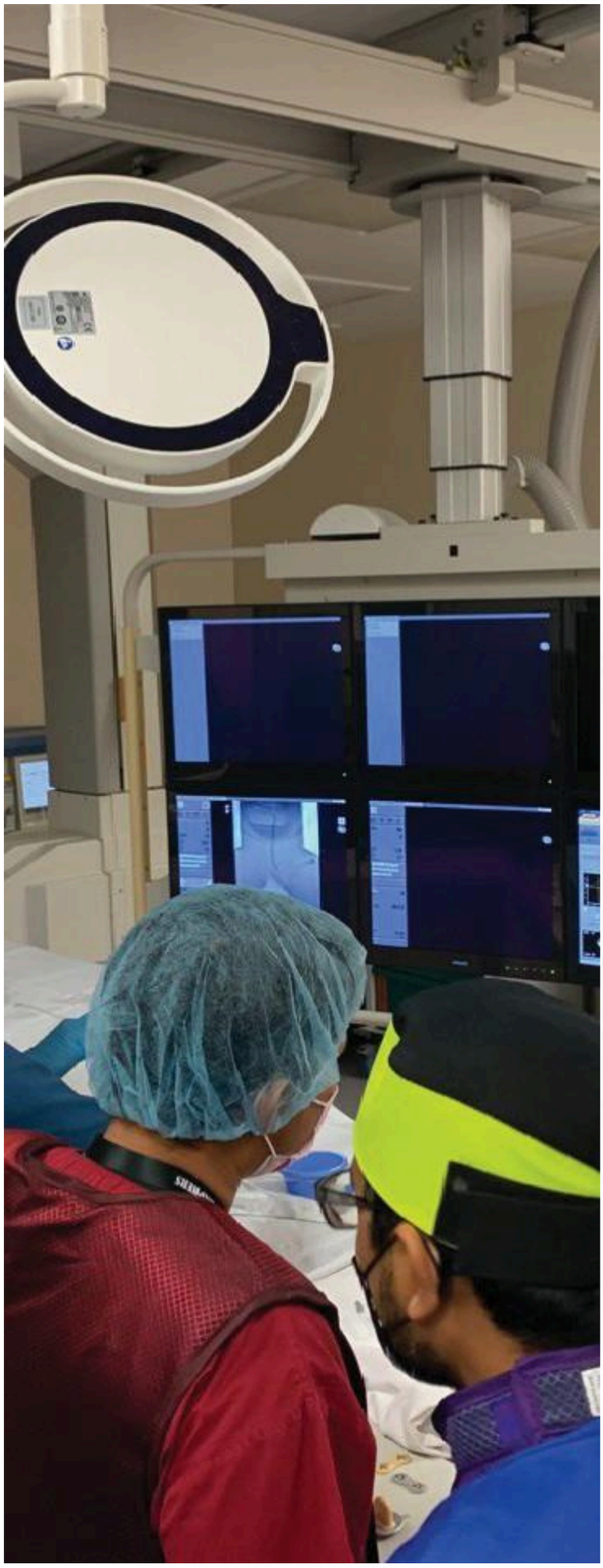
TWIN

TEACHING WORKSHOP IN NEUROINTERVENTION

Modules 2025



TWIN is specially designed to give realistic high-fidelity exposure in neurointerventional procedures to the operator and team members, without actual patients. The modules are tailored towards the clinical need, using the latest technology of high-fidelity patient-specific 3d models with clinically relevant pathology performed in a real environment. This will enhance the understanding of neurointerventional procedures workflow, tactile experiences and treatment strategies. TWIN also incorporate case-based discussion to further illustrate the techniques, patient selection and treatment strategies.

TWIN modules high fidelity workshop was designed by leading neurointerventional radiologist, Prof Ahmad Sobri Muda.

Stroke Thrombectomy Module

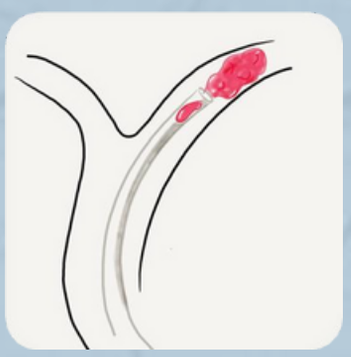
Designed to give participants exposure and insights to stroke thrombectomy. This stroke thrombectomy module touches the basic principles, procedural management, devices and advanced techniques. The high-fidelity simulation within actual environment in the real angiography suite using real contrast, real devices, and real angiographic protocols will give a more meaningful rehearsal and training to prepare for actual stroke thrombectomy clinical case. This module is useful for device companies to showcase their thrombectomy devices in real environment, stroke thrombectomy team and main operator who shall perform the stroke thrombectomy procedure.

