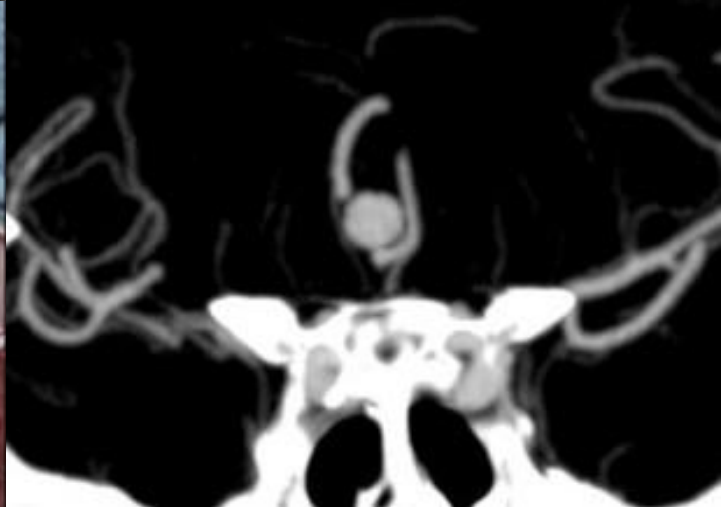
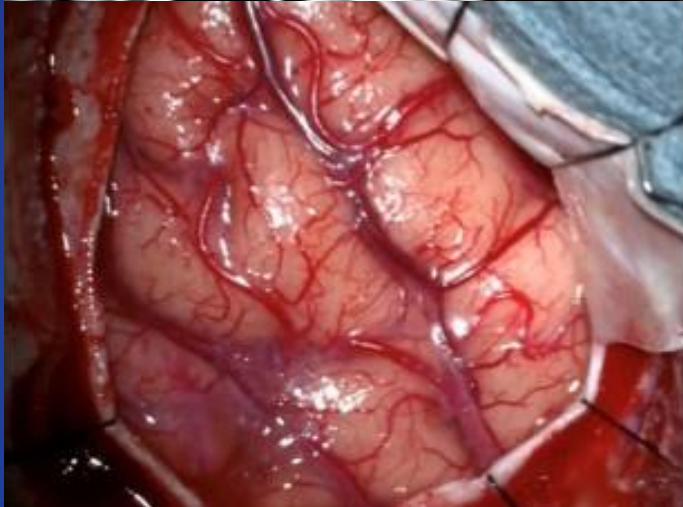
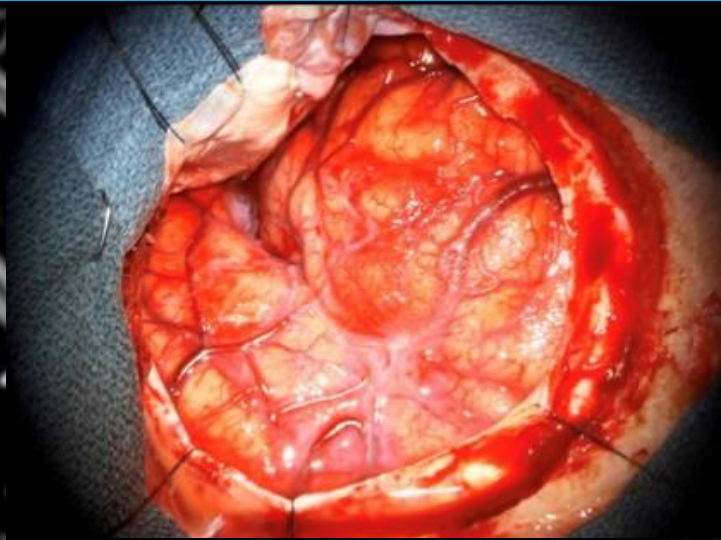
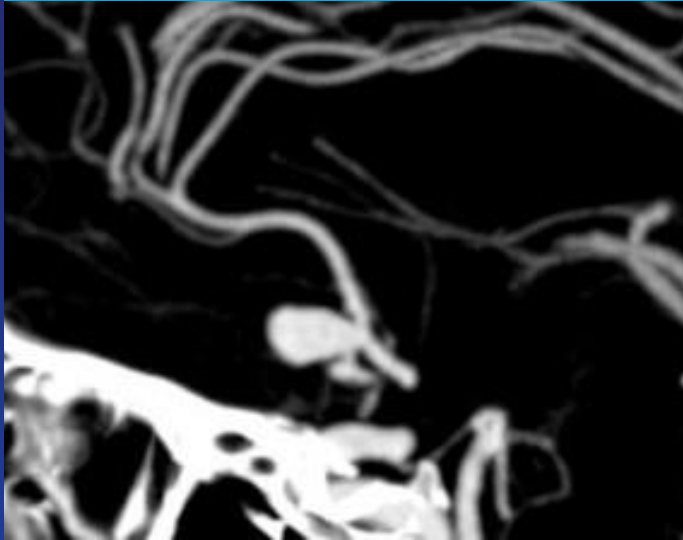


