



Royal College  
of Surgeons

ADVANCING SURGICAL CARE

# Operative Skills in Neurosurgery

## Programme

**Director:**

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**Day One**  
**High Speed Drill Training Day**

<b>Time</b>	<b>Session</b>
<b>0930</b>	<b>Registration and refreshments</b>
1000	Welcome and introduction
1010	Drilling Workshop Part I
<b>1100</b>	<b>Refreshments</b>
1130	Drilling Workshop Part II
<b>1230</b>	<b>Lunch</b>
1330	Drilling Workshop Part III
1430	Drilling Workshop Part IV
<b>1530</b>	<b>Refreshments</b>

**Basic Surgical Anatomy Tutorials**

1600	Spinal anatomy
<b>1700</b>	<b>Refreshments</b>
1715	Cranial anatomy
<b>1815</b>	<b>Close</b>

## Day Two

Time	Session
0815	Introduction and meet the tutors
0830	<b>ANTERIOR CERVICAL SPINE</b> <b>Lecture</b> <ul style="list-style-type: none"><li>• Anatomy of the neck relevant to anterior approaches to the cervical spine.</li><li>• The anatomy of the of the discs and uncovertebral joints and their relationship to the dura, nerve roots and vertebral arteries</li><li>• Operative technique of anterior cervical discectomy and foraminotomy</li></ul> <b>Cadaveric exercise</b> <ul style="list-style-type: none"><li>• Anterior cervical dissection with discectomy, foraminotomy and corpectomy.</li><li>• Dissection of vertebral artery. Relationship to cervical roots.</li></ul>
1030	<b>Refreshments</b>
1100	<b>POSTERIOR CERVICAL SPINE</b> <b>Lecture</b> <ul style="list-style-type: none"><li>• Anatomy of the neck relevant to posterior approaches to the cervical spine.</li><li>• The anatomy of the facet joint and its relationship to the thecal sac and nerve roots</li><li>• Operative technique of posterior cervical foraminotomy and laminectomy</li></ul> <b>Cadaveric exercise</b> <ul style="list-style-type: none"><li>• Cervical laminectomy and posterior foraminotomy</li><li>• Dissection along cervical roots to establish relationship posteriorly with facet joints and anteriorly with uncovertebral joints and cervical discs.</li></ul>
1300	<b>Lunch</b>
1345	<b>POSTERIOR CRANIOCERVICAL JUNCTION</b> <b>Lecture</b> <ul style="list-style-type: none"><li>• Anatomy of the craniocervical junction relevant to posterior approaches including Atlas, Axis, C2 nerve root and vertebral artery</li></ul> <b>Cadaveric exercise</b> <ul style="list-style-type: none"><li>• Midline posterior exposure of craniocervical junction with demonstration of Atlas, Axis, C2 nerve root and vertebral artery</li></ul>
1500	<b>Refreshments</b>

1520	<p><b>POSTERIOR LUMBAR SPINE</b></p> <p><b>Lecture</b></p> <ul style="list-style-type: none"> <li>• Lumbar musculature as relevant to surgical exposure of the lumbar spine</li> <li>• Anatomy of the lumbar vertebrae with particular attention to the differing shapes of the 5 lumbar vertebrae as relevant to surgical exposure of disc prolapses (including “far lateral”)</li> <li>• Anatomy of the dural sac and cauda equina as relevant to lumbar decompressive procedures</li> <li>• Relationship of the five lumbar and first sacral nerve roots to the discs, pedicles and facet joints.</li> <li>• Anatomy of the facet joint with attention to the superior and inferior articular processes as relevant to lumbar decompression for lateral recess stenosis</li> <li>• Anatomy of the lumbar and lumbosacral foraminae as relevant to lumbar decompression.</li> <li>• Relationship of the pedicle to the base of the transverse process and facet joint as relevant to pedicle screw placement and far lateral discectomy</li> <li>• <b>CONCEPT OF TRANSITING AND EXITING NERVE ROOTS</b></li> <li>• Operative technique of lumbar microdiscectomy and lateral recess decompression</li> </ul> <p><b>Cadaveric exercise</b></p> <ul style="list-style-type: none"> <li>• Midline posterior exposure of lumbar spine</li> <li>• Lumbar microdiscectomy</li> <li>• Lateral recess decompression by laminectomy with demonstration at one level of transiting and exiting nerve roots, exposure of pedicles and identification of superior and inferior articular processes.</li> <li>• Upper lumbar dissection beyond pedicle to identify entry point for pedicle screws as well as exiting root crossing disc at point of “far lateral” disc prolapse.</li> </ul>
1800	Close