In this module candidates will be exposed to short lectures: or case discussion:

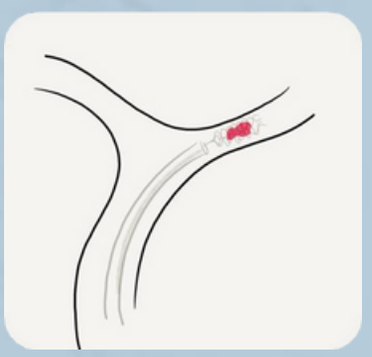
- What is stroke thrombectomy.
- Patient selection for Acute Stroke Imaging and NIHSS.
- Basic devices and instrument in stroke thrombectomy.
- Workflow for stroke thrombectomy set-up and procedure.
- Various clot retrieval techniques and revascularization techniques.

Large vessel occlusion

Post - thrombectomy



Aspiration Technique



Stent Retrieve Technique

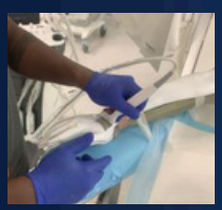
Carotid and Cerebral Angiogram Module

Designed by leading experts in the field with experience in stroke intervention and neurovascular image-guided therapies to give participants exposure and insights into cerebral angiograms. Cerebral angiogram module will touch on the basic principles, procedural management, devices and catheterization techniques. It will include high-fidelity simulation within the actual environment including in the real angiography suit using standard protocols and setting.

In this module, candidates will be exposed to:

- What is a cerebral angiogram. Basic devices and catheter in cerebral angiogram. Imaging technologies and acquisition protocol for cerebral angiogram.
- Workflow for femoral and radial access.
- Catheterization and manipulation techniques.

Radial & Femoral Access



Scan procedure to identify the artery

Radial image under angiogram

Femoral puncture access

Femoral image under angiogram

Endovascular Simulator (EVsim)

