**F1 jobs and logistics**

* Update the ward list every morning
  + Access: I drive>Surgery>Vascular>VASCULAR ROTA>Weekly planners>Ward list>[year]>[month]
  + At a minimum, just make sure the right patient’s name is in each bed on ward list
  + At the moment, we’re not update list on HDU, ESAU, ITU, etc, as we are currently ward based, not team based
  + If you become team-based (rather than ward based like we are at the moment), then someone will need to do Outlier list as well (found in same place on I Drive)
    - Finding vascular outliers: Dashboard>’speciality view’ on sidebar under ‘Dashboard’>Change from ‘A&E’ to ‘vascular surgery’ in top left bar> press ‘show outliers only’ in top right hand corner
    - Will also need to add the ‘referrals’: Dashboard> ‘Consultant referrals’ on side bar> ‘Active’> change to ‘RLH vascular’ in bar in top left
* WR prep notes, I’d include:
  + ‘Vascular WR + [Consultant name]’
  + ‘Issue: [Left/Right/Bilateral] + [CLI or ALI] or [CEA]. Or [AAA repair, open/EVAR]
    - Add any recent major medical issues (e.g.: MIs, severe electrolyte imbalance…)
  + ‘Surgery: [Name of procedure], [date surgery done], [Initials of operating consultant]’
  + ‘Vascular meds: [Abx + route], [Statin + dose], [Antiplatelet], [Anticoagulation inc pLWMH]
  + ‘Bloods: [Hb], [WCC], [CRP], [eGFR] + anything that’s moderately deranged’
  + [Insert latest observations]
* Ordering vascular interventions:
  + To order CT angiogram: ICE>[select pt]> ‘New Request’> ‘CT/MR’ tab>’CT angio’ in sidebar> ’ct aorta + peripheral angiogram’
  + To order dopplers or vein mapping for bypass surgery planning: ICE>[select patient]>’new request’>’Vascular labs’ tab
    - From here can order: Arterial Dopplers (add to comments if need ABPI/toe pressures), Vein mapping, post-bypass graft scans, etc...
  + To order ‘anaesthetic review’ for pre-op assessment. ‘Services’ tab> ‘Cons to cons ref’ in sidebar> ‘anaesthetic review referral RLH’ (This is exclusively for vascular patients only)
  + Can also order angioplasty (it is done by interventional radiology): ‘Interventional Theat’ tab> ‘Other vascular’ sidebar
* Analgesia
  + Very good ‘amputation pathway’ analgesia plan in junior doctor handbook
* Anticoagulation/VTE
  + If pt is on DOAC/warfarin on admission (often due to AF), usually we convert to tLMWH (dose is pt’s weight, BD (OD if CrCl<30) whilst they are an in-patient
  + **Don’t** prescribe TEDs; CI in peripheral arterial disease
  + Most patients will need prophylactic LMWH (pLWMH)
    - 40mg OD, or 20mg OD if low weight/poor renal fx (CrCl<30)
* Pre-op jobs
  + Ensure usual bloods done on admission (check handbook for specifics)
  + ECG for everyone
    - +/- Echo +/- PFTs (anaesthetist will let you know after their r/v if needed)
  + Ensure nurses know to do covid swab within 72 hours of planned operation time
  + Px VRII on paper chart if pt has insulin dependent DM
  + Generally don’t have to suspend any drugs pre-op for vascular except:
    - Clopidogrel for 5-7 days if they are having spinal anaesthetic (aspirin is ok)
