7th Intraoperative Imaging Society Meeting

Wednesday, March 13, 2019

10:00-11:00 am  IOIS Board meeting

10:00  Registration

12:00 pm  Welcome, Opening Remarks and Introduction to Practical Course
           Daniel Orringer, MD

**Practical Course:**

1:00-1:20  Didactic Session 1: Intraoperative Ultrasound
           Francesco Prada, MD and Geirmund Unsgård, MD

1:20-1:40  Case presentations, hands on session and Q&A

1:40-1:45  Discussion/Break

1:45-2:05  Didactic Session 2: Fluorescence Guided Surgery - 5ALA and Fluorescein
           Constantinos Hadjipanayis, MD and Jeff Bruce, MD

2:05-2:25  Case presentations, hands on session and Q&A

2:25-2:30  Discussion/Break

2:30-2:50  Didactic Session 3: Stimulated Raman Histology
           Sandra Camelo-Piragua, MD and Daniel Orringer, MD

2:50-3:10  Case presentations, hands on session and Q&A

3:10-3:15  Discussion/Break

3:15-3:35  Didactic Session 4: Laser Interstitial Thermal Therapy
           Dan Curry, MD and Veronica Chiang, MD

3:35-3:55  Case presentations, hands on session and Q&A

3:55-4:00  Discussion/Break

4:00-4:20  Didactic Session 5: Use of Tubular Retractor Tractography and fMRI for Presurgical Planning/Intraop Functional Imaging
           Michael E. Sughrue, MD and Mitesh Shah, MD

4:20-4:40  Case presentations, hands on session and Q&A

5:00-7:00 pm  Welcome Reception

Thursday, March 14, 2019

8:00-8:30 am  Presidential Address and Opening Remarks
               Michael Chicoine, MD

**Session 1:**  The Application of Intraoperative MRI to Glioma Surgery
               Moderators:  Christopher Nimsky, MD and Moshe Hadani, MD

8:30-8:45  TBD

8:45-9:00  Glioma Surgery in Smart Cyber Operating Theater Realized Through Internet of Things (IoT)
           Yoshihiro Muragaki, MD, PhD

9:00-9:15  Utility of iMRI for Non-Enhancing Low-Grade Gliomas:
           Why there are Implications also for Postoperative Surveillance
           Moritz Scherer, MD

9:15-9:30  Intraoperative BOLD Imaging
           Oliver Bozinov, MD

9:30-10:00  iMRI vs 5-ALA
            Constantin Roder, MD

10:00-10:15  iMRI for Gliomas of Eloquent Cortex
             Marcos Malduan, MD
10:15-10:25 Abstract Talk: A multi-institutional analysis of the impact of intraoperative MRI and other factors on outcomes after surgery for newly diagnosed grade II gliomas
A Yahanda

10:25-10:35 Abstract Talk: Volumetric Analysis of Intraoperative MRI Guided Surgery in Low-Grade Gliomas: Outcome assessment in a retrospective multicenter cohort by the German Study-Group for Intraoperative MRI
M Scherer

10:35-10:45 Abstract Talk: Timing of Postoperative MRI in Low Grade Glioma Surgery: Increasing Accuracy by Ultra-Early Imaging
Jan Coburger, MD

10:45-11:00 Break

11:00-11:30 Image Guided Therapy Program at MD Anderson
Introduction: Jeffrey Weinberg, MD
John Hazle, MD

11:30-11:40 Question and Answer Session

12:00-1:00 pm Lunch (provided)

1:00-1:30 IMAGING TOPIC
Introduction: Jeffrey Weinberg, MD
Donald Pettit, PhD - NASA Representative

1:30-1:40 Question and Answer Session

1:40-2:00 Break

Session 2: Advanced Imaging Modalities for Presurgical Planning
Moderators: Richard Bouchard, MD and Oliver Bozinov, MD

2:00-2:15 PET in Glioma and Meningioma Surgery/Statistics
Niklas Thon, MD

2:15-2:30 Advanced Ultrasonography
Richard Bouchard, MD

2:30-2:45 White Matter Tractography for Neurosurgical Planning
Lauren O’Donnell, MD

2:45-3:00 Solutions and Challenges for Using fMRI to Plan Neurosurgical Procedures in Eloquent Locations
Alexandra Golby, MD

3:00-3:15 Resting State and Surgical Planning for GBM in Intraoperative MRI Environment
Albert Kim, MD, PhD

3:15-3:25 Abstract Talk: Toward Real Time Brain Shift Prediction to Update Preoperative MRI During Brain Surgery
A Lesage, MD