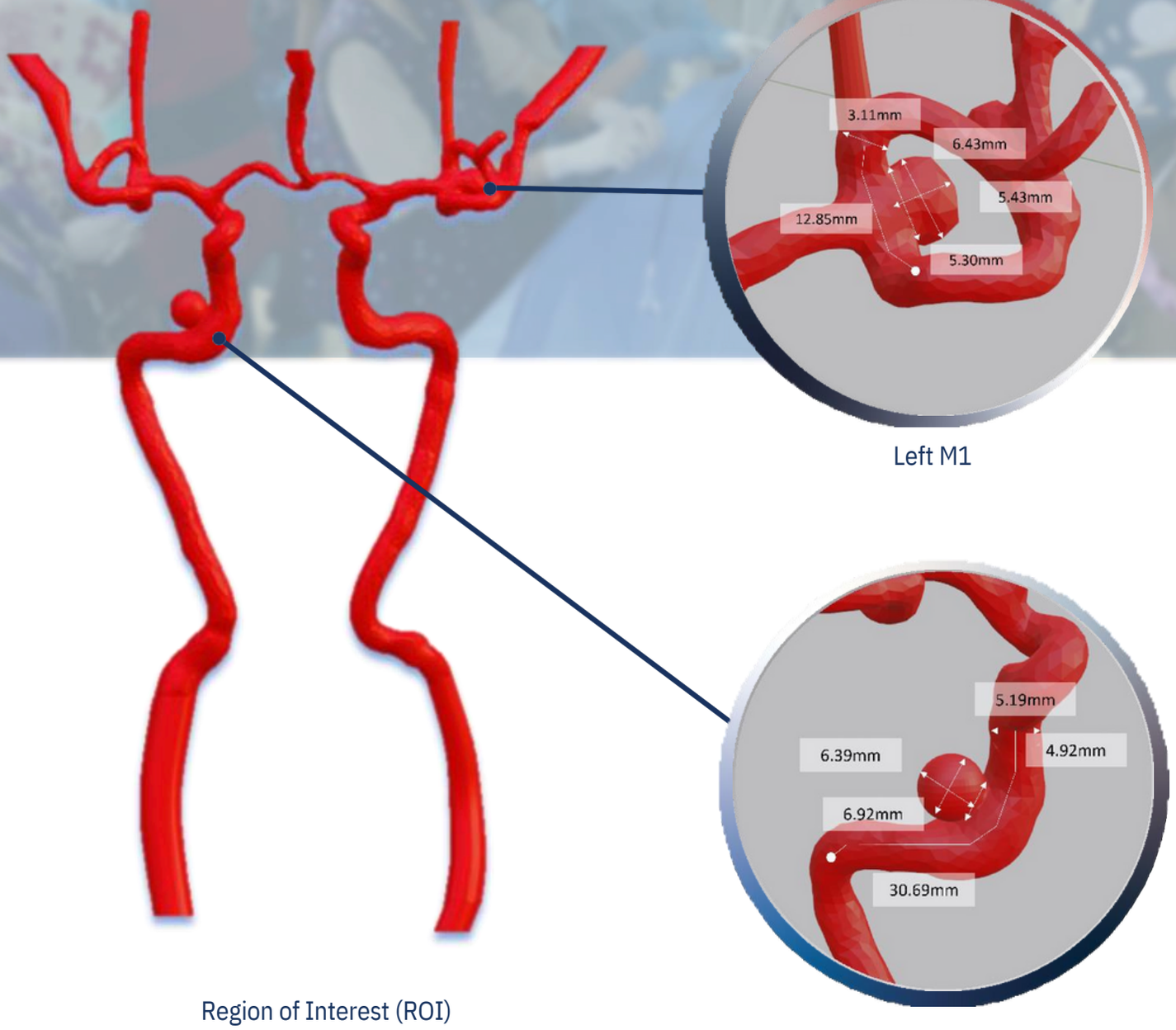
Brain Aneurysm Module

Designed by leading experts in the field with experience in endovascular treatment of brain aneursym to give participants exposure to procedure and insights to brain aneurysm treatment. Brain aneursym module will touch the basic principles, procedural endovascular management, devices coills and stent selection and advanced techniques.

In this module candidates will be exposed to:

- Neurovascular imaging.
- Patient selection.
- Basic strategies endovascular treatment of brain aneurysm.
- Basic devices and instrument in brain aneurysm.
- Complication and bail-out strategies.