    - tLMWH usually omitted morning of surgery (or evening before sometimes)
* Discharge summaries, follow up:
  + Need to mention: [surgeon name], [where: RLUH/AUH/Southport], [when, usually 6-8/52]
  + Here’s how to work out what the appropriate follow up is:
    - Check the op note, often the required f/u is under the post-op instructions
    - If not on op note, ask on WR when ‘discharge planning’ is the plan
    - If forgot to ask on WR, check handbook for general f/u rules
* TTOs
  + Usually pt should have antiplatelet (clopi and/or aspirin) & statin (ideally 80mg) on d/c
    - If pt not on these things, you need to mention this on morning WR
* Teaching med students
  + There are 6(!) new 3rd year students every week on the vascular ward
  + They need to be signed off for presenting a vascular Hx & examination to you
  + Make sure to ask them to do a feedback form for you
    - (can use same QR code that we use to give feedback on F1 teaching)
* In afternoon/end of day:
  + Check the blood results from today (‘view ward reports’ to returned bloods today on ICE)
  + Print out blood forms for pts who will need bloods tomorrow. Leave in phleb folder.
  + Update ward list if you have time
* How vascular consultants work
  + Consultant 1 (C1): looks after ward 8a, consultant of the week
  + Consultant 2 (C2): looks after outliers and new in-hospital vascular referrals
  + A patient’s responsible consultant is:
    - If elective admission: Vascular consultant who saw pt in clinic
    - If emergency admission: consultant of the week
* Learn the consultants’ initials:
  + AA: Assar AM: Millen CS: Sabbagh FT: Torella JB: Brennan JN: Naik JDS: Smout JHRS: Scurr KS: Sritharan MT: Twigg RKF: Fisher SN: Neequaye SRV: Vallabhaneni
* POPS meeting
  + These are the geriatricians that aid in medical mx of the elderly pts
  + Meetings on Thursdays 14:00, will often give you jobs (and cake!)
* MDT
  + Tuesday: Carotid MDT Thurs: peripheral (pMDT) (long one!) Fri: Aortic MDT
  + Your job may be to refer patients from ward (consultant will tell you on WR which pts)
    - Deadline is 1pm on day preceding MDT
  + Find template MDT form: I drive>Surgery>Vascular>MDT>[peripheral/aneurysm/carotid]
  + Email to: [vascularmdt@liverpoolft.nhs.uk](mailto:vascularmdt@liverpoolft.nhs.uk) & [michelle.boylan@liverpoolft.nhs.uk](mailto:michelle.boylan@liverpoolft.nhs.uk)
* Mortality and Morbidity (M&M)
  + Held in vascular meeting room, ground floor (look for vascular clinic signs near the cafe)
  + AA will email you with a couple of weeks notice on cases that you need to prepare
  + Find template form: I drive>Surgery>Vascular>M&M>TEMPLATE.doc
  + Save form in M&M folder and also send to [ahmed.assar@liverpoolft.nhs.uk](mailto:ahmed.assar@liverpoolft.nhs.uk)
* Theatres
  + If the day is not busy and you want theatre experience, I’d recommend scrubbing in for an amputation.
    - Check theatre list plan (is in vascular folder on I Drive)
    - Liaise with the Reg/Consultant on the list beforehand to attend

