

Curriculum

For

(Residency Program)

Master of Surgery (Vascular Surgery)

Phase - B



Department of Vascular Surgery

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1. Introduction:

Vascular Surgery is a new surgical specialty that has evolved out of the specialty of general surgery. During recent years, and in common with many other disciplines, there has been a trend towards further specialization within general surgery. This has led to the development of Vascular Surgery as a separate stand-alone specialty. This subject deals with the vascular disease of local community. The major areas of special interest associated with the specialty of Vascular Surgery are Aortic, Carotid, Limb salvage, Venous Vascular Access, Renovascular, each involving the acquisition of both open and endovascular competencies to include relevant imaging skills. In addition to these clearly defined disease-based areas of special interest there are others that are less well developed within the syllabus but represent substantial areas of practice like Vascular Surgery related to trauma, Vascular Surgery of Childhood, Academic Vascular Surgery, Vascular medicine. The variations in the scope of practices within the specialty are highly variable and largely shaped by local circumstances, the needs of the service and the personal development of the surgeons delivering those services. All vascular surgeons will be given the opportunity to develop an area of special expertise and some will then go on to include that area as a major part of their consultant practice as their individual careers develop. There is also significant shared practice with other specialties and subspecialties such as interventional radiology, cardiology, cardiothoracic surgery, diabetes, Geriatrics, renal, skin and VD, transplant surgery and stroke etc. This subject needs high practical skill, knowledge and expertise in every aspect.

2. Programme overview:

Residents will undertake three years intensive Phase-B training in order to achieve the level of knowledge, skills and expertise required for clinical practice in the field of Vascular surgery. The knowledge and skills acquired during Phase- A training are further focused and refined during Phase – B training which is three years speciality

specific training in Vascular, cardiac and thoracic surgery departments of various institutes. This whole period will be divided into various blocks. General rules of The University will be applicable for all the candidates.

3. Objectives of vascular surgery:

- To produce vascular surgeon for the society.
- To produce specialists, efficient in teaching learning process in vascular surgical field.
- To develop vascular surgeons who will be able to apply knowledge, manage the vascular disorders, conduct research, coordinate and promote collaboration in organizing the department and provide leadership in the field of vascular surgery.
- To utilize the diagnostic and therapeutic modalities in the most cost effective manner.
- To understand the usefulness and limitations of diagnostic and therapeutic modalities.

4. Admission requirement :

- Residents' of Vascular surgery who have successfully passed Phase-A final examination are eligible for enrolment in Phase – B residency.
- Candidates having FCPS (Surgery) / MS (Surgery) or equivalent qualification will be enrolled directly in phase B of Master of Vascular Surgery.

Content (Syllabus) outline

A. Vascular Surgery

1. Basic concepts of vascular disease which includes arterial, venous and lymphatic disease.
2. Initial patient evaluation by examination, non-invasive & invasive vascular procedures, vascular radiology and preoperative preparation.
3. Medical treatment in vascular disease.
4. Risk assessment in vascular surgery.
5. Perioperative management :
 - a. Anaesthesia.
 - b. Vascular monitoring.
 - c. Early postoperative care.
6. Managing postoperative patients and deals with complications.
7. Coagulation disorders and haemorrhage.
8. Drugs used in vascular surgery.
9. Specific arterial problems:
 - Pathology and medical treatment of chronic arterial occlusive disease (Atherosclerosis, Obliterative endarteritis, Thromboangiitis obliterans)
 - Acute arterial insufficiency-
 - Aorto-iliac occlusive disease.
 - Femoro-popliteal- tibial occlusive disease.
 - Amputation in the dysvascular patient.
 - Rehabilitation of vascular amputee.
 - Diabetes and peripheral artery disease.
 - Prevention and management of autogenous and prosthetic graft infection.
 - Reperfusion injury.
 - Aneurysm (True and False)

- Thoraco- abdominal aortic aneurysm.
- Aneurysm in other sites.
- Aortic dissection.
- Innominate, subclavian and vertibobasilar artery occlusive disease.
- Cerebrovascular disease :
 - Carotid artery occlusive disease.
 - Carotid body tumour.
 - Carotid aneurysms.
- Visceral arterial disease
 - Renovascular disease.
 - Acute and chronic mesenteric vascular disease.
- Vascular disease of the upper extremity and vasculitis.
 - Thoracic outlet syndrome.
 - Vasculitis of different types.
 - Juvenile obliterative arteritis.
- Takayasu's disease
- Vasospastic disease- Renaud's syndrome, Renaud's disease.

