

2021 ADVANCE PROGRAM



North American Skull Base Society

2021 Virtual Symposium

“Teams and Teamwork”

Saturday, February 13, 2021

8:00 AM-2:00 PM PT | A Virtual Event

PRESIDENT: John G. Golfinos, MD

PROGRAM CHAIRS: Daniel Prevedello, MD & Arturo Solares, MD

SCIENTIFIC PROGRAM COMMITTEE: John G. Golfinos, MD, President, Daniel Prevedello, MD, Program Co-Chair, Arturo Solares, MD, Program Co-Chair, Carolina Benjamin, MD, Juan Fernandez-Miranda, MD, David Friedman, MD, Jose Gurrola, MD, Bharat Guthikonda, MD, Oswaldo Henriquez, MD, David Jang, MD, Cristine Klatt-Cromwell, MD, Diego Mendez-Rosito, MD, Matthew Ord, MD, Donato Pacione, MD, Carlos Pinheiro-Neto, MD, Gustavo Pradilla, MD, Christopher Rassekh, MD, Pablo Recinos, MD, Camilo Reyes, MD, Brian Thorp, MD, Jamie Van Gompel, MD, Lee Zimmer, MD

WWW.NASBS.ORG

Letter from the President

Dear and Esteemed Members of the North American Skull Base Society:

It is one of the greatest honors and privileges of my life to have been chosen to lead this august Society as President. When I consider the talented individuals within the North American Skull Base Society – the gifted surgeons, the precise anatomists, the brilliant radiation oncologists, the insightful ophthalmologists – I am completely humbled to be considered among their ranks. The individuals who have preceded me as President include some of the greatest skull base specialists in history, not least of whom is my immediate predecessor, Ricardo L. Carrau, MD. I owe Ric an enormous debt for handing over a thriving, robust, and prosperous Society. He has indeed left very large shoes for me to fill.



John G. Golfinos, MD

The Society is in excellent shape, expanding faster and achieving membership larger than it ever has before. There are now more than 1,000 members in the North American Skull Base Society (NASBS), for the first time in the Society's history. This achievement is due to the hard work of Dr. Carrau and our leaders on the membership committee, including especially Brian Thorp, MD, Eric Wang, MD, and L. Madison Michael, II, MD and their crew of indefatigable skull base proselytizers. Their enthusiasm for the camaraderie and scholarship of the Society has been transmitted to the largest number of new recruits we have ever seen.

In similar fashion, our committees are more streamlined and effective than ever before, one of the many accomplishments of Dr. Carrau and also James Evans, MD who preceded him as NASBS President. Committees like our Website & Communications Committee, our Research Committee, our Value Based Healthcare Committee, and our Surgical Education Committee are hotbeds of innovation and accomplishment. I am amazed as what those committees and their leadership have accomplished in the last year. There are too many individuals to name without forgetting some, but especially Erin McKean, MD (Value Based Healthcare Chair), Shaan Raza, MD and Anand Devaiah, MD (Research Co-Chairs), and Christopher Graffeo, MD (Social Media Director), who somehow is still in training and yet has the time to post outstanding content on NASBS' social media accounts with the help of the Social Media Subcommittee. If you are not already following NASBS on Twitter or Instagram, I strongly urge you to do so. I look forward to every new Rhoton anatomy question and NASBS post, and I never have to worry about our Twitter account being permanently suspended, unlike the worries of some other, now former, Presidents.

To achieve all of this in any other year would be a spectacular accomplishment and ample evidence of a bustling, flourishing society, but to do all this in the horrible year that was 2020 defies the imagination. The past year has seen the Society confronted by the same problems and issues that have afflicted all of us personally. The pandemic has had an impact even at the skull base, as many of our otolaryngology colleagues know all too well. We have played our part in trying to keep health care workers and operating room staff in particular as safe as possible during the onslaught of the virus. For the Society itself, the pandemic's impact has been felt most acutely in our education efforts. This year will be the first year since the founding of the North American

Skull Base Society that we will not have an in-person academic meeting for the exchange of ideas and the enjoyment of collegiality. In place of our Annual Meeting in 2021, we will have a Virtual Symposium scheduled for February 13th and held online. It is a one-day meeting and packs into that one day all the important ideas and new clinical and scientific research that one would hear over our usual multi-day meeting. The Virtual Symposium has been brought together and organized by two of the greatest Scientific Program organizers one could ever hope for: Daniel Prevedello, MD, our scientific program chair, and C. Arturo Solares, MD, his co-chair. I cannot possibly thank Danny and Arturo enough for the incredible job they have done in organizing an exciting, informative meeting that will (almost literally) keep you glued to your Zoom screen. They have done spectacular work in picking the highest impact abstracts for presentation and in recruiting moderators and commentators with enormous insight and experience. We will harness and maintain the enthusiasm and energy of our very successful November Virtual Skull Base Course organized by Chris Rassekh, MD and our Surgical Education Committee. The honored guest for the meeting will be Prof. Michel Kalamarides from Paris, France one of the world's experts on the genomics of meningiomas and leading light in NF2 as well. We expect a day filled with the best that our unique Society has to offer about the skull base. Registration is open now, so don't miss out on the definitive meeting about the Skull Base.

