Surgical Treatment of the Craniocervical Junction
A Course for 5th & 6th Year Neurosurgery Residents

Cleveland, Ohio

August 29 – 30, 2023

Hosted by:

University Hospitals
Neurological Institute

CASE WESTERN RESERVE UNIVERSITY
SCHOOL OF MEDICINE
Surgical Treatment of the Craniocervical Junction

Tuesday and Wednesday, August 29 – 30, 2023

Institute for Surgery and Innovation
University Hospitals Cleveland Medical Center
Cleveland, Ohio

Wolstein Auditorium
Case Western Reserve University
Cleveland, OH 44106

Laboratory Sessions – Surgical Training and Research Lab,
Biomedical Research Building, BRB B68

An educational activity provided by
UH Neurological Institute

Overview
This two-day course is designed for 5th and 6th year neurosurgery residents who seek an intensive, hands-on course in the surgical management of pathologies of the craniocervical junction. Pathologies to be addressed include vascular diseases, tumors, deformities and trauma. Anatomical considerations, patient indications for intervention, decision-making, and surgical approaches and techniques will be discussed. Faculty will demonstrate repair, fixation and reconstruction techniques using 3-D imaging, and state-of-the-art devices and instrumentation. Small class size and emphasis on the practicum maximizes faculty and resident interaction, and the opportunity for expert guidance and skill development.

Objectives
After attending this course, program participants will be able to:

- Describe the anatomical factors involved in the surgical management of pathologies of the craniocervical junction
- Discuss patient indications and the surgical decision making process for selecting appropriate approaches, techniques and devices
- Demonstrate skills in CT and MRI navigation and image guidance
- Demonstrate surgical approaches, techniques and occipitocervical fixation techniques on tissue models
- Plan intraoperative steps to prevent complications and maximize outcomes
COURSE FACULTY

Nicholas C. Bambakidis, MD, FAANS, FAHA
Course Director
Chair, Department of Neurological Surgery
Vice President and Director, University Hospitals Neurological Institute
The Harvey Huntington Brown Jr., Professor and Chair in Neurological Surgery
Professor of Neurological Surgery
Case Western Reserve University School of Medicine
Cleveland, Ohio

Gabriel A. Smith, M.D., FAANS
Course Co-Director
University Hospitals Spine Institute Director
Neurosurgery Section Chief, UH St. John and Southwest General Medical Centers
Complex Spine Surgery Fellowship Director
Assistant Professor of Neurological Surgery
Case Western Reserve University School of Medicine
Cleveland, OH

Cliff A. Megerian, MD FACS
Chief Executive Officer, University Hospitals Health System
Jane and Henry Meyer Chief Executive Officer Distinguished Chair
Professor, Otolaryngology-Head & Neck Surgery, CWRU School of Medicine
University Hospitals Cleveland Medical Center
Cleveland, OH

Sepideh Amin-Hanjani, MD, FAANS, FACS, FAHA
Vice Chair, Department of Neurological Surgery
Director, Cerebrovascular and Skull Base Surgery
University Hospitals Cleveland Medical Center
Cleveland, OH

Garni Barkhoudarian, MD, FAANS
Associate Professor of Neuroscience / Neurosurgery
Co-director: Pacific Pituitary Disorders Center
Director: Pacific Facial Pain Center
Director: Pacific Adult Hydrocephalus Center
Director: PNI/SJCI Multidisciplinary Neuroanatomy and Surgical Skills Laboratory
Pacific Neuroscience Institute at Providence Saint John's Health Center
Santa Monica, CA 90404

Mohamad Bydon, M.D.
Mayo Clinic
Professor, Department of Neurosurgery
PI, Mayo Clinic Neuro-Informatics Laboratory
Rochester, Minnesota

Dustin J. Donnelly, M.D.
Assistant Professor of Neurological Surgery
Case Western Reserve University School of Medicine
University Hospitals Neurological Institute
University Hospitals Cleveland Medical Center
Cleveland, OH

Yin C. Hu, M.D.
Associate Professor of Neurological Surgery
Case Western Reserve University School of Medicine
University Hospitals Neurological Institute
University Hospitals Cleveland Medical Center
Cleveland, OH
Manish Kasliwal, M.D.
Assistant Professor of Neurological Surgery
Case Western Reserve University School of Medicine
Director, Minimally Invasive Spine Surgery
University Hospitals Neurological Institute
University Hospitals Cleveland Medical Center
Cleveland, OH

Louis J. Kim, MD
Professor and Vice Chair of Neurological Surgery
University of Washington School of Medicine
Harborview Medical Center
Seattle, WA