10. Specific venous problems:

- Varicose vein.
- Venous malformation.
- Venous thromboembolism.
- Postphlebitic syndrome and chronic venous insufficiency.
- Venacava interruption and pulmonary embolism.
- Superficial thrombophlebitis.

11. Lymphatic disease:

- Lymphoedema.

- Cystic hygroma
- Lymphangioma circumscriptum.

12. Miscellaneous problems:

- Hemodialysis access.
- Vascular trauma.
- Acquired arteriovenous fistula.
- Vascular neoplasm.

B. Cardiac Surgery

1. Special diagnostic and therapeutic procedures in cardiac surgery.
2. Intraoperative considerations in cardiac surgery.
3. Admission in ICU and monitoring techniques.
4. Cardiovascular and respiratory management.
5. Fluid management, Renal and metabolic problems.
6. Cardiac trauma.
7. The aorta, the Pericardium.
8. ASD, VSD, major congenital anomaly.
9. Coronary artery bypass grafting.
10. Mediastinal bleeding.
11. Tracheal intubation and assisted ventilation.
12. CPR.
13. Cardiac transplantation.

C. Thoracic surgery

1. Radiological imaging of thoracic abnormalities.

2. Preoperative evaluation of patients undergoing thoracic surgery.
3. Perioperative care of thoracic surgical patient.
4. Thoracic trauma.
5. Thoracic incisions.
6. Spontaneous pneumothorax, emphysema, malignant pleura and pericardial effusion.
7. Surgery of diaphragm
8. Surgery of oesophagus.
9. Thoracic outlet obstruction.

5. Teaching and learning methods :

- Case – based, small group interactive discussions.
- Problem oriented reading.
- Self-directed learning.
- The residents will expand their knowledge in managing preoperative vascular patients, different operative procedures, managing vascular trauma, learn Duplex scanning, in depth knowledge about vascular intervention and learn how to manage vascular complications.
- Vascular post-operative discussion, case presentation, journal presentation to upgrade their knowledge.

Phase – B training rotation:

- Vascular surgery --- 24 months.
- Emergency vascular surgery --- 6 months.
- Cardiac surgery – 3 months
- Thoracic surgery – 3 months.

6. Record of training :

The evidence required to confirm progress through training includes:

- Details of the training rotations, the training plan agree with weekly timetables and duty rosters and numbers of practical procedures with outcomes.
- Confirmation of attendance at events in the educational programme at departmental and interdepartmental meetings and other educational events.
- A properly completed logbook with entries capable testifying to the training objectives which have been attained and the standard of performance achieved.
- CME activity.
- Supervisor's report on observed performance (in the workplace) of duties, practical procedures, presentations made and teaching activities.
- EBR (End Block Report)

End Block Examination sheet:

Category of assessment	Assessment scale (Score/Grade)	Score/Grade achieved
Written examination	Total marks 50	
Clinical examination	Total marks 100	
Medical record view	Satisfactory : 80-100%	

	Satisfactory completed Unsatisfactory: <80% Satisfactory completed	
Log book assessment	Complete : 80-100% of the task were satisfactorily completed Recoverable : 60-79% of the task were satisfactorily completed Irrecoverable: <60% of the task were satisfactorily completed	

Log Book:

Residents are required to maintain a logbook in which entries of academic/professional work done during the period of training should be made on a daily basis and signed by the supervisor. Completed and duly certified logbook will form a part of the application for appearing in Phase- B examination.