Before I close, I want to mention the other unfathomable events of the year that was 2020. It was a year that saw my hometown, New York City, convulsed by the loss of innocent Black American lives. If there is any silver lining at all to the pandemic, perhaps it is the reflection that people of color in America have suffered far too much for far too long. The pandemic itself has laid these inequities bare, exposing them for all of us to see. To me, the North American Skull Base Society is in a unique position to show the way and help. We are a Society deliberately composed of physicians who approach the dividing line of the skull base from different directions and with different ideas. We all have conflicting notions of what is right and wrong at the skull base, and yet, through collaboration, discussion, and collegiality, we together arrive at answers better than any of us could achieve on our own. The North American Skull Base Society is proof that a surgically diverse team can accomplish more than any individual could - proof of the deep, intrinsic value of diversity. Even more, through our international scholarships and our other educational ventures, the Society remains devoted to improving the delivery of medical and surgical care throughout the world, devoted to the idea that every single person deserves the same level of outstanding care and expertise.

The year that was 2020, a true *annus horribilis*, has forced unique circumstances upon the NASBS. Above all, we will miss the ability to come together in person at our annual meeting, which had been scheduled for Atlanta. Our Virtual Symposium will take its place. Because of the unusual events, and in order to preserve continuity and unity, in a time marked by social distance, the Board of the NASBS voted to preserve the current leadership in their current positions. I will serve as President until our next annual meeting in Phoenix in February 2022. I can tell you that the decision was not made lightly, and it was made unanimously. (It was also made well before the storming of the US Capitol!) By keeping the leadership team in place for two years, we will best be able to ensure a smooth run-up to our first opportunity to come together in person and celebrate with the warm shaking of hands and, one hopes, even hugs. Drs. Prevedello and Solares, our Annual Meeting Scientific Program Chairs, will stay in place, bearing the largest burden of the two years of service, but I doubt anyone is better prepared for that task.

Let us not miss the opportunity to see each other at least virtually this February. Join us all at the Virtual Symposium. Stay in touch with what is going on at the Skull Base, and see your colleagues on the screen during our scientific program and our social hours. It will be a refreshing respite from the turmoil of the world around us and will recharge all of us until we can finally see each other again in person. Don't miss it and get left out!

Until then, please stay safe and be well, and continue the excellent care of patients in need that is a hallmark of the members of the North American Skull Base Society.

With warmest and most sincere regards, I remain yours,

A handwritten signature in black ink, appearing to read 'J. Golfinos', with a long horizontal stroke extending to the right.

John G. Golfinos, MD
NASBS President 2020 - 2022

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General/CME Information

CME ACCREDITATION:

Physician Accreditation Statement

This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education through the joint providership of PESI Inc. and North American Skull Based Society (NASBS). PESI Inc. is accredited by the ACCME to provide continuing medical education for physicians.

AMA PRA Designation Statement

PESI, Inc. designates this other educational activity (online live for 10 credits and online enduring for 10.25 credits) for a maximum of **20.25 AMA PRA Category 1 Credit(s)TM**. Physicians should only claim credit commensurate with the extent of their participation in the activity.

International CME

International Physicians are formally eligible for *AMA PRA Category 1 CreditTM*.

Physician Assistants

AAPA accepts Category 1 credit from AOACCME, Prescribed credit from AAFP, and AMA PRA Category 1 CreditTM for the PRA from organizations accredited by ACCME.

Each session claimed for credit must be attended in it's entirely.

ANNUAL MEETING OBJECTIVES

Upon completion of this course, participants will be able to:

- Understand and explain most recent recommendations for management of skull base pathology.
- Describe recent advances in instrumentation and technology in skull base surgery.
- Gain knowledge in challenging skull base pathology from experienced leaders in the field.
- Collaborate in multidisciplinary working groups to identify state of the art management for select skull base pathology.
- Gain knowledge on optimal technical surgical management of complex skull base pathology through video analysis and expert critique of intraoperative video.
- Establish consensus statement on management of complex skull base pathology through review of existing medical literature.

WHO SHOULD ATTEND

The NASBS meeting is open to NASBS members and non-members.

General Information

TARGET AUDIENCE

- Otolaryngologists, head and neck surgeons, neurosurgeons, reconstructive surgeons, radiation oncologists, radiologists, medical oncologists, physical rehabilitation physicians, ophthalmologists, neurologists, maxillofacial surgeons, maxillofacial prosthodontists and endocrinologists.
- Targeted allied health professionals include physical therapists, oncology nurses, oral health specialists, occupational therapists, speech and language pathologists, optometrists and psychologists.