Cerebrovascular Surgery International Course Virtual Program



Monday, September 12, 2022 - Friday, September 16, 2022

The Temerty Advanced Surgical Education and Simulation Centre

222 St. Patrick Street, Toronto Ontario Canada

Program Co-Chairs: Dr. Ivan Radovanovic, Dr. Joao Paulo Almeida & Dr. Hugo Andrade

Course Overview

Cerebrovascular diseases represent a significant cause of morbidity and mortality in our modern society. Ischemic cerebrovascular disease, following cancer and ischemic heart disease, represent one of the most common causes of death in our society (1, 2). Additionally, hemorrhagic strokes, secondary to hypertension and/or ruptures of intracranial aneurysms, arteriovenous malformations (AVMs) or cavernomas are associated with high rates of morbidity and mortality, leading to impacts on quality of life, loss of productivity, and increased costs in health care.

There have been major developments in the care of cerebrovascular diseases in the last 20 years. New technology and better understanding of the disease process has led to a revolution in the care of ischemic and hemorrhagic diseases of the brain and spine. Endovascular surgery / Interventional Neuroradiology has shifted the paradigm of the management of cerebrovascular diseases (3, 4). Currently, most aneurysms and dural fistulas are good candidates for endovascular management; additionally, endovascular thrombectomy for stroke management has revolutionized the treatment of patients with ischemic strokes. Another important treatment modality, radiosurgery, has advanced and represents a useful option in the management of intracranial AVMs (5), and therefore, should be incorporated in the armamentarium of modern cerebrovascular surgeons.

Surgery has also advanced and adapted to play an increasing role in the management of complex cases, in combination with endovascular and radiosurgery. Surgery has been improved with the better understanding of microsurgical anatomy (6), development of new minimally invasive techniques (7,8), introduction of modern microscopes, new methods to intraoperatively assess flow vascular flow, further development of bypass techniques and new tools to be applied for decision-making process in the selection of approaches.

Training of surgeons to properly perform open cerebrovascular surgery is one of the most significant challenges in neurosurgery today. Although the expansion of other modalities has been beneficial for patient care, open surgery has been progressively reserved for more complex cases, which are not suitable for less invasive modalities, and therefore surgical volume has decreased in most centers which has impacted the training of future surgeons and also the maintenance of expertise in cerebrovascular surgery. There is a growing need for new modalities of training in this surgical field and the CSIC is designed with the goal to provide such an opportunity.

The coordinators of the course have experience with development of surgical education courses, well exemplified by the traditional Lougheed Neurosurgical Course, which takes place in Toronto twice a year. The CSIC is subset to this course, and draws specific focuses on theoretical and hands-on training modalities directed to cerebrovascular surgery.

This course will take place at the Temerty Advanced Surgical Education and Simulation Centre at the Michener Institute of Education at the University Health Network (Michener). As Canada's first school embedded within a hospital, The Temerty Centre supports

surgical and medical professionals in the design, development and execution of forward thinking education by collaborating with experts in surgical education, adult education, research and technology.

During this five day course, attendees will be exposed to various training in open cerebrovascular surgery, and exposure to endovascular modalities and radiosurgery. Faculty and participants will discuss how these modalities can be incorporated in the armamentarium of the modern cerebrovascular surgeon. The CSIC is intended to provide a blended approach to learning, making this course available to surgeons worldwide, with offerings both in-person and virtually. The Temerty Centre boasts expertise in online programming, interprofessional education, personalized learning, international education, and conference planning. In addition, the Centre supports in the issuance of Maintenance of Certification (MOC) credits (i.e. professional development credits for physicians) as a Royal College Accredited Provider of Continuing Professional Development.

Target Audience

The course's target audience will be clinical fellows and early career surgeons subspecializing in cerebrovascular surgery.

Audience Size

The Cerebrovascular Surgery International Course will host 16 participants in-person and up to 100 participants virtually.

Learning Objectives

Overall Course Learning Objectives

At the end of the course, participants will be able to:

1. Make evidence-based recommendations for the management of cerebrovascular diseases including treatment selection of surgery, endovascular, radiosurgery or conservative management.
2. Combine clinical, anatomical, and radiological data to formulate a surgical treatment plan for specific case-based scenarios in cerebrovascular surgery.
3. Apply technical nuances and surgical techniques in a hands-on simulated wet lab to enhance workflow, and address both perceived and unperceived intra-operative challenges.

