

Education and Training Standards for Vascular Anaesthesia

Current RCA recommendations for core clinical outcomes for higher vascular surgery

- To gain knowledge of the perioperative anaesthetic management of patients undergoing elective and emergency abdominal aortic surgery and newer stenting techniques
- To anaesthetise patients for carotid endarterectomy and aortic aneurysm surgery

Educational Time: All trainees spend a minimum of 3 months training in vascular anaesthesia during ST training which can be split between Intermediate and Higher training to achieve the outcomes as detailed in Annexes C&D in the RCA curriculum (<https://www.rcoa.ac.uk/CCT/AnnexC>, <https://www.rcoa.ac.uk/CCT/AnnexD>).

Both are to be completed with indirect supervision

Proposed suggestions

Trainees wishing to develop a sub-specialty interest in vascular anaesthesia should complete Advanced Training in Vascular Anaesthesia.

The Advanced Training in Vascular Anaesthesia module should be a stand-alone specialist unit outwith general duties.

Trainees undergoing Advanced training need a minimum of 6 months training and where possible 12 months dedicated vascular training in a recognised vascular unit.

Essential Learning outcomes of Advanced training

- Gain mastery in the delivery of safe and effective perioperative anaesthetic care to patients undergoing complex vascular procedures [including intra-thoracic], both for elective & emergency cases and in the operating theatres and in interventional radiology suites
- Gain mastery in the management of such major cases demonstrating the necessary multi-disciplinary leadership, communication and team-working skills necessary to ensure the care delivered benefits both the patient and the organisation
- Gain maturity in understanding the importance of utilising the time allocated to clinical sessions effectively, optimising throughput whilst not compromising patient safety
- Gains the necessary maturity to guide the choice of audit cycles in developing practice
- Becomes familiar with recent developments in perioperative anaesthetic care for vascular surgery, to evaluate these developments and to advise colleagues of useful changes in practice

Core clinical learning outcomes

To be capable of undertaking the perioperative anaesthetic care for complex vascular cases independently; this implies an ability to:

- Provide perioperative anaesthetic care to a wide range of cases in and out of theatre including those where supra renal or thoracic aortic cross clamping occurs, demonstrating a fundamental understanding of the problems encountered
- Show the decision making and organizational skills required of an anaesthetist to manage busy clinical sessions that involve patients having major vascular procedures, ensuring that the care delivered is safe and timely, benefiting both the patient and the organisation
- Assist colleagues in making decisions about the suitability of surgery in difficult situations
- Provide teaching to less experienced colleagues of all grades
- Have experience of the vascular pre assessment clinic and have experience of CPX testing

Knowledge

In depth understanding of scoring systems and risk stratification methods for all vascular cases including those requiring thoracic access or pleural breach

In depth understanding of use of functional cerebral monitors during carotid surgery awake and under general anaesthesia

Knowledge of pathophysiology of aortic cross-clamping, together with management and mitigation strategies

Knowledge of pharmacological adjuncts used in vascular surgery

Skills

Open AAA – under distant supervision, including emergency AAA repair

EVAR/thoracic EVAR and fenestrated grafts - under distant supervision

Competence in performance of thoracic epidurals, insertion of double lumen tube and management of one lung ventilation

Carotid endarterectomy - GA and LA techniques with remote supervision

Cervical plexus blocks – understanding of superficial/deep/ intermediate – including ultrasound guidance. Risks/benefits and evidence of relative merits of each.

Anaesthesia for lower limb amputation under general or regional anaesthesia (including pain management) with remote supervision

Anesthesia for lower limb revascularization under GA and regional techniques including CSE and peripheral nerve blockade

Attendance at MDT & preoperative assessment clinics of vascular patients

Attendance at CPX clinics

Blood conservation strategies

Techniques and indications for cardiac output monitoring and modalities

Thoracic sympathectomy and thoracic inlet procedures under distant supervision

Experience of open thoracic aortic surgery including spinal cord protection strategies under direct, and ideally indirect supervision is desirable.

Involvement in one vascular audit, and if possible participation in vascular research process.

Indicative typical recommended log book numbers:

30 carotid endarterectomies

30 EVAR including at least 5 thoracic or fenestrated EVAR

10 Open aneurysms

4 Thoracic aneurysms

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