the upper end of the uncinate process and the presence of any type of frontal recess cells. With 0° endoscope, the technique was started usually by dividing the uncinate process at the junction between the upper anterosuperior two thirds and its lower posteroinferior third using the backbitting cutting forceps. The upper two thirds were then medialized using a ball tipped probe and then removed with soft tissue shaver or upturned forceps. With 30°, 45° or 70° telescope, the bony cap of recessus terminalis, agger nasi or frontal; cell was removed meticulously in order to expose the underneath frontal sinus ostium.

**RESULTS:** Twenty two patients were asymptomatic or markedly improved postoperatively. Three patients reported mild improvement while the other two had no improvement. The frontal sinusotomy opening was widely patent postsurgically in 15 patients, stenosed in 9 and closed in the remaining 3 patients. No major complications were encountered.

**CONCLUSION:** The uncinctomy approach provides a minimal invasive technique for management of chronic isolated frontal sinusitis. The lower third of the uncinate process protecting the maxillary sinus ostium is preserved avoiding the occurrence of iatrogenic maxillary sinusitis. The bulla ethmoidalis and the suprabullar recess were kept intact to avoid injury of the skull base or the anterior ethmoidal artery. This also gives support to the middle turbinate and minimizes the incidence of its lateralization.

ABSTRACT NUMBER: 1590

### FRONTAL SINUS APPROACH: THE CONCEPT OF THE “VERTICAL BAR”

Joao Nogueira, MD, Aldo Stamm, PhD, Ronaldo Americo, MD

**INTRODUCTION:** Endoscopic frontal sinus surgery is considered difficult and risky to the patient by many surgeons. Surgery on the frontal recess and frontal sinus remains a challenge because requires experienced surgeon, who has a precise knowledge of the anatomy of the lateral nasal wall and skull base. The frontal sinus outflow tract has a complex and variable anatomy. It is tightly situated between the orbit and the anterior skull base at an angle that makes visualization difficult from an intranasal approach. Objective: This paper has an objective to describe our frontal recess and sinus approach surgical technique, presenting the concept of the “vertical bar”.

**METHODS:** Cadaver dissections were performed in order to assure our frontal sinus endoscopic surgical access.

**RESULTS:** The “vertical bar” was found in all dissections.

**CONCLUSIONS:** We described our frontal sinus approach technique and the concept of the “vertical bar”. This technique can help surgeons in the identification of the frontal sinus and recess, providing a safe and predictable access to this challenging region.

ABSTRACT NUMBER: 1592

### NASAL OUTCOMES AFTER NOVEL BINOSTRIL APPROACH FOR ENDOSCOPIC PITUITARY SURGERY WITH SEPTAL PRESERVATION

Joao Nogueira, MD, Aldo Stamm, PhD

**BACKGROUND:** Endoscopic Pituitary Surgery is a well established technique for the treatment of sellar tumors. For its location, the pituitary gland is well accessed through the nasal cavity and sphenoid sinus, and several endoscopic approaches had been described: transnasal direct, transeptal, modified transeptal, and transnasal/transeptal binostril.

**OBJECTIVE:** The objective of our work is to report the nasal outcomes of patients who underwent to endoscopic pituitary surgery using the transeptal/transnasal binostril technique. Methods: A review of 22 datasheets elaborated to describe the most common nasal complaints of patients submitted to endoscopic pituitary surgery using the transeptal/transnasal binostril technique from May 2007 and February 2008 in Sao Paulo, Brazil.

**RESULTS:** Our series consisted of 15 females (68%) and 7 males (32%) with age between 19 and 70 years old. Nine patients (41%) did not have any nose related complaints. Eleven patients (50%) presented nasal obstruction, mainly for crusts, granulation tissue and clots that required debridement and suction at the office. Two (9%) patients presented nasal bleeding at the first week after the discharge. No patients presented signs of infection, nasal synechia or CFS leaks.

**CONCLUSION:** The most common nasal complaint in the postoperative assessment in our series was a transitory nasal obstruction in 50% of the patients. After analysis of the results we can conclude that the transnasal/transeptal binostril technique allows a minimum postoperative nasal morbidity allowing the conservation of the natural anatomy and physiology of the nasal cavity.