DISCLOSURE INFORMATION

In compliance with the ACCME Accreditation Criteria, the PESI, Inc., as the accredited provider of this activity, must ensure that anyone in a position to control the content of the educational activity has disclosed all relevant financial relationships with any commercial interest. All reported conflicts are managed by a designated official to ensure a bias-free presentation. Please see the insert to this program for the complete disclosure list.

MEMBERSHIP BENEFITS

- Active members will receive the official journal of the society, The Journal of Neurological Surgery Part B, a publication that contains peer reviewed original articles, review articles, and position papers. It also presents news and information on an international scope to keep members aware of recent and upcoming events, activities, and evolving developments in skull base surgery. Affiliate, International and Candidate members may subscribe to the journal for \$100 annually.
- Discounted rates to attend the Annual Meeting
- Opportunities to network with colleagues and experts from across North America and globally
- Committees which provide opportunities for camaraderie, involvement and leadership development
- Online access to all members contact information.

Please visit www.nasbs.org/membership for more information or email membership@nasbs.org.

WHY JOIN NASBS?

Membership is based on an interest in skull base surgery and related sciences. Individuals with backgrounds in neurosurgery, otolaryngology, head and neck surgery, radiology, neuroradiology, otology, neurotology, plastic and reconstructive surgery, and others interested in skull base diseases are welcome to apply.

Meeting Leadership

NASBS Scientific Virtual Symposium Task Force

John G. Golfinos, MD, *President*
Lee Zimmer, MD, PhD, *President-Elect*
Daniel Prevedello, MD, *Co-Chair*
C. Arturo Solares, MD, *Co-Chair*
Carolina Benjamin, MD
Juan Fernandez-Miranda, MD
David Friedman, MD
Jose Gurrola, MD
Bharat Guthikonda, MD
Oswaldo Henriquez, MD
David Jang, MD
Cristine Klatt-Cromwell, MD
Diego Mendez-Rosito, MD
Matthew Ord, MD
Donato Pacione, MD
Carlos Pinheiro-Neto, MD
Gustavo Pradilla, MD
Christopher Rassekh, MD
Pablo Recinos, MD
Camilo Reyes, MD
Brian Thorp, MD
Jamie Van Gompel, MD

NASBS Executive Committee

PRESIDENT: John G. Golfinos, MD
PRESIDENT-ELECT: Lee Zimmer, MD, PhD
IMMEDIATE PAST PRESIDENT: Ricardo Carrau, MD, MBA
VICE PRESIDENT: Siviero Agazzi, MD, MBA, FACS
SECRETARY: L. Madison Michael II, MD, FACS, FAANS
TREASURER: Adam Zanation, MD, FACS

Directors at Large

Sam Barnett, MD
Jurij R. Bilyk, MD, FACS
Amir Dehdashti, MD
Jean Anderson Eloy, MD, FACS, FARS
Rick A. Friedman, MD, PhD
Derrick Lin, MD, FACS
James K. Liu, MD, FACS, FAANS
Erin L. McKean, MD, MBA, FACS
Daniel Prevedello, MD
Shaan M. Raza, MD
Zoukaa Sargi, MD, MPH
C. Arturo Solares, MD, FACS
Jeffrey M. Sorenson, MD
Allan D. Vescan, MD, MSc, FRCS
Eugene Yu, MD, FRCPC

Board of Advisors

James Evans, MD, FACS, FAANS
Michael J. Link, MD
Jacques J. Morcos, MD, FRCS(Eng), FRCS(Ed), FAANS
Carl H. Snyderman, MD, MBA
Ian J. Witterick, MD, MSc, FRCSC

Virtual Event FAQ

1. What is a Virtual Event?

The aim of the NASBS 2021 Virtual Symposium is to provide similar educational, networking, and industry opportunity as an in-person Annual Meeting. The NASBS 2021 Virtual Symposium Task Force have developed a balanced virtual program of excellent work. All programming will take place online in the following three formats:

1. Live Zoom Webinar - Speakers and Moderators video and audio are enabled. Participating attendees can submit questions and comments via the Q&A feature.
2. Live Zoom Meeting - Speakers, Moderators, and Attendees can enable video and audio.
3. On Demand - All registered attendees will have access to pre-recorded presentations. Viewers are encouraged to submit comments and questions via the comments feature below the video.

2. What do I need in order to attend the virtual conference?

Content can be accessed by most devices with internet connection. We recommend using a computer with strong internet connection with the recommended internet browser. Google Chrome is advised for the best compatibility and experience.

3. If I want to watch live sessions that are occurring simultaneously, can I go back later and view them?

Yes, most concurrent live sessions are recorded. The recording will be available after the live session as On Demand content.

4. How long will On Demand content be available?

All On Demand content will be available until December 31, 2021.

5. How long will ePosters be available?

Genographics will archive ePosters for five (5) years.