Sarah E. Mowry, M.D., FACS
Associate Professor, Department of Otolaryngology/Head & Neck Surgery
Case Western Reserve University School of Medicine
Program Director, ENT – UH Cleveland Medical Center
University Hospitals Cleveland Medical Center
Cleveland, OH

Jeffrey P. Mullin, M.D., MBA
University at Buffalo Neurosurgery
Comprehensive Neuroscience Center
Buffalo, New York

Peter Nakaji, MD
Chair, Department of Neurosurgery at Banner –
University Medical Center Phoenix
Professor of Neurosurgery
Phoenix, AZ

Alejandro Rivas Campo, M.D.
Professor, Otolaryngology, Head & Neck Surgery, CWRU SOM
Professor, Neurological Surgery, CWRU SOM
Division Chief, Otology and Neurotology
Director, Cochlear Implant and Skull Base Programs
University Hospitals Cleveland Medical Center
Cleveland, OH

Maroun T. Semaan, M.D.
Clinical Associate Professor, Otolaryngology
Case Western Reserve University SOM
University Hospitals Cleveland Medical Center
Cleveland, OH

Michael P. Steinmetz, MD
Chairman, Department of Neurosurgery
The Cleveland Clinic Foundation
Professor and Chairman of Neurological Surgery
Cleveland Clinic Lerner College of Medicine of
Case Western Reserve University School of Medicine
Cleveland, OH

Martine van Bilsen, M.D.
Erasmus MC University Medical Center
Rotterdam, The Netherlands
and Radboud University Medical Center, Nijmegen, the Netherlands
Peter A. Weisskopf, M.D.
Mayo Clinic
Professor, Department of Otolaryngology
Phoenix, AZ

Joseph M. Zabramski, MD
Emeritus Professor of Neurological Surgery
Director of Clinical Neurosurgical Research
Barrow Neurological Institute & St. Joseph’s Hospital and Medical Center,
Phoenix, AZ
# Program Agenda (Tentative)

The program will consist of the following lectures and laboratory sessions.

## Tuesday, August 29, 2023

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 a.m.</td>
<td>Registration and Continental Breakfast</td>
</tr>
<tr>
<td>7:45 a.m.</td>
<td>Welcome and Introduction</td>
</tr>
<tr>
<td>8:00 a.m.</td>
<td>Biomechanics and Anatomy of the Axial Cervical Spine</td>
</tr>
<tr>
<td></td>
<td>Michael Steinmetz, M.D.</td>
</tr>
<tr>
<td>8:30 a.m.</td>
<td>Fixation Techniques of the Occiput, Cervical, and Upper Thoracic Spine</td>
</tr>
<tr>
<td></td>
<td>Gabriel A. Smith, M.D.</td>
</tr>
<tr>
<td>9:00 a.m.</td>
<td>Degenerative Spinal Disease at the Craniovertebral Junction</td>
</tr>
<tr>
<td></td>
<td>Speaker to be determined</td>
</tr>
<tr>
<td>9:30 a.m.</td>
<td>Treatment of Traumatic Injuries at the Craniovertebral Junction</td>
</tr>
<tr>
<td></td>
<td>Dustin Donnelly, M.D.</td>
</tr>
<tr>
<td>10:00 a.m.</td>
<td>Treatment Options for Oncologic Disease at the Occipitocervical junction</td>
</tr>
<tr>
<td></td>
<td>Mohammed Bydon, M.D.</td>
</tr>
<tr>
<td>10:30 a.m. – 10:45 a.m.</td>
<td>Break</td>
</tr>
<tr>
<td>10:45 a.m. – 11:15 a.m.</td>
<td>Selected Cases and Discussion</td>
</tr>
<tr>
<td></td>
<td>Martine van Bilsen, M.D.</td>
</tr>
<tr>
<td>11:15 a.m. – 11:45 a.m.</td>
<td>Selected Cases and Discussion</td>
</tr>
<tr>
<td></td>
<td>Manish Kasliwal, M.D.</td>
</tr>
<tr>
<td>11:45 a.m. – 12:30 p.m.</td>
<td>Lunch and migrate to laboratory</td>
</tr>
<tr>
<td>12:30 p.m. – 3:30 p.m.</td>
<td><strong>Laboratory Session</strong> – Surgical Training and Research Lab, Biomedical Research Building, BRB B68</td>
</tr>
<tr>
<td></td>
<td>Occipitocervical fixation and subaxial fixation/upper thoracic spinal fixation with Lab Faculty</td>
</tr>
<tr>
<td>3:45 p.m.</td>
<td>Anatomy of the Craniovertebral Skull Base</td>
</tr>
<tr>
<td></td>
<td>Joseph Zabramski, M.D.</td>
</tr>
<tr>
<td>4:30 p.m.</td>
<td>Posterolateral Skull Base Approaches – the Neurosurgical Perspective</td>
</tr>
<tr>
<td></td>
<td>Nicholas C. Bambakidis, M.D.</td>
</tr>
<tr>
<td>6:30 p.m.</td>
<td>Course Dinner – Venue TBD</td>
</tr>
<tr>
<td></td>
<td>Transportation leaves hotel at 6:00 p.m.</td>
</tr>
</tbody>
</table>