ABSTRACT NUMBER: 1656

### NASAL TURBINATE VIDEOENDOSCOPIC SURGERY

Stefano Millarelli, M.D., Massimiliano Del Ninno, M.D., Gianluca Bellocchi, M.D.

The possibility of carrying out videoassisted nasal surgery under local anesthesia is due to the improvement of anesthesiological techniques and the miniaturisation of instruments. This technique gives us an ideal visualization of the area to be operated on and so can be done with complete ease and therefore obtain better results. In the last two years we have performed nasal turbinate reduction with radiofrequency on 150 patients using the traditional method. Results were very good with only a small percentage of complications. 15 patients underwent surgery using videoendoscopy and on 4 of them we used the microdebrider. In this group there were no complications. This method is based on an adequate selection of patients and well established surgical timing. The results for this method are without doubt better the traditional one.

ABSTRACT NUMBER: 1686

## AN EFFECTIVE TECHNIQUE FOR ENDOSCOPIC RESECTION OF ANGIOFIBROMA

Mojtaba Mohammadi Ardehali, Seyed-Hadi Samimi, Mehdi Bakhshaei

**INTRODUCTION:** Recently surgical management of angiofibroma has been greatly influenced by endoscopic techniques. However, large tumor which extent into difficult anatomic sites presents major challenges for its management by either endoscopy or the open approach. By further refinement of surgical techniques and instrumentation, most of these tumors will be amenable to endoscopic removal.

**METHODS AND MATERIALS:** We introduced a simple endoscopic transnasal technique for the resection of angiofibroma via pushing and pulling the mass by 1/10000 soaked adrenalin tampons. 47 patients treated using this endoscopic technique through 7 years. Mean follow up period was 33 months. The staging, average blood losses, complications, length of hospitalization, residual, and/or recurrent rate of tumor were the main outcomes, measured.

**RESULTS:** According to Radkowski staging 5, 10, 3, 3, 22, 3, and one patient were at stage IA, IB, IIA, IIB, IIC, IIIA, and IIIB respectively. 43 cases were operated exclusively via transnasal endoscopy while 4 patients were managed endoscopic assisted. Embolization was performed only in 5 (10.64 %) cases. Mean blood loss in patients with and without embolization were 770 cc and 1403cc, respectively. Recurrence rate was 19.1% (9 cases). Mean hospitalization was 2.55 days. Complications included 2 cheek paresthesia, 2 epiphora, one transient II, III and VI cranial nerves weakness, 2 cases of cavernous sinus rupture.

**CONCLUSION:** Using this effective technique, endoscopic removal of even more advanced angiofibroma is possible. Better visualization, less intraoperative blood loss, lower rate of complication and recurrence and shorter hospitalization are some of the advantages.

ABSTRACT NUMBER: 1712

## TRANSNASAL ENDOSCOPIC DRAINAGE OF A PETROUS APEX CHOLESTEROL GRANULOMA

Jeffrey Suh, MD, Marvin Bersneider, MD, Rinaldo Canalis, MD, Marilene Wang, MD

**INTRODUCTION:** Lesions of the petrous apex are traditionally resected via transcranial or transmastoid approaches. Here we describe a patient with a petrous apex cholesterol granuloma who underwent successful transnasal endoscopic drainage. The purpose of this study is to illustrate this minimally invasive approach to petrous apex, along with the relevant skull base anatomy.

**METHODS:** Case report

**RESULTS:** A 58 year-old man had a history of a cholesterol granuloma of the left petrous apex that was drained previously via a transzygomatic infratemporal approach. He presented with recurrent headaches and hearing loss, and was found to have recurrence of the granuloma in the petrous apex on MR and CT imaging. The patient underwent transnasal endoscopic drainage of the granuloma with the assistance of intraoperative image guidance and placement of a tympanostomy tube. A drain from the petrous apex to the nasal cavity was sutured to the septum and left in place for several weeks. Final pathology confirmed the diagnosis of a cholesterol granuloma.

**CONCLUSIONS:** Lesions of the petrous apex have traditionally been removed through transcranial or transmastoid approaches. The endoscopic transnasal approach offers an effective minimally invasive method to approach select lesions of the petrous apex.