Past Presidents

1990	Paul J. Donald, MD	2006	Anil Nanda, MD
1991	Laligam N. Sekhar, MD	2007	Guy J. Petrozzelli, MD
1992	Ivo P. Janecka, MD	2008	Franco DeMonte, MD
1993	Peter G. Smith, MD, PhD	2009	Daniel Nuss, MD
1994	Albert L. Rhoton, Jr., MD	2010	Peter Neligan, MD
1995	Hugh Curtin, MD	2011	Peter Costantino, MD
1996	Derald E. Brackmann, MD	2012	Dennis Kraus, MD
1997	Ossam Al Mefty, MD	2013	Carl Heilman, MD
1998	Steven A. Newman, MD	2014	Ehab Hanna, MD, FACS
1999	John P. Leonetti, MD	2015	Michael Link, MD
2000	Robert F. Spetzler, MD	2016	Carl Snyderman, MD, MBA
2001	Ian T. Jackson, MD	2017	Jacques Morcos, MD, FRCS(Eng), FRCS(Ed), FAANS
2002	Vinod K. Anand, MD	2018	Ian Witterick, MD
2003	Jon H. Robertson, MD	2019	James Evans, MD, FACS, FAANS
2004	Jatin Shah, MD	2020	Ricardo Carrau, MD, MBA
2005	Patrick J. Gullane, MD		

Virtual Event FAQ (cont.)

6. Will there be continuing medical education (CME) credits?

The NASBS 2021 Virtual Symposium has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education through the joint providership of PESI, Inc. and North American Skull Base Society. PESI, Inc. is accredited by the ACCME to provide continuing medical education for physicians. For more information regarding CME please visit https://www.nasbs.org/future_meetings/cme-information/

7. How long do I have to claim credits?

Evaluations and claims for CME will be accepted through January 31, 2022. Please note that content will be available for viewing through December 31, 2021.

8. How will I receive access to the virtual conference platform?

After registering you will receive an email from the NASBS office with event access information. For more information regarding registration please visit https://www.nasbs.org/future_meetings/registration/

Content-at-a-Glance

Saturday, February 13, 2020

All times listed in Pacific Time Zone (PST)

8:00am – 8:30am **Presidential Opening Remarks**

8:35am – 9:35am **Main Topics:**

- Topic 1: Meningioma
- Topic 2: Pituitary

9:40am – 10:40am **Main Topics:**

- Topic 3: Complication
- Topic 4: Covid

10:45am – 10:55am **Break with Exhibitors**

10:55am – 11:15am **Main Presentation**

11:15am – 12:15pm **Main Topics:**

- Topic 5: Acoustic Neuroma
- Topic 6: Open Approaches

12:20pm – 1:20pm **Main Topics:**

- Topic 7: Malignancies & Chordoma
- Topic 8: Reconstruction
- Topic 9: Training, EEA Technology, & Malignancies

1:25pm – 2:25pm **Closing Remarks & Awards**

On-Demand Content to include Topics on:

- » Anatomy Of The Skull Base
- » Aneurysms
- » Cerebrospinal Fluid Leaks
- » Clival Tumors/Chordoma/Chondroid Tumors
- » Complications Of Skull Base Surgery
- » Cost Utility Of Skull Base Treatments
- » Craniofacial Surgery
- » Craniopharyngiomas
- » Development Of Novel Technology
- » Endoscopic Assisted And Keyhole Approaches
- » Endoscopic Transnasal Skull Base Surgery
- » Head And Neck Tumors
- » Inflammatory And Infectious Skull Base Conditions
- » Innovative Techniques, Technology, And Approaches To The Skull Base
- » Intraoperative Neuromonitoring
- » Lateral Skull Base Surgery
- » Medical Management Of Skull Base Neoplasms
- » Meningiomas
- » Microvascular Decompression
- » Novel Techniques and Treatment
- » Oncologic Outcomes
- » Orbital Tumors
- » Pediatric Skull Base Surgery
- » Pituitary Tumors
- » Quality Of Life Following Skull Base Surgery
- » Sinusoidal Neoplasms
- » Skull Base Reconstruction
- » Skull Base Surgery
- » Stereotactic Radiosurgery
- » Telemedicine
- » Temporal Bone Tumors
- » Training And Education
- » Transorbital Skull Base Surgery
- » Vestibular Schwannomas

Live Events Schedule

Time (Pacific)

8:00am - 8:30am

8:35am - 9:35am

Session

Presidential Opening Remarks - *John G. Golfinos, MD*

Topic 1: Meningioma

Expert Talk:

Molecular Biomarkers in Meningiomas - *Wenya Linda Bi, PhD*

Abstract Presentations:

To Radiate Upfront or at Initial Recurrence after Gross Total Resection of Newly Diagnosed WHO II Meningiomas? A Propensity Score Adjusted Analysis - *Arbaz Momin, BS*

