The role of Vascular Surgery in diabetic foot care

Ian Hunter
Vascular Surgeon
Taunton
Objectives- the impossible task?

- Vascular input in ‘spoke’ centres
- Assessing urgent (ischaemic) problems out of hours
- Criteria for urgent referral
- Integration of services to facilitate transfer and repatriation
- Aspirations for the service
Challenges

- Vascular reconfiguration
- Hospitals & Demographics
- Commissioning
  - Vascular vs Diabetic Foot care
- Heterogeneity of presentation
- Heterogeneity of clinicians!
Vascular reconfiguration

- **Hubs**
  - Arterial surgery & interventional radiology
  - 24/7 vascular surgeon on call
  - 24/7 interventional radiology

- **Spokes**
  - Vascular clinics & ward reviews (not daily)
  - Possible elective IR & day surgery
Hospitals & Demographics

- Rural population
- Elderly
- Transport links

- Some patients > 30 mins from local DGH
- … and further from vascular hub
Arterial work commissioned nationally

Separate commissioning for diabetic foot care

But...

Many patients with diabetic foot problems require arterial intervention

Should the services be aligned?
Heterogeneity of presentation

- Emergency / Urgent / ‘Elective’
- Acute / Chronic (stable or deteriorating?)
- Infection / Sepsis / Ischaemia / Charcot / Gangrene (wet or dry?) / Neuropathy / hyperglycaemia / hypoglycaemia
Clinicians

- **Multidisciplinary foot care team**
  - Diabetologists, vascular surgeons, orthopaedic surgeons, plastic surgeons, ‘other’ medical staff, microbiologists, radiologists (diagnostic & interventional), podiatrists, diabetes specialist nurses, plaster technician, ‘other’ nursing staff, orthotists.

- **Foot protection team**
  - Diabetologist, vascular surgeon, diabetes specialist nurse, podiatrist

- **Amputation team**
  - As above + physiotherapist, occupational therapist, rehabilitation & limb fitting specialists
With all of these challenges (and more)…

isn’t it great we have some guidance?
Guidance
Common themes from guidance

- Establishing multidisciplinary teams
- Generating referral pathways
- Assessment guidelines
- Antibiotic guidelines
Vascular input in the spoke (or non-arterial) centre
Vascular input in spoke centres

Section 14 of ‘The provision of services for patients with vascular disease, 2014’

- Must have a diabetic foot team (NICE)
- Vascular assessment to be carried out by member of spoke MDT using NICE guidance
- Decide if urgent (next clinic 48-72 hrs) or emergency (vascular opinion within 24 hrs)
- If IR revascularisation feasible, should be within 10 days
- If 24/7 orthopaedics may deal with non-vascular emergencies on site
Criteria for assessment and referral to vascular surgery
Vascular Outpatient Referral

Usually all need urgent review within 2 weeks
Vascular clinics in Musgrove 3*/week, Yeovil 2*/week,
Monthly/ Twice monthly clinics at Chard, Minehead,
Bridgwater, B-o-S, West Mendip

1. Diabetic patient with critical limb ischaemia (Vascular Clinic)
   1. Dry gangrene
   2. Ulcer over bony prominence with absent pulses to palpation, monophasic Doppler signals
2. New diabetic ulceration with evidence of peripheral arterial disease (Diabetic Foot MDT Clinic or Vascular Clinic)
3. Recurrent ulceration with a history of previous arterial intervention (Diabetic Foot MDT Clinic or Vascular Clinic)
Emergency Admission

- **Systemic sepsis, Hyperglycaemia, Shock**
  - A&E, Acute medicine, Intensive care at Musgrove/Yeovil

- **Hot swollen foot/leg with probable infection**
  - Acute medicine Musgrove/Yeovil

- **Wet gangrene**
  - Vascular surgery at Musgrove only
Emergency Role of Surgery

- Control sepsis
  - Drain pus
  - Remove necrotic tissue
- Limit local extent of spread of infection
- Reduce systemic effects of sepsis
  - Hyperglycaemia
  - Confusion
  - Organ dysfunction (renal, cardiac)
  - Multiorgan failure, death
Emergency surgical options

- Simple debridement/ Lay open tendon track
- Ray amputation of digit
- Transmetatarsal (forefoot) amputation

BUT

Further necrosis likely if significant arterial ischaemia
Access to arterial imaging, interventional radiology, vascular surgery may be limited in emergency setting
Patient may not be systemically fit enough to undergo major arterial surgery. Life or Limb??
Pus may have tracked into calf

- Below knee amputation
- Guillotine through knee amputation
- Above knee amputation
Integration of services to facilitate transfer and repatriation
Back to the guidance
200 pages, but really...

The right assessment,
at the right time,
by the right person,
in the right place
The right referral, at the right time, by the right person, to the right person, in the right place
To facilitate...

The right treatment,
at the right time,
by the right person,
in the right place
I can’t tell you how to configure the service in your area, but…

I can predict how it might fail…
"We don’t deal with those here, send them to the vascular hub."

- No MDT assessment undertaken at spoke
- Inappropriate emergency referral often made by F1 doctor
- Patient sent miles from home, possibly unnecessarily
- Delay in starting antibiotics
- Difficult repatriation
“Don’t take the dressings down, the vascular surgeon is here on Thursday”

- No MDT assessment undertaken within 24 hours
- Delay in proper assessment
- Delay in obtaining imaging
- Delay in antibiotics

Could lead to limb loss or death
“We don’t know how to look after patients with amputations / VAC dressings”

- Inability to repatriate back to spoke following treatment
- Patient’s relatives struggle to visit regularly
- Discharge co-ordinator struggles to find community hospital / package of care across county borders
Patient is assessed at spoke by MDT member and referred to vascular hub as emergency with gas gangrene of toe

Hooray! The system works

Ambulance service extraordinarily busy and patient not classified as an emergency (poor communication)

Patient has leg amputated due to ascending infection
Pathways are great - but nothing beats a timely conversation between 2 (or more) experienced clinicians.

Common sense - use resources when available, but don’t delay urgent management when they aren’t.

The hub & spoke model can work, but we all have to make it work.

We ALL want - right treatment, right time, right people, right place.