**Chronic limb ischaemia**

Hx of presenting complaint

* Claudication = cramping pain in calf/thigh/buttock, after fixed distance, relieved by rest
* Ulcers
  + Arterial: Small punched out, deep, necrotic base, cold. At pressure areas. Painful
  + Venous: Shallow, irregular granulating base, surrounding eczema. Ankles. Achy pain
  + Diabetic: “Painless” but can have neuropathic pain. Variable appearance. Pressure points
* Gangrene: 1) Dry (dehydrated + black) 2) Wet (Infected, oedema, erythema) 3) Gas
* Others questions: Hanging foot out of bed at night? Systemic signs of infection?

Past Medical/Surgical Hx

* Previous vascular interventions? (angioplasty/bypasses/amputations)
* Important comorbidities: Diabetes, HTN, Hyperlipidaemia, Obesity, COPD, IHD

Drug Hx

* Statin (1º prevention: 20mg, 2º prevention: 80mg). Antiplatelet (Clopidogrel/Aspirin) Antibiotics (if infected ulcer) Any drug allergies?

Social Hx

* **Smoking** (how many pack years)
* Living situation (?stairs) Occupation (impact of amputation on job)

Rest of Hx: Family Hx, Systems review...

Examination= TCP, TCP, BBB

* Before you get LL: radial pulse (+ r-r delay), brachial, carotid pulse (auscultate 1st), aorta
* Inspection= TCP:
  + Trophic changes (dry, hairless, shiny, poor nail growth)
  + Colour (?pale, ?reactive hyperaemia, ?dusky, ?cyanotic, ?necrotic)
  + Pressure points (ulcers/gangrene, look between toes and under heel)
* Palpation= TCP:
  + Temperature (compare both sides, ?cold) (can ask about sensation at same time)
  + Capillary refill time (normal is ≤2 secs)
  + Pulses (fem, pop, DP (lat to extensor Hallucis longus) , PT (behind medial malleolus)
* Special tests= BBB
  + Bruits (aneurysms in aorta or femorals (or stenosis))
  + Buerger’s angle (+ve= pallor, then reactive hyperaemia when drops legs) (≤20º= severe)
  + ABPI (Normal >0.9 Mild 0.8-0.9 Mod 0.5-0.8 Severe <0.5) (>1= stiff vessels)

Fontaine Classification

I= Asymptomatic II= Intermittent claudication III= Rest pain (?CLI) IV=ulcer/gangrene (CLI)

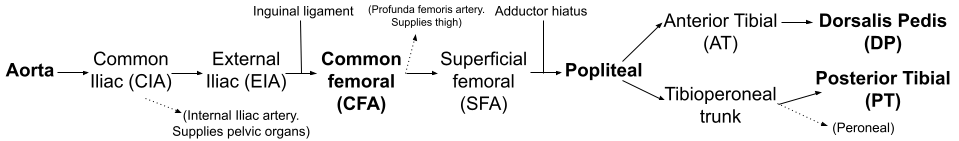
Critical limb ischaemia (CLI) features

Ischaemic rest pain (≥2 weeks) Ischaemic ulcers/gangrene ABPI<0.5

Management

* Further Ix: **Doppler ultrasound,** **CT-angiogram**, MR-angiogram
* Medical: **Lifestyle** (Stop smoking. Exercise), DM control, Statin (80mg), Clopidogrel
* Surgical: **Angioplasty** (土 stenting), **Bypass** graft (e.g.: using GSV), **Amputation**

**Vascular anatomy**



**Acute Limb Ischaemia (ALI)**

Causes

* Embolus: clot from somewhere else (Lt atrium if in AF, or forms around AAA)
* Thrombosis in situ: “Acute on chronic”. Vessel already atherosclerosed, then plaque ruptures

Clinical features= 6 P’s

* Early: Pain (**sudden** onset) Pallor Pulselessness
* Later: Paraesthesia Perishingly cold Paralysis

Rutherford Classification

* I (Viable): No neurovascular deficit at the moment
* IIA (Marginally threatened): No arterial pulse on doppler. Some toe tingling
* IIB (Immediately threatened): No arterial pulse + some toe/foot tingling +**some foot weakness**
* III (Irreversible): No venous trace now. No sensation. Paralysed. Fixed mottling.

Management

* Immediate Ix: High-flow O2 + Heparin bolus (then infusion)
* Further investigations: ECG + Echo, Doppler, CT angio
* Conservative, for I & IIA: Just keep on heparin for a while (monitor APTT). If fails→ surgery
* Surgery for IIB:
  + If embolic: Embolectomy or local thrombolysis or bypass surgery
  + If thrombotic: Local thrombolysis or angioplasty or bypass surgery
* Complications: Reperfusion injury→ compartment syndrome, hyperkalemia, acidosis, AKI
* Surgery for III: Urgent amputation (if unsuitable, then palliation)

**Abdominal Aortic Aneurysm (AAA)**

* Most asymptomatic If symptomatic= pain in abdomen/back/loins If ruptured= ↓BP +↓GCS
* Investigation: USS, with follow-up CT-contrast if >5.5cm
* Screening for >65 males:
  + 3-4.4cm = yearly scan 4.5-5.4= 3-monthly scans >5.5cm/growing >1cm/year= surgery
* Surgery (if big or symptomatic)
  + Open (midline laparotomy, clamp aorta above and iliacs, insert graft)
  + Endovascular (Better short-term outcomes, but similar long-term outcomes to open)
    - Complication= Endoleak so need regular surveillance

**Carotid artery disease**

* Atheroma in carotid artery→ carotid artery stenosis → ↓cerebral blood flow → TIA or stroke
* OE: carotid bruit Investigation: Duplex ultrasound→ quantify stenosis %
* Acutely managed by the stroke team. They refer pt’s who have 50-99% stenosis.
* Surgery= Carotid endarterectomy (CEA) = just removing atheroma and overlying intima
  + Risks= Stroke, CN palsy (CN IX, CN XII), bleeding, infection