The value of Simpson I-II resection in deep-seated and skull base WHO grade I meningioma - *Colin Przybylowski, MD*

International Tuberculum Sellae Meningioma Study: Preoperative grading scale to predict outcomes and inform approach selection - *Stephen T Magill, MD, PhD*

Machine Learning Analysis of Local Recurrence of Meningioma treated with Stereotactic Radiotherapy - *Benjamin A Greenberger, MD*

Live Question and Answer: All Presenters

Moderated by *Donato Pacione* and *Pablo F Recinos*

8:35am - 9:35am

Topic 2: Pituitary

Expert Talk:

Does the New WHO Classification Make Sense? - *Nelson M Oyesiku*

Abstract Presentations:

Does having a Primary Care Physician Predict Neurosurgical Outcomes? An Analysis of 225 Nonfunctional Pituitary Adenoma Resections Across Seven Years - *Robert C Osorio, BS*

Peri-operative variables and costs associated with early remission in Cushing's patients with micro and macroadenomas - *Limi Sharif, BS*

Remission Rates and Efficacy Profile of Endoscopic Endonasal Surgery for Prolactinomas Based on Their Cavernous Sinus Invasiveness - *Hussam Abou-Al-Shaar, MD*

Postoperative Oral Antibiotics and Sinonasal Outcomes Following Endoscopic Transsphenoidal Surgery for Pituitary Tumors (POET) study: a multicenter, prospective, randomized, double-blinded, placebo-controlled study - *Andrew S Little, MD*

Live Events Schedule

Assessment of the Validity and Reliability of the Sinonasal Outcomes Test-22 in Endoscopic Endonasal Transsphenoidal Pituitary Surgery in a Multicenter Prospective Trial - *Christina E Sarris, MD*

Live Question and Answer: *All Presenters*

Moderated by *Brian David Thorp* and *Lee Zimmer*

9:40am - 9:55am

Topic 3: Complication

Expert Talk:

Preventing and Managing Vascular Injuries in Endonasal Surgery - *Paul A Gardner*

Abstract Presentations:

Management Protocol for Intra-Operative Internal Carotid Artery Injury: A Modified Delphi Method and Multidisciplinary Expert Panel - *Amr F Hamour*

Characterization of outcomes and practices utilized in management of internal carotid artery injury not requiring embolization, stenting, or ligation - *Nyall R London, MD, PhD*

Endoscopic Endonasal Carotid Injury: Case series and review of the modern literature with lessons learned - *Sean P Polster, MD*

90-day Bundled Payment Simulation, Healthcare Utilization, and Complications Following Craniopharyngioma Resection in Adult Patients - *Nicholas Dietz, MD*

Management of the osteoradionecrosis of the median skull base: systematic review - *Chadi Makary, MD*

Live Question and Answer: *All Presenters*

Moderated by *Bharat Guthikonda* and *Camilo Reyes*

9:40am - 9:55am

Topic 4: Covid

Expert Talk:

Skull Base Surgery and COVID-19: Myths and Reality! - *Zara M Patel*

Abstract Presentations:

Aerosol Generation During Endonasal Instrumentation in the Clinic Setting - *Alexander Murr, BS*

Aerosol Generation During Endoscopic Sinonasal Surgery - *Alexander Murr, BS*

Live Events Schedule

Effects of Interruption of Care during COVID-19 Pandemic on Sinus and Skull Base Surgery Patients - *Katherine Y Liu, BA*

Intraoperative use and validation of a novel negative pressure, face-mounted antechamber to minimize aerosolization of particles during endoscopic skull base surgery - *Matthew Kim*

Topical Therapies to Prevent Aerosolization of Respiratory Viral Particles During Endonasal Skull Base Surgery: A Practical Review - *Katherine Tai, BA*

Live Question and Answer: *All Presenters*

Moderated by *David W Jang* and *Jose G Gurrola*

10:45am - 10:55am

10:55am - 11:15am

Break

Main Presentation - Advances in Vestibular Schwannoma Surgery

Michel Kalamarides, MD, PhD

Michel Kalamarides is a Professor of Neurosurgery at Pitié-Salpêtrière Hôpital (Faculté de Médecine, Sorbonne- Université), Paris France.

He is specialized in vestibular schwannoma and meningioma surgery. He has performed more than 1500 CPA tumor surgeries with neuro-otology team previously led by Olivier Sterkers. Within a large INSERM unit- U 1127 at Brain and Spine Institute (Pitié-Salpêtrière), Dr. Kalamarides is leading a research group on meningioma, particularly using mouse models to dissect the mechanisms of meningioma initiation and progression.

He is leading the French NF2 reference clinical center and the French NF2 network.