ABSTRACT NUMBER: 1725

## ENDOSCOPIC MANAGEMENT OF JUVENILE NASOPHARYNGEAL ANGIOFIBROMA

Teresa Oliveira Matos, Joana Filipe, João Subtil, Paulo Borges Dinis

Juvenile nasopharyngeal angiofibroma is a rare, tumour-like, vascular malformation of the nasopharynx, almost exclusive to adolescent males, that arises from the sphenopalatine foramen. Angiography is an important tool in diagnosis and a significant number of surgeons advocate the systematic pre-operative embolization of the lesion as a mandatory first step in the surgical management of the pathology, in order to reduce intra-operative bleeding. Embolization is, however, not without its risks, and surgeons working at centers with imaging departments that are less familiar with the procedure, certainly welcome surgical tips that may reduce intra-operative bleeding and eventually dispense embolization, altogether.

We present on video, in a Fish type 2 angiofibroma case with important pterygopalatine fossa invasion, a totally endoscopic technique in which tumour resection was preceded by the endonasal trans-antral ligation of the internal maxillary artery, with immediate impact on intra-operative bleeding, thus showing that embolization can be effectively dispensed. At the same time the endoscopic pterygopalatine fossa dissection itself is invaluable in the management of the tumour invasion at this particular site.

ABSTRACT NUMBER: 1781

## THE ENDOSCOPIC PERICRANIAL FLAP FOR ENDOSCOPIC ANTERIOR SKULL BASE RECONSTRUCTION: A TECHNICAL REPORT

Adam Zanation, MD, Carl Snyderman, MD, Ricardo Carrau, MD, Amin Kassam, MD

**INTRODUCTION:** Vascularized tissue reconstruction has become a standard for endoscopic skull base reconstruction. The nasoseptal flap is now the workhorse due to its size, availability in the operative field and its reliable vascular pedicle. There are times however, often during sinonasal tumor or revision cases, that the nasoseptal flap is not available. Due to this situation a novel endoscopic pericranial flap was conceived. This report demonstrates the techniques, limitations and effectiveness of an endoscopically harvested pedicled pericranial flap during reconstruction of anterior skull base defects.

**STUDY DESIGN/METHODS:** Operative Technique Description with Intraoperative Videos.

**RESULTS:** A technical description and clinical outcomes of the first endoscopic pericranial flap skull base reconstructions in an 80 years old patient with an endoscopically resected Kadish C Esthesioneuroblastoma are described. This patient had excellent intranasal healing and no postoperative CSF leak. She also underwent post-operative radiotherapy without subsequent flap complications. There was no facial nerve (CN 7) or trigeminal nerve (CN 5) dysfunction. Radioanatomic dimensions, particularly the area required to reconstruct an anterior skull base defect, are also described.

**CONCLUSIONS:** Minimally invasive endonasal surgical techniques for skull base tumor removal are novel. While reconstruction has often lagged behind the ablative techniques for skull base surgery, the emerging use of the vascular pedicled nasoseptal flap has reduced CSF leak rates to less than 5%. However, anterior skull base defects from tumors such as esthesioneuroblastomas test the limits of endonasal reconstruction since nasoseptal tissue is often involved with tumor. A novel, endoscopic approach to harvesting the well-known and versatile pericranial flap has been performed with good result and provides another option for reconstruction of large anterior skull base defects.

ABSTRACT NUMBER: 1881

### USE OF DEXAMETHASONE ON THE PROPHYLAXIS OF NAUSEA & VOMITING AFTER ESS

Mohannad Al-Qudah, MD, Yaser Al-Rashdan, MD

**INTRODUCTION:** Endoscopic sinus surgery (ESS) is a common otolaryngology operation that has been proven to be effective procedure in management chronic rhinosinusitis. Literature examining outcomes following ESS has focused exclusively on longer-term outcomes. Early recovery and complications such as nausea & vomiting (N & V) are still largely unexplored. Dexamethasone is effective medication in preventing N & V associated with chemotherapy as well as different surgical procedures. However this has never been tested in patients undergoing ESS. The objectives of this study were to determine the incidence and severity of postoperative N & V after ESS and to evaluate the efficacy and safety of dexamethasone in N& V management in adult patients undergoing ESS.