## Wednesday, August 30, 2023

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 a.m.</td>
<td>Continental Breakfast</td>
</tr>
<tr>
<td>8:15 a.m.</td>
<td>Surgical Treatment of Posterior Vascular Malformations</td>
</tr>
<tr>
<td></td>
<td>Peter Nakaji, M.D.</td>
</tr>
<tr>
<td>8:45 a.m.</td>
<td>Multimodality Treatment of Posterior Circulation Aneurysms</td>
</tr>
<tr>
<td></td>
<td>Louis J. Kim, M.D.</td>
</tr>
<tr>
<td>9:15 a.m.</td>
<td>Revascularization of the Posterior Circulation</td>
</tr>
<tr>
<td></td>
<td>Sepideh Amin-Hanjani, M.D.</td>
</tr>
<tr>
<td>9:45 a.m.</td>
<td>Endoscopic Approaches to the Posterior Skull Base</td>
</tr>
<tr>
<td></td>
<td>Garni Barkhoudarian, M.D.</td>
</tr>
<tr>
<td>Time</td>
<td>Event</td>
</tr>
<tr>
<td>--------------</td>
<td>------------------------------------------------------------</td>
</tr>
<tr>
<td>10:30 a.m.</td>
<td>Transpetrosal approaches – The ENT Perspective</td>
</tr>
<tr>
<td></td>
<td>Cliff A. Megerian, M.D., Alejandro Rivas Campo, M.D., Sarah</td>
</tr>
<tr>
<td></td>
<td>Mowry, M.D., Maroun Semaan, M.D., Peter Weisskopf, M.D.</td>
</tr>
<tr>
<td>12:00 noon</td>
<td>Lunch</td>
</tr>
<tr>
<td>12:30 – 5:00 p.m.</td>
<td>Laboratory Session - Surgical Training and Research Lab,</td>
</tr>
<tr>
<td></td>
<td>Biomedical Research Building, BRB B68</td>
</tr>
<tr>
<td></td>
<td>12:30 – 3:00 p.m.: Retrosigmoid Translabyrinthine/Transpetrosal</td>
</tr>
<tr>
<td></td>
<td>3:00 – 5:00 p.m.: Far Lateral Approach and its Variations</td>
</tr>
<tr>
<td>5:00 p.m.</td>
<td>Course adjourns and departures</td>
</tr>
</tbody>
</table>
Accommodations:

Courtyard by Marriott – University Circle
2021 Cornell Road
Cleveland, OH 44106
216-791-5678

The hotel is within walking distance of the conference venue. For those who drive, valet parking is $20 for overnight guests.

Acknowledgments

This activity will be supported by grants from industry. We hope you enjoy this educational opportunity provided by University Hospitals Cleveland Medical Center.

Acceptance of funding in support of this symposium does not constitute endorsement of any product or manufacturer.

The commitment to exceptional patient care begins with revolutionary discovery. University Hospitals Cleveland Medical Center is the primary affiliate of Case Western Reserve University School of Medicine, a national leader in medical research and education and consistently ranked among the top research medical schools in the country by U.S. News & World Report. Through their faculty appointments at Case Western Reserve University School of Medicine, physicians at University Hospitals Cleveland Medical Center are advancing medical care through innovative research and discovery that bring the latest treatment options to patients.

Resident & Fellow Educational Grant Policy and Procedure

The policy and procedure listed below describes who is eligible to participate in this two day course, what the grant will cover, and the steps to follow to apply for the course.

Fifth & Sixth Year Neurosurgery Residents who are interested in the surgical management of pathologies involving the craniocervical junction may complete the on-line application form on the CNS website to request an educational grant to attend this course.

The educational grant will cover the following for 18 neurosurgery residents/fellows:

- Tuition
- Lodging for 2 nights, room & tax only. Two residents/fellows assigned per room. If attendees prefer a private room due to COVID-19, there will be a charge for the cost of one room night ($169.00 plus tax).
- Roundtrip airfare (nonrefundable coach) UHCMC is unable to pay for international travel.
- Meals & refreshment breaks at the course.

The educational grant will not cover:

- Incidental, miscellaneous expenses at the hotel. A credit card will be required at hotel check-in.
- Transportation to and from the home city airport and between the Cleveland airport and hotel.
- Food & beverage expenses (outside the course agenda).