2nd International Course on Intraoperative Ultrasound in Neurosurgery

Day 1 (29th May)

8-8.30 Registration

8.30 -10.30 am Theoretical Background

Chairs: TBC

Basic Principles

- Perspective vis a vis other modalities? - Geirmund Unsgaard
- Physics of US for neurosurgeons - Tormod Selbekk
- Understanding the US machine (knobology and probes) – Tormod Selbekk
- Enhancing the US – Applications of CEUS - Francesco Prada
- Navigated US/ Image fusion - Aliasgar Moiyadi
- Practical tips - How I do it - Aliasgar Moiyadi, TMH
- Interpreting the US and correlation with anatomy - Francesco DiMeco

10.30 – 11.00 am - Coffee Break

11.00 – 12.30

Hands on fine tuning US – Basics and principles – Faculty and trade

12.30-1.30 pm – Working lunch

1.30 pm– Applications and advances

Chairs: TBC

- Spectrum of applications –
- Pediatrics – Martin Schuhmann
- Minimally Invasive surgery (endoscopy) - Llewellyn Padayachy
- LGG and Vascular - Geirmund Unsgaard
- Oncology - Aliasgar Moiyadi
- Newer Aspects - Elastography/ Therapeutic US - Francesco Prada
- Advanced Imaging in Brain tumors – Mike Sathekge / Gill Boshomane

3.00 pm – Coffee Break

3.45 pm IOUS - Global and local experience  (15 min each)
30 May

Chair – TBC

Speakers
- James Balogun, Nigeria
- Gavin Quigley, UK
- Oliver Bozinov, Switzerland
- Francesco DiMeco, Italy

Discussion

5.00 pm End

7 pm – Dinner
**Day 2 (30th May)**

8.00 am – Overview for the day. Divide all into workstation batches (o

8.15 - 9.30 am: Hands on Module 1

Module 1: Machine specific setup/ knobology and probes and their adjustment

Hands on exercises: Demonstrate machine and console

(All Faculty) Probes and their different features

Adjusting parameters of acquisition

9.30- 10.45 am: Hands on Module 2

Module 2: Technique of insonation/ Localization/ Methodical Tumor insonation (orthogonal and multiplanar imaging)

Recap of lecture taken previous day – 20 min

Hands- On: Probe draping – keep 1 cover and few gloves to mimic covers (with/without gel -see the difference)

(All Faculty) Acoustic coupling

Object localization in phantoms and Anatomical orientation in Goat brain

10.45-11.00 Coffee break

1100—12.00 Pm: Hands on Module 3

Module 3: Target localization / Cyst aspiration / Hand-eye coordination/ (Elasto and (? CEUS)

Recap of lecture taken previous day + Hand-eye coordination talk by Francesco Prada – 20 min

Hands on: Lesion (or cyst) localization

(All Faculty) Hand-eye coordination

Elasto/ CEUS in models

12.00 – 1.00 pm: Hands on Module 4

Module 4: Resection control and artefact avoidance

Artefacts in resection cavity and techniques of overcoming it

Hands on: Simulation models – resect tumor and create cavity and insonate, endoscopic guidance.

(All Faculty)
1-1.30 pm : Lunch

1.30-3.30 pm: Hands on Module 4
Module 4 - (Nav US AND Simulation) – 1 hour each in rotation (Split into groups)
   1. NavUS (limitations of 2DUS vs Nav US )
   2. Simulation – Francesco Dimeco/ Alessandro Perin

3.30-3.45 pm : Coffee break

3.45 : Course Review and feedback

4 pm : Conclude

4- 5.30 pm Committee Meeting to Review and Plan ahead
Proposed Faculty:

International
Geirmund Unsgard, Norway
Francesco DiMeco, Italy
Francesco Prada, Italy
Alessandro Perin, Italy
Martin Schuhmann, Germany
Nelci Zannon, Brazil
James Balogan, Nigeria
Gavin Quigley, Ireland

Local organisers
Llewellyn Padayachy
Zakhe Mathonsi
Meerash Ramsammy
Vusi Radebe
Shane Alexander