**METHOD:** After obtaining the approval of our hospital's research and human ethics committee, written informed consents were obtained from 62 consecutive adult patients, ASA (American Society of Anesthesiologists) physical status I or II, undergoing general anesthesia for elective ESS. Patient under 16 year old or those who had previous systemic steroid treatment for more than 3 months at any time or within 1 month before randomization were excluded, Patients with grade 3 nasal polyposis were also excluded. No premedication was given to the patients. When the patient arrived in the operating room, baseline hemodynamic data were recorded after placement of routine monitors. All patient were anaesthetized in a standard way. Patients were randomly divided into two groups, group 1 received 8 mg (2 mL) dexamethasone intravenously; group 2 received 2 mL saline intravenously. Randomization was performed using a table of random numbers and sealed envelopes. The patients and the investigators who collected the postoperative data were unaware of the content of the syringes. ESS was performed by using standard ESS technique. Surgery progresses anatomically in a stepwise manner. Sphenoidotomy and frontal recess opening were performed in selected cases when computer tomography scan showed diseased sinuses. Upon completion of surgery, surgicell was placed into the middle meatus to help prevent synechiae, nasal pack was not inserted routinely. Postoperatively, patients were observed for 24 hours. The data of nausea and vomiting were collected every 4 hours, except when patients were asleep, by direct questioning by trained resident on the ward or by spontaneous complaint of the patients. Vomiting that occurred more than three times within 24 hours was considered as severe vomiting. The time when the patients had their first meal after surgery was also reported. The occurrence of side effects accompanying dexamethasone use during hospital stay or follow up visits was recorded. Data were analyzed using appropriate statically tests. A P value less than.05 was considered significant.

**RESULT:** All 62 patients completed the study. The subject's characteristics (e.g., age, weight, and gender), duration of anesthesia and surgery were similar between the two groups. The incidence of nausea and vomiting was 30 % in group 1 compared to 60% in group 2, this was statistically significant. 4 patients in group 2 had severe vomiting compared to none in the dexamethasone group, this was also statistically significant. Patients in group 1 had their first meal 3.5 hour average after surgery compared to 4.5 in the control group, again this was statistically significant. No patients reported wound infection, delayed wound healing, GI bleeding or glucose intolerance.

**CONCLUSION:** N & V are relatively common complication during early recovery after ESS. Prophylactic intravenous administration of 8 mg dexamethasone significantly reduces the incidence of postoperative N & V in patients undergoing ESS with out complications.

ABSTRACT NUMBER: 1883

### ENDOSCOPIC ENDONASAL REPAIR OF ORBITAL BLOW-OUT FRACTURE

Shoji Matsne, MD, Kousuke Yoshifuku, MD, Tamon Hayashi, MD, Yuichi Kurono, MD

**BACKGROUND:** Orbital blow-out fracture is a common result of facial trauma. Enophthalmos, diplopia resulting from extraocular muscle dysfunction may occur. The indication as well as timing for surgical approach have been under debate. While endoscopic endonasal treatment is now quite common for the medial wall fracture among otolaryngologists, three approaches, at least, are now evolved to access to the orbital floor; traditional transmaxilla, transconjunctiva with subciliary incision and endoscopic endonasal approach. In this seminar, we would like to show our endoscopic endonasal technique for the orbital floor fracture as well as the medial wall fracture with the aid of video presentation.

**MATERIAL AND METHODS:** Orbital blow-out fracture cases of the floor type as well as the medial wall type were treated by the endoscopic endonasal approach. Chief complains of theses cases were diplopia and enophthalmos. In order to access to the orbital floor endonasally, the unchinate process and the bulla lamella were removed and opened the fontanelle adequately under general anesthesia. With observation under 70-degree rigid endoscope, fractured bony wall was confirmed and removed carefully without damaging herniated orbital soft tissue. The balloon was inserted endonasally into maxilla and sustained the prolapsing tissue put into orbita. Postoperative course were assessed clinically.

**RESULTS:** Not only in cases of medial wall fracture but also in the floor fracture cases, diplopia was improved without postoperative complication.

**CONCLUSION:** Endoscopic endonasal approach for orbital blow-out fracture is quite useful technique not only in cases of medial wall fracture but also in the floor fracture type.