7. Research:

Development of research competencies is an important competent of the residency programme curriculum as they are an essential set of skills for effective clinical practice. Undertaking research helps to develop critical thinking and the ability to review medical literature. Every resident shall carry out work on an assigned research project under the guidance of a recognized supervisor. The project shall be written and submitted in the form of a thesis. Thesis protocol should be submitted to institutional Review Board (IRB) within first 6 months and total thesis should be completed within 27 months out of 36 months.

8. Assessment:

Assessment will be done in two broad compartments:

Compartment A: Consist of four components.

- Written examination consisting of 2 papers.
- Clinical examination (One long and four short cases)
- SCA (10 stations)
- Oral (Two board consisting of 4 examiners)

Every resident must pass all the three components of Compartment A separately. Candidates will be declared failed if he/she fails in one or more components of the compartment. He/she the have to appear all the three components in the next phase final examination.

Compartment B:

Thesis and thesis defense.

Written examination:

Two papers: Paper I : Vascular surgery(artery,venous& lymphatic)- 100 marks.

Paper II: Vascular emergency and miscellaneous. – 50 marks.

Cardiac and thoracic surgical disease.- 50 marks.

Question type:

- Two papers: 100 marks each. Time 3 hours for each paper. Pass marks-60% of total two papers.
- Each paper will consist of two groups :

Group A:

- 10 short questions (5 marks each)
- These will assess the knowledge of different level and its application.

Group B:

- 5 scenario based problem solving questions (10 marks for each)

- The questions should focus to assess the capability of handling clinical problem independently and comprehensively as a specialist.
- Suggested format :
 - o A scenario followed by questions.
 - o Questions may include diagnosis, differential diagnosis, investigations plan, treatment, follow up and patient education.

Clinical examination:

There will be one long case and four short cases.

1. Long case : Marks-100

- Directly observed.
- Two examiners for each examinee.
- History taking and examination by examinee 20 mins.
- Discussion on the case 20 mins. (presentation 6 mins, crossing 6 X 2 mins and decision 2 mins)
- Examiners will neither ask any question nor stop the examinee in any way during history taking and physical examination.
- Discussion should be done preferably as per structured format and proper weightage on different segments of clinical skills.

2. Short cases : Marks-100

- Four in number
- Time 20-30 minutes.
- Crossing should be done with proper weightage on different segments of clinical skills.

Pass marks: 60 % of total long and short cases.

Structured Clinical Assessment (SCA): Marks – 100; Pass marks – 60%.

- 10 stations: 5 minutes each.

Oral examination: Marks – 100; Pass marks – 60 %

- Two boards consisting of 4 examiners.
- 20 minutes each.

Thesis evaluation:

- Marks: Thesis writing -200; Thesis defense- 100; Marks for acceptance- 60 % of total.
- To be evaluated by 4 (Four) evaluators- 3 subject specialist and one academician preferably involve in research and teaching research methodology.
- Among the subject specialist one should be external.
- Evaluators should be in the rank of Professor / Associate Professor.
- Supervisor will attend the defense as an observer and may interact only when requested by the evaluators.
- Thesis must be submitted to the evaluators.
- Thesis must be submitted to the controller of examination not later than 30months of enrolment in Phase- B.
- Thesis must be sent to the evaluators 2 (Two weeks prior to assessment date.
- Evaluation will cover Thesis writing and its defense.
- For thesis writing evaluator will mark on its structure, content, flow, scientific value, cohesion etc.
- For defense- candidate is expected to defend, justify and relate the work and its findings.
- Assessment must be completed in next 3 months.
- Outcome of the assessment shall be in 4 categories- "Accepted", "Accepted with minor correction", "Accepted with major correction" and "Not accepted".

Residents must submit and appear Thesis defense at notified date and time. However, non-acceptance of the Thesis does not bar the resident in appearing the written, clinical and oral exam.

Qualifying for MS Degree:

On passing both the compartments, the candidate will be conferred the degree MS in Vascular Surgery. If any candidate fails in one compartment he/she will appear in that compartment only in the subsequent Phase- B examination.