International Faculty

Dr. Juha Hernesniemi

Dr. Luca Regli

Dr. Michael Lawton

Local Faculty and Organizing Committee

Dr. Ashish Kumar

Neurosurgery

Dr. Hugo Andrade

Neurosurgery

Dr. Joanna Schaafsma

Neurosurgery

Dr. Julien Spears

Neurosurgery

Dr. Leodante da Costa

Cerebrovascular and Endovascular Neurosurgery / Spine Surgery

Dr. Michael Schwartz

Neurosurgery

Dr. Patrick Nicholson

Neurosurgery

Dr. Ronit Agid

Diagnostic & Interventional Neuroradiologist

Dr. Timo Krings

Diagnostic and Interventional Neuroradiologist

Dr. Vitor Pereira

Neurosurgery

Course Agenda

Cerebrovascular Surgery International Course Monday, September 12, 2022	
Date/Time	Surgical and Angiographic Anatomy
08:00 – 08:15	Opening Remarks
08:15 – 09:00	Sulci and Gyri Dr. Joao Paulo Almeida
09:00 – 09:45	Basal Cisterns and Arteries and Veins of the Brain Dr. Joao Paulo Almeida
10:15 – 11:00	Angiographic Anatomy: Arteries and Veins Dr. Patrick Nicholson
11:00 – 12:00	Surgical Approaches: Pterional / Pretemporal / OZ Approaches Dr. Joao Paulo Almeida
12:00 – 13:00	Ergonomics in Neurosurgery Dr. Juha Hernesniemi
13:00 – 13:45	Surgical Approaches: Minipterional Dr. Hugo Andrade
13:45 – 14:30	Surgical Approaches: LSO Dr. Juha Hernesniemi
15:00 – 15:45	Surgical Approaches: Eyebrow Dr. Rabi Tawk
15:45 – 16:30	Surgical Approaches: Endoscopic Pterional Dr. Ivan Radovanovic
16:30 – 16:45	Closing Remarks

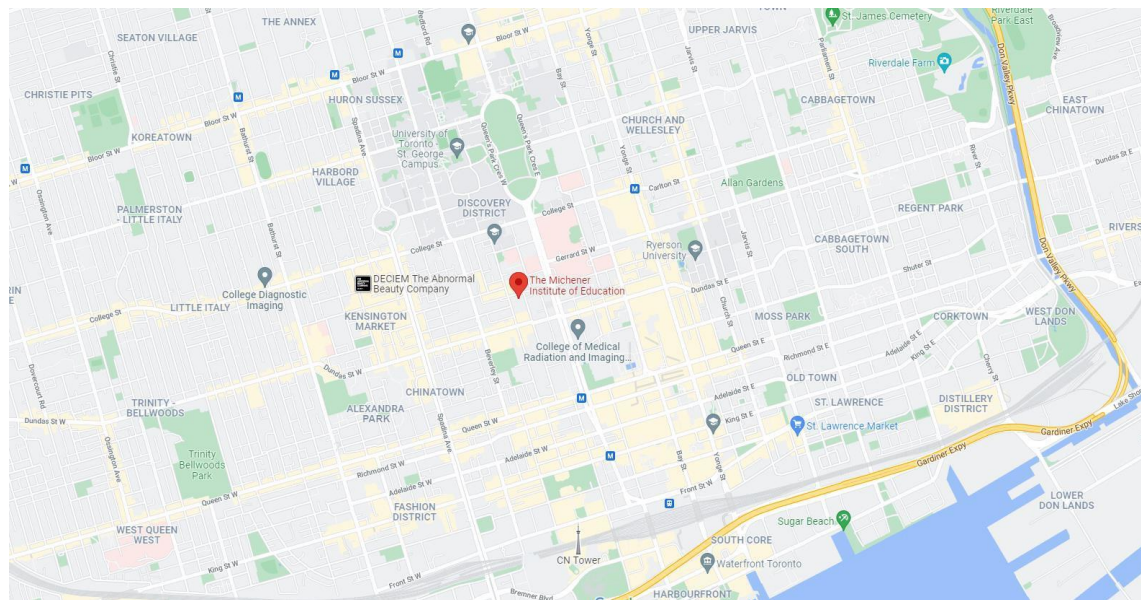
Cerebrovascular Surgery International Course Tuesday, September 13, 2022	
Date/Time	Aneurysm
08:00 – 09:00	Surgical Strategies and Results: Aneurysms Dr. Luca Regli
12:00 – 13:00	Case Discussion/Videos Dr. Julien Spears
13:00 – 14:00	Endovascular Treatment of Intracranial Aneurysms Dr. Vitor Pereira
Cerebrovascular Surgery International Course Wednesday, September 14, 2022	
Date/Time	Revascularization: Grandrounds Bypass for Aneurysms
07:00 – 08:00	Grandrounds with Dr. Michael Lawton
08:00 – 09:00	Endarterectomy / Carotid Stenting: Indications and Results Dr. Leodante da Costa
11:00 – 12:00	Cerebral Revascularization Dr. Michael Lawton
12:00 – 13:00	Case Discussion / Video Session