11:20am - 12:20pm

Topic 5: Acoustic Neuroma

Expert Talk:

Vestibular Schwannomas: Can Molecular Biomarkers Influence the Clinical Outcome? - *Konstantina Stankovic*

Abstract Presentations:

Technology-assisted minimally invasive surgical options for the treatment of medium to large vestibular schwannomas: our experience - *E. Carrassi, MD*

Distinct immune signature predicts progression of vestibular schwannoma and unveils a possible viral etiology - *Moran Amit, MD, PhD*

Surgical outcomes following vestibular schwannoma resection in patients over the age of sixty-five - *Ben A Strickland*

Live Events Schedule

Prospective Quality of Life in Patients with Sporadic Vestibular Schwannoma: A Comparison of Observation, Microsurgery, and Radiation Treatment Modalities - *Ashley M Nassiri, MD, MBA*

Continued Observation of Growing Vestibular Schwannomas - *Donald Tan, MD*

Live Question and Answer: *All Presenters*

Moderated by *Gustavo Pradilla* and *Jamie Joseph Van Gompel*

11:20am - 12:20pm

Topic 6: Open Approaches

Expert Talk:

Can the Use of ICG Really Improve Outcomes? - *John Yk Lee*

Abstract Presentations:

Augmented reality guided retrosigmoid approach - *Christoph Leuze*

Utility of Modified Frailty Index (mFI) and Traditional Prognostic Measures to Prognosticate Adverse 30-Day Quality Outcomes after Microvascular Decompression for Trigeminal Neuralgia - *Mohammed Ali Alvi, MBBS, MS*

Radiosurgery vs Microsurgery for Newly Diagnosed, Small Petroclival Meningiomas with Trigeminal Neuralgia - *Hun Ho Park, MD*

Transorbital neuroendoscopic surgery as a mainstream neurosurgical corridor: a systematic review - *Lena Mary Houlihan, MD, MCH*

Live Question and Answer: *All Presenters*

Moderated by *Bharat Guthikonda* and *C. Arturo Solares*

12:25pm - 1:25pm

Topic 7: Malignancies & Chordoma

Expert Talk:

Perineural Invasion in Cutaneous Squamous Cell Carcinoma: Current Clinical Practice and the Future of Immunotherapies - *Benedict J Panizza*

Abstract Presentations:

An Integrated Management Paradigm for Skull Base Chordoma Based on Clinical and Molecular Characteristics - *Hussein M Abdallah*

CDKs Blockade Enhances In Vivo Efficacy of EGFR Inhibition in Chordomas - *Tianna Zhao*

Live Events Schedule

Evaluation of the immune microenvironment in sinonasal squamous cell carcinoma and its association with patients' survival - *Yoko Takahashi, PhD*

Sinonasal Rhabdomyosarcoma: A 26-Year Experience at a Single Institution - *Lulia A Kana, BS*

Implementation of the Patient Protection and Affordable Care Act (PPACA) Affects Treatment Modality in Sinonasal Squamous Cell Carcinoma - *Abdullah H Feroze, MD*

Live Question and Answer: *All Presenters*

Moderated by *Carolina G Benjamin* and *Matthew Owen Old*

12:25pm - 1:25pm

Topic 8: Reconstruction

Expert Talk:

Should Endonasal Free Flaps Replace Regional Flaps? - *Michael Fritz*

Abstract Presentations:

Low pre-operative prealbumin levels are a strong independent predictor of post-operative cerebrospinal fluid leak following endoscopic endonasal skull base surgery - *Daryl P Fields, MD, PhD*

Magnetic Resonance Venography and Spontaneous Cerebrospinal Fluid Leaks to the Temporal Bone - *Shubham Patel, BS*

Analysis of Lumbar Puncture Opening Pressures Before and After Closure of Spontaneous Anterior and Lateral Cranial Base Cerebrospinal Fluid Leaks - *Glen D'Souza*

Long-Term Fate of Vascularized Pedicled Nasoseptal Flap after Endonasal Endoscopic Skull Base Surgery - *Jack Birkenbeuel, BS*

Anatomic Configurations in Midfacial Reconstruction Using Scapula and Scapular Tip Flaps - *Brian P Swendseid, MD*

Live Question and Answer: *All Presenters*

Moderated by *Carlos Pinheiro-Neto* and *Cristine N Klatt-Cromwell*

12:25pm - 1:25pm

Topic 9: Training, EEA Technology, and Malignancies

Expert Talk:

The Operating Room of the Future - *Martin Citardi*

Abstract Presentations:

Implementation of TDABC to Analyze Cost Drivers in Endoscopic Skull Base Surgery - *Shravani Pathak*

Live Events Schedule

Limited utility of 5-ALA optical fluorescence in endoscopic endonasal skull base surgery; a multicenter retrospective study - *Alexander Micko*

Long Term Outcomes After Surgery For Esthesioneuroblastoma: A Single Comprehensive Cancer Center Experience - *Dauren Adilbay*

Multi-center study on clinical outcomes of olfactory neuroblastoma - *Matt Lechner, MD, PhD*

