Ulcer Management Workshop

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GPCME meeting, Rotorua 2008
Ulcer management Workshop

- Diagnosis
- Management
- How and when to measure ABI
- How to apply compression
- Role of surgery (and other intervention)
• “A leg ulcer is a loss of skin below the knee on the leg or foot which takes more than 6 weeks to heal”
Trauma

- “Most leg ulcers can be attributed to an episode of minor trauma”
- ?role of ACC
Underlying condition associated with leg ulceration

- Venous disease 70%
- Arterial disease 22%
- Rheumatoid arthritis 8.5%
- Diabetes 5.5%
- Burns 2.5%
- Infections 1%
- Blood disease 1%
- Lymphoedema 0.5%
- Malignant disease rare
4 most important factors

- 1. Venous disease
- 2. Arterial disease
- 3. Diabetes mellitus
- 4. Rheumatoid arthritis
Venous ulcer management

- COMPRESSION!!!
Vasculitic ulcers

- Associated condition (esp RA)
- Painful
- Blood tests (RF, ESR etc)
- Biopsy
- ?steroids
- Difficult to manage
- Refer (either to Rheumatology or Vascular)
Rheumatoid arthritis
Diabetic Ulcer

- Arterial disease
- Neuropathy
- Increased risk of infection
- Mainly foot ulcers
Charcot’s foot

- Usually normal blood supply
- Need blood supply for bone resorption
- Ulcers usually neuropathic over unusual bony prominences
Neuropathic ulcers
Diabetic Ulcer

- Refer
- High risk foot clinic
- Diabetic foot clinic
- Multidiscipline
Arterial ulcer

- Bony prominence
- Painful
- Necrotic edges
- Distal
- Poor pulses
- Hair?
- Buerger’s sign
Venous

Above medial malleoli

Above lateral malleoli

Arterial

Over toe joints

Anterior shin

Over malleoli

Under heel

Neuropathic

Over toe joints

Inner side of first metatarsal head

Under metatarsal head

Under heel

Over malleoli
<table>
<thead>
<tr>
<th></th>
<th>Non-venous</th>
<th>Venous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calf</td>
<td>8%</td>
<td>5%</td>
</tr>
<tr>
<td>Gaiter</td>
<td>43%</td>
<td>87%</td>
</tr>
<tr>
<td>Foot</td>
<td>49%</td>
<td>8%</td>
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</tbody>
</table>

100% 100%
Malignant ulcer
Arterial ulcer
History + Examination

- Risk factors
- Smoke
- Claudication
- Rest pain
- Pulses
Ankle-brachial index

- DP or PT artery (highest)
- Pressure is under cuff
- Practice
- Listen for phasicity
Ankle-brachial index

- > 1 = normal
- < 0.8 is significant
- < 0.5 is often associated with rest pain
Doppler ABI
Limitations of ABI

- Experience
- Diabetes
- Incompressible vessels

However

Very useful if limitations understood
Rx of arterial ulcer

- Remove cause (eg trauma)
- Clean and dress
- Topical antibacterial
- BUT
- Early intervention for low ABI or deterioration
Venous ulcer

- Common
- Well researched
- Treatment evidence based
- Overall management is a problem
- Costly
Venous ulcer

- Gaiter area
- Lipodermatosclerosis
- Inverted champagne bottle
- Pigmentation
- Varicose veins
Venous ulcer
Venous ulcer
Healed venous ulcer
Venous ulcer pathology

- Venous hypertension
- Refluxing superficial veins 60%
- Incompetent or occluded deep veins
- Incompetent deep and superficial 20%
- Inadequate calf pump
Venous ulcer treatment

- COMPRESSION
Venous ulcer management

- High cost dressings
- Antibiotics
- Bedrest
- Skin graft
Dressings

- Hydrocolloids
- Hydrogels (alginate)
- Semi-permeable films
- Enzymic debriding agents
- Manuka honey
Antibiotics

- Unnecessary unless cellulitic
- Wound swabs always grow bacteria
- Topical antibacterial works best
- A/bs breed resistance
- Sometimes useful for significant ooze
- Topical antibiotic no better and breed resistance
Bedrest