3:25-3:35 Abstract Talk: Intraoperative Neurosurgical White Matter Imaging—Evaluation of a Novel MRI Sequence
C Elliott

3:35-3:45 Abstract Talk: Seed-based resting-state fMRI analysis for preoperative language mapping: A data-driven approach for guiding the seed selection
H Liu

3:45-3:55 Abstract Talk: Intraoperative identification of white matter tracts with diffusion tensor imaging with 1.5T iMRI
P Sylvester

4:10-4:30 Break

Session 3: Interpretation of Studies Evaluating Intraoperative Imaging Techniques
Moderators: Marcus Maidaun, MD and Zvi Cohen, MD

4:30-4:45 An Evidence-Based Approach to the Application Intraoperative Imaging in Brain Tumor Surgery
Colin Watts, MD
Application of Intraoperative Imaging Techniques in the Molecular Era of Glioma Diagnosis
Christian Senft, MD

Twenty Year Experience Using Low Field iMRI for Intra-Axial Tumor Resection
Zvi Cohen, MD

iMRI Applications in Children
John Honeycutt, MD

Abstract Talk: Intraoperative MRI versus 5-ALA in Glioblastoma Resection: A Systematic Review and Meta-Analysis
D Golub, MD

Abstract Talk: Intraoperative MRI in Transsphenoidal Pituitary Surgery: 10 years’ Experience with iMRT Assisted Resection of Pituitary Adenomas
A Pala, MD

Friday, March 15, 2019

Opening Remarks and Introduction of Keynote Speaker
Daniel Orringer, MD

Keynote:
Optical Techniques to Improving Outcomes in Neurosurgery and the Development of 5-ALA and Future Directions for 5-ALA and FGS
Walter Stummer, MD

Question and Answer Session

Fluorescence Guided Surgery and Optical Imaging Techniques
Moderators: Daniel Orringer, MD and Walter Stummer, MD

The Application of Handheld Confocal Microscopy in Brain Tumor Surgery
Peter Nakaji, MD

Pushing Limits of Fluorescence-Guided Surgery
Linton Evans, MD

FT-IR
Mattias Kirsch, MD

Near Infrared Imaging for Brain tumor resection
John Y. K. Lee, MD

Stimulated Raman Histology
Todd Hollon, MD

2HG Spectroscopy
Randy Jensen, MD

Fluorescence Guided Surgery
Costas Hadjipanayis, MD

Abstract Talk: Stimulated Raman Histology for the Rapid Intraoperative Diagnosis of Sellar Region Tumors
T. Hollon, MD

Abstract Talk: Role of photodynamic therapy using talaporfin sodium and a semiconductor laser in patients with newly diagnosed glioblastoma
S Tsuzuki

Abstract Talk: The additional value of 11C-methionine positron emission tomography and perfusion weighted MRI in fluorescence and intraoperative MRI-guided resection of glioblastoma
A Pala
11:20-11:35  Break

11:35-12:05  Keynote
**Mass Spectrometry for Cancer Diagnosis and Detection**
Introduction: Daniel Orringer, MD
Livia Eberlin, PhD

12:05-12:15 pm  **Question and Answer Session**

12:15-1:20  Lunch (provided)

**Session 5:**  Intraoperative Ultrasound, Focused Ultrasound, Surgical Robotics, and other Modalities
Moderators: Richard Bucholz, MD and Daniel Orringer, MD

1:20-1:35  **MR Guided Applications of High-Intensity Focused Ultrasound for Brain Tumor Ablation**
Julie Pititsis, MD

1:35-1:50  **LITT-Emerging Applications**
Eric Leuthardt, MD

1:50-2:05  **Applications of Radiogenomics to Neurosurgical Practice**
Rivka Colen, MD

2:05-2:20  **Surgical Robotics**
Garnette Sutherland, MD

2:20-2:35  **Surgical Robotics/SCOT**
Richard Bucholz, MD

2:35-2:55  Break

3:00-3:15  **Intraoperative CT as a Registration Device**
Christopher Nimsky, MD

3:15-3:30  **iUS**
Francesco Prada, MD

3:30-3:45  **DBS**
Richard Bucholz, MD

3:45-4:00  **Surgical VR Concepts, 3D Visualization and/or Open Abstracts**
John Golfinos, MD

4:00-4:10  **Abstract Talk: Brain Atlas (BA) and Virtual Reality (VR) Improves Analysis of Complex Brain and Skull Base Tumors**
V Kumar