Live Question and Answer: *All Presenters*

Moderated by *Jose G Gurrola* and *Oswaldo A Henriquez*

1:30pm - 2:30pm

Closing Remarks

Daniel Prevedello, MD and *C. Arturo Solares, MD*

On Demand Content Details

Anatomy Of The Skull Base

- Comparison between Far Lateral Approach, Far Medial Expanded Endonasal Approach and Contralateral Transmaxillary Corridor to the Jugular Tubercle - *Cleiton Formentin, MD*
- Ethmoidal Width as a Predictor of the Size and Surgical Freedom of the Trans-Cribriform Corridor. - *Zaid Aljuboori, MD*

Aneurysms

- Skull base approaches for cerebrovascular disorders - *M.R. Fasinella, MD*
- Standard Orbitozygomatic Craniotomy vs Mini Orbitozygomatic Craniotomy Via an Eyebrow Incision for Microsurgical Treatment of Anterior Communicating Artery Aneurysms - *David R Peters, MD*

Cerebrospinal Fluid Leaks

- Single-arm, open-label, multicenter study to evaluate the safety and performance of Dura Sealant Patch in reducing CSF leakage following elective cranial surgery; the ENCASE trial - *Tristan P van Doormaal, MD, PhD*
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- Impact factors on the postoperative evolution of paroxysmal trigeminal neuralgia with persistent continuous pain. – *Mauro A Segura-Lozano, MD, PhD*
- Outcomes of Microvascular Decompression for Trigeminal Neuralgia with Purely Venous Compression: A Systematic Review and Meta-Analysis – *Tamia Potter, BS*
- Microvascular decompression for combined hyperactive dysfunction syndrome. A single center experience. – *Aarón G Munguía-Rodríguez, PhD*

Minimal Requirements Of A Skull Base Team And/Or Program

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Modern Evaluation Of Vision And Ocular Function

- Case for quantitative evaluation – *Steven A Newman, MD*

Oncologic Outcomes

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- Primary and Metastatic Paraganglioma of the Cranial Vault – *Lena Mary Houlihan, MD*

Orbital Tumors

- Multiple Brown Tumors within the Cranium, in A Patient with Primary Hyperparathyroidism. A Case Report and Review of the Literature – *Anas M Bardeesi, MD*
- A unique case of solitary supraorbital/intracranial Langerhans Cell Histiocytosis presenting primarily with ocular manifestations and a Review of Literature – *Gohar Majeed, DO*

Pediatric Skull Base Surgery

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- Socioeconomic Determinants of Length of Stay Following Transsphenoidal Pituitary Surgery: A Six-Year Review – *Annie E Arrighi-Allisan, BA*
- Trends in Pituitary Adenoma Incidence: Population-based Study, 1989-2019 – *Lucas P Carlstrom, MD, PhD*
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- Cavernous Sinus Invasion by Growth-Hormone Secreting Pituitary Adenomas – *Camille K Milton, BS*
- Utilization of SIPAP Classification in prediction of pituitary adenoma recurrence; The Ottawa Hospital experience – *Fahad Alkherayf*

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- Modern Management of Pituitary Apoplexy via an Initially Conservative Surgical Paradigm – *Kevin Peng*
- Optical Coherence Tomography in Pituitary Adenomas Serves as a Predictor for Visual Functionality Post-Resection – *Abigail Funari, BS*

Sinonasal Neoplasms

- Granular cell tumor of the sphenoid: a unique finding in a pediatric patient with sickle cell disease and Jeavons syndrome – *Delaney Sheehan, BS*
- Sinonasal Sarcomatoid Carcinoma: A Case Report – *Daljit Mann, MD*
- Sinonasal metastases of clear-cell renal cell carcinoma: two case reports and literature review – *Matias Gomez, Otorhinolaryngologist*
- Sinonasal leiomyosarcoma: case report of a rare entity – *Alexa M Franco, MD*
- Investigation into the use of volatile organic compounds to identify sinonasal inverted papilloma – *Mark B Chaskes, MD, MBA*
- A case report of verrucous carcinoma of the paranasal sinuses – *Clifton Woods, MD*
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- Sinonasal Neuroendocrine Carcinoma: 15 Years of Experience at a Single Institution – *Charles A Keilin*
- High-Grade Biphenotypic Sinonasal Sarcoma: A case report – *Sukaina Hasnie, MD*

Skull Base Reconstruction

- Lumber Drain Outcomes in Endonasal Endoscopic Skull Base Surgery – *Jack Birkenbeuel, BS*
- Skull Base as a Team Sport: Role of the Neurosurgeon in Complex Head and Neck Cancer Surgery Requiring Vascularized Tissue Transfer Reconstruction – *Varun S Shah*
- Management of Complicated Skull Base Osteoradionecrosis with a Buccal Fat Flap and Free Tissue Transfer – *Ricardo Aulet, MD, MBA*
- Free Tissue Transfer in the Endoscopic Era: Evolving Role of the Top Tier of Skull Base Reconstruction – *Satyan B Sreenath, MD*