Cerebrovascular Surgery International Course Thursday, September 15, 2022	
Date/Time	AVM
08:00 – 09:00	Surgical Strategies and Results: AVMs Dr. Michael Lawton
09:00 – 10:00	Endovascular Treatment of AVMs Dr. Timo Krings
10:30 – 11:30	Radiosurgical Treatment of AVMs Dr. Michael Schwartz
11:30 – 12:30	Lunch + Case Discussions/Videos
13:00 – 14:00	Management of Dura Arteriovenous Fistulas (DAVF) Dr. Timo Krings

Cerebrovascular Surgery International Course Friday, September 16, 2022	
Date/Time	Stroke / Cavernoma
08:00 – 09:00	Management of Ischemic Stroke Dr. Joanna Schaafsma
09:00 – 10:00	Management of Intracerebral Hemorrhages Dr. Rabi Tawk
10:30 – 11:15	Surgical Strategies and Results: Supratentorial Cavernomas Dr. Ivan Radovanovic
11:15 – 12:00	Surgical Strategies and Results: Infratentorial Cavernomas Dr. Ivan Radovanovic
12:00 – 13:00	Case Discussions/Videos

Location

We are pleased to host the Cerebrovascular Surgery International Course at the Temerty Advanced Surgical Education and Simulation Centre located within the Michener Institute of Education at UHN in the heart of Downtown Toronto.



**222 St. Patrick Street, Level 12
Toronto, ON Canada**

COVID-19 Protocols

This course has been designed to ensure the safety of all participants with appropriate IPAC practices given the current state of the pandemic. The Scientific Planning Committee will assess COVID-19 protocols and regulations as they change leading up to the launch of this course. All participants will be updated on any changes to the delivery of this course which may include postponement. Please keep us updated on any changes to your email address so we can keep in touch with you.

References

1. GBD 2016 Stroke Collaborators. Global, regional, and national burden of stroke, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016. *Lancet Neurol*. 2019 May;18(5):439-458. doi: 10.1016/S1474-4422(19)30034-1
2. Guzik A, Bushnell C. Stroke Epidemiology and Risk Factor Management. *Continuum (Minneap Minn)*. 2017 Feb;23(1, Cerebrovascular Disease):15-39.
3. Spetzler RF, McDougall CG, Zabramski JM, Albuquerque FC, Hills NK, Nakaji P, Karis JP, Wallace RC. Ten-year analysis of saccular aneurysms in the Barrow Ruptured Aneurysm Trial. *J Neurosurg*. 2019 Mar 8;132(3):771-776.
4. Luther E, McCarthy DJ, Brunet MC, Sur S, Chen SH, Sheinberg D, Hasan D, Jabbour P, Yavagal DR, Peterson EC, Starke RM. Treatment and diagnosis of cerebral aneurysms in the post-International Subarachnoid Aneurysm Trial (ISAT) era: trends and outcomes. *J Neurointerv Surg*. 2020 Jul;12(7):682-687. doi: 10.1136/neurintsurg-2019-015418.
5. Taeshineetanakul P, Krings T, Geibprasert S, Menezes R, Agid R, Terbrugge KG, Schwartz ML. Angioarchitecture determines obliteration rate after radiosurgery in brain arteriovenous malformations. *Neurosurgery*. 2012 Dec;71(6):1071-8
6. Almeida JP, Reghin Neto M, Chaddad Neto F, DE Oliveira E. Anatomical considerations in the treatment of intracranial aneurysms. *J Neurosurg Sci*. 2016 Mar;60(1):27-43.
7. Wong JH, Tymianski R, Radovanovic I, Tymianski M. Minimally Invasive Microsurgery for Cerebral Aneurysms. *Stroke*. 2015 Sep;46(9):2699-706.
8. Andrade-Barazarte H, Patel K, Turel MK, Doglietto F, Agur A, Gentili F, Tymianski R, Mendes Pereira V, Tymianski M, Radovanovic I. The endoscopic transpterial port approach: anatomy, technique, and initial clinical experience. *J Neurosurg*. 2019 Feb 22;132(3):884-894.