### Day Three

Time	Session
0815	<b>FRONTOTEMPORAL CRANIOTOMY</b> <b>Lecture</b> <ul style="list-style-type: none"><li>• Surface anatomy and anatomical landmarks relevant to frontotemporal craniotomy</li><li>• Anatomy of surgical approach</li><li>• Identification of structures related to anterior clinoid and proximal sylvian fissure.</li><li>• Operative technique of frontotemporal craniotomy</li></ul> <b>Cadaveric exercise</b> <ul style="list-style-type: none"><li>• Frontotemporal craniotomy</li><li>• Relevant anatomy of skull and dura including middle meningeal vessels.</li><li>• Cortical anatomy of frontal and temporal lobe</li><li>• Anatomy of proximal sylvian fissure</li><li>• Anatomy of proximal internal carotid, optic nerve, anterior clinoid, oculomotor nerve and tentorium cerebelli</li></ul>
1030	<b>Refreshments</b>
1100	<b>BIFRONTAL CRANIOTOMY</b> <b>Lecture</b> <ul style="list-style-type: none"><li>• Surface anatomy and anatomical landmarks relevant to bifrontal craniotomy</li><li>• Anatomy of surgical approach including vessels and nerves of scalp and anatomy of frontal bones including air sinuses.</li><li>• Anatomy of sagittal sinus</li><li>• Operative technique of bifrontal craniotomy including frontal air sinus exenteration and exteriorisation of air sinuses with vascularised pericranial flap.</li></ul> <b>Cadaveric exercise</b> <ul style="list-style-type: none"><li>• Bifrontal craniotomy</li><li>• Extradural and intradural approach to anterior fossa with identification of olfactory tracts, optic nerves and anterior cerebral artery complex.</li><li>• Formal division of anterior sagittal sinus</li><li>• Exenteration of frontal air sinuses</li><li>• Exteriorisation of sinuses with vascularised pericranial flap</li><li>• Bone flap replacement with various fixation techniques</li></ul>
1300	<b>Lunch</b>

1345	<p><b>POSTERIOR FOSSA</b></p> <p><b>Lecture</b></p> <ul style="list-style-type: none"> <li>• Surface anatomy and anatomical landmarks relevant to posterior fossa craniotomy (Midline and paramedian approaches).</li> <li>• Anatomy of posterior fossa as relevant to surgical approaches (occipital and petrous bone, venous sinuses, arterial anatomy and neural structures including cranial nerves)</li> <li>• Posterior fossa craniotomy to expose cerebellar hemispheres, cerebellopontine angle and foramen magnum</li> <li>• Operative technique of posterior fossa craniotomy</li> </ul> <p><b>Cadaveric exercise</b></p> <ul style="list-style-type: none"> <li>• Midline prone exposure of posterior fossa</li> <li>• Identification of venous sinuses and major arteries</li> <li>• Identification of lower cranial nerves</li> <li>• Identification of neural triangles in the floor of fourth ventricle</li> <li>• Identification of Meckels cave, and cranial nerves V to VIII with resection of cerebellar hemisphere as necessary.</li> </ul>
1545	<b>Refreshments</b>
1600	<p><b>PARASAGITTAL CRANIOTOMY,</b></p> <p><b>Lecture</b></p> <ul style="list-style-type: none"> <li>• Anatomy of the sagittal sinus, cortical veins, the falx and the pericallosal arteries</li> <li>• Surgical approach to parasagittal lesions</li> <li>• Surgical approach to parietal and occipital lesions</li> </ul> <p><b>Cadaveric exercise</b></p> <ul style="list-style-type: none"> <li>• Craniotomy for parasagittal lesion crossing the midline.</li> </ul>
1800	<b>Close</b>