4:10-4:20  **Abstract Talk: How to Improve the Benefit of Ultrasound in Intraoperative Imaging**
G Unsgård, MD

4:20-4:30  **Abstract Talk: Intraoperative MRI for minimally invasive resection of deep-seated brain tumors via tubular retractors**
J Sun

4:30-4:40  **Abstract Talk: First Results Using a Highly Mobile Computed Tomography for Cranial Surgery**
D Sarment, MD

6:30-9:30 pm  George Ranch Dinner Event

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**Saturday, March 16, 2019**

8:00-8:05 am  **Opening Remarks**
Jeff Weinberg

**Session 6:**  LITT and other Advanced Therapeutics
Moderators: John Honeycutt, MD and Michael Schulder, MD

8:05-8:20  **Review of Published Evidence for LITT**
Michael Schulder, MD
8:20-8:35 LITT-Radiation Necrosis
    Veronica Chiang, MD

8:35-8:50 LITT-Brain Tumor- LITT for Radiation Necrosis in the Setting of Metastatic Disease
    Ian Lee, MD

8:50-9:05 LITT for Epilepsy
    Dan Curry, MD

9:05-9:20 LITT-Glioma
    Gene Barnett, MD

9:20-9:35 Applications of Focused Ultrasound in Neurosurgery
    Ying Meng, MD

    R Vega

9:45-10:00 Break

Session 7: Neuro Anesthesia, Robotics, Functional Neurosurgery, Cerebrovascular Imaging & Other Advances in the iMRI Environment
    Moderators: Richard Bucholz, MD and Rene Bernays, MD

10:00-10:15 Delivering Anesthesia in the Setting of iMRI Environment
    Shreyas Bhasvar, MD

10:15-10:30 Delivering Anesthesia in the Setting of the iMRI Environment
    Sergio Bergese, MD

10:30-10:45 Anesthetic Considerations for Awake Craniotomies in iMRI Environment
    David Ferson, MD

10:45-11:00 ROSA Robot
    Nitin Tandon, MD

11:00-11:15 The Use of Image Guidance in Functional Neurosurgery
    Paul Larson, MD

11:15-11:30 Intraoperative Vascular Imaging
    Colin Derdeyn, MD

11:30-11:45 Indications for Use; Pitfalls; Utility of Extent of Resection
    Jan Coburger, MD

11:45-12:00 Augmented Reality
    Osamah Choudhry

12:00-1:00pm Box Lunch

1:00-1:55pm Rapid Fire Abstract Session
    Moderators: Jeff Weinberg, MD and Daniel Orringer, MD

1:00-1:05 Abstract Talk: Prognostic Prediction of Hypertensive Intracerebral Hemorrhage Using CT Radiomics and Machine Learning
    X Xu, MD

1:05-1:10 Abstract Talk: Prospective Analysis of Intraoperative Angiography in a Hybrid Operating Room Setup in the Treatment of Cerebrovascular Lesions: Comparison to Indocyanine Green Videoangiography and Analysis of Efficacy, Workflow and Cost
    G Durner, MD

1:10-1:15 Abstract Talk: Application of Augmented Reality (AR) in Ventricular Puncture
    M Hlaváč, MD

1:15-1:20 Abstract Talk: Estimated Maps of Proliferative Activity Present Alternative Targets For Initial Glioma Biopsy
    E Gates

1:20-1:25 Abstract Talk: Dual-Utility Intraoperative MRI: Experience of the First 100 Patients
    O Sakowitz
1:25-1:30  Abstract Talk: Establishment of a multi-center intraoperative MRI database
P Sylvester

1:30-1:35  Abstract Talk: Intraoperative MRI assisted neuro-port surgery for the resection of cerebral intraparenchymal cavernous malformation
Zhao

1:35-1:40  Abstract Talk: Implementation of Fluorescence-Guided Surgery, A Single Center Experience and Model of Logistical Workflow for Future Adopters of 5-Aminolevulinic Acid
S Haider

1:40-1:45  Abstract Talk: Alterations in functional connectomics associated with neurocognitive changes following brain tumor resection
K Noll

1:45-1:50  Abstract Talk: Resting state fMRI improves localization of eloquent speech and motor areas in glioma patients
V Kumar

1:50-1:55  Abstract Talk: Laser Interstitial Thermal Therapy and Intraoperative MR Thermography in the setting of Aneurysm Clips
M Prablek

1:55-2:00  Award Presentation for Top Abstract Presentations & Meeting Wrap-up

2:00pm  Adjourn