Left M1



Region of Interest (ROI)
Anterior View

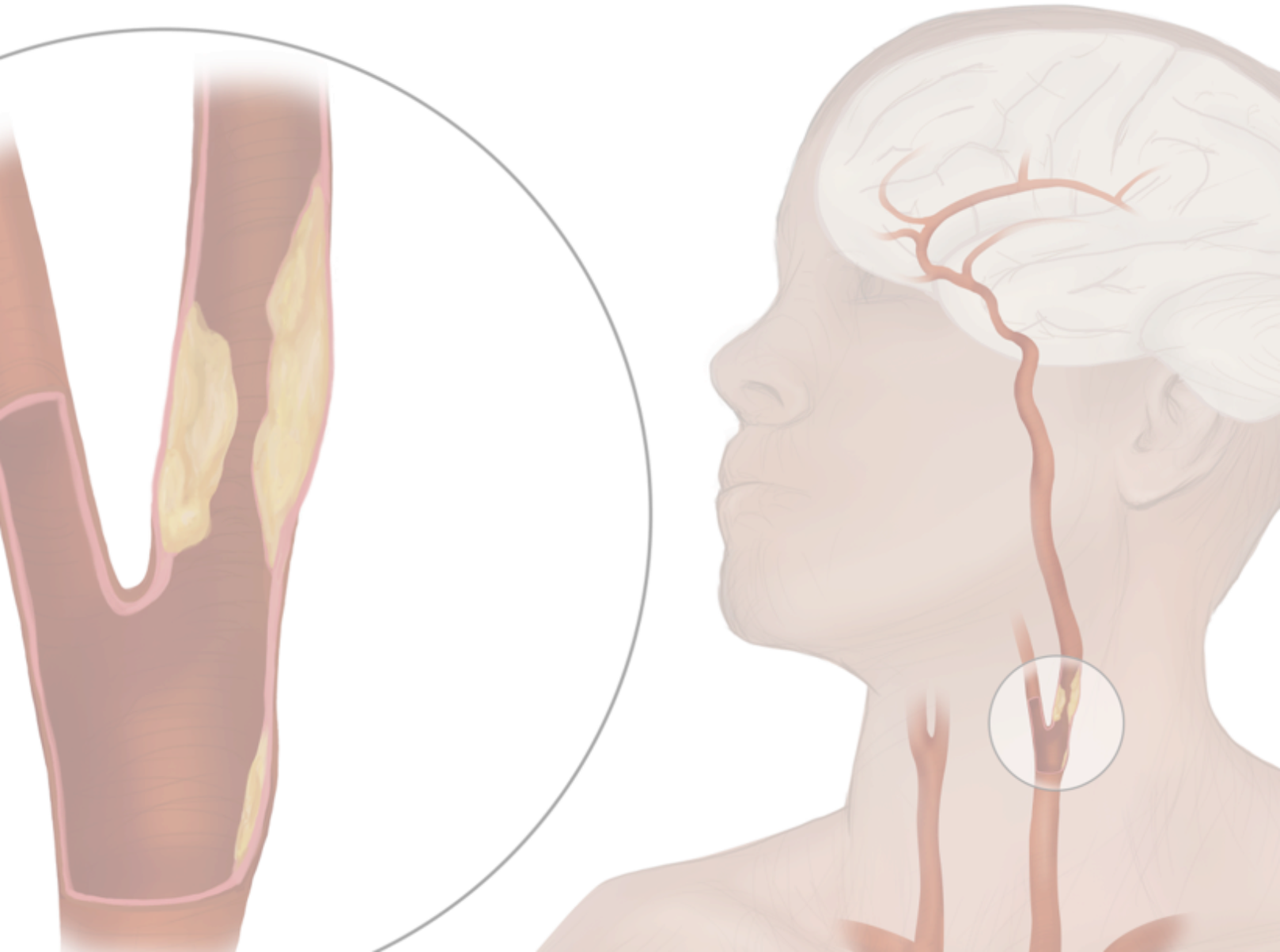
Right ICA

Carotid Angioplasty & ICAD Stenting Module

Mastering the techniques and strategies essential for carotid angioplasty and intracranial stenting especially in stroke thrombectomy. This expertly designed module is tailored for healthcare professionals. The module delves into the diagnosis and management of carotid artery disease (CAD) and intracranial atherosclerotic disease (ICAD). Participants will explore cutting-edge procedural methods, learn the nuances of selecting and deploying balloons and stents, and gain proficiency in addressing complex vascular scenarios. Hands-on practice combined with case-based discussions ensures a thorough understanding of both foundational skills and advanced intervention techniques to improve patient care and procedural success.

In this module candidates will be exposed to:

- Basic principle of Carotid and ICAD angioplasty and stenting.
- Patient selection.
- Basic devices and tools for carotid stenting.
- Basic devices and tools ICAD angioplasty and stenting.
- Endovascular technique of carotid angioplasty and stenting.
- Endovascular technique of ICAD.



Master Class Module (Neurovascular and Stroke Imaging)

Topic covered:

1

CT in Acute Stroke.

- Role in early detection of ischemic and haemorrhagic stroke.
- CT perfusion imaging and its clinical relevance.
- Case-based approach to interpreting CT findings

2

MRI in Acute Stroke.

- Diffusion-weighted imaging (DWI) and fluid-attenuated inversion recovery (FLAIR) sequences.
- Identifying penumbra and infarct core.
- MRI in hyperacute and subacute stroke phases.

3

Diagnostic Cerebral Angiography.

- Indications and techniques. Understanding cerebral vascular anatomy.
- Identifying abnormalities: aneurysms, AVMs, and stenoses.

4

NIHSS and clinical evaluation.

- Standardized assessment for stroke severity.
- Hands-on practice in scoring.
- Integrating NIHSS with imaging and treatment decisions.

5

Neurovascular Imaging.

- Overview of imaging modalities: CT, MRI, and digital subtraction angiography (DSA).
- When and why to choose specific imaging techniques.
- Advanced imaging in interventional planning.

6

Neuro Imaging carotid stenosis.

- Detecting and grading stenosis using Doppler ultrasound, CT angiography (CTA), and MRI.
- Role in decision-making for carotid endarterectomy or stenting.

7

Venous stenosis.

- Pathophysiology and clinical relevance.
- Imaging techniques for venous sinus evaluation.
- Case discussions: differentiating venous thrombosis from stenosis

TWIN Educator

Prof. Ahmad Sobri bin Muda
Consultant Neurointerventional
Hospital Sultan Abdul Aziz Shah

CV

Dr. Rajeev bin Shamsuddin Perisamy
Consultant Neurointerventional
International Islamic University Malaysia

CV

Prof Abdul Hanif Khan bin Yusof Khan
Consultant Neurology Hospital Sultan
Abdul Aziz Shah

CV

TWIN

Visit us at:
twin.longemed.com

For any inquiries and registration:
anis@longemed.com

This prospectus has been prepared in good faith and is correct at the time of sharing.