- Works but costly
- Does not prevent recurrence
Skin graft

- May hasten healing but no evidence
- Pinch grafts
- Need to be clean and granulating
Pinch graft
Compression

- Grade 2 below knee stocking
- Compression bandage
Venous ulcer management

- 1. achieve healing
- 2. prevent recurrence
- 3. maintain mobility
- 4. improve lifestyle
Results

- 79% healed at 12/52
- 84% healed at 24/52
Difficulties

- Not all ulcers are venous
- Some venous ulcers have arterial component
- Compliance with compression
- Allergies to dressings
- Deep vein incompetence
- Calf pump problems
- Prevention of recurrence
Difficulty

- Cost
- ABI
- Expertise
- Compliance
Who should treat venous ulcers

- GP
- District nurse
- Nurse led clinic
- Vascular clinic (venous ulcer clinic)
- Access to product, ABI, training
GP management

- Diagnose
- ?ABI
- Gd 2 compression stocking
- Not tubigrip
- Early D/N referral for profor
Mixed ulcer

- ABI > 0.8  profor
- 0.8 > ABI > 0.6  try profor lite
- ABI < 0.6  usually revascularise

- Refer early if ABI low
Mixed ulcer
Compression in PVD
Pain

- Arterial disease
- Infection
- Vasculitis
Prevention of recurrence

- Compression
- Varicose vein treatment
- Deep vein reconstruction
- Calf pump issues
Role of surgery

- Varicose vein surgery
- SSG
- Prevention of recurrence
- Surgery + compression does not increase ulcer healing but significantly reduces recurrence (ESCHAR trial) even with DVI
Problems preventing recurrence

- Compliance with compression
- Cost of compression
- Compression in PVD patient
- Access to and cost of vv treatment
- Inadequate calf pump
Calf pump

- Poor musculature
- Fused ankle
- Arthritis
- Obesity
Compliance issues
Conclusion

- Don’t forget compression
Don’t forget compression!
Don’t forget compression!
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Don’t forget compression!
Don’t forget compression!
Foam protection
Padding the gaiter area
Figure of 8 bandage
Compliance with compression

- Analgesia
- Reassurance
- Patience
- Close followup (district nurse)
Allergy to dressings

- Unna’s boot
- Zinc paste bandage (viscopaste, icthopaste)
Infection

- Antibiotics for cellulitis
- Local infection - local treatment
  - Iodine
  - Manuka honey
  - Silver sulphadiazine
  - Potassium permanganate
  - Zinc paste
Infected ulcer
Split skin graft

- Meshed SSG
- Pinch grafts
- Increase healing rate
Duplex ultrasound scan

- Deep venous incompetence 20%
- Superficial venous incompetence 60%
- Both 20%
- Perforator incompetence 20%
Duplex ultrasound

- Anatomical study
- Doesn’t quantify deep vs superficial
Plethysmography

- APG
  - Diagnose and quantify reflux
  - Measure calf pump function
\[ VFI = \frac{90\% VV}{VFT90} \]

\[ EF = \frac{EV}{VV} \times 100 \]

\[ RVF = \frac{RV}{VV} \times 100 \]
Plethysmography

- Doesn’t reliably separate deep vs superficial
- Access difficult
Deep Venous Reflux secondary to past DVT
Downstream Occlusion

- Loss of respiratory phasicity
- Presence of good augment
Superficial Collateralization in patient with occlusive iliofemoral DVT

- Note the helpful contribution of SFJ reflux
Reporting Results of Venous Duplex

- Clear concise
- Graphical (multicolor or arrows)
- What the surgeon wants to know

Things to be noted:
- Vessel Course
- Tributaries
- Presence of Reflux
- Superficial Vessel Diameter
- Site of Perforators
- Thrombosis (DVT, STP)
- Occlusion
- Anatomic Variants
- Incidental Findings
  - Baker’s cyst, POP aneurysm, etc.

Legend:
- Normal Deep
- Normal Superficial
- Reflux
- Chronic Thrombus
Report Examples

Intramuscular insertion

Perforator 1
Perforator 2
Perforator 3
Perforator 4
Perforator 5
Perforator 6
Perforators

- SEPS
- UGS
- UG ligation
- Compression stockings