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- Skull base chordoma with intradural component and compression to pons. – *Tural Rahimli, MD*
- Longitudinal Trends in the Morbidity and Mortality of Skull Base Surgery by Anatomic Subsite – *Nilan G Vaghjiani, BS*
- A Low Subfrontal Dural Opening For Anterior Skull Base Lesions – *Samuel J Cler, BS*
- Intraoperative Differentiation of Normal Pituitary Gland from Adenoma Using Frozen Section and Touch Preparation Techniques – *Nataly Raviv, MD*
- Steps of the Expanded Extreme Lateral Approach: A Systematic and Consequential Anatomical Description – *Irakliy Abramov, MD, PhD*
- Endoscopic Transorbital Approach for Spheno – Orbital Meningiomas, first Colombian Case Reports. – *Andrés F Méndez, MD*
- The Blood Supply of Intracavernous Cranial Nerves: An Anatomic Study and Its Implications for Transcranial and Endoscopic Cavernous Sinus Surgery – *Edinson Najera, MD*
- Optic canal decompression for delayed vision loss in post traumatic optic neuropathy – *Stefania B Diniz, MD*
- The transfrontal sinus approach to anterior fossa skull base tumors in the era of expanded endonasal endoscopy – *Kevin A Cross, MD*
- Surgical Strategies for Incising the Tentorium in Skull Base Approaches – *Michael G Kim*
- Skull Base Chondromyxoid Fibroma: A Case Report and Review of the Literature – *Christopher Weeks, MD*

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- Zapping Vestibular Schwannomas: The first vestibular schwannoma treated with the ZAP-X – *Malika Bhargava, MD, MBA*
- Microsurgical Resection of Petroclival Meningiomas Treated with Stereotactic Radiosurgery to Address Persistent Post-Treatment Trigeminal Pain – *Baha'eddin A. Muhsen, MD*

Poster Listing

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- In vivo application and short-term outcomes of exoscope-assisted near-total temporal bone resection for malignancy – *Rima Rindler, MD*
- Primary skull base melanoma causing jugular foramen syndrome – *GRene Alvarez Berastegui, MD, Neurosurgeon*

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- Understandability and readability of online resources for skull base surgery patients – *Drew Cutshaw*
- Pilot study in theoretical and hands-on experience and its contribution to learning of residents and young trainees in Neurosurgery. The importance of surgical anatomy laboratories as part of training – *Luciano Leonel, PhD*
- Investigation of Surgical Precision and Efficiency in a Laboratory Model of Endoscopic Endonasal Dural Suturing: Is 3D Endoscopy Superior to 2D Endoscopy? – *Ivanna Nebor, MD*
- Upright, Bright, Instruments in Sight: A Multimodal Training Module for Assisting in Endoscopic Endonasal Procedures for Junior Surgical Residents – *Rima Rindler, MD*
- Micro-CT 3D Printed Temporal Bone Dissection: A Feasibility Study – *Nathaniel Webb*

Training The Future Skull Base Surgeon

- Anatomical step-by-step dissection of complex skull base approaches for trainees: surgical anatomy of the endoscopic endonasal approach to the orbit – *Laura Salgado-Lopez, MD*
- Anatomical Step-by-step Endoscopic Endonasal Approach for Maxillary Nerve(V2) Rhizotomy and case series – *Michael O'Brien, MD*

Transorbital Skull Base Surgery

- First Case Report of Primary Central Nervous System Amyloidoma Involving Cranial Nerves V and VII – *Esther Yesde Son, PhD*
- A Multiplanar Perspective of Endoscopic Approaches to the Infratemporal Fossa: A Cadaveric Study – *Roberto M. M Soriano, MD*

Vascular Malformations/Tumors

- Multidisciplinary Approach to Recalcitrant Dural AV Fistula – *Joshua C Page, MD*
- Treatment of a pontine cavernoma with laser interstitial thermal therapy: case report – *Jesse D Lawrence, MD*
- Cerebellopontine angle Glioblastoma: Unlikely presentation and limited treatment options – *Danielle D Dang, MD*

Poster Listing

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- Contralateral Hearing Loss After Vestibular Schwannoma Resection – *S Hasnie, MD*
- Cochlear Ossification after Vestibular Schwannoma Resection via the Middle Cranial Fossa Approach – *Scott B Shapiro, MD*
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- Pontocerebellar Angle Pathology: Analysis of the casuistry of a neurosurgical center in Chile – *Pablo Peña, MD*
- Porus Acusticus Obstruction from a Densely Adherent Loop of AICA During Retrosigmoid Resection of a Vestibular Schwannoma – *Jacob Kahane*
- Vision deterioration and hydrocephalus: rare presentations of vestibular schwannoma and evolution of management – *Marte van Keulen, MD*

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